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ASSOCIATION FOR RESEARCHER OF SKILLS AND VOCATIONAL TRAINING

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INTERNATIONAL INNOVATION ARSVOT MALAYSIA 2024

EMPOWERING TOMORROW: PIONEERING THE FUTURE THROUGH INNOVATIVE TECHNOLOGY

Malaysia, 27th & 28th July 2024
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INTERNATIONAL INNOVATION ARSVOT MALAYSIA (IAM2024)

INTERNATIONAL INNOVATION ARSVOT MALAYSIA (IAM2024)

Ts. Dr. ZULKIFLI BIN MOHD SIDI, A. M. N.
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2024

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PREFACE



Bismillahirrahmanirrahim

Assalamualaikum W.B.T dan salam sejahtera.,

Peace be upon you, and greetings.

We are grateful to the presence of Allah SWT that, with His permission, the proceedings book for the International Innovation ARSVOT Malaysia (IAM2024) program was successfully organized and published. Under the theme "Empowering Tomorrow: Pioneering the Future Through Innovative Technology," IAM2024 is dedicated to exploring cutting-edge innovations that will shape a dynamic and empowered future. This proceedings book serves as a comprehensive guide and valuable reference for program participants and researchers from diverse fields. Furthermore, it aims to support participants in enhancing the commercial value of their innovations, with a focus on equipping them to successfully market their products in alignment with the principles of TVET (Technical and Vocational Education and Training) entrepreneurship.

IAM has a proud history of fostering global collaboration, with successful virtual events in 2021 and 2022, which saw participation from over 600 groups and more than 2,500 participants worldwide. In 2023, the event transitioned to an in-person format, enhancing opportunities for networking and collaboration. Building on these experiences, IAM2024 once again unites participants through an impactful online platform with participants from Malaysia, Indonesia, Thailand, Turki, China, South Afrika, Brunei, Kazakhstan, Uzbekistan and Philippines. This event was made possible by the continued support of the Department of Skills Development and esteemed partners, including MAS Giresources (MG), Uniglobal Education Academy, the Institute of Metallurgy and Ore Beneficiation at Satbayev University in Kazakhstan, and Todox Digital Network. I would like to extend my highest congratulations and appreciation to all the organizing committees and collaborating parties. May the publication of this proceedings book be a highly useful guide and benefit all involved parties to the fullest.

Thank you.

Ts. Hj. Anuar bin Shaari
Program Director
International Innovation ARSVOT Malaysia (2024)

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MESSAGE & WELCOME ADDRESS



Assalamulaikum w. b. t. and Salam Sejahtera
Bismillahirahmanirahim,

Good morning to all distinguished guests. I extend a warm welcome to everyone at the IAM2024 conference.

First and foremost, I would like to express my heartfelt gratitude to all the organizers, speakers, and participants who have taken the time to be here. A special thanks to our sponsors for their unwavering support, which has made this event possible. Our theme this year, "Empowering Tomorrow: Pioneering the Future Through Innovative Technology" is particularly relevant given the rapid advancements in technology and digital transformation we are witnessing. Innovation is not just about creating new technologies, but also about how we think and collaborate to shape a better future.

Innovation touches every aspect of our lives from healthcare to education, from business to our daily routines. It is the driving force behind progress and the key to solving many of the challenges we face today. Throughout this conference, we will hear from industry leaders, technology experts, and innovators who will share their insights and experiences. Some of the key sessions include Digital Innovation; Communication Technology; Childcare innovation; and Healthy food, where we will explore cutting-edge advancements and their implications.

We will also have the pleasure of hearing from Key Speakers Assoc. Prof. Ts. Dr. Tee Tze Kiong from MyRIVET, UTHM, Batu Pahat Johor; Dr. Rosmaria Omar from Open University Malaysia (OUM) and Assoc. Prof. Dr. Gulzhaina K. Kassymova from Abai Kazakh National Pedagogical University, Kazakhstan, whose work has significantly contributed to their respective fields. Additionally, I encourage you all to attend until the end of session, which promise to be both informative and inspiring. Let this gathering be a beacon of innovation, collaboration, and progress. May our discussions and exchanges over the next few days pave the way for groundbreaking advancements and fruitful partnerships. Together, let us drive forward the future of innovation.

I hope this conference will serve as a platform to foster collaboration, encourage meaningful discussions, and generate innovative ideas that will transform the way we work and live. Let us all actively participate and seize this opportunity to learn and innovate. Personally, I recall a time when "Sharing is Caring", which taught me the true value of creativity and perseverance. It's these moments of breakthrough and discovery that we are here to celebrate and cultivate.

And as we officially inaugurate this conference, with Lafaz BismillahiRahmaniRaheem it is my great honour to declare the IAM 2024 conference open.

Once again, welcome and enjoy the IAM 2024 conference. Thank you very much.

Ts. Dr. ZULKIFLI BIN MOHD SIDI, A. M. N.
Chairman
Association for Researcher of Skills and Vocational Training (ARSVOT), Malaysia

COMMITEE MEMBERS

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PROGRAM SCHEDULES

DAY 1

27th July 2024

Time	Program
2.45 pm	**Final Presentation of Innovation Competition** (This slot determines the platinum award for innovation competition)

DAY 2

28th July 2024

Time	Program
08:00 am	Online Registration of Participants & Presenters
09:00 am	Opening Ceremony and Video Montage Officiation of IAM2024
09:30 am	**Keynote Speech 1** (Assoc. Prof. Ts. Dr. Tee Tze Kiong) Institute for Vocational Education and Training (MyRIVET), Universiti Tun Hussein Onn Malaysia, Malaysia
10:00 am	**Keynote Speech 2** (Dr. Rosmaria Omar) Faculty of Education (FoE), Open University Malaysia
10:30 am	**Keynote Speech 3** (Assoc. Prof. Dr. Gulzhaina K. Kassymova) Abai Kazakh National Pedagogical University, Almaty Kazakhstan
11:00 am	Announcement of Platinum Award for IAM2024 Closing Ceremony
12:00 pm	END

PROFILE KEYNOTE SPEAKER 1



Assoc. Prof. Ts. Dr. Tee Tze Kiong

Head of Department of Global Cooperation,
Malaysia Research Institute for Vocational Education and Training (MyRIVET),
Universiti Tun Hussein Onn Malaysia, Malaysia

Assoc. Prof. Ts. Dr. Tee Tze Kiong is currently Head of Department Malaysia Research Institute for Vocational Education and Training (MyRIVET), Universiti Tun Hussein Onn, Malaysia. He holds a Bachelor's degree in Technology with Education (Civil Engineering) from the Faculty of Education, Universiti Teknologi Malaysia, Skudai, Johor, Malaysia, in 2002. He completed his Master's degree in Technical and Vocational Education at University Teknologi Malaysia, Skudai, Johor, Malaysia, in 2004. In 2013, he obtained his Ph.D. in Technical and Vocational Education from Universiti Tun Hussein Onn Batu Pahat, Johor, Malaysia. His doctoral research focused on higher-order thinking skills and Buzan Mind Mapping. Throughout his career, he has gained valuable experience in various educational roles. He has worked as a secondary school teacher at a junior college, served as a subject matter expert, e-tutor, e-grader and proctor for final examinations at a private university and supervised industrial practicums, undergraduate projects, as well as master's and Ph.D. theses. In addition, he has served as an internal and external examiner for undergraduate, master's, Ed.D and Ph.D. programs. He also served as a professional consultant for educational instrument development. He also serves as a Technology and Technical Accreditation Council (TTAC) for Malaysia Board of Technologist (MBOT) and program evaluator for external university programs. Dr. Tee's research interests revolve around thinking skills, thinking tools, self-instructional modular approaches, learning styles, and inventive problem-solving skills. He is a registered technologist with the MBOT, a TRIZ Level 3 practitioner and Level II instructor for the Malaysia TRIZ Innovation Association (MyTRIZ) and a trainer for Human Resource Development Corporation (HRD Corp). In his editorial capacities, he serves as the Chief Editor for the Journal of Technology and Humanities (JTH) and as a member of the Managing Editor for the Journal of Technical Education and Training (JTET). He is also an editorial board member for several esteemed journals, including the Asian Journal of Assessment in Teaching and Learning (AJATEL), Journal of Vocational Education Studies (JOVES), Jurnal Pendidikan Teknologi Kejuruan, Journal of Engineering Researcher and Lecturer, and Technical and Vocational Education Journal (TAVEJ). Dr. Tee has an extensive publication record, with more than 100 publications to his credit, including journals, conference proceedings, books, research books, book chapters, policy documents, and copyrights. Currently, he holds the position of Head of the Global Cooperation Department at the Malaysia Research Institute for Vocational Education and Training (MyRIVET) and also serves as an associate professor at the Faculty of Technical and Vocational Education, Universiti Tun Hussein Onn Malaysia. He can be contacted via email at tktee@uthm.edu.my

KEYNOTE ABSTRACT

ADVANCING EDUCATION: INTEGRATING HEUTAGOGY AND THE 4Cs FOR LEARNER-CENTRIC EXCELLENCE

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Abstract

This presentation introduces a framework for teaching that progresses from traditional pedagogy through andragogy to heutagogy. Pedagogy, characterized by a teacher-centered approach, has historically dominated education. However, in response to the rapidly evolving education landscape, there is an increasing demand for a more dynamic and learner-centric methodology. Heutagogy represents an advanced concept extending beyond andragogy, emphasizing heightened learner autonomy, self-determination, and the active construction of knowledge and meaning.Building upon heutagogy, this presentation emphasizes the integration of the 4Cs (critical thinking, communication, collaboration, and creativity) into education. These skills are indispensable in contemporary workplaces, essential for enabling learners to excel in their respective fields. By incorporating the 4Cs into the educational process, learners not only acquire specialized knowledge but also develop a versatile skill set crucial for navigating the challenges and opportunities of their careers.Furthermore, the framework considers diverse learning styles to personalize teaching strategies, ensuring inclusivity and effectiveness in educational delivery. By recognizing and accommodating individual learning preferences, educators create an enriching and supportive environment conducive to optimal knowledge acquisition and application. This comprehensive approach equips learners with the necessary competencies to thrive in today's dynamic workforce. It fosters critical thinking for problem-solving, enhances communication skills for effective interaction, and cultivates creativity to drive innovation in professional domains. The presentation advocates for further exploration and implementation of this empowering educational model in education settings, highlighting its potential to meet the diverse needs of learners and comprehensively prepare them for the complexities of modern careers.

Keywords: *Pedagogy, Heutagogy, 4Cs (critical thinking, communication, collaboration, creativity), Personalize learning*

PROFILE KEYNOTE SPEAKER 2



Dr. Rosmaria Omar

Academician
Open University Malaysia

Dr. Rosmaria Omar: A Beacon of Educational Excellence. From the vibrant shores of Tumpat, Kelantan, emerges Dr. Rosmaria Omar, a trailblazing Malaysian academic whose journey epitomizes the transformative power of education. With an insatiable thirst for knowledge, she ascended from primary school to the pinnacle of academia, earning her PhD in Educational Psychology in UPM, Malaysia.A visionary in her field, Dr. Rosmaria's expertise spans educational and applied psychology, research methodologies, pedagogy, and advanced statistics. Her mastery of cutting-edge data analysis tools has made her a sought-after consultant for Malaysia's leading universities. Dr. Rosmaria's influence resonates throughout the academic world. As chief editor of ANP-JSSH and a respected reviewer for multiple journals, she shapes the discourse in her field. Her presence at international conferences as judge, presenter, and participant has earned her accolades and respect across borders. A member of prestigious associations like ARSVOT and MAsREE, Dr. Rosmaria stands at the forefront of educational innovation. Her numerous awards testify to her groundbreaking contributions to research and academic excellence. Yet, beyond her impressive credentials, Dr. Rosmaria's true strength lies in her collaborative spirit. Despite her demanding schedule, she remains an unwavering pillar of support for her colleagues, embodying the teamwork essential for academic progress.Dr. Rosmaria Omar isn't just an academic; she's a catalyst for change, living by her powerful motto: "Empowering minds through education, research, and collaboration." Her story isn't just one of personal achievement it's a beacon guiding the future of education in Malaysia and beyond.

KEYNOTE ABSTRACT 2

AI AND EDUCATOR ROLES IN ODL: NAVIGATING THE EVOLVING LANDSCAPE OF VIRTUAL LEARNING DYNAMICS

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Abstract

The integration of Artificial Intelligence (AI) in education is revolutionizing traditional teaching paradigms, with particularly profound implications for Open and Distance Learning (ODL) environments. This paper examines the evolving roles of educators in AI-enhanced ODL settings, exploring the unique challenges and opportunities that arise when navigating this technological shift in remote and asynchronous learning contexts. As AI systems increasingly manage administrative tasks, content delivery, and basic learner support in ODL, the role of distance educators is undergoing a significant transformation. This study investigates how teachers in ODL environments are adapting from being primarily content providers to becoming learning experience designers, digital facilitators, and online mentors in AI-augmented virtual classrooms. The research explores key areas of change unique to ODL, including; i) the use of AI for personalized learning pathways in self-paced courses; ii) AI-driven analytics for tracking student engagement and progress in virtual environments; iii) the integration of AI chatbots and virtual assistants for 24/7 learner support; and iv) balancing automated interactions with meaningful human connection in remote settings. Furthermore, this paper addresses the ethical considerations specific to AI in ODL, such as ensuring equitable access to AI-enhanced learning tools, maintaining academic integrity in online assessments, and protecting student data privacy in digital platforms. Drawing on case studies from various ODL institutions, the research highlights successful strategies for human-AI collaboration in online instruction and identifies potential challenges in scaling these approaches. It emphasizes the importance of digital literacy and adaptability among ODL educators as they navigate continuous technological advancements. The paper concludes by proposing a framework for redesigning ODL teacher training programs to better prepare educators for their evolving roles in AI-enhanced virtual learning environments. It argues that by leveraging AI capabilities while focusing on uniquely human teaching competencies, ODL educators can create more engaging, effective, and inclusive distance learning experiences for diverse global learners in the digital age.

Keywords: *AI-Enhanced ODL, Virtual Pedagogy, Digital Facilitatio*

PROFILE KEYNOTE SPEAKER 3



Assoc. Prof. Dr. Gulzhaina K. Kassymova

Queen Margaret University, Edinburgh, Great Britain
Abai Kazakh National Pedagogical University; Insitute of Metallurgy and Ore Beneficiation JSC, Satbayev University, Almaty, Kazakhstan

Assoc. Prof. Dr. Gulzhaina K. Kassymova is an experienced teacher with over 10 years of experience in the field of educational research in social sciences, Dr. Gulzhaina K. Kassymova from Abai Kazakh National Pedagogical University (Abai University), Kazakhstan has continually strived to serve her research discipline. Her journey in academic pursuit has been marked by relentless excellence in teaching and research. Simultaneously, she works for the Insititute of Metallurgy and Ore Beneficiation JSC, Satbayev University, as a head of the Department of International Cooperation and Intellectual Property. Throughout her career, she has reviewed more than 200 research papers for Scopus, Calarivate Analytics and other international high-ranking peer-reviewed journals worldwide, to the present date. She is actively engaged in the scientific community and has been also a responsible scientific advisor for master's degree and doctoral students of SDU University and Abai University for the last few years. She likes reading research studies and currently is studying educational leadership program at Queen Margaret University in Edinburgh, Great Britain. Her motto in every step of life is ‘Only honest person may become a great scientist’.

KEYNOTE ABSTRACT 3

DEVELOPMENT OF COGNITIVE COMPETENCE OF STUDENTS IN DIGITAL EDUCATION

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Abai Kazakh National Pedagogical University; Insitute of Metallurgy and Ore Beneficiation JSC, Satbayev University, Almaty, Kazakhstan

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Abstract

In recent years, the use of digital technologies in education has attracted the attention of educators and researchers. Although the question of the consequences and conditions of the productivity of digitalization of education has been sufficiently studied, it is still one of the most important issues. The features of modern education are determined by the need to introduce a competency-based approach, the implementation of which involves changing educational programs based on modern basic competencies, which include cognitive competencies that form a whole cognitive competency. The introduction of digital technologies in the education of young people and adults allows to significantly revitalize this process, make it conscious, structured and effective, while it is necessary to update the educational process of the university, observing a number of conditions that ensure the high-quality use of digital technologies. In conclusion, the development of students' cognitive competence in digital education is a multifaceted area that requires further research and this study provides a model for developing student's cognitive competence based on digital education.

Keywords: *Digital Education, Cognitive Competence, Students, Teaching.*

INNOVATION

POSTERS

IAM 8
SUPERB KUSTRAP

Superb Kustrap



MyIPO

CRLY2023W06716

OUR TEAM IAM8



SR ZARINA MAT SAPRI
Supervisor



AISYAH ILYANA TALIB



RABIATUL ASYYIKIN MOHD JOHARI



MUHAMMAD HUSNA HARIZ ABD RAHIM



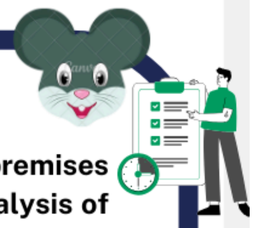
SYIRATUL HAFIZ AZIZAN

1 ABSTRACT

Superb Kustrap is a mousetrap innovation product project placed in an existing trash bin at a food premises equipped with the Internet of Things (IoT) digital system. The stainless steel trap can trap 4 to 5 mice at a time and can notify the owner of the presence of rodents.



2 PROBLEM STATEMENT



The problem of the presence of rats in food premises due to hygiene problems which refers to the analysis of the Ministry of Health Malaysia (MOH) in 2012-2016 found 635, 439 inspections of food premises throughout the country. A total of 15,731 unsanitary food premises were closed under Section 11 of the Food Act 1983. Meanwhile, in 2022, MOH recorded 8 food premises closed due to rat problems around Selangor

3 OBJECTIVES



1. **To trap mice with an optimal amount.**
2. **Able to notify the owner of the premises when there is a presence of rodents.**

4 MARKET POTENTIAL

Local Authority

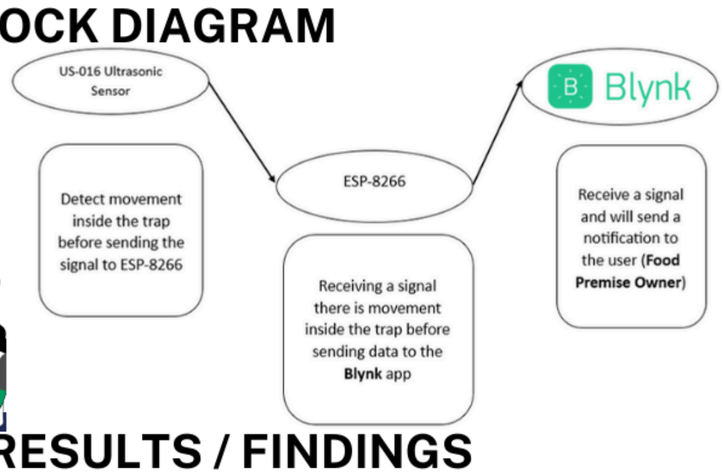


MAJLIS BANDARAYA SHAH ALAM

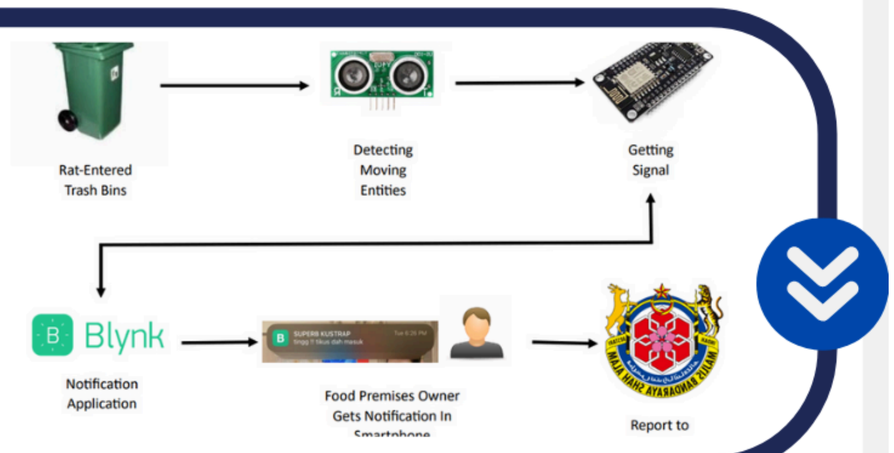
Majlis Perbandaran Selayang

JPSPPA
JABATAN PENGURUSAN SISA PEPEJAL DAN PEMBERSIHAN AWAM MBSA

5 BLOCK DIAGRAM







6 RESULTS / FINDINGS



96% Product is convenient for various parties such as premise owners, local authorities, and customers

92% Agreed that the electronic counter system can count the number of rats that go into the mousetrap

During the run test



18 rats were trapped

Keep It Clean
Keep It Comfort

7 PROJECT SIGNIFICANCE

- **Great potential to reduce the presence of mice in food premises.**
- **User-Friendly Operation**
- **Eco-Friendly Materials**
- **Easy To Monitor**

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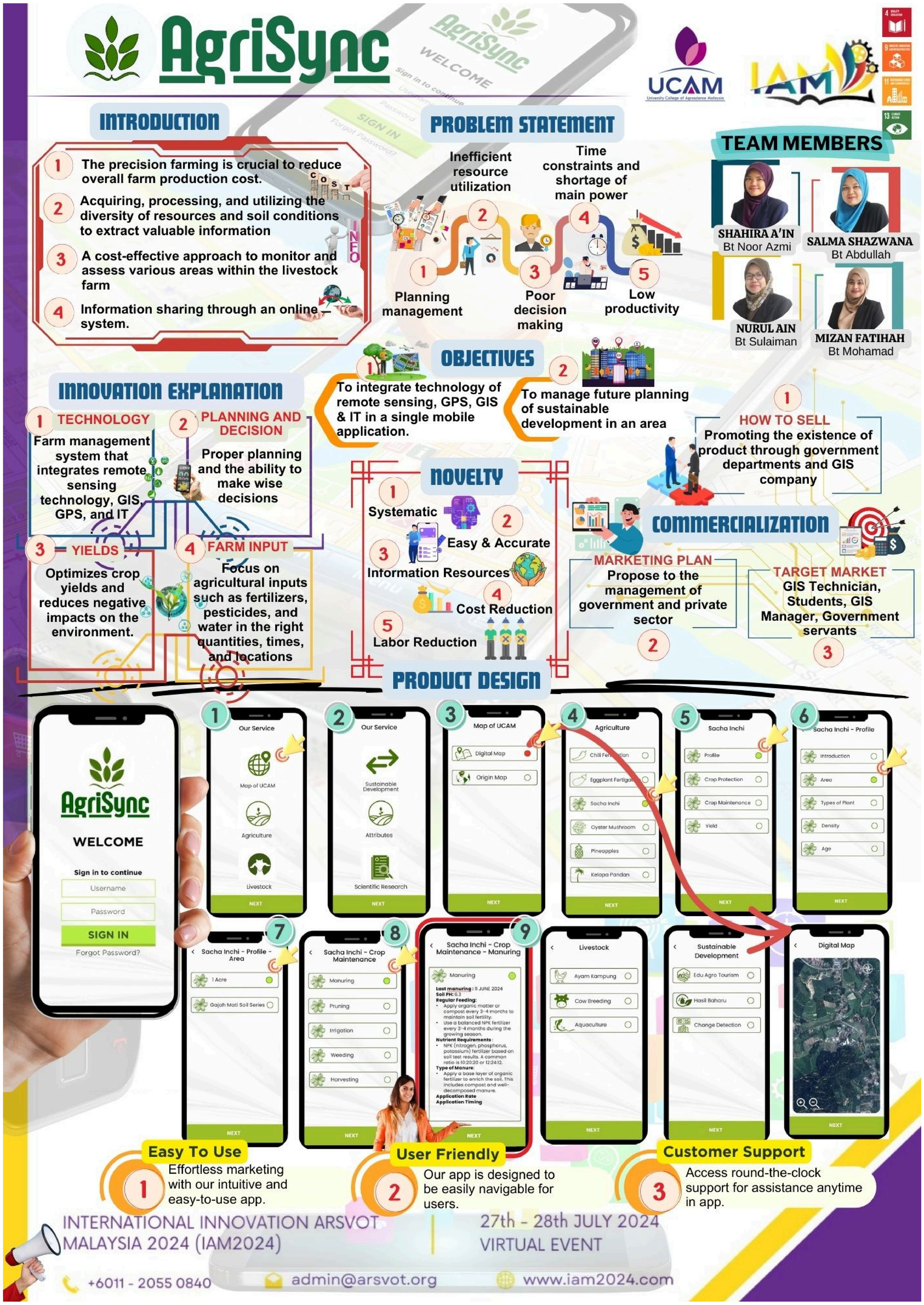
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IAM 21
BIOCAPSULE



IAM 22
AGRISYNC

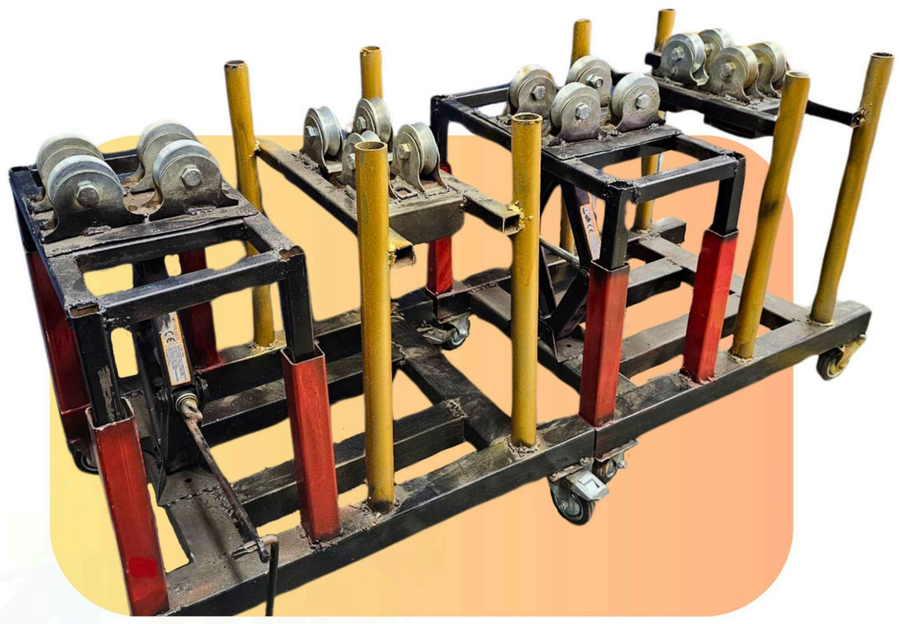


IAM 25
MANUAL CUTTING PIPE JIG

KOLEJ VOKASIONAL
KEMENTERIAN PENDIDIKAN MALAYSIA
bersama membina masa depan
KOLEJ VOKASIONAL SANDAKAN

MANUAL CUTTING PIPE JIG

Tired of the clunky pipe jig slowing you down? This is the cutting-edge solution you've been waiting for. From small shops to large-scale facilities, this pipe jig is designed to revolutionize pipe handling in any workspace. Because safety shouldn't be a luxury, we've developed an affordable pipe jig that keeps your workers safe and your projects on track.



New Innovative Idea

Safe To Handle

Cheap Production & Maintenance Cost

Problem Statement

- Difficulties in pipe cutting prosses
- Shortening pipe length requires repeated lifting, slowing down the process and accuracy reduced.
- Unstable pipe cutting jig structure leads to uneven cuts affecting weld quality

Innovation Product Objectives:

- Revolutionize Pipe Handling Safety and Efficiency
- Achieve Cost-Effective Production with Extended Machine Life
- Validate Superior Performance Through Rigorous Testing

Commercialisation

- Wide applicability: Works with several pipe sizes.
- Simple design: No need for complex power sources like pneumatics or electricity.
- Low cost: Cheaper to build and maintain compared to powered tools.
- Easy maintenance: Uses basic materials and simple construction for easy repairs and part replacement.

Novelty of Product

Inspired by the old design, this manual cutting pipe jig are genuine idea and fully manual using mechanical and kinetic energy, as one of our way to preserve the electrical bill cost, better and safer equipment, and for nurturing our dearly mother nature.

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IAM 29
4K MOKAYA



Pengenalan

Mokaya gabungan nama Moringa dan Seri Kaya yang diinovasikan bagi memenuhi diet vegetarian menggunakan bahan berasaskan tumbuhan sepenuhnya. Ia merupakan seri kaya alternatif bagi golongan vegan. Tumbuhan Moringa, yang sering digelar sebagai pokok ajaib, digabungkan ke dalam formulasi seri kaya untuk menghasilkan 4K Mokaya yang bukan sahaja enak tetapi juga padat dengan nutrisi. Idea yang kreatif dan berinovatif bagi menggantikan penggunaan bahan seperti telur dalam pembuatan Seri Kaya. 4K Mokaya merupakan inovatif untuk diet vegetarian, diperkaya dengan bahan berasaskan tumbuhan sepenuhnya. Gabungan "moringa" dan "seri kaya" memberi produk ini nilai nutrisi tinggi tanpa penggunaan telur. Sesuai untuk pencinta makanan vegan yang mencari alternatif seimbang dan berkhasiat.

PENYATAAN MASALAH

- Permintaan yang semakin meningkat bagi makanan yang berasaskan tumbuhan berkhasiat dan pelbagai guna telah telah menunjukkan jurang dalam pasaran untuk makanan mesra vegetarian yang sihat dan menarik.
- Jem atau sapuan tradisional seperti Seri Kaya, yang biasanya bergantung pada bahan berasaskan haiwan iaitu telur, tidak sesuai untuk vegetarian.
- Terdapat keperluan mendesak untuk berinovasi dan membangunkan alternatif yang bukan sahaja memenuhi diet vegetarian tetapi juga meningkatkan profil pemakanan keseluruhan jem atau sapuan ini.

OBJEKTIF

- Menghasilkan produk sapuan atau jem yang menjimatkan kos pembelian bahan mentah iaitu daun moringa serta buah moringa bagi membolehkan ianya dimanfaatkan bagi tujuan pembelajaran dan pengajaran.
- Meningkatkan kreativiti pelajar dengan memperkukuhkan kemahiran penghasilan inovasi diluar kotak bagi memudahkan pelajar menggunakan produk alternatif ini supaya dapat meneroka semasa tempoh pembelajaran.
- Memperkenalkan teknik penghasilan produk yang inovatif dalam penghasilan jem atau sapuan serta meneroka kaedah baru dalam memberikan hasil yang lebih baik bagi bentuk, tekstur, daya tahan dan kepekatan semasa pembuatan pes.

KEBAIKAN PRODUK

- **Vegetarian & Berasaskan Tumbuhan**

Direka khusus untuk vegetarian, sapuan ini menggunakan sepenuhnya bahan berasaskan tumbuhan, memastikan ia sejajar dengan keutamaan diet vegetarian sambil mengelakkan sebarang komponen yang berasal dari haiwan. Ini menjadikannya sesuai untuk pelbagai sekatan dan keutamaan diet.

- **Perisa &Tekstur yang Dipertingkatkan**

4K Mokaya menawarkan rasa yang menarik dan tekstur berkrim yang menyaingi Seri Kaya tradisional. Dengan berhati-hati mengimbangi rasa semula jadi Moringa dengan bahan berasaskan tumbuhan lain, sapuan memberikan pengalaman makanan yang memuaskan tanpa menjejaskan rasa atau rasa mulut.

- **Alternatif Sedar Kesihatan**

Sebagai alternatif yang lebih sihat kepada sapuan konvensional, 4K Mokaya adalah lebih rendah dalam lemak dan gula yang tidak sihat, memenuhi keperluan pengguna yang mementingkan kesihatan. Ia menyumbang kepada tabiat pemakanan yang lebih baik dan menyokong gaya hidup sihat secara keseluruhan.

PRODUK 4K MOKAYA



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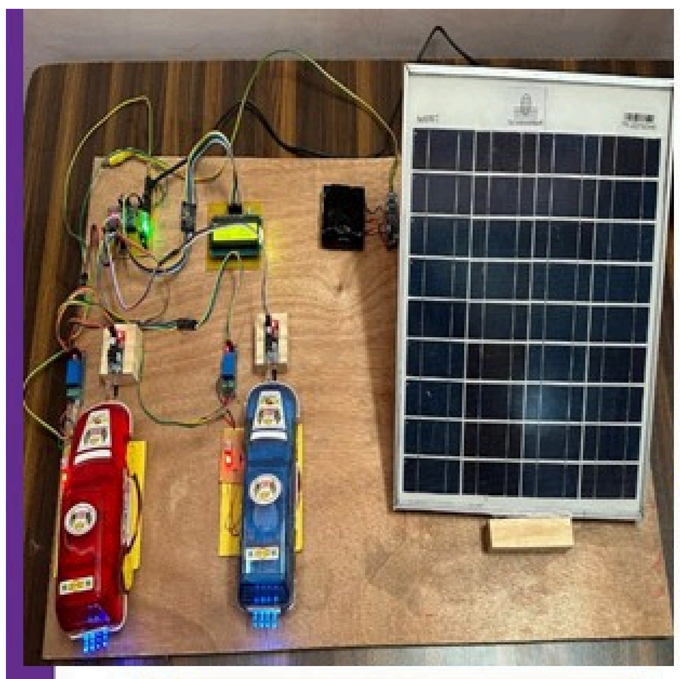
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IAM 33
GO GETAH



IAM 41
WIRELESS SOLAR CHARGING FOR ELECTRIC VEHICLE



UNIVERSITI MALAYSIA PERLIS

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WIRELESS SOLAR CHARGING FOR ELECTRIC VEHICLE

INVENTORS & RESEARCHERS
- TS.DR. LIEW HUI FANG

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INTRODUCTION

This project introduces an innovative solution to revolutionize electric vehicle (EV) charging infrastructure by combining solar energy harvesting with wireless charging technology. The integration of these technologies aims to address the challenges of accessibility, sustainability, and convenience in EV charging. By harnessing solar power and enabling wireless charging, this system offers a scalable and eco-friendly solution that can be deployed in diverse urban and remote environments. This abstract highlights the potential benefits of this integrated approach, including increased convenience for EV owners, reduced dependency on traditional grid-based charging, and significant contributions to environmental sustainability.

PROBLEM STATEMENT

- Limited Surface Area: EVs have limited surface area available for installing solar panels. Maximizing the energy generation within this constraint is a significant challenge.
- Energy Storage: Solar energy is intermittent, affected by factors such as weather and time of day. Efficient energy storage solutions are needed to store excess energy generated during sunny periods for use when sunlight is not available.
- Integration with EVs: Integrating solar panels seamlessly with the design of EVs without compromising aesthetics or aerodynamics is a complex engineering challenge.

NOVENTLY/ APPLICATIONS

- Integration of Solar and Wireless Charging
- Environmental Sustainabilityg
- Innovation in Transportation
- Convenience and Accessibility

ADVANTAGES

- Enhanced convenience and accessibility for EV owners.
- Reduced dependency on traditional grid-based charging infrastructure.
- Lower operational costs through harnessing renewable energy. Increased flexibility for charging in remote or urban areas.
- Contribution to environmental sustainability by reducing carbon emissions.
- Improved efficiency and productivity in crop growth.
- Real-time monitoring and adjustment of environmental factors.

MARKET POTENTIAL

Market Growth

The electric vehicle (EV) market was valued at USD 171. 26 billion in 2020, and it is expected to reach a value of USD 725. 14 billion by 2026, registering a CAGR of around 27. 19% during the forecast period (2021-2026). The global wireless charging for electric vehicles market is expected to register a CAGR of about 30%, during the forecast period, 2020 - 2025. It's estimated that by 2040 more than 50% of new car sales will be electric vehicles.

Market Driver

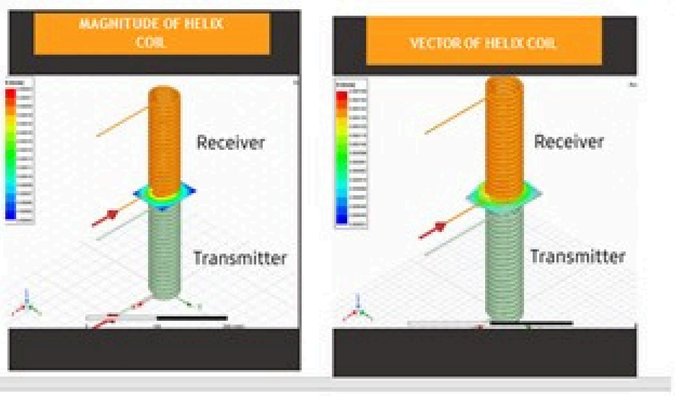
The wireless charging system is more convenient, safe, and reliable compared to plug-in charging without the hazard of short circuit due to the possibility of charging cable crack. The energy management within the wireless charging system secure the charging process.

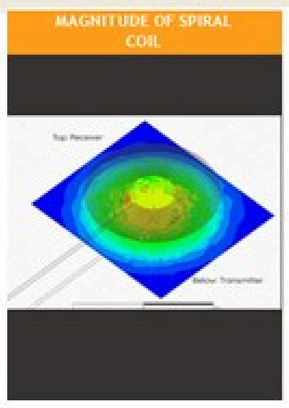
Market Trend

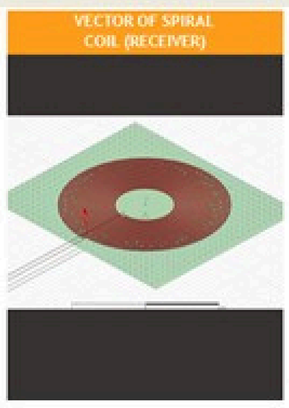
Sustainability building markets as utilities and regulators prefer them to replace excessive plug-in charging station and customers increasingly choose them for high efficiency, reduce the cost of replacing damaged charging cable due to aging, and reduce the hazard problems exist in plug-in charging

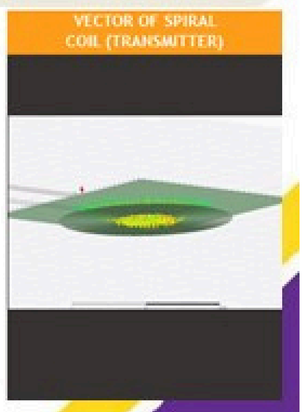
PUBLICATIONS

- Liew Hui Fang, Chong K H, Muhammad Izuan Fahmi, A A M Ezanuddin, Junaidah Ali Mohd Jobran, Norhanisa Kimpol. **Improvement of Hybrid Energy Storage Wireless Charging System Performance and Efficiency**, International Conference on Emerging Electrical Energy, Electronics and Computing Technologies 2021 (ICE4CT 2021), 16-17 December 2021, in Journal of Physics Conferences Series by IOP Publishing. (published)
- Liew Hui Fang, Chong K H, Muhammad Izuan Fahmi, Junaidah Ali Mohd Jobran, Norhanisa Kimpol. **Application of a hybrid energy storage wireless charging system in the fast charging station of electric vehicles**, at 2023 IEEE Power and Energy Society (PES)) **Belgrade, Serbia, on June 25-29, 2023**. and indexed in SCOPUS. (Submitted)
- Liew Hui Fang, Costantine Bin Mulok , Muhammad Izuan Fahmi, Junaidah Ali Mohd Jobran, Norhanisa Kimpol. **Development of Charging Control Strategy System For Electric Vehicle Battery**, at 2023 2023 IEEE International Conference on Advanced Systems and Emergent Technologies, Hammamet–Tunisia, from April 29 to May 1st, 2023. and indexed in SCOPUS. (Submitted)









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IAM 42
UGC - FOLIO

INSTITUT PENDIDIKAN GURU MALAYSIA
KAMPUS PENDIDIKAN TEKNIK

UGC - FOLIO

Mahamsiatus Kamaruddin (PhD), Azlin Mohd Rosdi , Mohamed Nazul Ismail (PhD)

MYIPO : LY2023W02378

ABSTRAK

Pendigitalan pendidikan melibatkan pemerkasaan penggunaan teknologi maklumat dan komunikasi (TMK) dalam pengurusan termasuk menambah baik pelaksanaan **pengajaran dan pembelajaran (PdP)**, seperti memilih strategi pedagogi, kaedah interaksi, cara akses dan berkongsi maklumat pembelajaran, menentukan platform pelaksanaan tugasan, alatan pentaksiran dan sebagainya. Namun, mengaplikasi pendigitilan dalam PdP secara retrospektif dan prospektif masih wujud cabaran, justeru kesediaan pensyarah melakukan perubahan termasuk dalam mengurus rekod folio pelaksanaan PdP tersebut. Sejajar perkembangan TMK, folio bersepadu ***UGC*-Folio** yang merupakan inovasi untuk pengurusan dokumen PdP secara kolektif dan komprehensif bagi pensyarah di Institut Pendidikan Guru Malaysia Kampus Pendidikan Teknik (IPGMKPT) dilaksanakan. *UGC*-Folio merupakan platform koleksi 'Folio kursus' dan 'Folio pensyarah' sebagai korpus maklumat akademik PdP merangkumi rancangan semester, rancangan mingguan, soalan tugasan, profil kelayakan, semakan jaminan kualiti dan sebagainya bagi sesuatu semester pengajian dan tahunan yang dibangunkan berasaskan **kandungan di hasil pengguna (*User Generated Content, UGC*).** Temubual berdasarkan pelaksanaan ujilari *UGC*–Folio melibatkan lima orang pensyarah menunjukkan penggunaannya mempunyai pelbagai kekuatan antaranya, pengurusan dokumen PdP lebih sistematik dan tersusun, rekod dokumen dipaparkan secara semerta, tidak memerlukan memasang perisian justeru akses secara atas talian, meningkatkan kemahiran TMK, data berpusat untuk pemantauan dan sebagainya. Kepentingan inovasi ini menjimatkan kos kerja modal insan, mengurangkan pertindanan maklumat serta menambahbaik pengurusan dokumen PdP pensyarah.

Kata kunci : Kandungan dihasil pengguna (UGC), Folio, pengajaran dan pembelajaran (PdP)

LATAR BELAKANG

1. Folio Bersepadu, ***UGC* - Folio** merupakan satu inovasi perkhidmatan dalam pengurusan dokumen pentadbiran pendidikan secara kolektif dan komprehensif. semakan jaminan kualiti bagi sesuatu semester pengajian dan tahunan.
2. Pelaksanaan pengurusan **PdP** secara digital dengan membangunkan folio secara digital merupakan suatu strategi yang sesuai dengan pendidikan masa kini.
3. Pembangunan dilaksanakan di IPG Kampus Pendidikan Teknik (IPGKPT) sebagai satu ruang maya pengumpulan rekod pengurusan PdP yang menunjukkan pembangunan standard professional PdP secara berterusan pensyarah yang dilaksanakan berpandukan dokumen rujukan manual kualiti IPG EOMS PT-03 berdasarkan **pendekatan kandungan dihasil pengguna (User generated Content, UGC).**

PERNYATAAN MASALAH

1. Pelaksanaan folio pensyarah di peringkat kampus sebelum ini melibatkan pengurusan secara manual dengan menyediakan dua 'fail hardcopy' iaitu fail folio kursus dan fail folio pensyarah.
2. Pengurusan folio agak menyukarkan semasa semakan dilakukan sama ada oleh Ketua Jabatan, auditor atau semasa pemantauan akreditasi MQA, di mana pensyarah perlu membawa atau menyusun di lokasi bilik yang ditentukan kedua-dua fail 'hardcopy' tersebut untuk rujukan kepada yang berkenaan.
3. Setiap dokumen dicetak dan difailkan, manakala dokumen hilang pensyarah perlu mencetak semula

SASARAN KEBERHASILAN

1. Meningkatkan pemanfaatan digital dalam pengurusan akademik di kampus IPGKPT.
2. Penilaian pematuhan kualiti lebih tersusun dan sistematik.

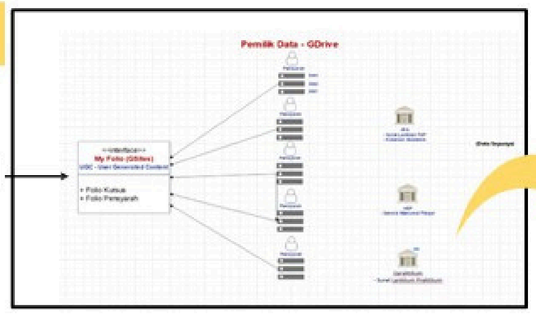
KEKUATAN	CABARAN
• Rekod pengurusan PdP lebih sistematik • Rekod pengurusan PdP lebih teratur / data tersusun • Rekod dipaparkan secara 'semerta' (tanpa perlu klik folder satu demi satu) • Tidak memerlukan memasang perisian • Memudahkan akses oleh pihak yang berkenaan (contoh : Ketua Jabatan, Auditor, penilaian akreditasi MQA dll.) • Pengurusan PdP dengan imej baru • Meningkatkan kemahiran ICT secara tidak langsung • Dokumen / fail dikongsi secara digital boleh disimpan secara langsung di folder folio ke Google Drive tanpa perlu cetak terlebih dahulu • Data berpusat (one stop center)	• Memerlukan pengguna membuat dua langkah utama, penyediaan Google Drive dan Google Sites • Penyediaan mengambil masa bagi pensyarah telah berusia Pelaksanaan MyFolio perlu diselaraskan antara JK peringkat kampus bagi mengelakkan kerja berulang (contoh : EOMS, MQF, penarafan, EEVE dll) • Pensyarah perlu berhati-hati membuat penetapan (setting) pada rekod dokumen/fail (contoh : restricted / public dll.) Penyusunan folder Googel Drive perlu diseragamkan semua pensyarah

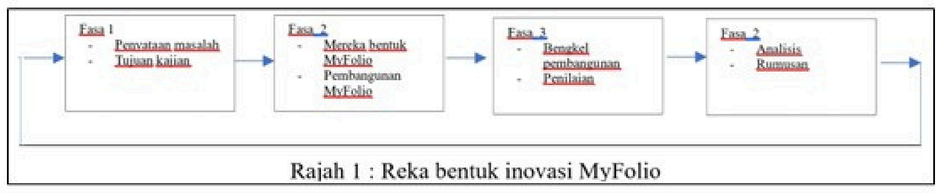
PELAKSANAAN

Pendekatan reka bentuk kajian Herrington dan Parker (2013) melibatkan empat fasa utama seperti Rajah 1.

KERANGKA PELAKSANAAN

IPGKPM-EOMS-PT-03





Rajah 1 : Reka bentuk inovasi MyFolio



NOVELTI

1. Repositori Dokumen lebih mudah dicapai oleh semua peringkat pengurusan.
2. Penilaian pematuhan kualiti kampus lebih tersusun dan sistematik..
3. Dokumen yang berulang dapat dielakkan.
4. Kos, masa dan tenaga dapat dijimatkan - semua dokumen softcopy.

RUJUKAN

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IAM 44
COGNITIVE RECALL REVOLUTION: ENHANCING PEDAGOGY THROUGH SPACED RETRIEVAL AND AI

Cognitive Recall Revolution: Enhancing Pedagogy through Spaced Retrieval and AI

Wan Sieng Yeo, Mary Jenny Lim Yee Tiing, Fethma M Nor, Agus Saptoro

Faculty of Engineering and Science, Curtin University Malaysia, CDT 250, 98000 Miri, Sarawak, Malaysia

Curtin University Malaysia

Introduction

- **Retrieval Practice**: An active learning strategy where students recall information to improve memory retention.
- **Spaced Retrieval**: Involves breaking study sessions into intervals, enhancing long-term retention.
- **AI-Powered Applications**: Utilize a AI tool, namely EdApp for generating practice questions, promoting engagement and personalized learning.

Problem statement

Student Challenges:

- Uncertainty about where to start.
- Last-minute cramming.
- Wasted study time.
- Increased stress levels.

Objectives

- Increase exam/test grades.
- Enhance knowledge retention.
- Improve student engagement.
- Provide personalized learning experiences.

Product Design

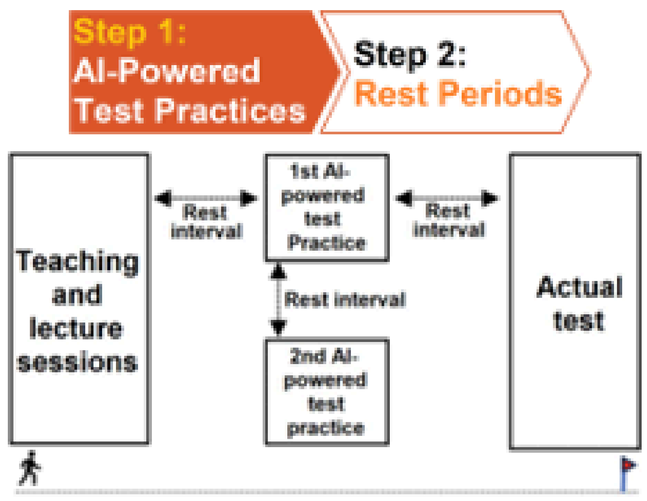


Fig. 1. Spaced Retrieval Practices Design Flow

Data Collection:

- First-year engineering unit data from 2023-2024.
- Utilized a AI-powered question generator, namely EdApp.
- Spaced retrieval practices implemented two times per test.

Hypothesis Testing and Questionnaire Survey

- Comparison of passing rates before and after spaced retrieval implementation.
- Anonyms questionnaire survey to gather the student feedback on how they experience.

Novelty and Significance

- Utilizing AI-Enhanced Applications.
- AI-Powered Question Generators.
- Improving Student Engagement.
- Enhancing Pedagogy through Spaced Retrieval.

Commercialization

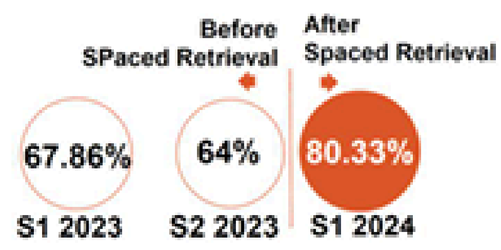
Sales of the developed product design (license)	Key Partners	Potential end users
	Curtin University Malaysia Four inventors	Primary, Secondary and Tertiary Education Levels

- **Intellectual property (IP):** A copyright for this new product design has been submitted to MyIPO (LY2024Q03685).

Results

- **Improved Passing Rates**:

  Mid-Semester Test Passing Rates:



- **Student Insight**:



Conclusion

Significant Improvement:

- 22% average increase in passing rates.
- Enhanced student satisfaction and engagement.

Future Implications:

- Broader implementation of AI-powered spaced retrieval practices.
- Continued research on long-term benefits.

Acknowledgement

- Funding: Curtin Malaysia Teaching Support (CMTS) Fund, Round 1 2024.
- Ethical Approval: Curtin University Low-Risk Review Process (Approval Number: HRE2024-0173).

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IAM 47
SEMI AUTOMATIC FITTING PIPE JIG (SFPJ)

SEMI AUTOMATIC FITTING PIPE JIG (SFPJ)

PENGENALAN PRODUK

Projek Semi Automatic Fitting Pipe Jig (SAFPJ) ini adalah sebuah mesin yang direka khas untuk membuat paku kimpal dengan cara memegang paip dan memutarkan posisi paip mengikut kedudukan paku kimpal. Mesin ini boleh dilakukan secara automatik dan manual berkesesuain kehendak pengimpal

KELEBIHAN PRODUK

1. Sebuah mesin yang mudah alih.
2. Tidak memerlukan kepakaran yang tinggi untuk mengendalikan mesin.
3. Tidak memerlukan tenaga kerja yang ramai.
4. Masa yang diambil untuk menghasilkan paku kimpal tidak terlalu lama.
5. Kumai yang dihasilkan berkualiti
6. Mengurangkan kecacatan pada kumai yang dihasilkan



SOP PRODUK

1. Memastikan keadaan mesin Semi Automatik Fitting Pipe Jig (SAFPJ) dalam keadaan selamat digunakan.
2. Longgarkan Clamp paip mengikut saiz paip yang hendak dipaku kimpal.
3. Letak paip dalam keadaan lurus dan ketatkan clamp dengan menggunakan pengunci jig.
4. “ON” suis pada mesin untuk menghidupkan mesin.
5. Melaraskan pergerakan paip mengikut tempat yang hendak dikimpal paku.
6. Pergerakan paip boleh dilakukan secara manual dengan menggunakan pemegang pada jig.
7. “OFF” suis apabila paip telah siap dikimpal paku.

IAM 48
I-POKET PERUMAHAN 2.0



IAM 49
TVET FOUNDATION SERIES: ENGLISH 2

IAM49_2024 (INNOVATION-Tertiary Edu.)

1.Nik Intan Baizura binti Ramsa 2.Siti Nurfirdaus binti Mohd Nasir 3. Nur Amalina binti Bahtiar

Politeknik Tuanku Syed Sirajuddin, Perlis, Malaysia

TVET FOUNDATION SERIES : ENGLISH 2

RATIONALE

1. ***On-the-go* material** to accommodate the learner's **mobile lifestyle**
2. enhanced **flexibility** in curriculum delivery
3. improved **efficiency** in the use of **study time**
4. Easy **accessibility** and **storage** convenience
5. **new strategies** for course materials and **cost effective**
6. **Supplementary sources** of reference and enrichment activities

BETA TESTING

The implementation of this e-book for 3 experimental classes has reported 97% positive anticipations from 93 students as they love to spend time with their gadgets (smartphones/ tablets/ computers) instead of printed books. However, printed version is only also available for teacher reference and upon request by user.

The use of colourful graphics and animations are also able to excite students' interest to learn. It has been a great help for the students as their reference resource and for enhancement activities

PROTOTYPE COSTING

No print or distribution costs and changes made to the publication *(can be implemented at any time for free).*

Using *Canva for Education* - copyright-free images, fonts, animations, and editing features.

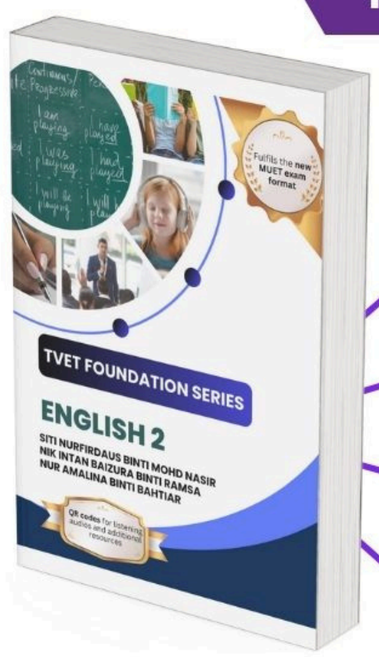
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   (animations are only available through this link)
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- SECONDARY SCHOOL STUDENTS
- ENGLISH LANGUAGE LEARNERS

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ISBN 978-629-7514-38-3

PRICING STRATEGY

COST	POSITIONING	DEMAND
Product Cost No cost needed	**Pricing Approach** Affordable price, high quality content	**Audience** English Language Learners
Marketing Cost Registration for MYIPO -RM200	**Product Attributes** Responsive across all devices	**Need** Limited e-workbook in the marketplace
Business Cost No cost needed	**Product Benefit Strategy** Perceived value by user	**Timing** At any time convenient - mobile lifestyle

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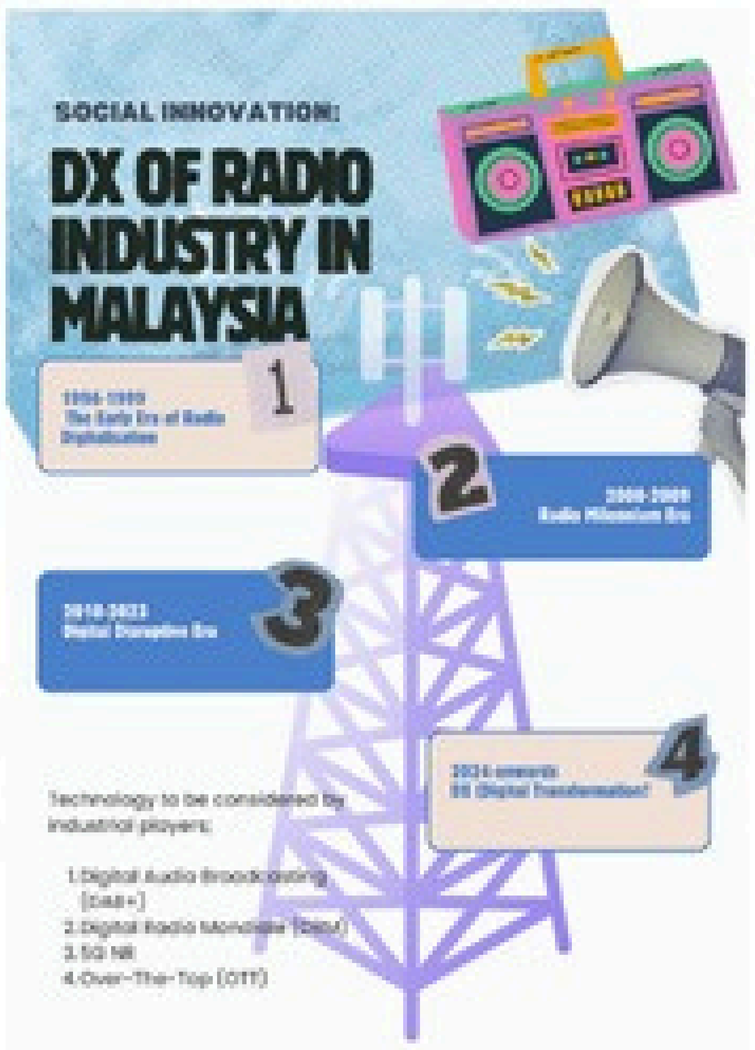
IAM 50
POSTER ON THE WAY BARU NAK SEND

DX OF RADIO INDUSTRY IN MALAYSIA: A SOCIAL INNOVATION

1. PROBLEM STATEMENT

In the digital world, conventional radio's role is increasingly challenging. Radio's future is unpredictable. Digital technology has transformed the conventional radio industry's development pattern in many ways, making its survival challenging. Conventional radio may not be relevant in the next few years because radio worldwide is facing massive disruption in the digital era. Therefore, I have carefully mapped out the development of the radio industry in the digital era as a social innovation. The transformation of the radio industry in the digital era is not an abrupt shift, but a relatively gradual process. This transition has been triggered by the refusal to change (digital resistor) and uncertainty among industrial players such as the government and private sector radio stations, who are grappling with the lack of a specific business model for the radio industry. This gradual shift has led to the saturation of the FM standard and profound implications on the radio ecosystem.

4 DX AS SOCIAL INNOVATION



2. Status Inovasi

TRL-9

5 COMMERCIAL POTENTIAL



3. USEFULNESS OF INNOVATION

a) Contribute to the epistemological development.
b) Radio industrial players can use it to consider Dx.

Dr Intan Soliha Ibrahim
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IAM 51
UMSfm BUSSINESS MODEL : SELEPAS SETAHUN

UMSfm BUSINESS MODEL: SELEPAS SETAHUN

1. PENGENALAN & PERMASALAHAN

Radio mengalami perubahan yang signifikan. Bagaimanapun berlaku ketidakseimbangan dalam pelaksanaan format stesen radio. Radio dengan format komersial dibenarkan untuk membuat penjanaan menerusi pengiklanan. Bagaimanapun, radio dengan format komuniti seperti radio kampus tidak dibenarkan membuat penjanaan. Namun, stesen radio kampus perlu membayar lesen MACP setiap tahun RM 12,000; lesen dalam talian RM 500, serta membayar kos penyelenggaraan. Apabila radio kampus tidak dibenarkan membuat penjanaan, bagaimana inovasi sosial boleh membantu tanpa berlakunya perlanggaran terhadap Akta Komunikasi dan Multimedia Malaysia 1998?

2. ORIGINALITI

Copyright CRLY2022S06605

3. Status Inovasi

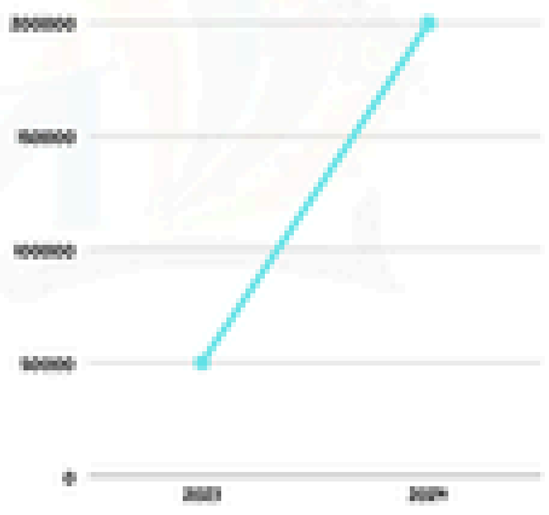
TRL-9

3. KEGUNAAN INOVASI

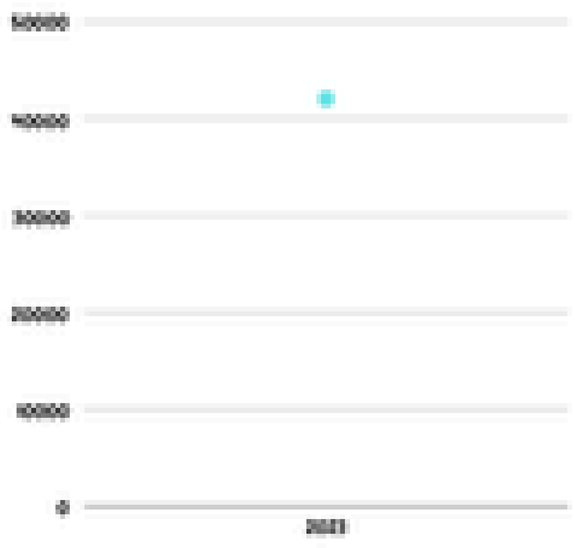
a) Jana Pendapatan
b) Boleh diaplikasi oleh mana-mana radio komuniti

3. POTENSI INOVASI

Melalui model ini ia telah membantu UMSfm menjana kewangan dan menjalankan pelbagai aktiviti.



Untung Kasar



Untung Bersih



Dr Intan Soliha Ibrahim (Ketua)
Prof. Dr Asmady Idris (Ahli)
Prof. Madya Dr. Syahruddin Awg. Ahmad (Ahli)
Universiti Malaysia Sabah

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IAM 52
EASY.GO FOOD HUNTER

TAJUK PRODUK

EASY.GO FOOD HUNTER

SCAN ME

PENGENALAN

- Melaka merupakan pusat tumpuan pelancongan serata dunia.
- Dengan daya tarikan tempat bersejarah, ramai pelancong datang untuk melawatnya.
- **Tempat makan yang menarik juga menjadi salah satu sebab untuk datang melancong ke Melaka.**

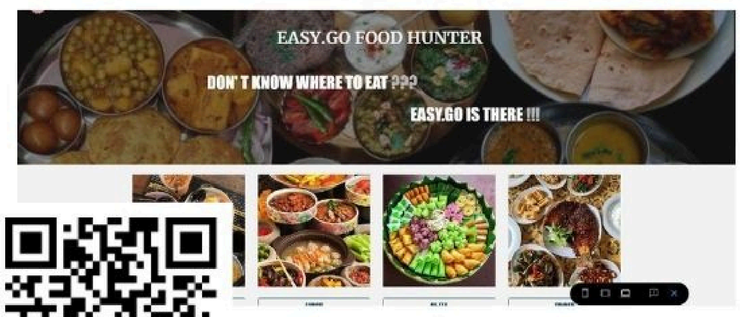
PENYATAAN MASALAH

- Maklumat **informasi yang tidak mencukupi** serta meragukan perasaan pelanggan dan membuatkan pelanggan **tidak berasa yakin** dengan maklumat
- Pelanggan **membuang masa** untuk membuat **sesuatu pilihan** dan menyebabkan **citarasa pelanggan tidak tercapai.**
- **lokasi yang sulit dilihat** atau **kurang** terlihat akan **membatasi jumlah pelanggan**
- Mengambil **masa yang lama** untuk membuat sesuatu keputusan.

OBJEKTIF

- Membantu **perniaga setempat untuk melariskan jualan perniagaan**
- **Meningkatkan kreadibiliti perkhidmatan** perniagaan atas talian
- **Meningkatkan aktiviti- aktiviti** perlancongan
- **Memudahkan setiap pengguna/pelancong** untuk **mencari maklumat** kedai makan di bandar Raya Melaka mengikut **kriteria kehendak pelanggan**..

PROJEK INOVASI



NOVELTY/ PEMBAHARUAN PRODUK

Produk ini dilihat mampu dipasarkan dan dikomisyenkan bagi meningkatkan sektor pelancongan melaka seiring dengan tahun melawat melaka 2024 .

CA-PA BITES

Introduction

Ca" means Cassava and "Pa" means Pandan. It utilizes aromatic pandan leaves and cassava as a primary ingredients. In this product, Cassava is used as a main ingredient instead of potato due to the presence of a carcinogen called acrylamide in potato chips, a less risky alternative can be chips made from cassava (Chancharoenchai & Saraithong, 2021).

Product Description

- This product is a type of healthy snack that uses cassava and pandan as main ingredients.
- Cassava is chosen for its local prominence as the leading agricultural product in Malaysia and its outstanding nutritional value.

Problem Statement

- Snacks commonly found in the market tend to be high in salt and fat.
- Growing demand for food items that prioritize enhanced safety measures and incorporate health benefits (Tylewicz et al., 2020).
- Cassava chips can be a safer alternative to potato chips, as they don't contain the carcinogen acrylamide found in potato chips.

Objective

- The aim of this study was to develop formulations and methods to produce attractive and nutritionally valuable dried snacks based on pandan leaves and cassava.





Product Impact

- Can add a diversity of flavour options.
- Possibly take the product to stand out from competitors.
- Offers a nostalgic and culturally resonant.
- Propose a healthier snack alternative.

Commercialisation

The market potential will be significant with these few factors.

- Growing demand
- Increaseing preference for natural snack option
- Sustainable and local sourcing

3 GOOD HEALTH AND WELL-BEING
12 RESPONSIBLE CONSUMPTION AND PRODUCTION
13 CLIMATE ACTION

Novelty

- The product we produce is inspired and original.
- The originality and novelty of "CA-PA BITES" stem from its innovative blend of two distinctive ingredients which is Cassava and Pandan.

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Contact person: Melvin Chai Lik Sheng
(0128827287)

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IAM 54
SMART COUNTER



Ts. ZURINA BINTI ZAINUDIN
LUQMAN HAKEM BIN LAILY

KOLEJ VOKASIONAL IPOH, PERSIARAN BRASH

1 PENGENALAN

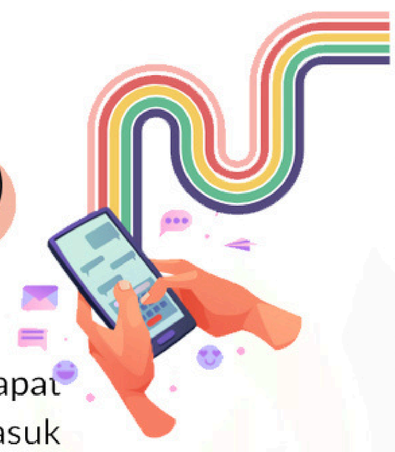
Smart Counter adalah satu alat untuk mengesan dan menghantar isyarat bagi mengira manusia atau objek yang melalui pintu sesebuah bilik secara automatik. Walaupun penggunaan CCTV sedia ada lebih efektif, namun ***Smart Counter*** direka khas sebagai alat keselamatan lain yang digunakan untuk mengesan manusia atau objek yang melalui pintu utama tersebut secara tersembunyi kerana ianya bersaiz kecil dan terselindung. Paparan maklumat akan terpapar pada skrin dan juga secara automatik akan dapat di akses melalui satu aplikasi khas di dalam telefon pintar

2 PENYATAAN MASALAH

Pemilik sesebuah bilik tidak dapat mengenalpasti manusia atau objek yang masuk ke bilik sekiranya sistem keselamatan CCTV yang berdekatan tidak berfungsi dengan baik. Ini kerana ***Smart Counter*** boleh berfungsi tanpa sumber elektrik dan tanpa wifi

Sistem keselamatan sedia ada kurang selamat dan kurang efektif

3



4



OBJEKTIF

- Memudahkan pemilik bilik (Ketua Jabatan Teknologi maklumat) untuk mengenalpasti seberapa ramai manusia dan objek yang masuk ke biliknya
- Meningkatkan tahap keselamatan sedia ada bilik tersebut

5 POTENSI PASARAN

- ***Smart Counter*** dihasilkan dalam bentuk yang kecil dengan menggunakan kos yang murah untuk tujuan komersial.
- Boleh ditambahkan lagi untuk kegunaan bilik-bilik lain kerana kosnya yang murah dan mudah dibawa kemana sahaja
- Walaupun ***Smart Counter*** nampak ringkas tetapi penggunaan alat tambahan dapat meningkatkan lagi tahap kecekapannya, seperti menggunakan sensor yang lebih berspesifikasi tinggi, ***Rasberry PI*** dan sebagainya

6



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IAM 55
AIRCOND OUTOSERVICE AND NOTIFIER

KOLEJ VOKASIONAL
KEMENTERIAN PENDIDIKAN MALAYSIA
KOLEJ VOKASIONAL IPOH

AIRCOND AUTOSERVICE AND NOTIFIER



INTRODUCTION

- The air conditioning system needs to be serviced at certain times and it is usually recommended to do it every 3-6 months.
- Users often forget and are unaware of the appropriate timing for maintenance that will decrease the efficiency of the air conditioner.
- Aircond Autoservice and Notifier are designed to detect and give a signal when air conditioning service is needed.
- This product can automatically service the unit with Arduino device control.

PROBLEM STATEMENT

- Users do not know the right time to do maintenance or service their air conditioning unit.
- The position of the air conditioning unit such as the outdoor unit in a high-rise house is the reason why users neglect air conditioning maintenance.
- Failure of users to perform periodic maintenance will also cause an increase in the cost of electricity consumption.

OBJECTIVE

i. Perform automatic service on outdoor and indoor air conditioning units.
ii. Notify the user when the system overheats.
iii. Cool the room faster with the use of Speed Cooling Mode.

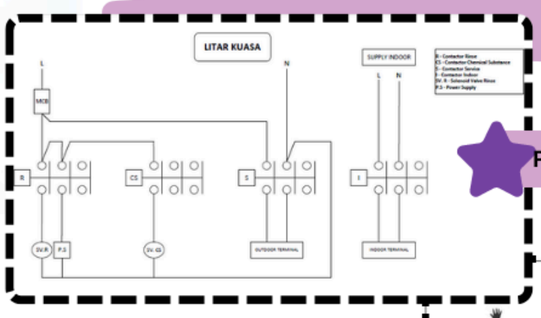
NOVELTY

This products / project offer significant advantages to users by utilizing technology to detect and signal when service is required, it not only enhances efficiency but also reduces the risk of air conditioning failure.

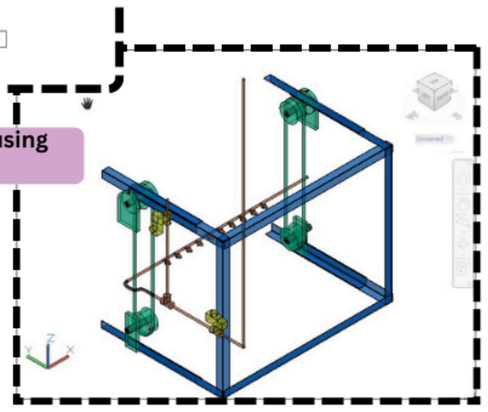
IMPACT ON USER

- Applies automation technology that combines mechanical, electrical, and IoT technology that leads to the development of Smart Home/Smart Building.
- This system can be installed on domestic type air conditioning units that are in each home or office.
- Able to make it easier for users to identify the temperature of the outdoor unit and perform automatic or manual cleaning maintenance in their homes or offices.

PRODUCT DESIGN



Power Circuit Diagram



3D Drawing using ACAD

Real Product

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IAM 56
S N O R R E - SLEEP AID SERIES

S N O R R E - Sleep Aid Series

Sleep Health Solution Device

SNORRE can face the problem of snoring interference with a compassionate attitude. To improve the user's sleep quality, it helps you to filter snoring into silent mode or white noise mode, allowing you to sleep well at night.

The primary target customers for SNORRE may include light sleeper, insomnia people, snoring patients and its multi-functional that also can fulfil other groups of customers .



Product Specifications



SNORRE Reducing Voice Device

Settings need to be made through app and results will be displayed on system. “SNORRE” main function is to eliminate or filter snoring.



SNORRE System Sleep Aid

Attached with a system. The main function is to monitor the sleep quality and temperature of the room environment, wake-up method with unique sound and provide night light sensor.



SNORRE App

Connect phone app to set the functions, “SNORRE” system will display the results on the screen.

Design Trends

Interactive

Synchronous operation, allowing you to have the most comfortable and relaxing sleep quality and environment.

Multifunctional

Fulfil needs of different customer groups for the product, enhancing user experience and satisfaction.

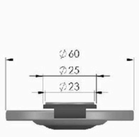
Analysis & Solutions

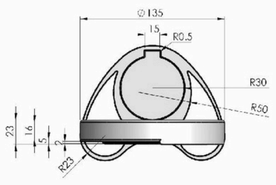
Ensure safety and harmlessness, will not cause radiation and reduce risk.

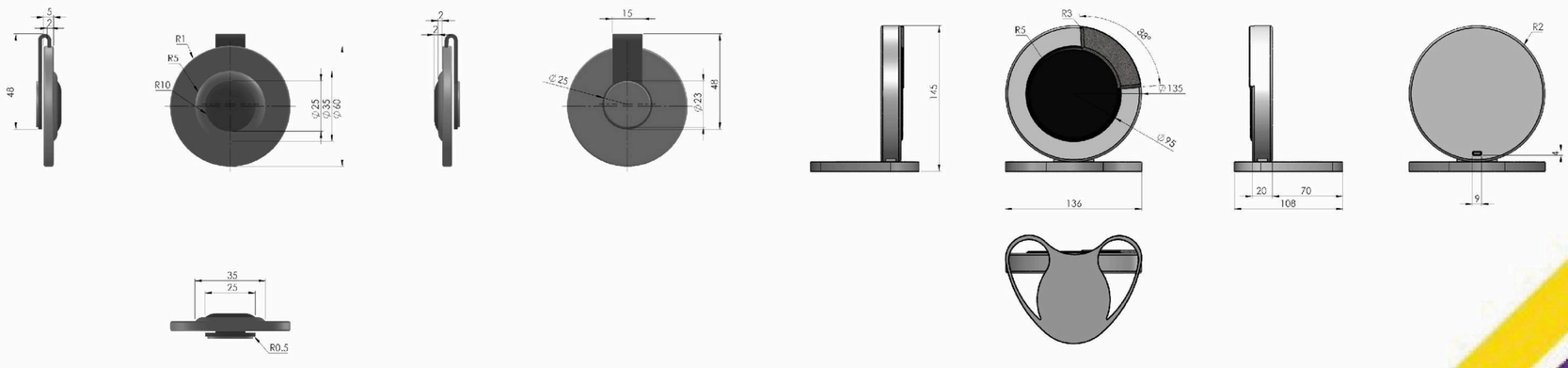
Using vibration sensor and excitor to sense the noise and quickly canceling noise.

Multi-functional design allows user to improve quality of sleep.

Dimension







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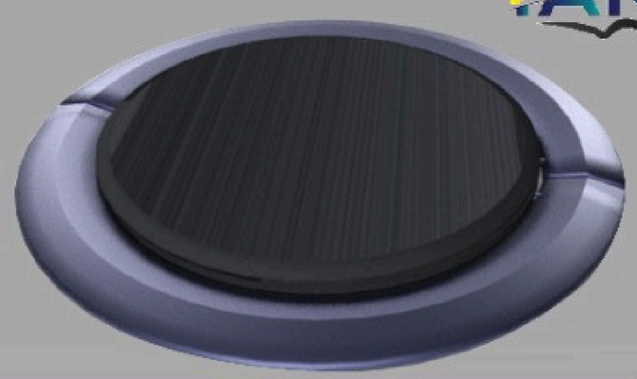
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IAM 57
GALACTIC RING

GALACTIC RING

Emergency Car Light

This is a car emergency light. I designed this product to attract the attention of other drivers and solve the problem of darkness at night. I also added different lights and flashing light to this emergency light to make it easier for other vehicles to notice. This emergency car light not only provides users with lighting, but also allows users to carry it easily and charge it at any time.



LIGHTING:



White (5000K)



Blue (495 Nanometer)



Red (6500k)

ADVANTAGE:

High Visibility

Lighting Patterns

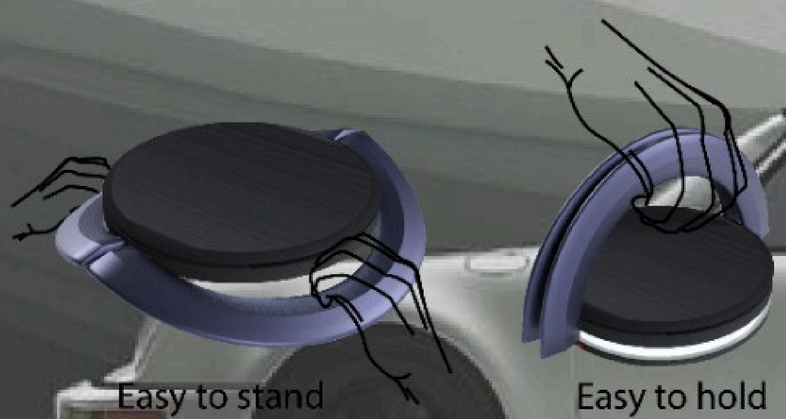
360-Degree

Lightweight

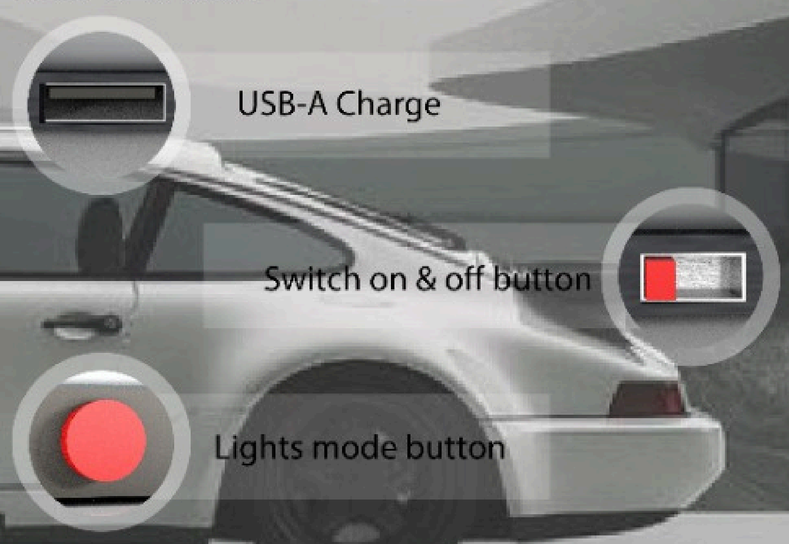
Waterproof

Easy Handling

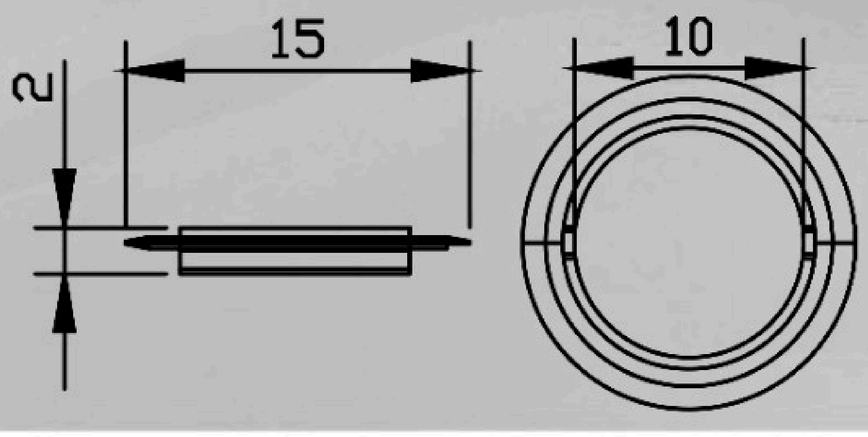
HOW TO USE:



FUNCTION:



DIMENSION:



TARGET AUDIENCE:

Car User

MATERIAL:

Alluminium, Plastic, LED Light & Rechargable Batteries

SIZE:

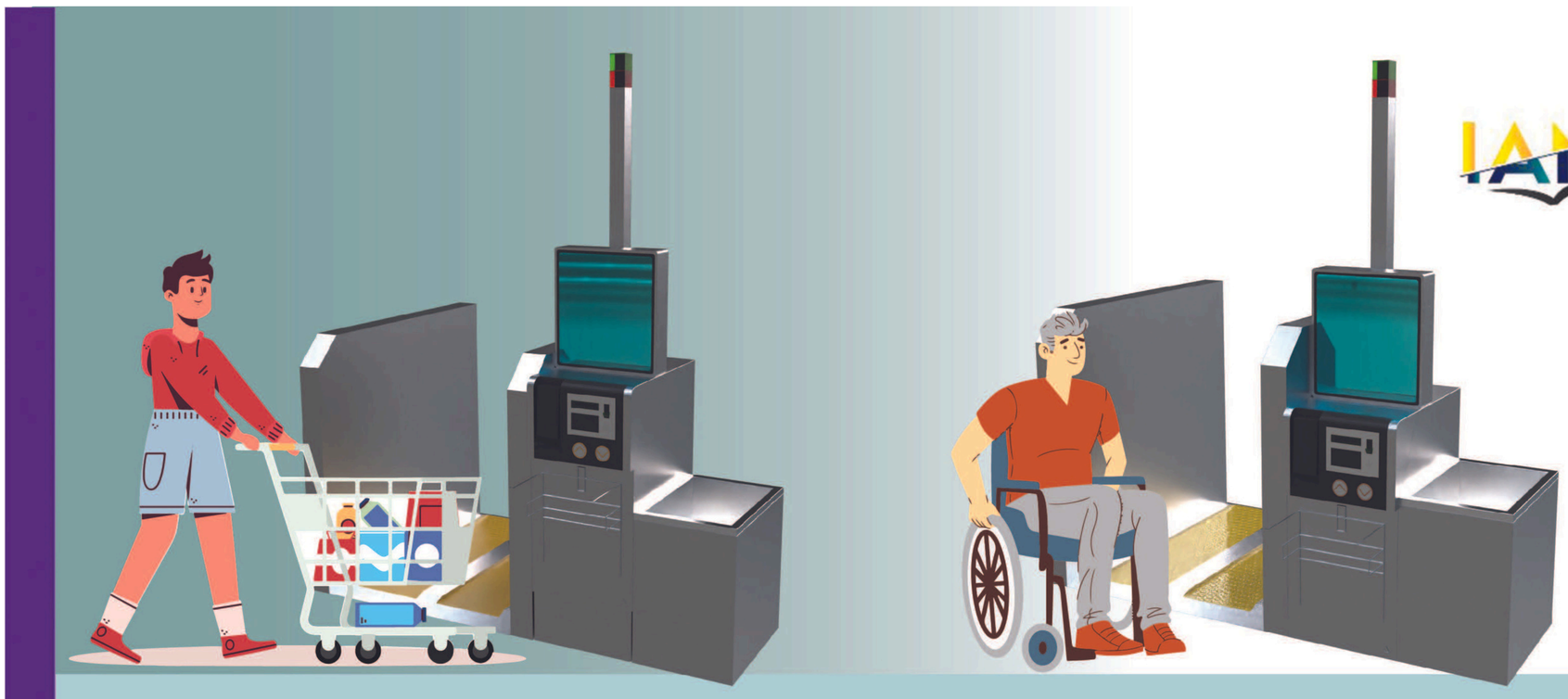
15x2 cm

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IAM 58
U-FLEX

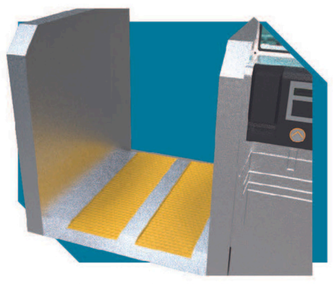


U-FLEX
flexible self-checkout kiosk for everyone

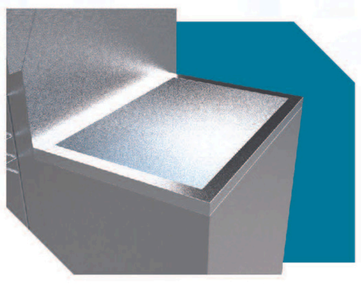
We emphasize on universal design and the equality usage of all users. We take account of all kinds of user such as users with disabilities, users that face some unexpected scenario and so on. We intend to create a flexible self-checkout kiosk that everyone could make use of, therefore, we hope to achieve the outcome of ease the checkout process for users, speed up the checkout system, and enhance the flaws of the current product.

Product Functions

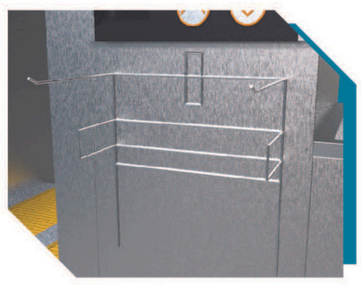
Taking account of the limitations of the disabled and people that might face some unexpected scenarios, we added multiple functions for them to enjoy the same facilities easily with on barrier. RFID scanner is added to speed up the checking out process because they do not have to take the goods out. Besides, height adjusting, voice assistance and barille are added to ease the disabled.



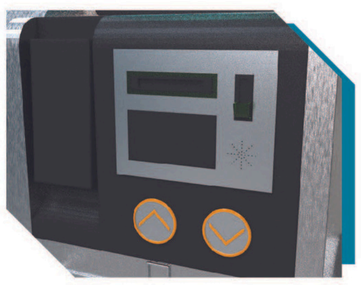
Shopping Cart RFID Scanner



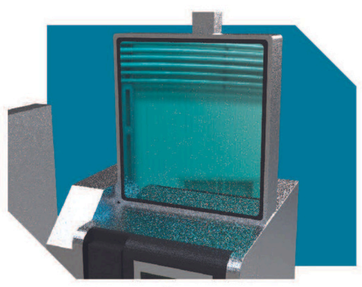
Shopping Basket RFID Scanner



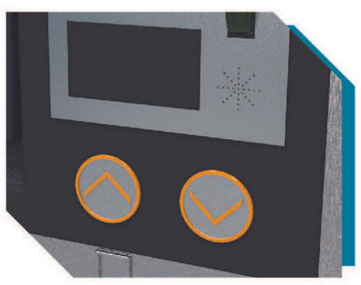
Plastic Hanger



Self Checkout with self assistance



Touch Screen

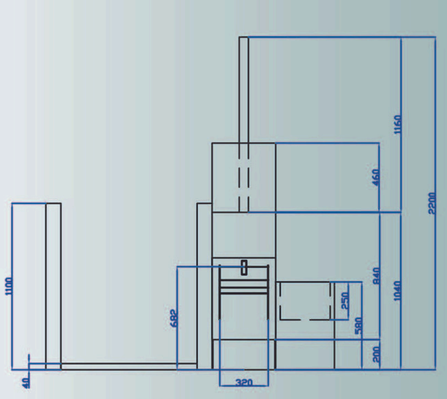


Height Adjusting Button

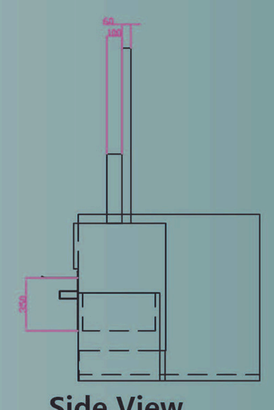
Complementary Products



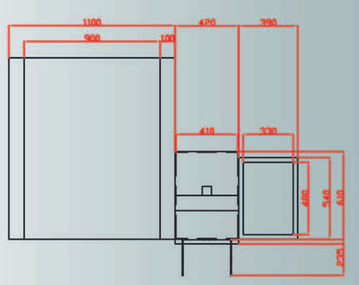




Front View



Side View



Top View

Product Dimension

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IAM 60
CA APP : UNLOCKING INTERACTIVE LEARNING FROM PAGES TO TECH

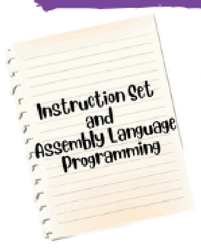


CA APP: UNLOCKING INTERACTIVE LEARNING FROM PAGES TO TECH

MAZUIN BINTI STAPAH @ SALLEH — POLITEKNIK SULTAN ABDUL HALIM MU'ADZAM SHAH
SA'ADIAH BINTI MOHAMAD — POLITEKNIK SULTAN ABDUL HALIM MU'ADZAM SHAH



PENGENALAN





Program Diploma Teknologi Maklumat

KEMENTERIAN PENDIDIKAN TINGGI
JABATAN PENDIDIKAN POLITEKNIK DAN KOLEJ KOMUNITI

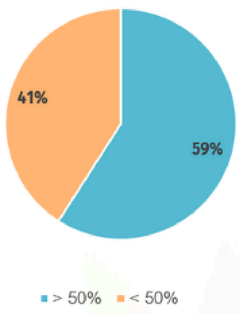
POLITEKNIK MALAYSIA

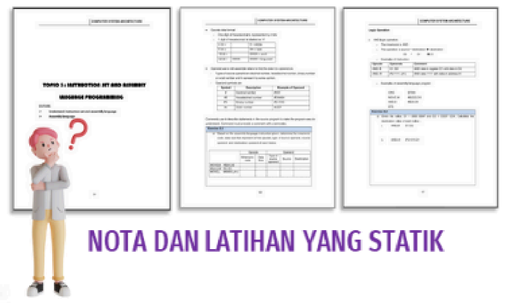


PENYATAAN MASALAH

1. Pencapaian pelajar yang kurang memberangsangkan
2. . Kesukaran dalam mengaplikasi teori kepada amali
3. Akses Terhad kepada sumber pembelajaran dinamik

JUMLAH KESELURUHAN MARKAH SOALAN PEPERIKSAAN AKHIR BAGI TOPIK INSTRUCTION SET AND ASSEMBLY LANGUAGE PROGRAMMING	BILANGAN PELAJAR MENDAPAT > 50%	BILANGAN PELAJAR MENDAPAT < 50%
45 MARKAH	26 ORANG	18 ORANG





NOTA DAN LATIHAN YANG STATIK

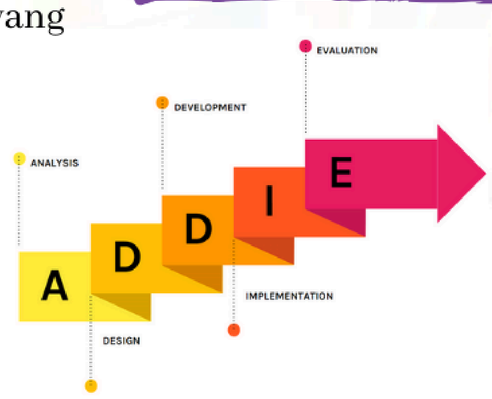
OBJEKTIF

1. Membantu pelajar menguasai topik pembelajaran melalui aplikasi mobile
2. Memudahkan pelajar mengaplikasikan teori kepada amali
3. Membangunkan sumber pembelajaran yang dinamik





REKABENTUK & PEMBANGUNAN PRODUK



Perisian Yang Digunakan Dalam Merekabentuk

Canva	antaramuka
Microsoft Powerpoint	platform pembangunan
QuillBot	semakan bahasa
ChatGPT	semakan isi kandungan
Voicemaker	Ai convert *text to speech*
Filmora WonderShare 9	suntingan video
Runway	Ai convert *mp3 and png to video*
iSpring Suite 9	publish file .ppt kepada .html5
Netlify	publish .html5 menjadi website
Web2 APK Builder	convert .html5 kepada .apk
YouTube	muat naik video simulasi
Wordwall	penyediaan kuiz
Github	forum
Easy68k	simulator



KEASLIAN

Telah digunakan di JTMK, POLIMAS dari sesi II 2023/2024



MyIPO
CRLY2024P03406



KOMERSIAL

KEY PARTNERS	KEY ACTIVITIES	VALUE PROPOSITION	CUSTOMER RELATIONSHIP	CUSTOMER SEGMENT
• Bahagian Interaksional dan Pembelajaran Digital (BIPD) JPPKK • Kelab Staf JTMK POLIMAS	• Menyediakan framework aplikasi • Khidmat pemudahcara sebelum, semasa & selepas pembangunan aplikasi **KEY RESOURCES** • Platform e-dagang (Shopee, Lazada, Tiktok) • Alat pemasaran digital (Wordpress)	• Penggunaan teknolog terkini seperti AI, iSpring Suite, Netlify, Voicemaker, Github dll pembangunan aplikasi android dan iOS dalam PdP • Perkhidmatan jualan dan aktiviti selepas jualan yang boleh dilaksanakan secara atas talian	• Promosi melalui Jerayawara JPPKK • Media Sosial • Kandungan Aplikasi berubah mengikut silibus **CHANNELS** • Jualan menerusi platform e-commerce (Shopee, Tiktok)	• Bahagian Interaksional dan Pembelajaran Digital (BIPD) JPPKK • Pensyarah Politeknik dan Kolej Komuniti • Pelajar Politeknik & Kolej Komuniti
COST STRUCTURE		**REVENUE STREAM**		
• Kos pemasaran dan penyediaan framework aplikasi • Kos perkhidmat pemudah cara sebelum, semasa & selepas pembangunan aplikasi • Kos pembelian software		• Penjualan framework aplikasi • Bayaran perkhidmatan pemudah cara sebelum, semasa & selepas pembangunan aplikasi • Bayaran pembelian/sewaan software		

BUSINESS MODEL CANVAS

KEPELBAGAIAN INOVASI

Sesuai untuk

POLITEKNIK MALAYSIA — KOLEJ KOMUNITI MALAYSIA



Maklumbalas daripada pensyarah Politeknik Tuanku Syed Sirajuddin – *'Aplikasi sangat mudah digunakan dan menarik'*



Maklumbalas daripada pensyarah Kolej Komuniti Bandar Darulaman, Jitra – *'Aplikasi ini memenuhi keperluan silibus kursus Computer Architecture (SFC10413), Kolej Komuniti*

Boleh digunakan melalui:

1. WEB: https://caapp.netlify.app/
2. .APK

Disokong oleh



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IAM 62
KEWMOS
(KEWPA MONITORING SYSTEM)

KEWMOS
(KEWPA MONITORING SYSTEM)

PENGENALAN

KEWMOS merupakan system yang direka khas untuk menguruskan aset di sekolah dengan lebih mudah dan sistematik. KEWMOS membantu pihak sekolah memantau kondisi aset serta keberadaan aset yang telah didaftarkan dengan mudah, berkesan dan cepat. KEWMOS boleh diakses melalui website serta aplikasi telefon pintar.

Sistem yang akan dibina akan mengurus dokumen-dokumen yang memerlukan penyelenggaraan dan akan mengurus dokumen-dokumen ini dengan lebih efisien

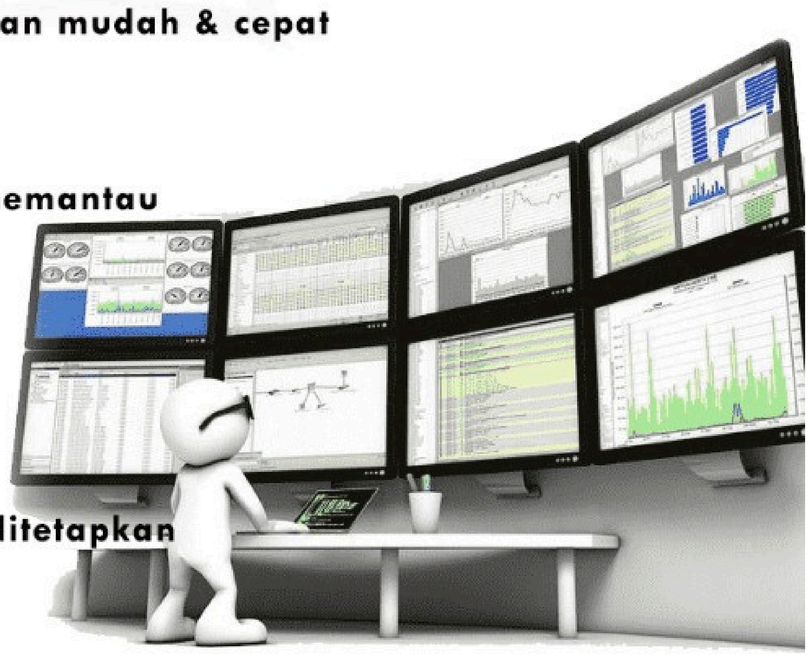
PENYATAAN MASALAH



- **Pengurusan sekolah sering menghadapi kesulitan menguruskan data aset secara efisen dan sistematik**
- **Pihak pengurusan sekolah selalu menghadapi kesulitan untuk mengesan kerosakan/ kondisi terkini aset .**
- **Akibat dari penggunaan aset oleh tenaga pengajar berbeza mengikut keperluan, keberadaan aset selalu sukar dikesan**
- **Pihak pengurusan menghadapi masalah untuk mendapatkan dokumen aset yang betul dan terkini dengan mudah & cepat**

OBJEKTIF

- **Membantu pihak sekolah mengurus dan memantau aset dengan efisen dan sistematik**
- **Membantu pihak sekolah mengesan dan memantau kerosakan/kondisi terkini aset**
- **Membantu pihak sekolah mengesan keberadaan aset dengan mudah**
- **Membantu pihak sekolah menguruskan dokumentasi aset mengikut kriteria yang ditetapkan**



SKOP PROJEK

Projek ini disasarkan kepada semua pegawai aset atau ketua bengkel di sekolah harian dan kolej vokasional


Ts. Zurina Binti Zainudin


Nur Azira Sabiha Binti Abdullah


Nor Sunarti Binti Mohd Ghowth


Muhammad Ridzuan Bin Amir Sharifuddin

Pensyarah Jabatan Teknologi Maklumat
Kolej Vokasional Ipoh

KOLEJ VOKASIONAL
KEMENTERIAN PENDIDIKAN MALAYSIA
KOLEJ VOKASIONAL IPOH

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IAM 63
EASY JIG POSITION (eajipos)



IAM 64
JSMART LEARNING MACHINE



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IAM 65
PILL DOCTER



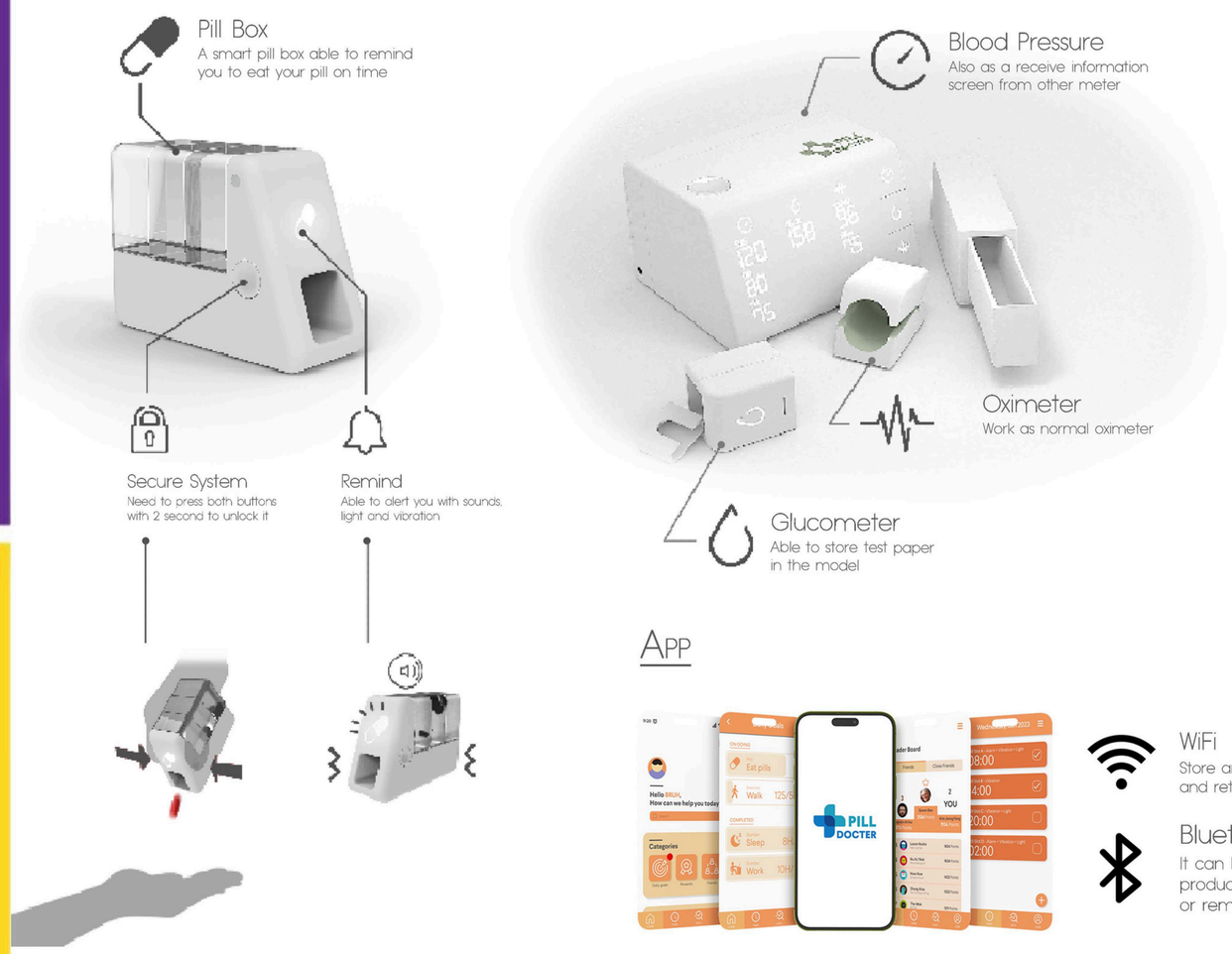
Why?

Nowadays, disease is not just the privilege of the elderly and getting common, which make the pills always need to be around for a patient. Not only for the patient, people who pursue healthy also increase yearly, some of them choose to eat vegetables, but some of them choose to eat health products or pills to maintain their healthy lifestyle, this product will be able to help them.

What?

This is a new smart product and combines what you need for daily healthcare. 4 components which is Pill box, Blood pressure, Oximeter, Glucometer to help the patient and people who pursue healthy.

Functions



App

WiFi
Store amount of data on cloud and retrieve it easily

Bluetooth
It can be link with the product to track information or reminder

Product adventages

Smaller
Small size which is easy to bring it out

Convenient
Combination of common healthcare product

Battery use
Low power consumption makes the product durable

Timer
User able to set the time for different slot

Leaderboard
Able to compete and interact with friends

Data collect
More details of information through application

Suggestion
Application will provide good advice to control bad habits

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IAM 66
LETS'S MAKE WASTE TO WAGES

Let's make Waste to Wages



- **Online Recycle Platform**
- **Door-to-Door Recycle Service**
- **Up to 50++ Redeemable Rewards**

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IAM 67
HAYUYA SMART TOOTHBRUSH

HAYUYA SMART TOOTHBRUSH

2 DIPLOMA PEMASARAN



Pengenalan

Berus gigi sejenis alat yang terdiri daripada sebuah berus kecil dengan pegangan yang digunakan untuk membersihkan gigi dengan menggosok gigi. Berus gigi datang dengan pelbagai tekstur berus, serta pelbagai saiz dan bentuk. Inovasi pula ialah kaedah mencari jalan untuk menghasilkan produk atau perkhidmatan yang lebih baik sama ada melalui pengubahsuaian atau penambahbaikan. Hal ini telah mencetuskan idea untuk kami mencipta sebuah produk inovasi yang baharu yang boleh memudahkan aktiviti seharian masyarakat. Pada era serba moden ini juga masyarakat tertarik untuk mencuba perkara baharu. Dengan ini kumpulan kami telah mencipta sebuah produk inovasi yang diberi nama "Hayuya Smart Toothbrush".

Objektif

- Menganalisis ketahanan produk
- Mengkaji keberkesanan terhadap pengguna
- Mencatat reaksi pengguna terhadap produk



Pernyataan Masalah

- Memakan masa untuk meletakkan ubat gigi
- Ramai rakyat Malaysia yang malas menjaga kebersihan dengan memberus gigi
- Pengembara sering tertinggal dan harus mengeluarkan kos untuk membeli baru
- Menyukarkan pengembara untuk mengembara dengan barang yang banyak
- Ibu bapa kurang memberi perhatian terhadap kesihatan gigi anak-anak

Penyelesaian Masalah

- Membantu seseorang yang malas menjaga kebersihan diri untuk memberus gigi
- Memudahkan untuk membawa ke mana sahaja
- Menjimatkan kos dan masa
- Kesihatan gigi kanak-kanak terjaga oleh ibu bapa

Harga : RM 13.90

Metodologi Kajian



- Kaedah kuantitatif
  -Borang soal selidik telah disediakan
  -Soalan adalah berdasarkan objektif kajian iaitu :
  1. Menganalisis ketahanan produk
  2. Mengkaji keberkesanan terhadap pengguna
  3. Mencatat reaksi pengguna terhadap produk
- Sampel Kajian
  hanya 30 - 50 orang daripada purata 1000 pengembara
- Data primer
- Data utama dikumpulkan dengan objektif untuk mengenal pasti beberapa faktor khusus yang diperlukan
- Data Sekunder
- Maklumat yang disediakan dari sumber sedia ada akhbar & internet

Analisis

Responden sangat bersetuju dengan ketahanan produk dari segi kekemasan dan keselesaan, pembungkusan yang menarik, saiz produk, reka bentuk dan kualiti serta harga produk mampu milik. Selain itu, responden mengenai keberkesanan produk juga responden bersetuju dari penerimaan pengguna, mengikut citarasa pengguna, kesesuaian produk mengikut semua peringkat umur, penggunaan dimana sahaja dan memudahkan kerja. Akhir sekali, daripada dapatan analisis reaksi pengguna terhadap produk Hayuya Smart Toothbrush yang mempunyai kelainan dengan kemodenannya, pembungkusan yang memudahkan, produk diterima pasaran secara berterusan dan mendapat sokongan penuh.





Kesimpulan

- Para pengguna tidak lagi menggunakan kaedah secara manual dalam membersihkan gigi kerana hayuya smart toothbrush dapat membersihkan gigi dengan mudah.
- Sekali gus menjimatkan masa.
- Sesuai untuk para pelancong.
- Daripada hasil analisis ini juga, semua objektif tercapai.
- Banyak penambahbaikan perlu dilakukan pada kajian yang akan datang.

Senarai rujukan

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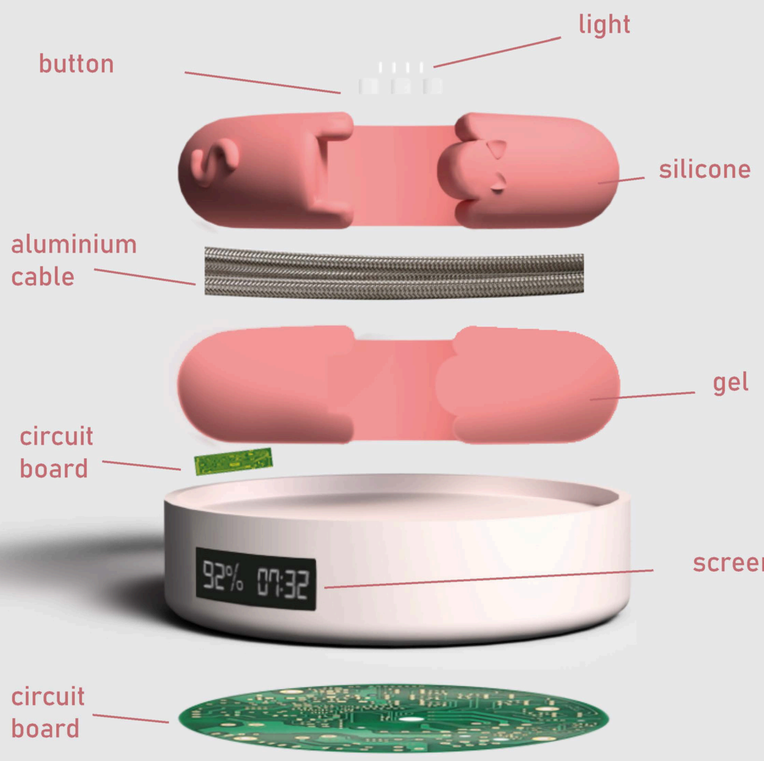
IAM 68
APLIKASI DID-ART



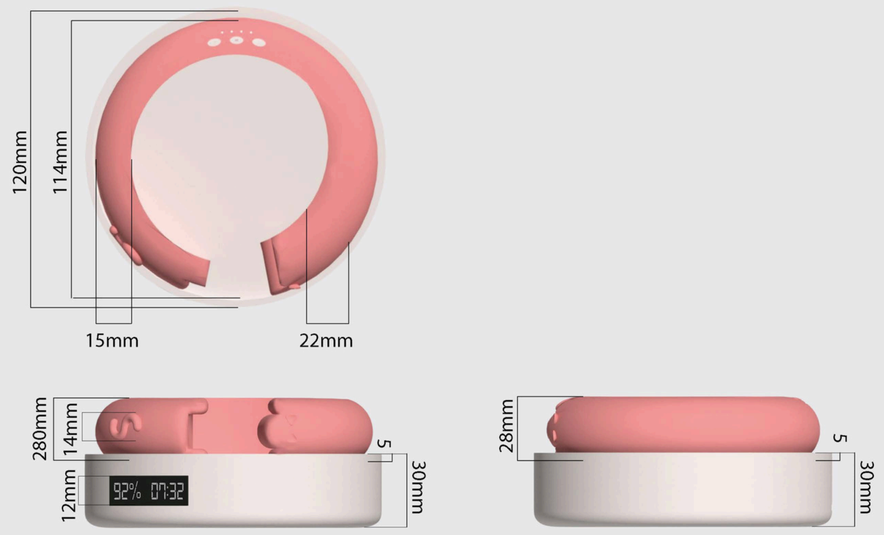
IAM 69
COZY MASSAGER



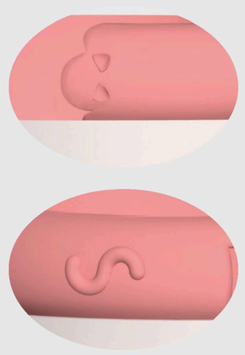
Product details



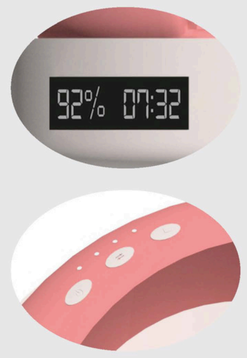
Dimension



Product Specification



Cat tails and cat ear design can provide psychological healing and smoothing effect.

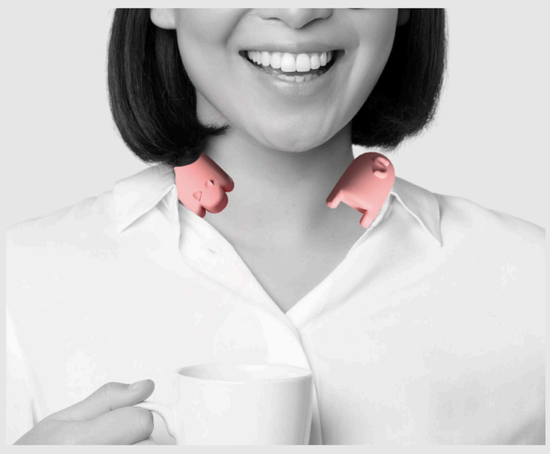


Screen can show battery level and time while charging.

Button and battery level.

Environment to use







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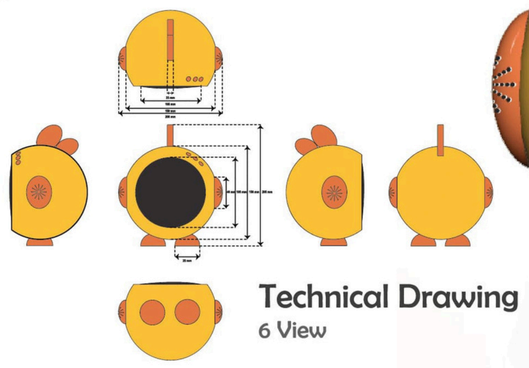
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IAM 70
CHICKY BUDDY VIRTUAL PET



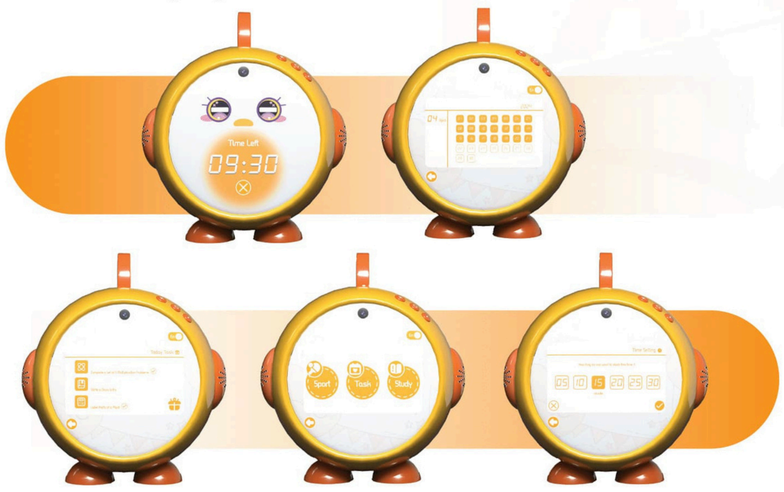
About Chicky

Chicky, inspired by combination of Pomodoro Technique and Virtual Pet designed for children aged 7-12, combines time management and emotional support through a virtual pet. This tool helps children develop key life skills, including time management and patience, in a fun and engaging way.



Technical Drawing
6 View

Product Display Interface

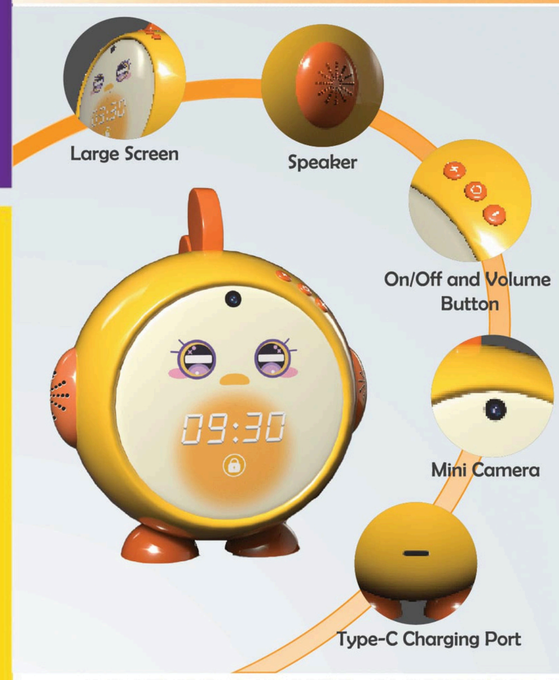


Product Application Scenario

Chicky is a virtual pet that combines time management tools, learning focus building features, smart pet interaction features.

Chicky also offer emotional support, making children feel cared for even in the absence of their parents.





Product Details

Chicky combines a kid-friendly large touch screen, clear speaker, secure camera for parental monitoring, easy-to-use buttons, and

Type-C charging into a compact educational virtual pet that teaches time management and provides emotional support.

App Interface Design



Interactive method

Chicky offers interactive learning tasks, remote monitoring for parents



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IAM 71
AR PAINTING : RETRO GAMES



IAM 73
RAGUM GERUDI MAGNET

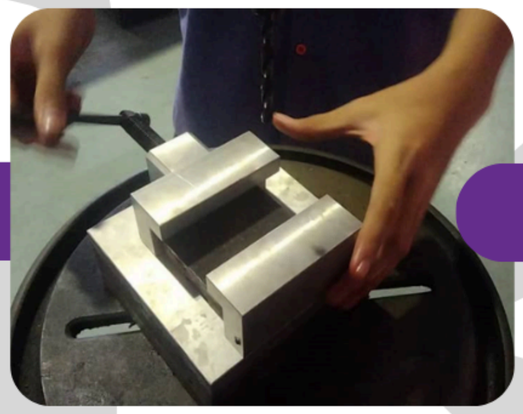
*Ts. ZAITON WAHID *ELLI AMIRAH AZLAN *MUHAMMAD FARIS
AIMAN M MAZLAN *MUHAMMAD AMIRUL MOHD AIMAN

IAM73 **RAGUM GERUDI MAGNET**

PENGENALAN

Ragum pemegang magnet memastikan kestabilan bahan kerja semasa pengeboran dengan melekat pada permukaan logam menggunakan pangkalan magnet yang kuat. Ini mengurangkan getaran, meningkatkan kecekapan dan keselamatan, terutama untuk pengeboran pada permukaan tegak atau di atas kepala.

REKABENTUK PRODUK



NOVELTI



OBJEKTIF 1

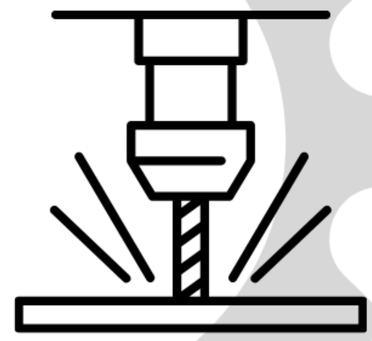
Merekabentuk alat *magnetic drill vise*.

OBJEKTIF 2

Menghasilkan alat *magnetic drill vise*.

OBJEKTIF 3

Menguji alat *magnetic drill vise*.





PERNYATAAN PERMASALAHAN

Masalah utama dalam penggunaan ragum gerudi di bengkel adalah ketiadaan ciri keselamatan yang menyebabkan ragum sering terangkat semasa operasi, menimbulkan kebimbangan kepada pelajar. Selain itu, masa yang diambil untuk setup ragum sangat lama kerana perlu memastikan mata gerudi selari dengan tempat yang ditanda, melambatkan proses kerja. Tambahan lagi, ragum hanya sesuai untuk bahan kerja besi, menyebabkan bahan lain memerlukan ragum berbeza, turut melambatkan penyelesaian kerja.

KOS EFEKTIF

1. **Pemasangan dan Penempatan Cepat**:
Bahan kerja lebih cepat dipasang dan dipindahkan dengan ragum gerudi magnet kerana kemudahan pemasangan dan pemindahannya.

2. **Keselamatan Tempat Kerja**:
Keselamatan ditingkatkan kerana ragum gerudi magnet memegang bahan kerja dengan kuat tanpa perlu pengapit tambahan.

3. **Kos**:
Ragum gerudi magnet memerlukan penyelenggaraan yang rendah dan memiliki jangka hayat panjang, menjadikannya pelaburan yang berbaloi untuk bengkel dan industri kecil.

PENGKOMERSIALAN

1. Mengadakan bengkel demonstrasi di kolej vokasional untuk menunjukkan kelebihan dan cara penggunaan ragum gerudi magnet.

2. Menawarkan pakej pembelajaran yang merangkumi ragum gerudi magnet sebagai sebahagian daripada alat praktikal untuk pelajar.

3. Menjalankan program perkongsian dengan kolej vokasional lain untuk menyediakan ragum gerudi magnet pada harga diskaun atau secara sewaan untuk memudahkan pelajar menggunakannya dalam latihan amal

PENGUJIAN

RAGUM GERUDI BIASA	RAGUM GERUDI MAGNET
13 SAAT	5 SAAT



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IAM 74
TRANSFORMING METAL WASTE REDUCTION WITH CHIP COMPACTOR

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KOLEJ VOKASIONAL SUNGAI BULOH

IAM74

MEMBERS:
- Ts. ZAITON BINTI WAHID (LECTURER)
- UMMU AFIQAH BINTI MOHD HILMIN (LECTURER)
- MUHAMMAD RAFIQ IQMAL BIN RAZALI (STUDENT)
- MUHAMMAD IDHAM IMAN BIN ROSLAN (STUDENT)

TRANSFORMING METAL WASTE REDUCTION WITH CHIP COMPACTOR

INTRODUCTION

"Chip compactor is a tool used to compress and compact chips, which are waste materials in a machining process. It utilizes a threaded rod as the medium to move the plate presser up and down. Through this compression process, the accumulated chips form a cube. This chip compactor project is a low-cost initiative with low manufacturing costs."

OBJEVTIVES

OBJECTIVE #1
- "To create a chip compactor capable of strong compression of chips."

OBJECTIVE #2
- "To design a chip compactor project capable of performing the chip compaction process."

OBJECTIVE #3
- "To produce a low-cost product suitable for workshops."

COMMERCIALISATION

1. COLLABORATE WITH VOCATIONAL COLLEGES TO INCORPORATE THE CHIP COMPACTOR INTO THEIR CURRICULUM, OFFERING HANDS-ON TRAINING CHANCES.
2. PARTNER WITH IRON PROCESSING PLANTS TO INTEGRATE THE CHIP COMPACTOR INTO THEIR OPERATIONS, IMPROVING WASTE MANAGEMENT EFFECTIVENESS.
3. OFFER COMPACTING WORKSHOPS WITH THE CHIP COMPACTOR AS A COST-EFFECTIVE SOLUTION TO REDUCE METAL WASTE AND BOOST SAFETY WITHIN THEIR WORK ENVIRONMENTS.

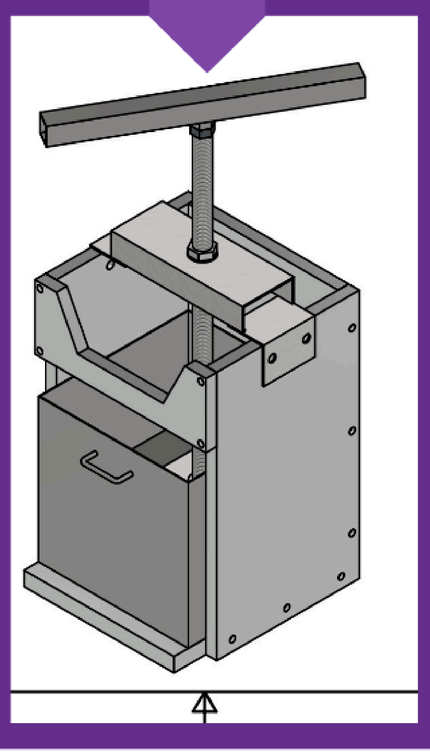
NOVELTY

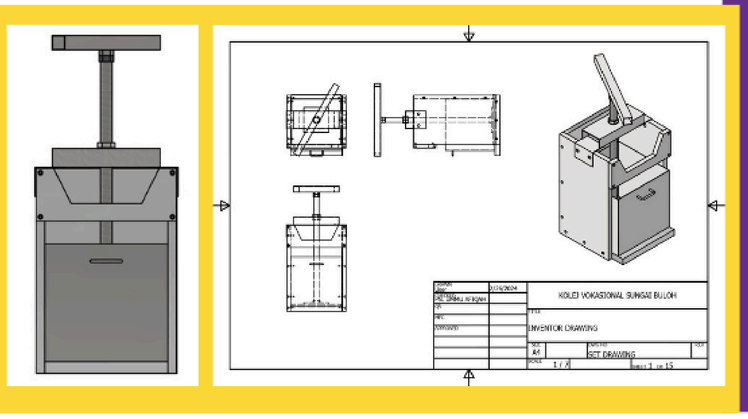


COST- EFFECTIVE

- The project is intended for vocational college students and iron processing factories.
- Additionally, small workshops can benefit from it for cost-effective product manufacturing.

PROTOTYPE





PROBLEM STATEMENTS

- Scatter chips can be hazardous and pose a risk of injury to students.
- Uncompressed chips take up a significant amount of space, making them challenging to store in bags.
- Uncompacted chips require a large storage area, creating difficulty in storing them in containers.

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IAM 77
ZnOASH

UNIVERSITI TEKNOLOGI MARA

ZnOASH

ZnO/EFBA for Sustainable FFA Removal in WCO for Biodiesel Production

Team members

ChM. Dr Norshahidatul Akmar Mohd Shohaimi
ChM. Dr Zul Adlan Mohd Hir
Assoc. Prof. Dr. Mohd Lokman Ibrahim
Siti Fadhilah Ibrahim

INTRODUCTION

Biodiesel, a renewable and sustainable alternative to petroleum diesel, can be produced from waste cooking oil (WCO) through photocatalytic esterification under light irradiation, a method that has recently garnered significant attention. The advanced oxidation process (AOPs) in the initial photo-esterification step is crucial for removing the high free fatty acid (FFA) content in WCO, which can otherwise hinder biodiesel yield. This study primarily used a ZnO semiconductor photocatalyst, selected for its effective optical properties under light illumination. Doping ZnO with empty fruit bunch ash (EFBA) created a synergistic effect that enhanced photocatalytic performance. The research achieved an 85% FFA conversion using 4 wt% photocatalyst, for 4 h reaction time and 16:1 methanol-to-oil molar ratio under UV light irradiation. In the second step, which is the transesterification process, the study achieved an 88% biodiesel yield using 1 wt% NaOH catalyst, for 1 h reaction time at 60°C and 12:1 methanol-to-oil molar ratio. Therefore, photo-esterification shows significant potential for removing FFA content from low-quality feedstock oils, particularly WCO.



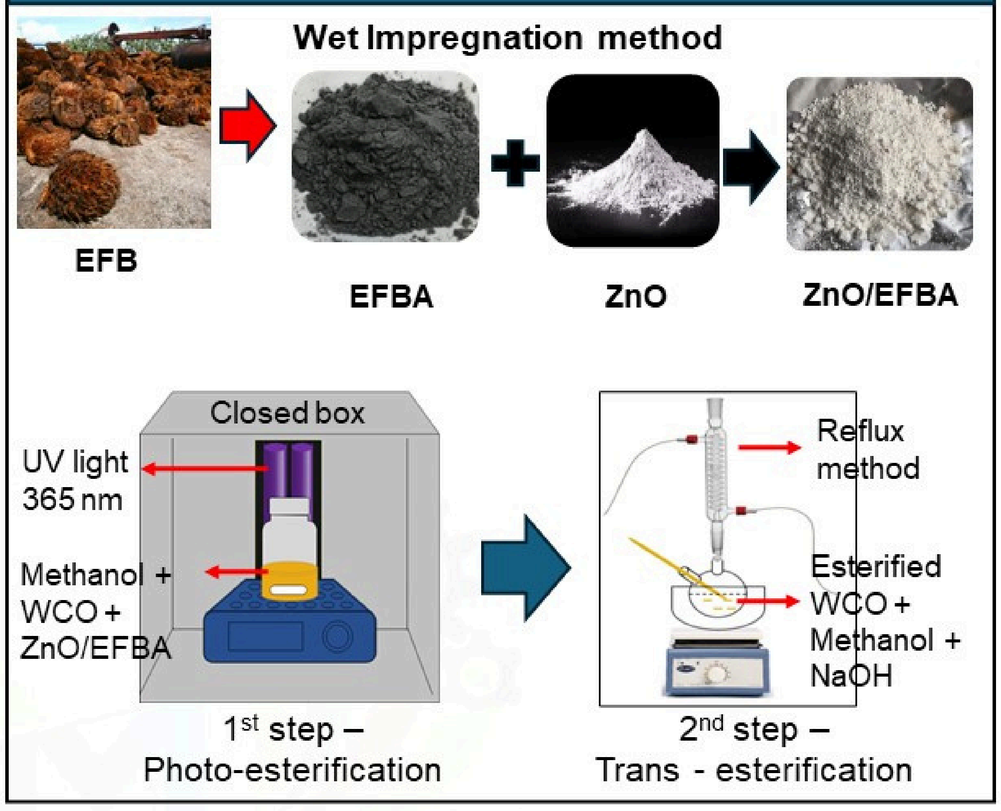
PROBLEM STATEMENT

- WCO contained high amount of FFA which resulted in saponification reaction
- Thermal catalytic process required high temperature and pressure which can increase the operating cost
- Homogeneous acid catalyst is hard to separate and recover which lead to increase economic cost and environmental pollution
- Wide bandgap energy and high rate of recombination photoinduced electron hole pairs inhibit the photocatalytic process

OBJECTIVE

- To investigate the physicochemical properties of EFBA doped-ZnO photocatalyst.
- To determine the optimum reaction condition for the FFA reduction of WCO in photo-esterification reaction.
- To elucidate the mechanism of photo-esterification trans-esterification reaction

PRODUCT DESIGN

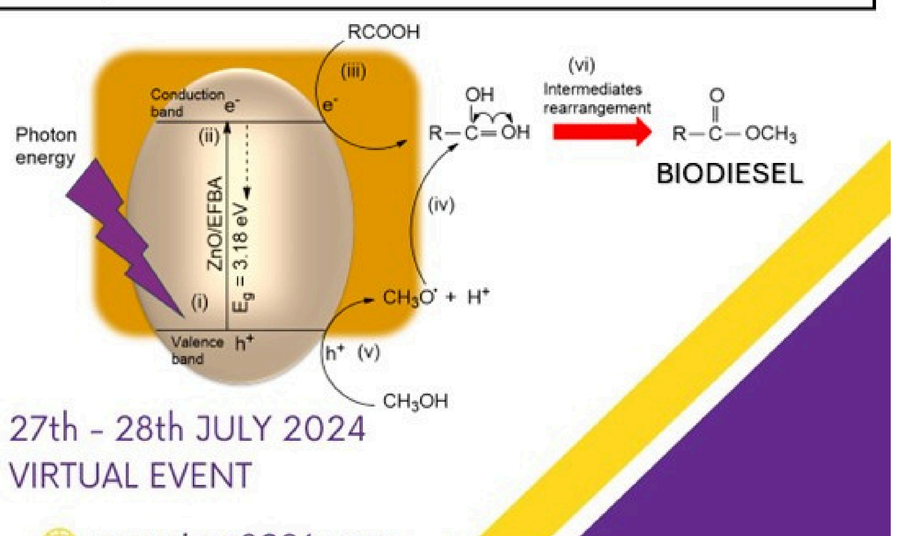


COMMERCIALIZATION

- Environmentally beneficial
- Cost-effective, as the photocatalyst can be reused multiple times while maintaining stability and high performance, with no necessary pretreatment.
- Easy preparation and a simple technology process, which saves energy usage.
- Uses low-cost feedstock oil, reducing disposal management costs.
- The biodiesel produced meets ASTM D6751 and EN14214 standards.

NOVELTY

- Removal of FFA in low-quality feedstock oil through a photocatalytic process under UV light
- The process occurs at room temperature without any heating
- Successfully removes more than 80% of FFA



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IAM 78
GREEN BUILDING MATERIAL - RECYCLED CONCRETE

Universiti Pendidikan Sultan Idris
Sultan Idris Education University
INSTITUT PENGAJIAN SISWAZAH
INSTITUTE OF GRADUATE STUDIES

Innovation Competition

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GREEN BUILDING MATERIAL —RECYCLED CONCRETE

1 Zhang Li , 2 M.N.A. Azman
1 Faculty of Technical and Vocational, Sultan Idris Education University
2 Faculty of Technical and Vocational, Sultan Idris Education University

1 INTRODUCTION

Recycled coarse aggregate concrete is prepared by crushing, screening, cleaning, and other treatments of waste concrete, which is used to partially or completely replace natural coarse aggregates(1,2).
Construction waste (waste concrete) is increasing in countries today, but the utilization rate is low. Concrete is one of the most in-demand materials in the construction industry, and mining the raw materials sand and gravel severely damages the environment(3).
It is important to balance the need for raw materials and waste concrete to promote the sustainable development of construction materials.

2 PROBLEM STATEMENTS

1. The surface is covered with original mortar.
2. Rough surface with many angles.
Defects of Recycled Coarse Aggregate(4).
3. There are internal microcracks and high-water absorption.
4. Low apparent density and high crushability.


Recycled coarse aggregate


Natural coarse aggregate

Due to the defects of the coarse aggregate of recycled concrete, the popularization and application of recycled concrete are limited.

3 OBJECTIVES

1. Protecting the environment and low-carbon emission reduction, developing green buildings and strengthening the recycling application of building materials.
2. Promote the application of recycled concrete not only for road works; but also for bridges, buildings, precast elements, etc.
3. To explore the enhancement of recycled coarse aggregates and the addition of steel fiber as effective approaches to reduce stress-induced damage in recycled concrete.

4 METHODOLOGY

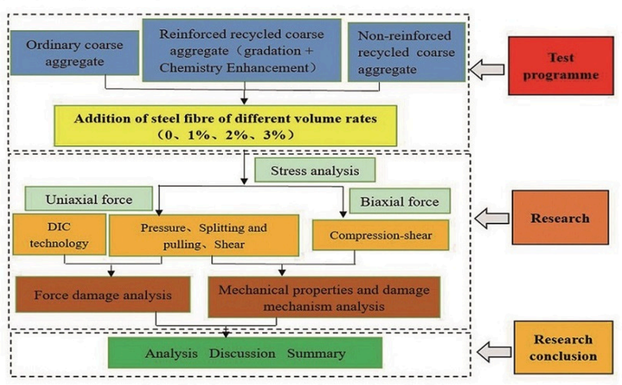
Fabrication of three coarse aggregate steel fiber recycled concrete specimens.

Mechanical property analysis with origin software.

Analyze force damage by the Digital Image Correlation(DIC) method.

Experimental method

Technical roadmap



5 CONCLUSION AND SUMMARY(Mechanical property analysis)

Table 5.1 Peak stresses of steel fiber recycled concrete for various stress states

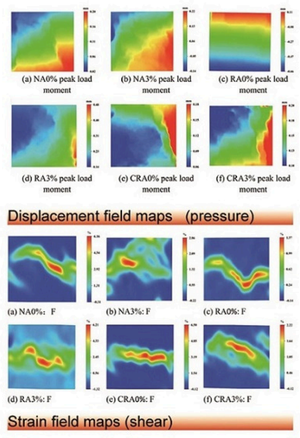
Type of force/Steel fiber volume ratio		CRA (MPa)	RA (MPa)	NA (MPa)
Compressive	0%	41.35	33.49	37.09
	3%	50.39	39.04	44.55
Split-tension	0%	1.48	1.19	1.38
	3%	2.5	1.98	2.11
Shear	0%	6.29	5.33	6.29
	3%	9.36	7.16	7.9

Design pressure value 30MPa.

Note, CRA= Reinforcement of recycled coarse aggregate to produce recycled concrete; RA= Recycled coarse Aggregate to produce recycled concrete; NA=Natural coarse Aggregate to produce concrete.

Reinforcement of recycled concrete by steel fiber is better than ordinary steel fiber concrete.

CONCLUSION AND SUMMARY(DIC technical analysis)



Damaged by stress:

1. Reinforcement of recycled coarse aggregates, filling the internal pores of recycled coarse aggregates, enhancing the mechanical connection between coarse aggregates, increasing the compressive strength, and improving and optimizing the splitting and shearing properties.

2. The addition of steel fiber effectively enhances the mechanical properties, reduces the susceptibility of concrete to cracking, lowers the rate of crack development, and improves the load-bearing capacity and toughness of recycled concrete.

6 SUMMARY

i Effective methods to improve the mechanical properties of recycled concrete are the reinforcement of recycled coarse aggregate and the incorporation of appropriate steel fiber.
ii After the recycled coarse aggregate is strengthened, it is higher than ordinary concrete in force properties, but lower in toughness and deformation in the later stage, and the toughness and deformation can be improved by adjusting steel fiber admixture.
iii The peak stress of CRA is higher than NA and RA, and the steel fiber improves the toughness and crack resistance of recycled concrete, retards crack development, and enhances integrity.
iv According to the DIC technique it was verified that the reinforcement of recycled coarse aggregate and the incorporation of steel fiber is an effective way to reduce the force damage of recycled concrete.
v Recycled coarse aggregates can be used in more areas of the construction industry.

7 PRODUCTS


Recycled Prefabricated Stairs


Recycled prefabricated laminated panels

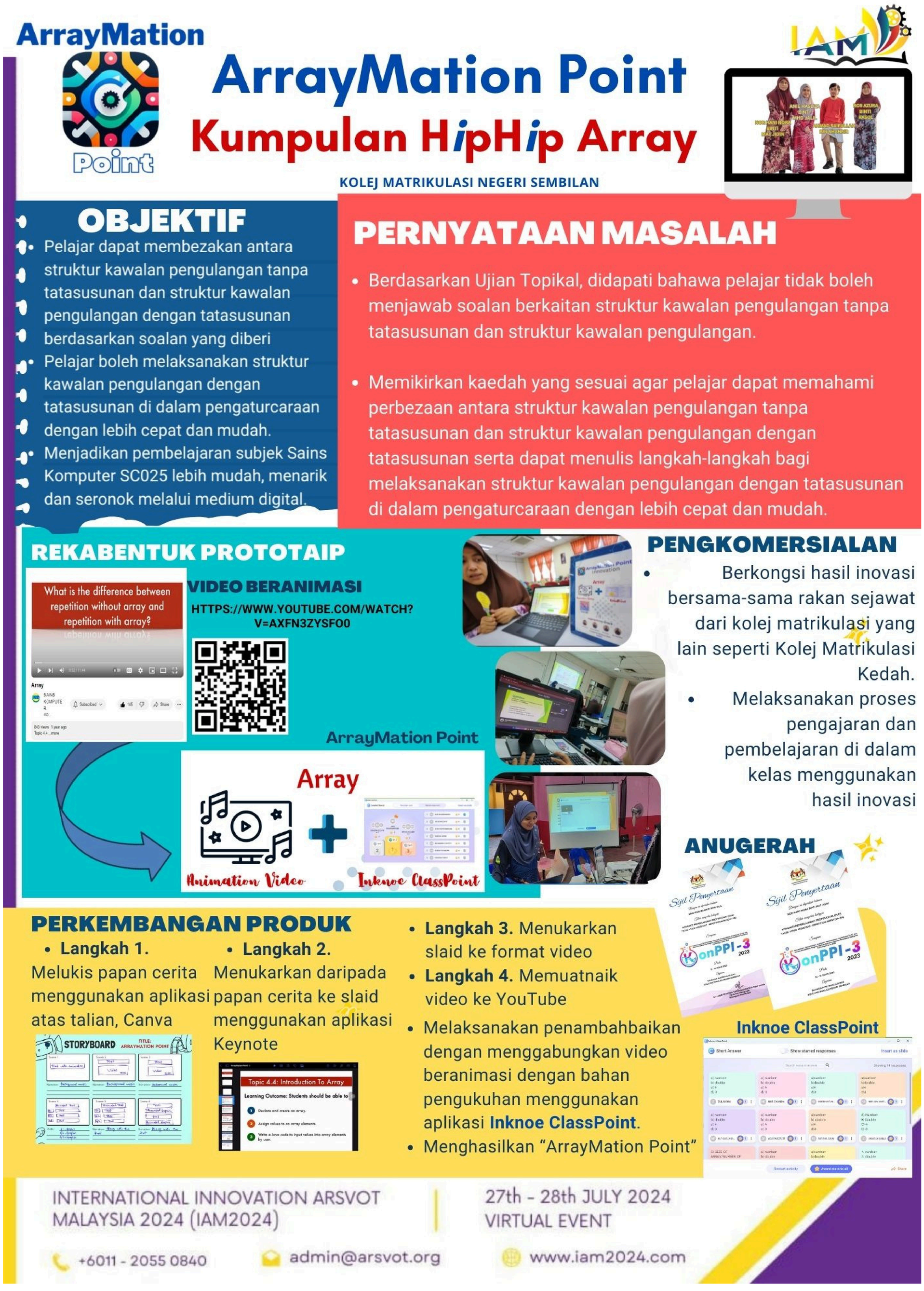

Cast-in-place recycled concrete

8 REFERENCE

Nußholz, J.L.K., Nygaard Rasmussen, F., Milios, L.,(2019).Circular building materials: carbon saving potential and the role of business model innovation and public policy. Resour. Conserv. Recycled. 141, 308–316.
Xiao, J. Z., X. W. Ma., Q. Liu., H. H. Zhang, & Z. H. Duan. (2021). Derivation and Research Progress of the Concept of Fully Recycled Concrete. Journal of Building Science and Engineering, 38(2), 1-15.
Filippo, J., Karpman, J., DeShazo, J.R.,(2019). The impacts of policies to reduce CO2 emissions within the concrete supply chain. Cem. Concr. Compos. 101, pp. 67-82.
Zhang, S.F., & Qi, H.J. (2021). Advances in the durability of recycled concrete. Concrete, 9, 56-62.

Environmental Protection

IAM 79
ArrayMation Point



IAM 82
SMART POP-UP



IAM 84
EASY CARRY HAIR MAT



EASY CARRY HAIR MAT

Easy Carry Hair Mat ini dihasilkan untuk membantu para guru menerangkan tentang pembelajaran penjagaan rambut. Penghasilan produk ini adalah cetusan idea-idea kreatif yang mampu menarik minat pelajar dalam pembelajaran. Inovasi ini tercetus daripada penghasilan tikar yang mana mudah dibawa, ringan dan boleh dilipat untuk penyimpanannya. EasyCarry Hair Mat ini mempunyai 9 bahagian yang mana setiap bahagian mempunya infomasi dan aktiviti yang menarik berkaitan penjagaan rambut.



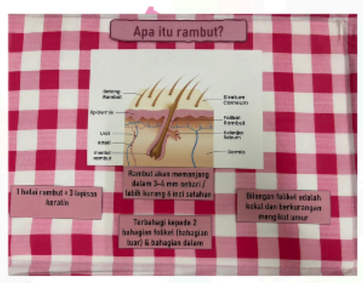
KEPENTINGAN

Menyediakan bahan bantu mengajar yang efekif dan menarik mengikut cara pembelajaran yang terkini.



KELEBIHAN

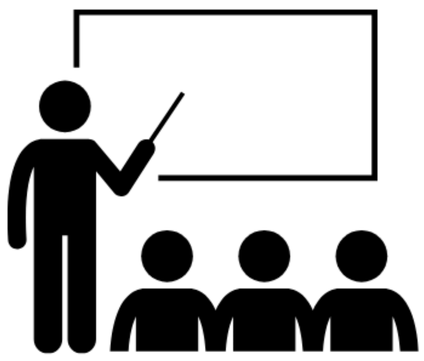
Bahan bantu mengajar (bbm) yang kreatif dan menarik membantu merangsang kreativiti pelajar dalam memahami dan menerapkan konsep-konsep yang diajar.



RAISES AWARENESS

Memerlukan proses pembelajaran yang lebih menarik dan interaktif bagi pelajar dalam topik penjagaan rambut.

OBJEKTIF



Meningkatkan minat dan motivasi murid dalam pembelajaran dengan bantuan Easy Carry Hair Mat dan mampu membantu guru dalam proses pdp agar murid-murid lebih memberi tumpuan dalam pembelajaran.



IMPAK & SIGNIFIKASI

Peningkatan minat dan prestasi pembelajaran murid yang memberansangkan serta mampu meningkatkan efisiensi pengurusan bahan pembelajaran dan maklumat yang kreatif.









AHLI KUMPULAN:
1) NOORSYAMIMIE BINTI ZULKIFLI
2) NIK INTAN ZULAIKHA BINTI NIK YAHYA

PENSYARAH PEMBIMBING:
1) PUAN FARAH NAJWA BINTI AHMAD PUAD
2) PUAN ZALEHA BINTI ARSHAD

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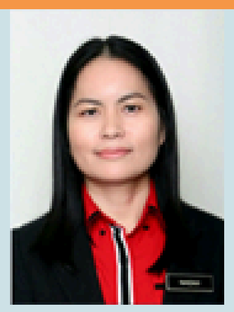
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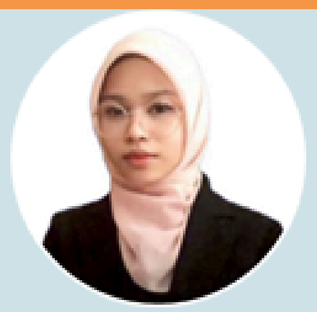
IAM 85
SUIKA FINGERS

AHLI KUMPULAN/ ID KUMPULAN: IAM85

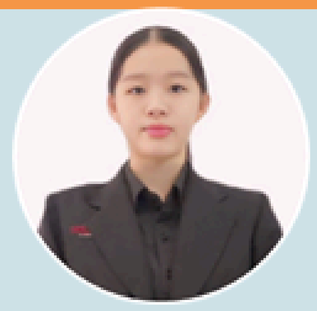
POLITEKNIK MALAYSIA KOTA KINABALU



NAISAH UJIN (KETUA)



IZZATI AZ-ZAHRA SAIÍN



CHRISTINA WONG TZI YI

PENGENALAN

Buah tembikai adalah buah yang popular di seluruh dunia kerana rasa manis dan kandungan air yang tinggi. Biasanya isi buah tembikai berwarna kuning atau merah yang kaya dengan nutrisi seperti vitamin C, vitamin A, dan kalsium serta meningkatkan penghidratan tubuh badan. Biasanya, kita hanya menikmati isi tembikai manakala kulitnya dibuang begitu sahaja. Oleh itu, untuk mengoptimumkan penggunaan buah tembikai, maka wujudlah inovasi produk *Suika Fingers* yang bukan sahaja mengelakkan pembaziran tetapi dapat menggalakkan amalan kitar semula *food waste* di kalangan masyarakat kita.

PERNYATAAN MASALAH

Mengenalpasti potensi kulit buah tembikai sebagai produk makanan.

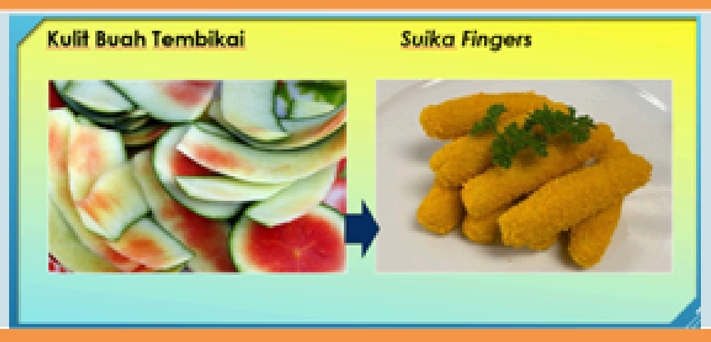
OBJEKTIF

- Membangunkan inovasi produk baharu berasaskan kulit buah tembikai iaitu *Suika Fingers*.
- Mempelbagaikan produk makanan sedia ada daripada kulit buah tembikai.

KEPENTINGAN PRODUK

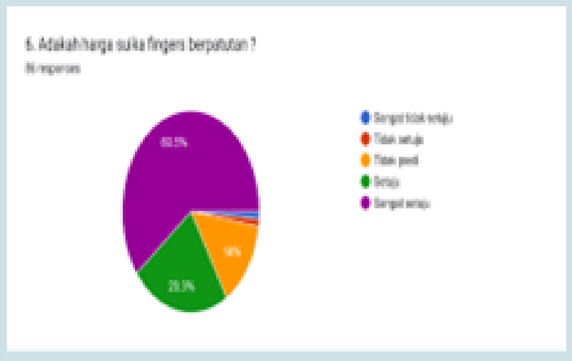
- Mengelakkan pembaziran
- Penggunaan buah tembikai yang optimum
- Menggalakkan amalan kitar semula *food waste*

REKA BENTUK PRODUK



NILAI KOMERSIAL

Sangat berpotensi untuk dikomersialkan berdasarkan maklumbalas positif daripada responden seperti berikut:







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IAM 87
PORTABLE TUNGSTEN SHARPENER (PTS)

KOLEJ VOKASIONAL
KEMENTERIAN PENDIDIKAN MALAYSIA
KOLEJ VOKASIONAL SULTAN AHMAD SHAH

IAM



PORTABLE TUNGSTEN SHARPENER (PTS)

PENGENALAN

Portable Tungsten Sharpener (PTS) ialah satu produk asahan yang dicipta khusus untuk mengasah rod tungsten yang menggunakan kertas pasir sebagai bahan asahan utama. Seterusnya, mesin ini digerakkan oleh motor arus terus (DC) dimana ianya sesuai digunakan dimana-mana sahaja tempat yang mempunyai bekalan elektrik yang sama. Pentingnya di sini, mesin inovasi PTS ini dapat menjimatkan masa, mudah alih, dan selamat digunakan berbanding mesin canai tangan yang konvensional.

PERNYATAAN MASALAH

PTS ini beroperasi secara separa automatik dengan menggunakan kuasa motor (DC). Selain itu, produk ini dibangunkan kerana terdapat kesukaran dan masalah yang timbul berikutan proses penyediaan rod tungsten secara manual. Rekabentuk PTS ini telah mencapai objektif yang telah ditetapkan iaitu, projek PTS dibangunkan dengan sistem separa automatik untuk menggerakkan kertas pasir dengan menggunakan motor elektrik. Secara keseluruhannya didapati, penggunaan rekabentuk ini akan memudahkan pelajar-pelajar di institut-institut kemahiran untuk menjalankan aktiviti penyediaan rod tungsten.

OBJEKTIF

- Memudahkan pelajar untuk mengasah rod tungsten dengan lebih halus dan berkualiti.
- Meningkatkan kestabilan nyalaan tungsten semasa mengimpal proses GTAW.
- Meningkatkan kualiti hasil arka untuk proses GTAW.

KOMERSIALAN

STS ini berpotensi besar dalam memudahkan kerja mengasah rod tungsten di bengkel-bengkel teknologi kimpalan atau tempat kerja logam yang berkaitan. Oleh yang demikian, produk STS yang dibangunkan ini sesuai digunakan di institusi-institusi kemahiran yang menawarkan programkimpalan di seluruh Negara dan juga sesuai untuk orang perseorangan yang mengendalikan kerja kimpalan.

KEASLIAN PRODUK

PTS ini mempunyai rekabentuk yang berlainan daripada produk yang terdapat dipasaran arus perdana dimana ianya dicipta khusus untuk mengasah rod tungsten dan telah mengambil kira keupayaan ergonomik dan kesesuaian bahan (material) yang perlu digunakan. Rekabantuk PTS ini juga telah melalui satu proses randering 3D menggunakan perisian Autocad bagi memastikan produk akhir yang dihasilkan adalah mengikut spesifikasi yang telah ditetapkan dan berada dalam kawalan toleransi yang dibenarkan.



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IAM 88
INTELLIFARM : A MACHINE LEARNING-BASED SYSTEM FOR MONITORING LIVESTOCK HEALTH STATUS

IntelliFarm: A Machine Learning-Based System for Monitoring Livestock Health Status

Hafizan Mat Som, Nurul Aida Osman, Noor Syakira Shan, Nurul 'Izzati Abdul Hadi, Raveena Kaur Sukhvindar Singh, Muhammad Haziq Khiril Anuar
Universiti Teknologi Petronas (UTP)

INTELLIFARM GOAT

Abstract

This project aims to develop a Machine Learning model capable of predicting diseases in goats by analyzing symptoms and remotely monitoring their health status. This approach eliminates the need for constant on-site presence, providing farmers with a user-friendly dashboard for convenient access to health updates and recommendations for unhealthy goats.Using the CRISP-DM (Cross-Industry Standard Process for Data Mining) Framework, the methodology combines Power BI for powerful data visualization and Python for robust programming, including machine learning and web development. A supervised learning technique, specifically a Classification Decision Tree, is employed for predictive analytics to classify goats as healthy or unhealthy based on gathered data.The resulting Intellifarm Goat System offers a revolutionary solution for goat breeders, providing data-driven insights and predictive analytics. This comprehensive livestock health monitoring and management platform enhances animal welfare, reduces costs, and increases profits by offering real-time health data and early detection of potential health issues.In conclusion, the Intellifarm Goat System revolutionizes goat management by enabling breeders to make critical health decisions based on data-driven insights and predictive analytics, ultimately improving animal welfare, reducing costs, and boosting profitability.

Introduction

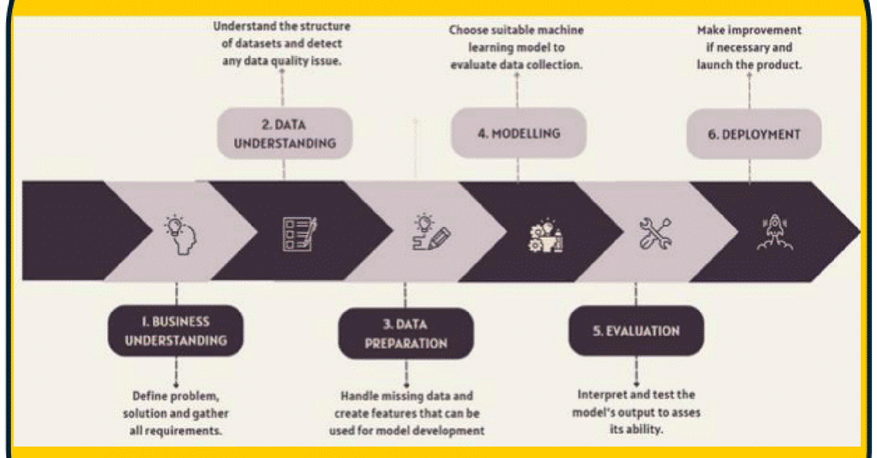
What is Intellifarm Goat Dashboard System?
Intellifarm Goat Dashboard System is a comprehensive digital solution for goat farmers to monitor the health status of their livestock and predict potential diseases. With the dashboard, farmers and breeders can track key health indicators such as temperature, heart rate and respiratory rate where the collected data will be used to predict potential diseases based on the animal's health data and other factors such as age and breed

Problem Statement
Goat breeders and farmers currently rely on manual and time-consuming processes to monitor the health of their goats, which involves physically inspecting each animal to identify signs of illness. This approach is inefficient, labor-intensive, and may lead to delayed detection of health issues, potentially resulting in the spread of diseases and compromised animal welfare.

Purpose and Objective

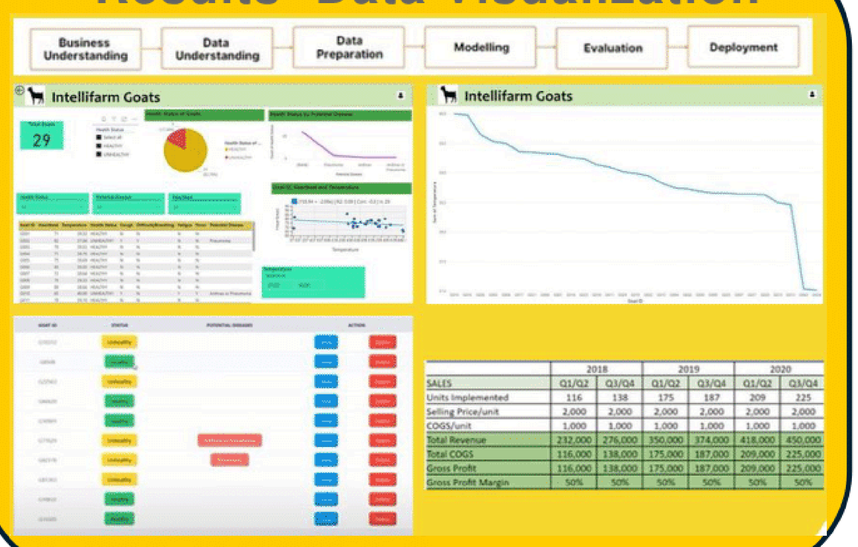
- **The project aims to address the issue by introducing a system that can monitor the vital signs of the goats and**
- **help farmers to detect early symptoms of diseases in their goats. The system will use sensors to gather data of the health condition of the goats where the data will then be analysed using machine learning to identify potential diseases as well as predicting potential outbreaks of the diseases.**
- **There will also be a dashboard to help with the data visualization to ensure the farmers able to see the status of the goats as well as the prediction of the diseases based on the data that was analysed.**

Project Methodology



CRISP-DM (Cross-Industry Standard Process for Data Mining) Framework

Results- Data Visualization



SALES	2018		2019		2020	
	Q1/Q2	Q3/Q4	Q1/Q2	Q3/Q4	Q1/Q2	Q3/Q4
Units Implemented	116	138	175	187	209	225
Selling Price/unit	2,000	2,000	2,000	2,000	2,000	2,000
COGS/unit	1,000	1,000	1,000	1,000	1,000	1,000
Total Revenue	232,000	276,000	350,000	374,000	418,000	450,000
Total COGS	116,000	138,000	175,000	187,000	209,000	225,000
Gross Profit	116,000	138,000	175,000	187,000	209,000	225,000
Gross Profit Margin	50%	50%	50%	50%	50%	50%

Discussion & Conclusion

The Intellifarm Goat System revolutionizes goat management by integrating data-driven insights and predictive analytics, empowering breeders to make critical health decisions. This comprehensive livestock health monitoring and management solution enhances animal welfare, reduces costs, and increases profits. The user-friendly dashboard provides real-time health data and facilitates early detection of potential issues. By combining livestock health monitoring with IoT-based solutions, the system leverages data analytics and machine learning to identify health patterns and predict issues. Employing the CRISP-DM (Cross-Industry Standard Process for Data Mining) Framework ensures a structured and effective approach to data mining and analytics. Our future initiatives focus on continuous innovation and enhancing the platform's features based on user feedback and emerging technologies to stay competitive and meet evolving customer needs.

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IAM 89
SMART CUP FERTILIZER



IAM 91
MASTER OF HEX@TRONIC


AQILAH HAFAWATI ADENAN


WAN NURLISA BINTI WAN AHMAD


TANG JING RUI


ANIZAH BINTI MOHD SALLEH



MASTER OF HEX@TRONIC

"Let's study electronic component"



INTRODUCTION

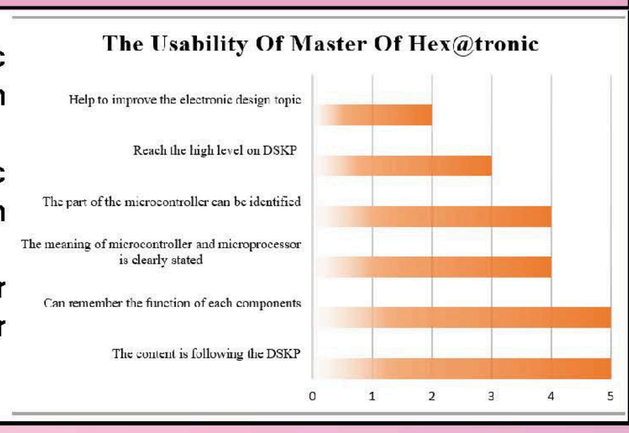
The Master of Hex@tronic is an innovative gamification approach to the integration of technology in technical and vocational education. (TVET). The game also provides a fresh and exciting learning environment which the game elements are used in PdPC to enhance the motivation and achievement of students' general knowledge of the Electronic Design topic.

PROBLEM STATEMENT

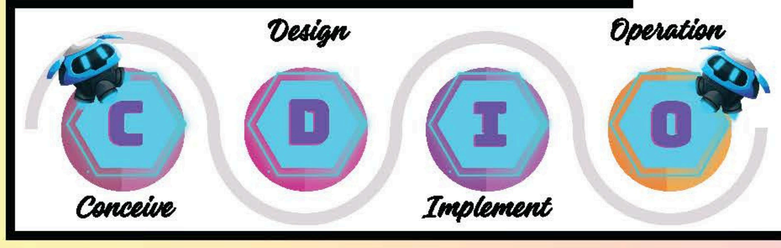
1. Lack of interest for traditional teaching methods (Huang & Hew, 2017)
2. Worse understanding of electrical and electronic concepts (Chang et al, 2019)
3. Cognitive load (Ihsaniah. 2022)

OBJECTIVE

1. Identify the learning needs for the topic of Electronic Design for students in High School
2. Developing GBL Master Of Hex@Tronic Gamification For Technology Design (RBT)
3. Evaluating the usability of GBL Master Of Hex@Tronic Gamification For Technology Design (RBT)



INNOVATION FRAMEWORK



SIGNIFICANT IMPACT

- Catalyst to accelerate learning through active student involvement
- Student's interest and perfomance increased
- Create an effective learning process
- Use throughout the secondary school

DIVERSITY OF INNOVATION

- Club activity
- Freetime activity
- Classroom teaching method

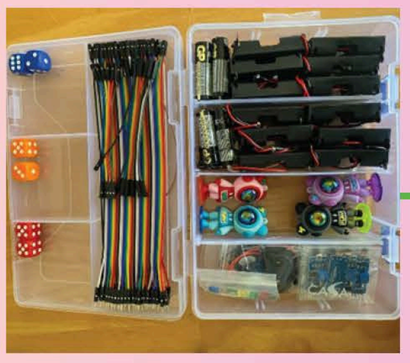
TRANSPARENT COINS



FINAL PRODUCT



COMPONENTS



SET OF GAME



REFERENCE

- Nurul Ihsaniah Omar. (2022). Keberkesanan Simulasi Reka Bentuk Elektronik Terhadap Motivasi, Pencapaian Dan Bebanan Kognitif Pelajar. (Disertai Kedoktoran). Universiti Pendidikan Sultan Idris, Tanjung Malim.
- Huang, B., & Hew, K. F. (2017). Factors Influencing Learning and Factors Influencing Persistence: A Mixed-Method Study of MOOC Learners' Motivation. Proceedings of the 2017 International Conference on Information System and Data Mining, Charleston SC USA, April 2017, 103-110. https://doi.org/10.1145/3077584.3077610
- Chang, C.Y., et al. (2018) Trends and Research Issues of Mobile Learning Studies in Nursing Education: A Review of Academic Publication from 1971 to 2016. Computers & Education, 116, 28-48

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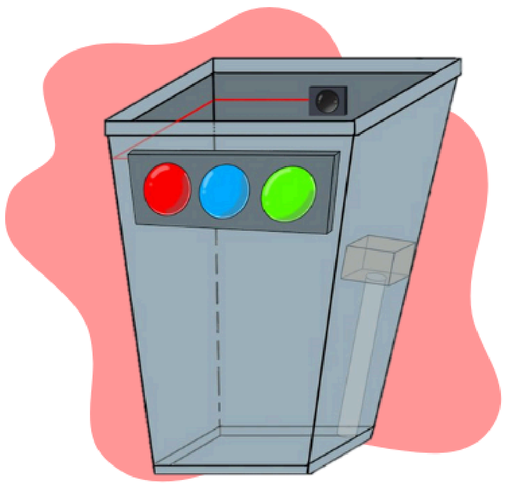
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IAM 93
SMART DUSTBIN DETECTOR

KOLEJ VOKASIONAL
KEMENTERIAN PENDIDIKAN MALAYSIA
KOLEJ VOKASIONAL KUCHING

CONTACT : 082420814

SMART DUSTBIN DETECTOR



INTRODUCTION

SMART DUSTBIN DETECTOR IS INTRODUCED AS A HIGH-TECH DEVICE THAT UTILIZES DETECTION TECHNOLOGY TO ACCURATELY IDENTIFY THE LEVEL OF EMPTYNESS OR FULLNESS OF THE DUSTBIN.

PROBLEM STATEMENT

- AN INCREASE IN THE AMOUNT OF WASTE THAT IS NOT PROPERLY MANAGED WHICH HAS RESULTED IN THE CONDITION OF THE BINS BEING IN UNSANITARY
- EXCESSIVE USE OF WASTE PLASTIC CAUSING THE PROCESS OF DECOMPOSITION OF THE MATERIAL TO TAKE A LONG TIME

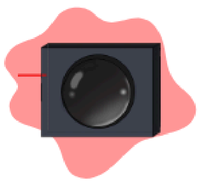
OBJECTIVE

- TO ENSURE THE GARBAGE DISPOSAL PROCESS IS CLEAN AND SAFE
- TO REDUCE THE USE OF MATERIALS THAT TAKE A LONG TIME TO DECOMPOSE

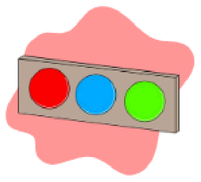
TARGET

KUCHING VOCATIONAL COLLEGE COMMUNITY

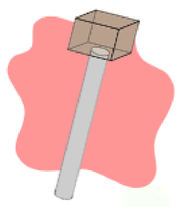
PRODUCT DESCRIPTION



ULTRASONIC SENSOR: MEASURES THE FULLNESS OF THE DUSTBIN BY DETECTING THE DISTANCE TO THE WASTE LEVEL, ENSURING TIMELY EMPTYING AND PREVENTING OVERFLOW.



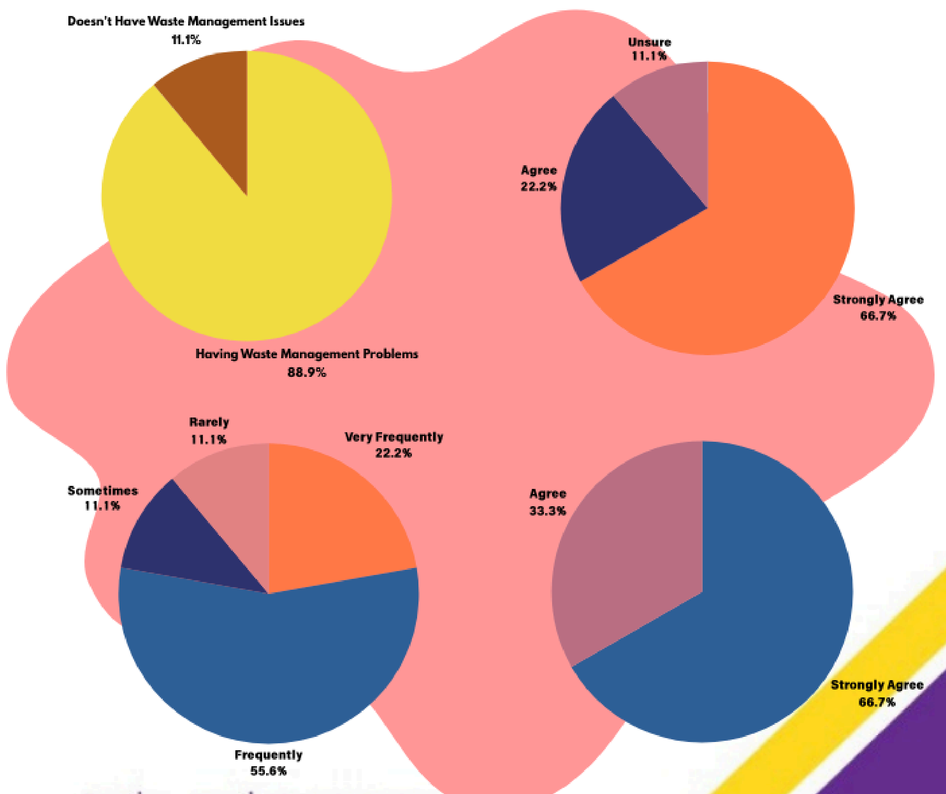
LIGHT INDICATOR: INDICATES THE FULLNESS LEVEL BY ADJUSTING LED INDICATORS AND DETECTS SIGNALS FROM THE ROD DETECTOR, ENHANCING WASTE LEVEL MONITORING.



WATER SENSOR: DETECTS WATER LEVELS AND ANY WATER ENTERING THE DUSTBIN, PROVIDING SIGNALS TO THE LIGHT SENSOR FOR REAL-TIME STATUS UPDATES AND PROMPTING TIMELY MAINTENANCE TO PREVENT LEAKS OR WATER DAMAGE.

RESULT ANALYSIS

- 88.9% OF RESPONDENTS HAVE EXPERIENCED WASTE MANAGEMENT PROBLEMS.
- 66.7% STRONGLY AGREE THAT WASTE MANAGEMENT IS IMPORTANT; 22.2% AGREE, AND 11.1% ARE UNSURE.
- 55.6% FREQUENTLY USE NON-DEGRADABLE WASTE BAGS; 22.2% VERY FREQUENTLY, 11.1% RARELY, AND 11.1% SOMETIMES.
- 66.7% STRONGLY AGREE AND 33.3% AGREE ON USING THE SMART DUSTBIN DETECTOR.



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IAM 94
PHONE STORAGE CABINET

KOLEJ VOKASIONAL
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KOLEJ VOKASIONAL KUCHING
TEL : 082-420 814

MOHD MIZAN HAKEEM BIN ALI RAHMAN
JACKSON KONG CHONG HANG
SITI NUR IRNAIZZATY BINTI NORJAYADI

PHONE STORAGE CABINET

DIGITAL
KESELAMATAN
EFISEN

PENYATAAN MASALAH

1. Tiada tempat penyimpanan yang sesuai.
2. Barangan atau telefon mudah hilang ataupun dicuri.

OBJEKTIF

1. Tempat simpan yang khas untuk telefon.
2. Keselamatan telefon atau barang bernilai terjamin.



DIPERBUAT DARIPADA
- Logam
- Plastik
- Kaca

SASARAN
- Pelajar
- Guru

1
Lukis reka bentuk kabinet. Potong logam, kaca, dan plastik mengikut reka bentuk. Pasang rangka logam kabinet.

2
Pasang pintu atau panel kaca. Pasang bahagian dalam plastik untuk slot. Pasang pengecas tanpa wayar di setiap slot.

3
Pasang skrin LED dan keypad di depan kabinet. Sambungkan semua komponen ke sumber kuasa.

4
Uji pengecas dan skrin LED serta keypad. Perbaiki sebarang masalah yang ditemui. Kabinet sedia digunakan

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IAM 95
PASTA BEBAS GLUTEN BERASASKAN UBI KELEDEK UNGU

PASTA BEBAS GLUTEN BERASASKAN UBI KELEDEK UNGU

KOLEJ VOKASIONAL
KEMENTERIAN PENDIDIKAN MALAYSIA
bersama membina masa depan
KOLEJ VOKASIONAL KUCHING

PERNYATAAN MASALAH

i.Mengikut Kosmo Digital, Malaysia telah mencatat 19.7 peratus bagi tahap peratusan obesiti dan ianya semakin meningkat tahun demi tahun.

ii.Kebanyakkan pasta diperbuat daripada tepung gandum durum (semolina) atau tepung gandum serbaguna.

PENGENALAN



Pasta ini adalah hidangan unik yang menggabungkan akar talas ke dalam pasta klasik, memberikan warna dan rasa yang berbeza. Menggunakan tepung bebas gluten, taro mencipta tekstur dan profil rasa unik yang melengkapkan kekayaan pasta. Hidangan ini menyediakan alternatif lebih sihat kepada pilihan berasaskan gandum tradisional, memenuhi keperluan pengguna yang mementingkan kesihatan dan penggemar makanan yang mencabar.

OBJEKTIF

i.Untuk membuat pasta bebas gluten daripada bahan ubi keledek ungu

ii.Pasta bebas gluten dibuat untuk memenuhi keperluan kesihatan dan pemakanan orang yang tidak boleh mengambil gluten.

HASIL PROTOTAIP



NOVELTI

- 100% bahan organik tanpa pewarna
- Bahan bebas gluten



KAEDAH KAJIAN

i. Soal Selidik
Google Form telah diedarkan kepada 30 responden yang berasal dari Malaysia dan mempunyai 4 bahagian; (Maklumat Responden, Bahagian B (Tabiat Pemakanan dan Kesihatan), Bahagian C (Kesediaan Membeli), dan Bahagian D (Kesediaan Membeli).

ii. Pemerhatian
Berdasarkan laman web rasmi Majlis Keselamatan Negara, Malaysia menduduki tempat kedua masalah berat badan selepas Brunei iaitu dengan peratusan sebanyak 19.7 peratus.

CONTACT NO: 082420814

IAM 100
SCRUFFEE

KOLEJ VOKASIONAL
KEMENTERIAN PENDIDIKAN MALAYSIA
KOLEJ VOKASIONAL SULTAN ABDUL SAMAD

IAM

SCRUFFEE

PENGHASILAN SKRUB BADAN BERASASKAN HAMPAS KOPI



APLIKASI

- Mudah digunakan
- Sesuai untuk semua peringkat umur

SASARAN

Individu yang mempunyai masalah kulit kering dan kusam

KEBAIKAN

- Menanggalkan sel kulit mati
- Mencerahan kulit badan
- Melembapkan kulit badan
- Melembutkan kulit badan

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IAM 101
PANDAN RESIDUE FOOT SCRUB

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KOLEJ VOKASIONAL SULTAN ABDUL SAMAD

IAM

PANDAN RESIDUE FOOT SCRUB

PENGHASILAN SKRUB KAKI BERASASKAN HAMPAS DAUN PANDAN

PENGENALAN HAMPAS DAUN PANDAN RESIDUE FOOT SCRUB

Merupakan produk penjagaan kaki yang berasaskan daun pandan, beras bukit, minyak matahari dan essential oil. Produk ini sesuai bagi mengatasi masalah kaki seperti kaki berbau, tumit kaki merekah dan kulit yang kasar.

KEBAIKAN PANDAN RESIDUE FOOT SCRUB

- Mengurangkan masalah kaki berbau
- Menanggalkan sel kulit mati pada kaki
- Mampu mengurangkan masalah kaki merekah
- Memberi kelembutan pada kaki



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IAM 103
PENGUJI GEGANTI AC & DC (12V & 240V)

PENGUJI GEGANTI AC & DC (12V & 240V)



PENGENALAN

SECARA UMUMNYA GEGANTI INI DIGUNAKAN SEBAGAI PENGHUBUNG DAN PEMUTUS LITAR SAMA ADA DALAM VOLTAN AC ATAU DC. INOVATION INI TERHASIL UNTUK MENGUJI GEGANTI AC DAN DC IAITU DENGAN MENGGUNAKAN SATU DISPLAY, PUSH BUTTON, AC-DC CONVERTER. MCB DAN LAMPU PETUNJUK YANG DIGABUNGKAN DALAM SATU PENDAWAIAN.

PROBLEM STATEMENT

- TIADA PENGUJI GENGANTI AC & DC

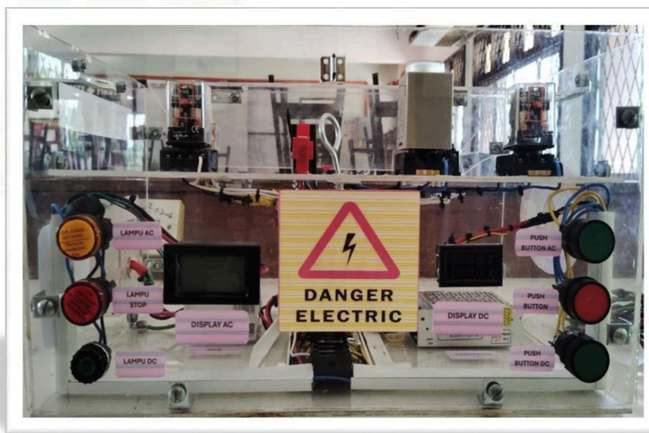
OBJEKTIF

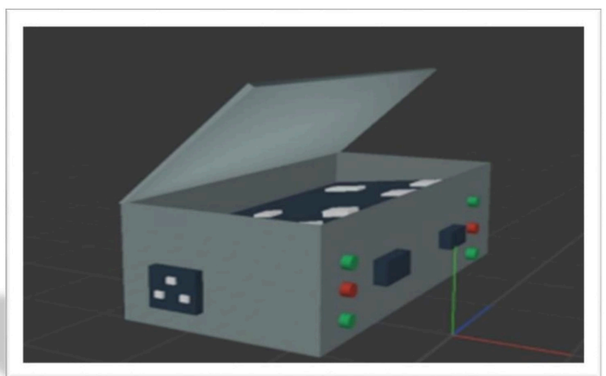
- MENGUJI GEGANTI SAMA ADA DALAM KEADAAN BAIK ATAU TIDAK
- MEMBINA SEBUAH ALAT UNTUK MEMUDAHKAN BARISAN PENSYARAH DALAM MENGEMAS KINI

PRODUCT / PROTOTYPE



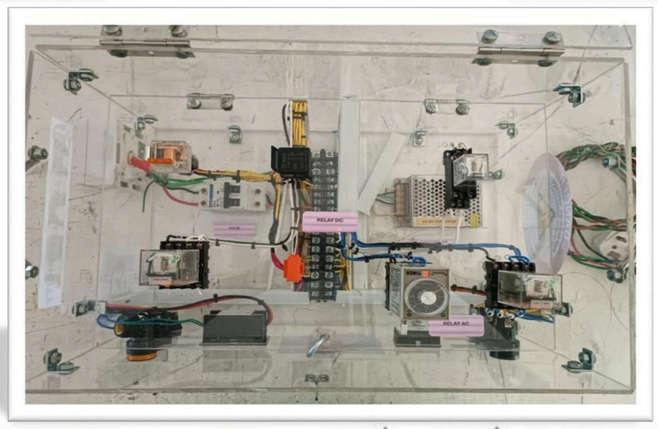
FRONT VIEW





SIDE VIEW





IAM 105
GUNTING FABRIK MULTIFUNGSI DENGAN PELARAS BASI JAHITAN 1.0

GUNTING FABRIK MULTIFUNGSI DENGAN PELARAS BASI JAHITAN 1.0

PN. NORFARIZAN BINTI JAWAHIR (PENYELIA)
PN. NUR INANI IZZATI BINTI MOHD SHARIFF (PENYELIA)
SITI NABILAH BT MOHD ROSLIDE,
JACINTA JUNAMIE JOKLY,
NISRIEN AZKIYA' BT ROKI BUDIMAN

PRODUCT DESCRIPTION

Gunting Fabrik Multifungsi Dengan Pelaras Basi Jahitan 1.0 adalah produk inovasi yang di reka khas untuk digunapakai oleh pelajar daripada bidang Rekaan Fesyen khususnya, Tukang Jahit, Tenaga Pengajar/Pensyarah dan butik-butik pakaian. Rekaan produk ini direka untuk memudahkan proses kerja didalam pemotongan fabrik rekaan.

Di mana dalam proses pemotongan fabrik tidak perlu lagi membuat tetapan atau penandaan secara manual untuk mendapatkan basi jahitan seperti 1 cm, 1 inci dan lain-lain ukuran yang ditetapkan di bahagian pola rekaan tetapi dengan menggunakan produk inovasi ini pemotongan dan sukatan basi dapat dijalankan secara serentak, seterusnya dapat meminimakan masa menghasilkan sesuatu rekaan.

Bahan yang digunapakai untuk menghasilkan peralatan ini adalah daripada aluminium/alloy, stainless steel dan karbon steel yang tahan lasak. Produk ini mudah untuk di bawa ke mana-mana saja dan boleh dilaras mengikut ketetapan basi yang diperlukan mengikut standard yang ditetapkan.

GENUINELY

- Memudahkan kerja dan menjimatkan masa dalam proses penandaan basi jahitan dan pemotongan pola.
- Meningkatkan kualiti dan produktiviti
- Mencipta pasaran baru
- Meluaskan jangkauan produk

OBJECTIVE

- Menghasilkan produk yang dapat memudahkan proses penandaan basi jahitan dan pemotongan fabrik.
- Meminima masa dalam menghasilkan sesuatu rekaan.
- Menjadi salah satu produk yang akan menyumbang dalam perkembangan teknologi dan ekonomi Negara.

MARKET APPLICATION AND POTENTIAL

- Menggabungkan dua (2) kombinasi kerja iaitu menggunting fabrik dan membuat penandaan basi jahitan sekali gus.
- Sasaran pengguna adalah pelajar Bidang Rekaan Fesyen, Tukang Jahit, Tenaga Pengajar/Pensyarah dan Butik-butik pakaian.
- Peralatan yang tahan lasak dan mudah untuk di bawa ke mana-mana Sahaja.

PRODUCT PICTURE



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IAM 106

AI LINGUMATIK AS A LEARNING MACHINE ADDRESSES THE AMBIGUITY OF UNDERSTANDING EARLY MATHEMATICAL CONCEPTS

AI LINGUMATIK AS A LEARNING MACHINE ADDRESSES THE AMBIGUITY OF UNDERSTANDING EARLY MATHEMATICAL CONCEPTS

INTRODUCTION/ABSTRAC

This study has developed a virtual kit named the AI-LINGUAMATIC. This virtual kit is AI products used the medium of language in translating the operations and early terminology of Mathematics that is applied in meaningful contexts or multicontexts.In this product, the meaningful teaching context is created through a research-based approach to Malay lexis corpus that provides collocation of words and a clear concept of early mathematics. This process provides an understanding of the concepts of matching, collecting, isolating and comparing in a meaningful way and can be utilized by teachers as an effective and innovative learning aid .

PROBLEM STATEMENT

This product highlights the medium of language in translating the operations and early terminology of Mathematics applied contextually or multicontextually meaningfully. In this product, the teaching context means incarnated through research-based approach by the corpus from Dewan Bahasa dan Pustaka Databases (DBP) to examine the collocation of the concepts of matching, collecting, isolating and comparing. Thus, this developed innovation reveals an early Mathematics learning kit based on a fun online lexical approach while cultivating thinking skills through lexical context.

OBJECTIVE

1)As a virtual Teaching Aid tool in the form of AI-LINGUAMATIK to clarify confusion in understanding terminology, procedural skills, and the early context of Mathematics among children.

2) Offering interactive pedagogy in learning early Mathematical concepts using digital technology that can stimulate the cognitive, psychomotor, and affective domains of children.

PRODUCT/ PROTOTYPE DESIGN

This product theory is a lexical examination methodology looking at the existence context or combination of words that reflect a particular meaning and highlight a consistent aura of meaning.Utilization of Semantic Prosody Theory in this study is conducted through collocation analysis of the corpus (data obtained from the Corpus Database of Dewan Bahasa dan Pustaka DBP) related to the lexical meaning of match/matching, collecting, isolating and comparing. Analysis also shows that lexical values are often positive when the words (match/match, collect, isolating and comparing) colocate with words of positive value. The language patterns found in the corpus data can express the meaning exactly as it is carried by the speaker. This product is accessed through the link developed, which is https://scratch.mit.edu/projects/313663914 which can be used through the pin card provided.

COMMERCIALISATION

This product can be used for teaching early Mathematics in all preschools in Malaysia. It can help all the preschools to further strengthen their mastery and teaching strategies to be interesting and effective. Based on the observations of the collocations for the words match, matching, collect, isolate and comparing, it is evident that the teaching of early Mathematics for the concepts should be transparent and accurate. This is aimed to enable children to have good understanding of the procedural skills and terminology for the concepts. In other words, the teaching of early Mathematics should be characterized by the construction of concepts and comprehensive meanings of its nature.

NOVELTY/INVENTIVENESS

The failure of children in mastering the concepts and skills of Mathematics will constrain the fostering of interests in such learning which indirectly becomes an obstacle in achieving the aspirations of education as a whole and the aspirations of individual students as outlined in the National Education Development Plan (2013 2025). Verbal strategies often used by teachers were more towards general understanding and did not highlight the information contained in the Mathematics terminology itself. In addition, the phrase comprehension strategies used by teachers are more towards general understanding and do not highlight information to students related to subjects, instructions and keywords in the teaching of Verbal Mathematics. This has caused the process of understanding Mathematical terms complicated among students and indirectly created ambiguity in understanding Mathematical terminology and procedural skills.

OTHERS (PUBLICATION/INTELLECTUAL PROPERTY/INDUSTRY)











INTELECT PROPERTT: IP CRY2022C042267

E BOOK: EISBN 9789672814085

2 SCOPUS Q1 & Q4 + 1 MYCITE

Sarudin, A., Raja Ma'amor Syah, R. N. F. A., Mohamed Redzwan, H. F., Osman, Z., Othman, W. M., Mohd Ariff Albakri, I.S. (2019a). Lexical Approach: Overcoming Vague Skills Procedure and Early Mathematical Terminology based on the Prosodic Semantic *Theory. Journal of Mechanics of Continua and Mathematical Sciences, 14 (3), 94-111.*

Sarudin, A., Mohamed Redzwan, H. F., Osman, Z., Raja Ma'amor Shah, R. N. F., & Mohd Ariff Albakri, I. S. (2019b). Menangani kekaburan kemahiran prosedur dan terminologi awal Matematik: Pendekatan leksis berdasarkan Teori Prosodi Semantik. *Malaysian Journal of Learning and Instruction*, 16(2), pp. 255- 294

Anida Sarudin, Sufian Ismail , Abdullah Yusof, Husna Faredza Mohamed,Redzwan4 , Zulkifli Osman , Hermandra. *Journal of Social Sciences and Humanities (MJSSH),* Volume 7, Issue 9, 1-23.









Prof Madya Dr Anida Sarudin, Dr Mohamad Nik Mat Pelet, Dr Maulana Al-Finn Che Man, Cik Siti Nurzawanah Sharuddin.



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IAM 110
MyFFR Tracker 2.0

MyFFR Tracker 2.0

"My Forced Financial Restatement Tracker 2.0"

Fakulti Perakaunan — Unleashing Potentials Shaping the Future

ABSTRACT

Firms subject to forced financial restatement are distinguished as those that have admitted or been identified of making unintentional or deliberate attempts to mislead in financial reporting. The string cases of accounting scandals have led to increased demand for an effective tool that can predict forced restatement firms at an early stage before the financial reports are published. However, the critical analysis of firm performance and reporting quality appears challenging, specifically for students in the postgraduate accounting program. Although students may have studied financial statement analysis at the undergraduate level, their prior exposure has generally been basic. Additionally, their working experience often pertains to specific accounting areas rather than the broader and more comprehensive aspects of financial statements, both quantitative and qualitative, covered in this subject. The innovative prediction tool so-called "MyFFR Tracker 2.0" aspires to simulate the prediction of firms that violate the Malaysian Financial Reporting Standards due to deliberate income-increasing misstatements, and which are likely to be issued with income-decreasing forced restatement. This prediction tool enhances the educational experience by enabling students to analyze and detect firms at risk of misstatements that warrant further investigation.

1.0 OBJECTIVE

The innovative prediction tool, "MyFFR Tracker 2.0," aims to ambitiously simulate the prediction of firms that violate Malaysian Financial Reporting Standards through deliberate income-increasing misstatements and are subsequently likely to be issued with income-decreasing forced restatements.

2.0 RESEARCH METHODOLOGY

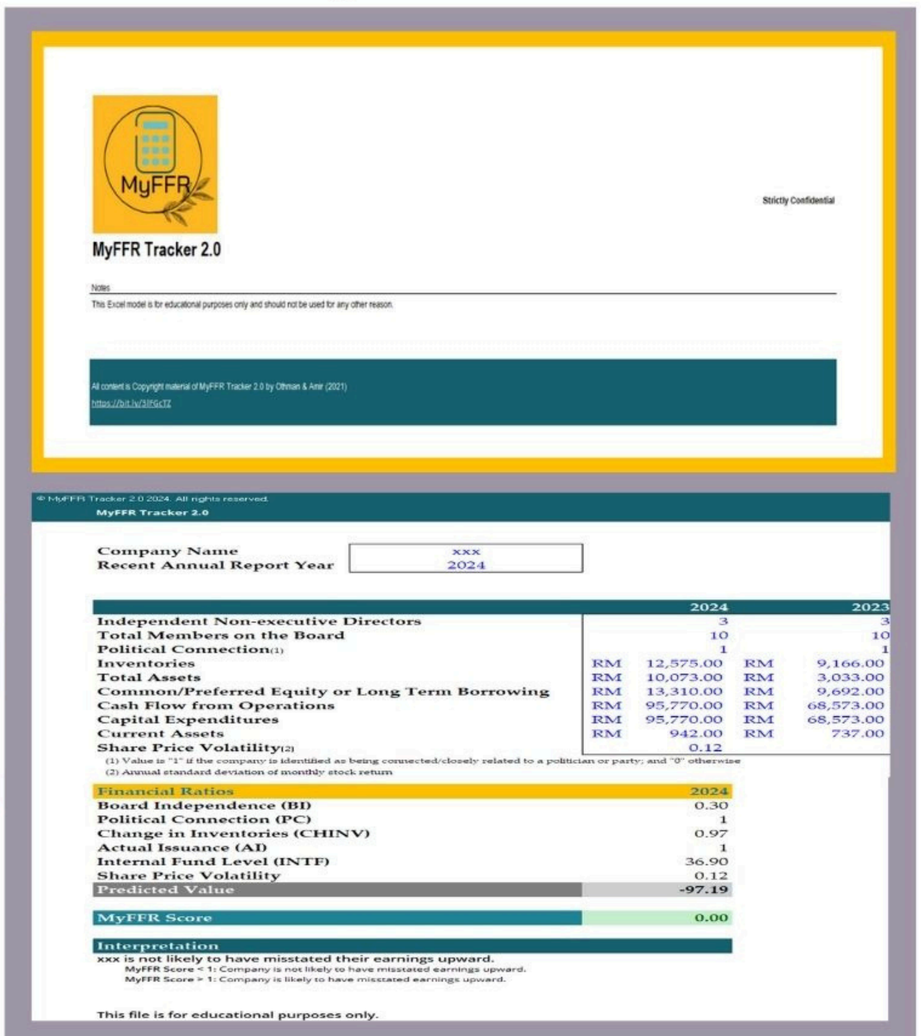
This prediction tool is developed based on a comprehensive database of income-increasing financial misstatements and an analysis of a wide-ranging financial and corporate governance attributes of misstating firms. In addition to using the stepwise logit, data analysis was also performed based on the penalized likelihood logit model, a reliable test that produces less biased results, especially in dealing samples with rare events such as forced restatements. Variables including board independence, political connection, firm's level of internal fund, share price volatility, change in inventories and actual issuance were shown to be significant predictors. The final output of this analysis is a scaled probability (MyFFR Score) that can be used as a red flag or signal of the likelihood of income-decreasing forced restatement.

3.0 USEFULNESS

- It exposes students to the use of MyFFR Tracker 2.0 in order to help them comprehend how data analysis can find the underlying root issues and provide results under real-world conditions.
- It helps students to develop problem-solving and develop decision-making skills required in the competitive job market and makes their educational experience relevant and applicable when joining the job market.
- It helps improve students' communication skills and builds their level of confidence.
- It encourages students to explore and become analytical and creative thinkers.

Research Publication

1) PREDICTING INCOME DECREASING FORCED FINANCIAL RESTATEMENT, UNIVERSAL JOURNAL OF ACCOUNTING AND FINANCE, 9(6), 1571-1581
2) FINANCIAL STATEMENT FRAUD: CHALLENGES AND TECHNOLOGY DEPLOYMENT IN FRAUD DETECTION. INTERNATIONAL JOURNAL OF ACCOUNTING AND FINANCIAL REPORTING, 11(4), 1-11.
3) INTERNAL AUDITORS' PERCEPTION ON THE EFFICACY OF FRAUD PREVENTION AND DETECTION IN THE PUBLIC SECTOR. UNIVERSAL JOURNAL OF ACCOUNTING AND FINANCE, 9(4), 764-772.
4) THE EFFECT OF FINANCIAL AND CORPORATE GOVERNANCE FACTORS ON THE FORCED FINANCIAL RESTATEMENT LIKELIHOOD: EVIDENCE FROM MALAYSIA. JOURNAL OF NUSANTARA STUDIES 2023, 8(3) 147-176


MyFFR Tracker 2.0

Strictly Confidential

Notes
This Excel model is for educational purposes only and should not be used for any other reason.

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https://bit.ly/3IPGcTZ

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MyFFR Tracker 2.0

Company Name	xxx
Recent Annual Report Year	2024

	2024	2023
Independent Non-executive Directors	3	3
Total Members on the Board	10	10
Political Connection(1)	1	1
Inventories	RM 12,575.00	RM 9,166.00
Total Assets	RM 10,073.00	RM 3,033.00
Common/Preferred Equity or Long Term Borrowing	RM 13,310.00	RM 9,692.00
Cash Flow from Operations	RM 95,770.00	RM 68,573.00
Capital Expenditures	RM 95,770.00	RM 68,573.00
Current Assets	RM 942.00	RM 737.00
Share Price Volatility(2)	0.12	

(1) Value is "1" if the company is identified as being connected/closely related to a politician or party; and "0" otherwise
(2) Annual standard deviation of monthly stock return

Financial Ratios	2024
Board Independence (BI)	0.30
Political Connection (PC)	1
Change in Inventories (CHINV)	0.97
Actual Issuance (AI)	1
Internal Fund Level (INTF)	36.90
Share Price Volatility	0.12
Predicted Value	-97.19
MyFFR Score	0.00

Interpretation
xxx is not likely to have misstated their earnings upward.
MyFFR Score < 1: Company is not likely to have misstated earnings upward.
MyFFR Score > 1: Company is likely to have misstated earnings upward.

This file is for educational purposes only.

4.0 NOVELTY

- Provide forced restatement firm prediction, which is not possible with other existing tools that merely detect fraud after it has already occurred.
- Offers the first work and generates more reliable score indicator as it uses a comprehensive set of financial and non-financial factors as a basis for forced restatement prediction.

5.0 POTENTIAL OF COMMERCIALISATION

- The MyFFR Tracker 2.0 has its value-added since our team collaborated with various stakeholders of relevant industries such as MR Admin Solution, Inokom Corporation and MISC Bhd. The team also received positive feedback from the Higher educational Institutions supporting the idea that the product would practically help in detecting aggressive earnings misstatement
- Our product is competitively benchmark against other products and is offered at an introductory price of RM40 and normal price of RM60

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REFERENCE NO: CR003752
LETTER REF NO: 600-BITCOM
(IP.5/2/6/3/CP)

TEAM MEMBERS:
INTAN WAHEEDAH OTHMAN, NUR AIDA AMIR, SERI AYU MASURI MD DAUD, INDARAWATI TARMUJI

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IAM 111
PEMBANGUNAN MODUL PEMBELAJARAN : KOMIK LAKARAN PIKTORIAL BAGI SUBJEK REKA BENTUK DAN TEKNOLOGI TINGKATAN 1

PEMBANGUNAN MODUL PEMBELAJARAN : KOMIK LAKARAN PIKTORIAL BAGI SUBJEK REKA BENTUK DAN TEKNOLOGI TINGKATAN 1

PENGENALAN

- Secara umumnya, lakaran boleh definisikan sebagai lukisan awal atau lukisan draf yang dihasilkan menggunakan teknik lakaran bebas.
- Lakaran piktorial pula ialah contengan berbentuk garisan gambar, dan simbol bahasa yang menerangkan sesuatu perkara.

OBJEKTIF

- Mengkaji tahap keperluan Pembangunan Modul Pembelajaran : Komik Lakaran Piktorial bagi Subjek Reka Bentuk dan Teknologi Tingkatan 1 .
- Membangunkan Komik Lakaran Piktorial bagi Subjek Reka Bentuk dan Teknologi Tingkatan 1.
- Mengenal pasti tahap kebolehgunaan Modul Pembelajaran : Komik Lakaran Piktorial bagi Subjek Reka Bentuk dan Teknologi Tingkatan 1.

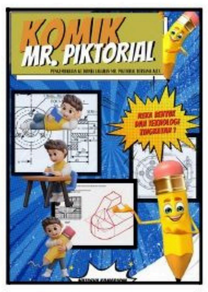
PERNYATAAN MASALAH

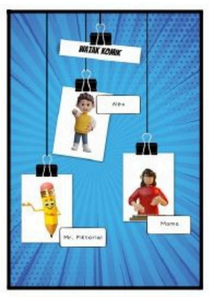
"Menggabungkan alat bantu pengajaran seperti objek sebenar yang dimodelkan ke dalam pengajaran konsep lukisan ortografik boleh memberi kesan positif kepada prestasi, pemahaman, penglibatan pelajar, dan keupayaan untuk mengaplikasikan prinsip-prinsip yang dipelajari."
- Marji et. al. (2023)

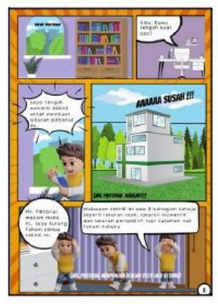
"Terdapat keperluan untuk mencipta modul tambahan sebagai alat bantu pengajaran di dalam bilik darjah untuk mata pelajaran Reka Bentuk dan Teknologi, yang merangkumi topik melukis lakaran."
- Sahaat & Mohamad Nasri (2020)

PROJEK PROTOTAIP

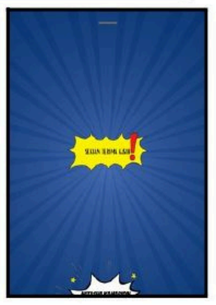
MUKA DEPAN → WATAK → HALAMAN DIALOG → INFOBAIT → LATIHAN → MUKA BELAKANG









PENGKOMERSILAN

- Modul ini akan dikomersilkan di peringkat sekolah dan masyarakat.
- Ia akan menjadi pilihan ramai kerana modul ini menarik, mudah dibaca dan mudah untuk dibawa kemana sahaja.
- Memudahkan pelajar untuk mengulangkaji pelajaran dalam memahami tajuk yang dipelajari.

KEASLIAN PRODUK

- Keaslian produk/modul ini dibina menggunakan konsep komik.
- Malah, komik ini meliputi keseluruhan bab 4 (RBT, Tingkatan 1).
- Proses penghasilan komik ini menggunakan teknologi IT seperti *Canva pro* dan *Pinterest*.

RUJUKAN

- Marji, M., Musta'amal, A., Chidozie, C., & Hassan, S. (2023). An Action Research on The Effect of Using Real Modeled Object in Teaching Orthographic Drawing Concepts on Students' Performance. Jurnal Cendekia: Jurnal Pendidikan Matematika, 7(2), 1192-1201.
- Sahaat, Z. & Mohamad Nasri, N. (2020). Cabaran Pelaksanaan Mata Pelajaran Reka Bentuk dan Teknologi Sekolah Menengah: Jurnal Pendidikan Malaysia, 45(1) Isu Khas, 51-59.

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Pembentang:
- **Cik Nur Intan Natasha binti Kamarudin**
- **Dr. Tang Jing Rui**
- **Cik Wan Nurlisa binti Wan Ahmad**
- **Dr. Irdayanti binti Mat Nashir**

IAM 114
SUNDROP : SOLAR POWERED ATMOSPHERIC WATER GENERATOR (AWG) FILTERED SMART SYSTEM HOUSEHOLD USE

IAM114

SUNDROPS: SOLAR POWERED ATMOSPHERIC WATER GENERATOR (AWG) FILTERED SMART SYSTEM FOR HOUSEHOLD USE

Group Members:
1) Norhanis Athirah Yusof
2) Shamsuhaila Shamas
3) Nur Izzatul Umaira Mohd Razak
4) Ts Dr Hafizan Mat Som

Universiti Teknologi PETRONAS

INTRODUCTION

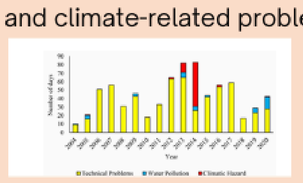
Sundrops: Atmospheric Water Generator (AWG) harnesses air moisture and solar energy to produce clean, drinkable water. This efficient system uses advanced filtration to ensure safe household use. Designed for regions in Malaysia with limited access to clean water, Sundrops provides a sustainable and reliable solution, Malaysia's abundant sunshine and humidity to meet critical water needs.

OBJECTIVE

The objective of this study is to develop an **efficient, solar-powered Atmospheric Water Generator (AWG)** that uses advanced air-to-water techniques **to provide clean, drinkable water** in regions of Malaysia with limited access to clean water.

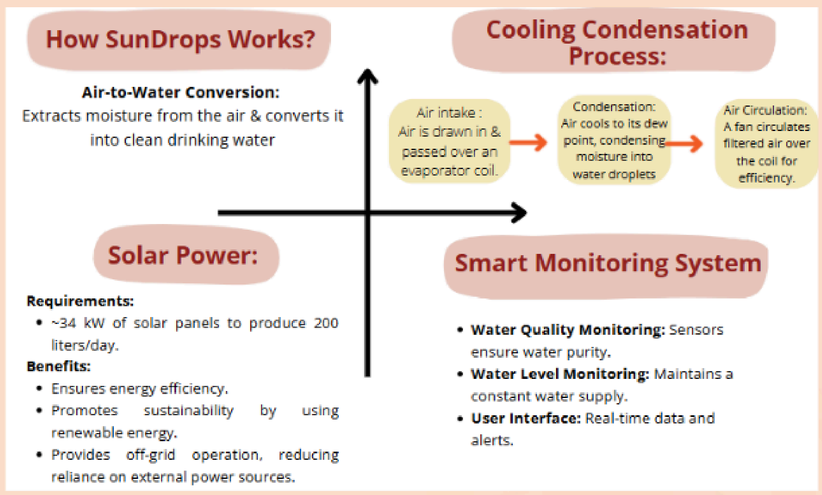
PROBLEM STATEMENT

1. ***Frequent Water Disruptions in Malaysia***
78% area of the State of Selangor experiences frequent interruptions in their water supply from the Selangor River due to various factors such as technical issues, water pollution, and climate-related problems.
(A. Raihan et al.,2023)



2. ***Strain on Traditional Water Sources Due to Urbanization*** Increasing demands from agriculture, industrialization, and population growth are straining water supplies, leading to decreased per capita availability and highlighting disparities in access to clean water in Malaysia.
(T. E. Garba et al, 2021)

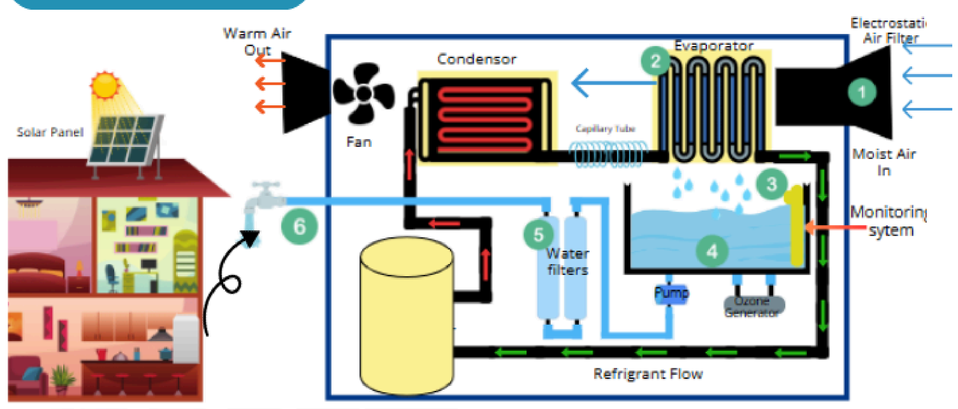
PROTOTYPE DESIGN



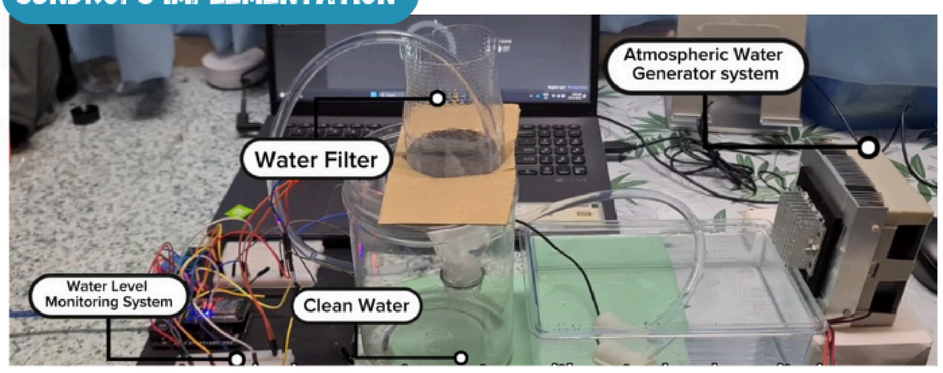
Key Features:

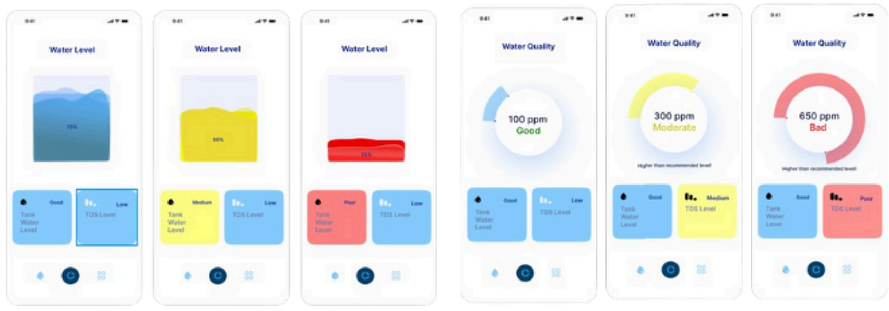
- **Compressor (7.6 HP):** Circulates refrigerant through the system.
- **Condenser (5.66 kWh):** Releases heat from the refrigerant.
- **Evaporator Coil (5.66 kWh):** Cools air to condense moisture.
- **Filtration System:** Multi-stage system with sediment, carbon, and UV filters, purifying 200 liters/day.
- **Solar Panels (~34 kW):** Powers the entire system, ensuring off-grid operation.
- **Smart Monitoring System:** Monitors water quality and water level in real-time using phone.

SUNDROPS DESIGN



SUNDROPS IMPLEMENTATION





NOVELTY OF SUNDROPS

Air to Water Generation

Sundrops utilizes advanced AWG technology through Malaysia's humid air to produce drinkable water on-site.

AWGs provide safe and clean drinking water in areas with water shortages **(Nooman Khan et al., 2022)**

Solar power Integration

(G. Raveesh et al.,2021) describe the energy-intensive nature of traditional AWG through electricity.

Sundrops utilizes solar panels eliminating reliance on electricity with our Energy Efficiency Optimization that aligns water production with peak sunlight hours.

Dashboard Application

Sundrops offers real-time control of the AWG and real-time monitoring of the filtered water metrics such as tank water level and water quality through the Sundrop dashboard mobile application

Advanced filtration

Sundrops employs a multi-stage filtration system within its water filter, ensuring the highest quality of drinking water produced, surpassing that of traditional AWGs

COMMERCIALISATION

Pricing: RM 13.5k including installation

Target Audience: Residential households and remote communities

Sales Channel:
Direct sales: online store, partnership with NGOs & community programs.

Market Sizes: Peninsular Malaysia

Marketing: Social media marketing (TikTok, Instagram)

After-Sale Service:

- Maintenance.(free under warranty)
- Warranty (1 year)
- Customer Support

AWG demonstrate an attractive return on investments and can contribute toward solving global water problems.
(Faraz Moghimi et al., 2019)

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LIFE-LONG INVESTMENT LITERACY THROUGH IPO ONE-STOP SUPPORT CENTER AND STOCK TRADING SIMULATION

IAM116

LIFE-LONG INVESTMENT LITERACY THROUGH IPO ONE-STOP SUPPORT CENTER AND STOCK TRADING SIMULATION

https://sites.google.com/uitm.edu.my/ipo-one-stop-support-center





21st Century Teaching and Learning IPO-ONE STOP CENTER

- Helps students and potential retail investors become investment literate.
- One of the significant features of this website, a stock trading simulation, enables stock trading practice in a simulated or virtual environment.

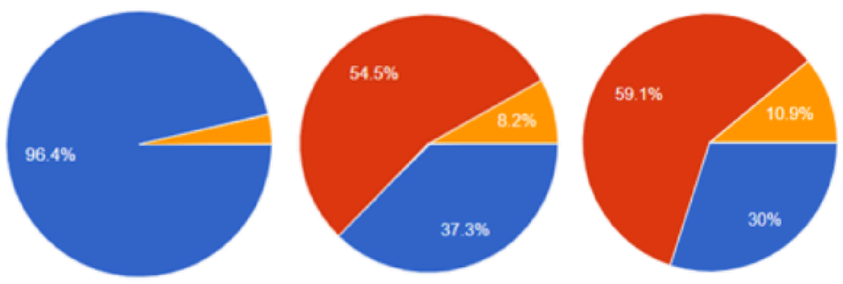




Highlights IPO-ONE STOP CENTER

- Offers users a risk-free environment to learn and practice trading before entering the real stock market.
- Aligns with the Securities Commission Malaysia's current agenda to promote sustainable and responsible investment (SRI).

Impacts



- 96.40% agrees that IPO One-Support Center helps improve understanding of initial public offerings and shares.
- 91.80% agrees that IPO One-Support Center is extremely and very useful in investment-related learning activities.
- 89.1% agrees that IPO One-Support Center is extremely and very useful in improving lifelong learning skills from the investment aspect.

IAM 117
PEMBANGUNAN "TECH SENSOR KIT" SEBAGAI ALAT BANTU MENGAJAR DALAM TOPIK SISTEM KAWALAN BAGI SUBJEK REKA CIPTA TINGKATAN 5

Pembangunan "Tech Sensor Kit" sebagai alat bantu mengajar dalam topik sistem kawalan bagi subjek reka cipta tingkatan 5.

Pelajar :
SITI NUR AFIZAH BINTI SANDRIKI

Penyelia :
TS. DR FARDILA MOHD ZAIHIDEE

Pengenalan

Tech Sensor Kit adalah salah satu alat bantu mengajar yang boleh digunakan khususnya bagi topik sistem kawalan yang memerlukan kemahiran dan pengalaman yang tinggi. ABM ini berfokuskan kepada topik sistem kawalan. Pembangunan Tech Sensor Kit ini adalah dengan menggunakan model ADDIE. Guru menggunakan Tech Sensor Kit ini sebagai alat bantu mengajar serta pemudahcara dan pelajar boleh gunakan alat bantu mengajar Tech Sensor Kit ini sebagai pembelajaran interaktif dalam proses pengajaran dan pembelajaran.

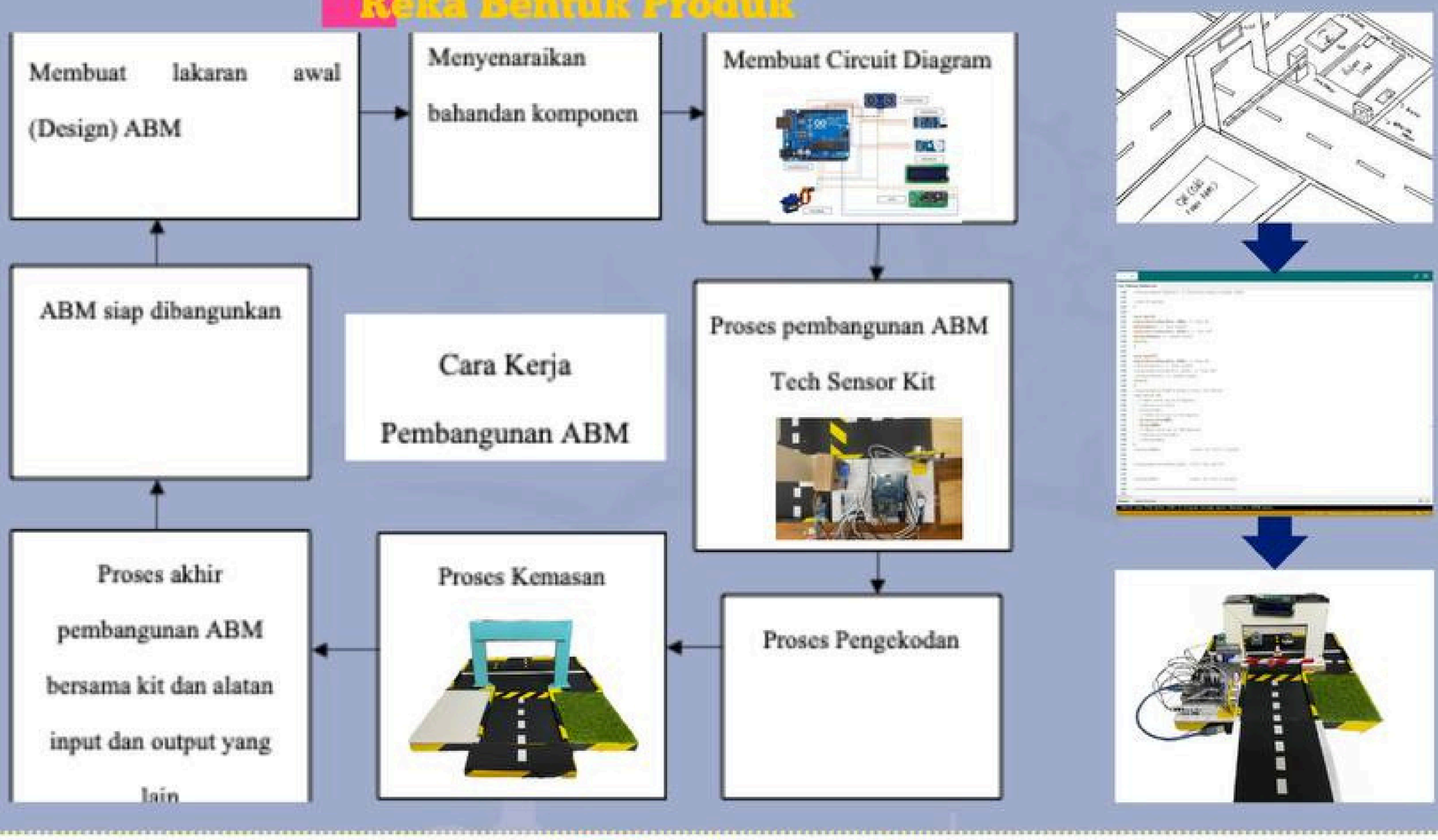
Objektif Kajian

- Membangunkan Tech Sensor Kit sebagai alat bantu mengajar dalam topik sistem kawalan bagi subjek Reka Cipta tingkatan 5.

Pernyataan Masalah

- Guru kurang kreatif dalam mempelbagaikan kaedah penerangan yang efektif hanya berlandaskan teks atau verbal semata-mata (Buntat,2020).
- Kaedah konvensional yang diaplikasikan dalam Pdp adalah membosankan yang menyebabkan minat pelajar kurang (Jusoh etal.,2019)

Reka Bentuk Produk



Kebaharuan Produk

- ABM yang dibangunkan adalah selaras dengan Dokumen Standard Kurikulum dan Prestasi (DSKP) yang ditetapkan
- Reka Bentuk produk adalah daripada gambar rajah yang terdapat dalam buku teks Reka Cipta Tingkatan 5

Pengkomersilan



KOS BUKAN PEMBUATAN

Bil	Elemen	Harga (RM)
1.	Alat tulis dan cetakan (lukisan autocad)	25
	JUMLAH	25

KOS PRODUK = KOS PEMBUATAN + KOS BUKAN PEMBUATAN

BILANGAN PRODUK YANG DIHASILKAN

= RM168.89 + RM25

1

= RM193.89

HARGA TOKOKAN = KOS SEUNIT

(I-PULANGAN YANG DIKEHENDAKI DARI JUALAN)

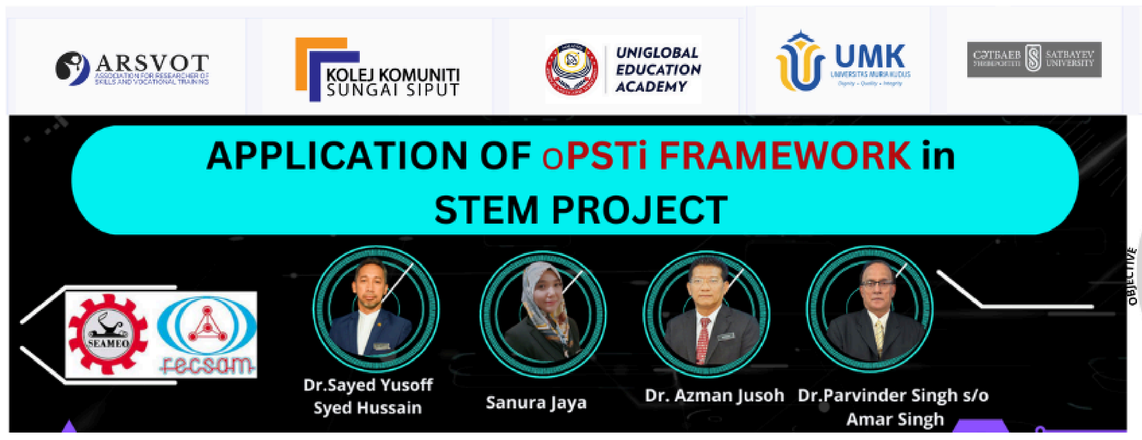
= RM193.89

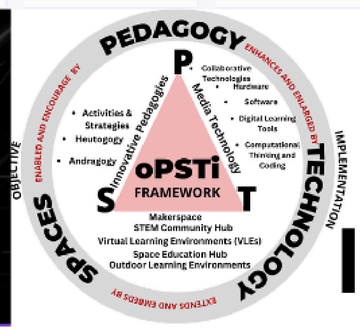
1-0.1

= RM192.89

RM 192.89 (seunit)

IAM 118
APPLICATION OF oPSTi FRAMEWORK IN SYSTEM PROJECT





Innovation

IAM 118

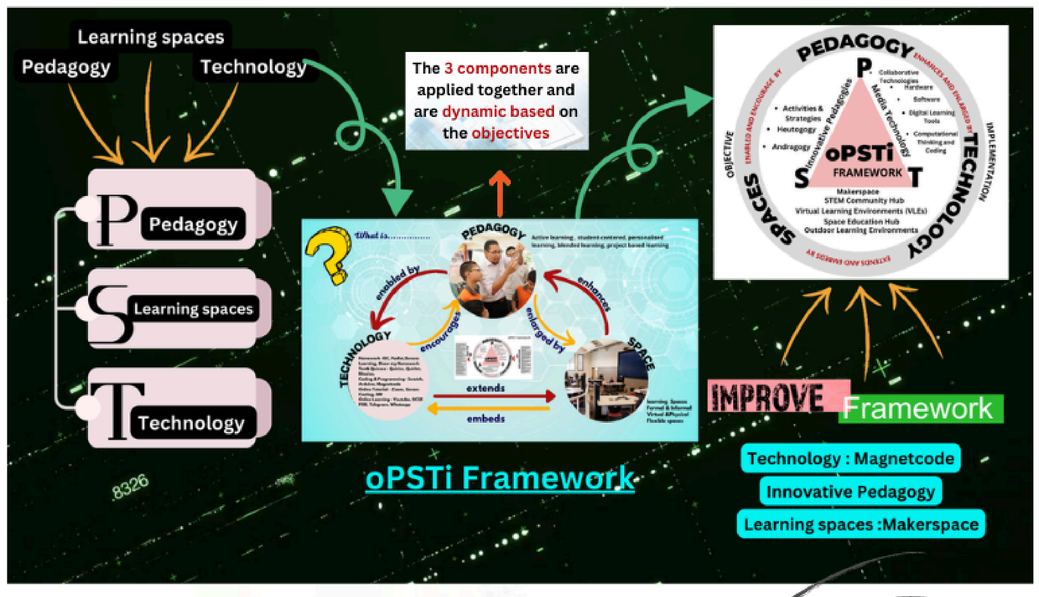
INTRODUCTION

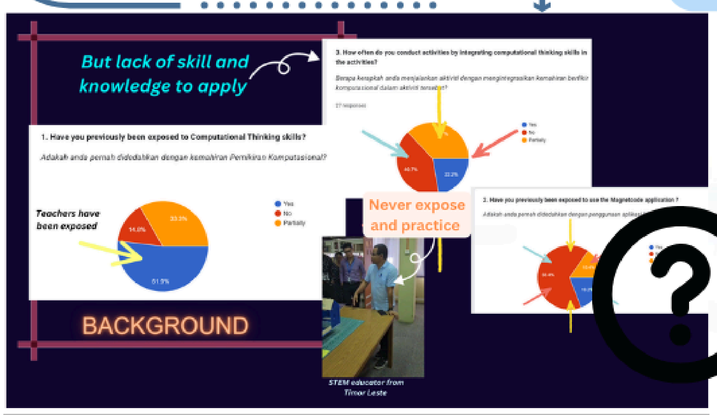
1. TThe emergence of pedagogy, learning spaces, and technology within the oPSTi Framework reflects a holistic approach to modern education that integrates active, project-based, and personalized learning strategies with diverse physical and virtual environments designed to foster creativity and collaboration.

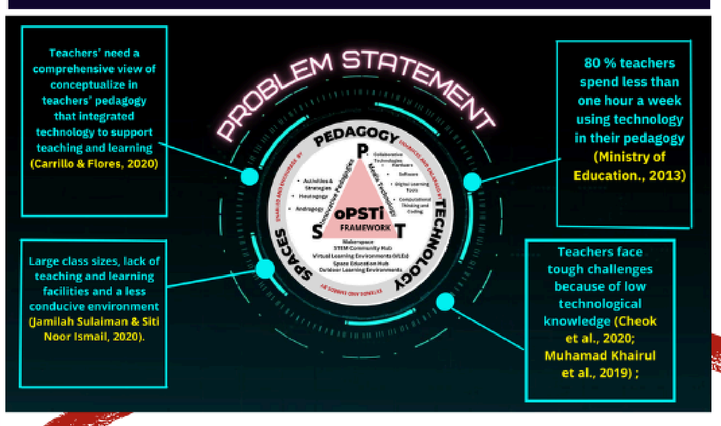
2. Teachers need to transition rapidly to remote teaching and learning embedded with suitable technology tools to transform and disseminate skills, knowledge and value in future education

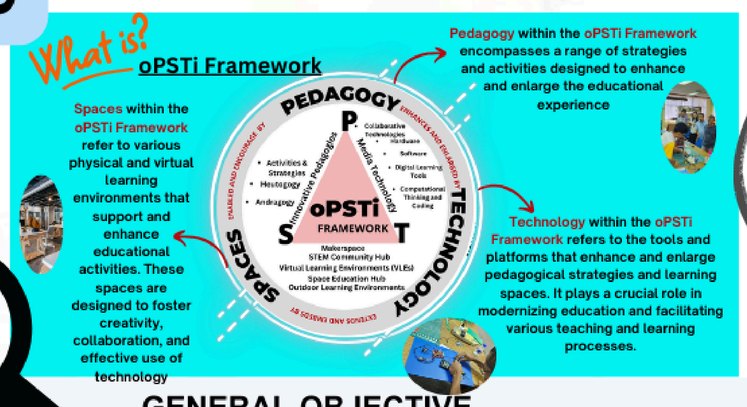
3. Applying oPSTi framework through Magnetcode application in stem-based contents project; involve critical thinking and creative problem-solving

IMPROVE oPSTi Framework

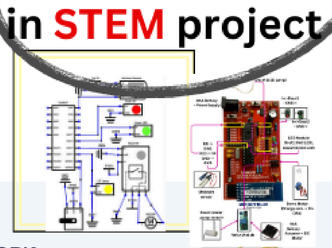








Application of oPSTi Frameowrk through MAGNETCODE APPLICATION in STEM project

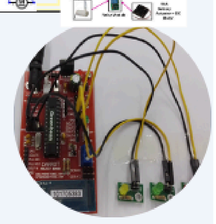


GENERAL OBJECTIVE

EXPOSING TEACHER TO APPLY OPSTI FRAMEWORK

SPECIFIC OBJECTIVE

APPLYING OPSTI FRAMEWORK THROUGH MAGNETCODE APPLICATION IN STEM-BASED CONTENTS PROJECT.



METHODOLOGY

Case Study

27

WOH







STEM

EDUCATORS

oPSTI APPLICATION FINDINGS

APPLICATION OF oPSTi FRAMEWORK in STEM PROJECT

1.The teaching activities introduced in the workshop using oPSTi Framework enhanced my teaching	MEAN= 4.41
2.The pedagogies strategies embedded in the oPSTi Framework enhanced my teaching	MEAN= 4.59
3.The activities during the workshop using the oPSTi Framework provided effective methods for integrating self-determined learning into my teaching	MEAN= 4.55
4.Project based learning applied in the workshop using the oPSTi Framework contributed to my understanding of integrating Magnetcode.	MEAN= 4.68
5. Activities conducted in the makerspace during the workshop using the oPSTi Framework was beneficial for my understanding.]	MEAN= 4.50
6. The activities during the workshop using the oPSTi Framework provided effective methods for integrating self-determined learning into my teaching]	MEAN= 4.55
7. The digital learning tools used in the workshop using the oPSTi Framework will be beneficial for integrating Magnetcode in my teaching practices.	MEAN= 4.50
8. I feel more confident to use the oPSTi Framework in my educational practices after attending the workshop	MEAN= 4.50

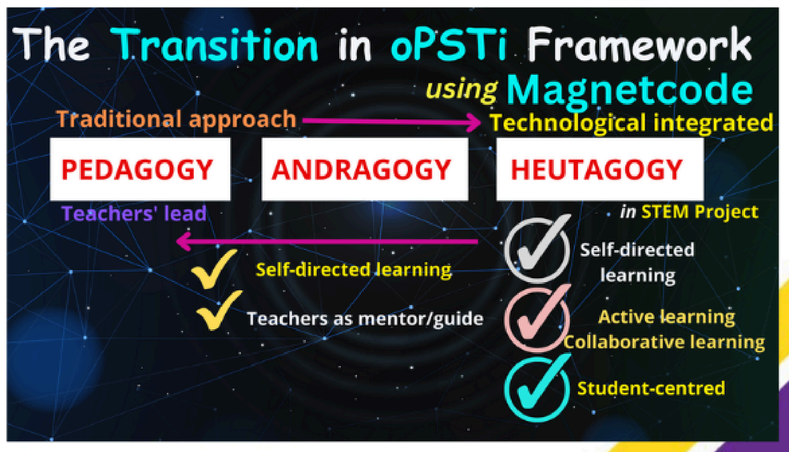
QUALITATIVE FINDINGS

R1: "Because to makes learning more interesting and using the right ways and method to increase our understanding . Changing from traditional ways to digitalization technology using the oPSTi framework "

R2: "It increases my exposure to new educational technologies and provide me with hands-on opportunities to incorporate what I've learnt into my lessons"

Conclusion

The application of oPSTi FRAMEOWORK encourage STEM educators to enhance their teaching practices, pedagogical strategies, and understanding of STEM-based project.



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IAM 120
ITINERARY PLANNING AND BUDGET APPROVAL SYSTEM (IPBAS) THROUGH AUTOMATED DATA DRIVEN WORKFLOW

Itinerary Planning and Budget Approval System (IPBAS) Through Automated Data Driven Workflow

MAT ZARIF (IAM120)
Universiti Teknologi Petronas (UTP), Perak, Malaysia

Abstract

Streamlining Student Internship - Supervisor Visit Planning & Approval System via Power Platform

This project improves the SIIP supervisor visit planning process by automating tasks and improving data visibility.

- Inefficiencies in the current manual process cause delays and inaccuracies.
- Automating tasks like itinerary planning and budget approvals will save time and reduce errors.
- A real-time data dashboard will provide supervisors and administrators with better insights.
- Future enhancements include a more accurate mileage calculation and a real-time interactive dashboard.

Introduction

Problem:

Current supervisor visit planning are manual processes, leading to:

- Delays due to manual data entry and approvals
- Inaccurate budgets and limited data visibility
- High workload for supervisors and management staff

Solution:

Automate key functionalities to:

- Reduce processing times and errors
- Enable real-time budget tracking and data-driven decisions
- Improve data accuracy and accessibility through a centralized system
- Minimize workload through automated tasks and document generation

Benefits:

- Smoother travel arrangements for supervisors
- More efficient resource allocation
- Enhanced decision-making for program improvement
- Reduced workload for all stakeholders

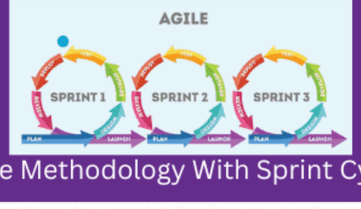
Focus:

- Streamlining supervisor travel planning and budget management
- Optimizing manpower resources through automation
- Maintaining transparency and efficiency for CDO and supervisors

Methods

Methodology: **Agile research with sprints** allows for:

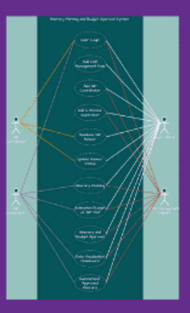
- Iterative development: Break down project into manageable chunks for focused research.
- Rapid feedback: Gather input from stakeholders (management, supervisors) throughout the process.
- Collaboration: System developers, stakeholders, Management, Supervisor



Agile Methodology With Sprint Cycle

Results & Discussion

Project Outcomes:
1. Intuitive Data Entry
2. Automated Workflow
3. Real Time Budget Utilization Dashboard
4. Centralized & Organize Data Repository



IPBAS Covered 4 Different Roles Of User:
1. SuperAdmin
2. Admin
3. Supervisor
4. Coordinator

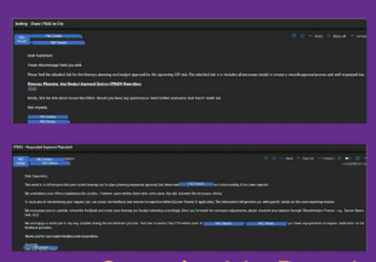
Fully Functional and Developed IPBAS System

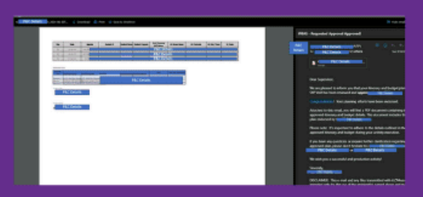
Below interface is for SuperAdmin role which covers all 4 roles



Automated Data Driven IPBAS Workflow Approval System

Below interface is for notify share IPBAS to SV, approved, and return for amendment





Sustainable Development Goals Achieved:

4 QUALITY EDUCATION · 8 DECENT WORK AND ECONOMIC GROWTH · 9 INDUSTRY, INNOVATION AND INFRASTRUCTURE · 12 RESPONSIBLE CONSUMPTION AND PRODUCTION · 17 PARTNERSHIPS FOR THE GOALS

Conclusion

IPBAS Revolutionizes the Process:
90% faster: Reduced processing time from 10 hours weekly to 1 hour weekly. It took **less than 3 minutes for one approval automated for pdf generation** document.

Reduced Workload:
Automation frees up management staff for other tasks.
Improved Accuracy: Reduced risk of human error.
Enhanced Transparency:
Electronic communication and record-keeping.
Overall Impact:
IPBAS significantly improves efficiency, reduces workload, and streamlines the supervisor visit planning and approval process, leading to a substantial return on investment.

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IAM 121
DIGITAL SIMULATION OF A HALAL ABATTOIR

Digital Simulation of a Halal Abattoir

Introduction

The halal meat industry has streamlined meat preparation and mass production, allowing for halal slaughtering training.

Competency and certification/ accreditation are crucial in ensuring the slaughterers are able to perform their role effectively. This can be achieved through repeated practical training.



Aim & Objectives

The digital simulation aims to improve operational awareness, training effectiveness and overall process optimisation, ensuring highest standards of halal integrity is maintained.

The objectives are:

- Assess the current training methods and challenges associated with learning halal slaughter practices.
- Develop a digital simulation through a replica of the process of halal slaughter from the perspective of the handler.
- Evaluate the usability and effectiveness of the digital simulation training program in improving trainee knowledge and skills related to halal slaughter.

Problem Statements

1. Repeated practice for competency

Lack of availability of real livestock for practice and suitable placements for students or personnel are common problems in education and training settings. Providing the opportunity for repeated practice of different aspects of slaughtering work in a safe environment is needed to become a competent slaughterer.

2. Sustainable learning and training environment

In continuation from the first challenge, a safe and sustainable environment is also needed for learning and training purpose.

Product Features

Simulation Walkthrough

Digital simulation of the halal abattoir

Information on Halal Slaughtering

Information for each checkpoint is provided. Users can stand on a numbered plate to read the information.

Workstations for each Checkpoint

Each workstation has its own equipment that is needed for the process.

Product Benefits

Animal Welfare

A training environment ensures that workers are educated on humane slaughter practices, which minimises the suffering of animals. Proper training helps in understanding and implementing regulations and guidelines that promote ethical treatment of animals.

Safety

Slaughterhouses can be dangerous workplaces. Comprehensive simulation and ongoing training help workers understand and follow safety protocols, reducing the risk of accidents and injuries.

Environmental Impact

Efficient use of resources and proper waste management. Utilising digital simulation as a training tool helps to reduce the environmental footprint of slaughterhouses. This includes minimising water usage, proper disposal of waste, and reducing emissions.

Product Novelty

The first simulation product that caters to the needs of students and slaughterers to practice without involving real animals. A modern innovation that will revolutionise the halal meat and education industries.



Future Direction

The digital simulation of a halal abattoir software is consistently refined aiming to be used as a learning tool at Halalan Thayyiban Research Centre. The next step is to evaluate its effectiveness as a learning tool for students and training tool for industrial abattoir in Negara Brunei Darussalam.

Group Members

1. Dr. Siti Nur Idayu binti Haji Matusin (Leader; HTRC, UNISSA)
2. Miss Nur Akashah Nadhirah Afifah binti Razali (HTRC, UNISSA)
3. Miss Syifa Syaheerah binti Begawan Mudim Haji Amran (HTRC, UNISSA)
4. Miss Nur Imanina Athilah binti Haji Mohd Hairul Raji (HTRC, UNISSA)
5. Dayang Erna Alizahwati binti Awang Damit (HTRC, UNISSA)
6. Miss Aimuny Fatnin Syakirah binti Samsani (HTRC, UNISSA)
7. Miss Rabiatul Adawiyah binti Begawan Mudim Haji Amran (UTB)
8. Dr. Aklimah binti Haji Mustapa (HTRC, UNISSA)

Affiliations

Halalan Thayyiban Research Centre, Universiti Islam Sultan Sharif Ali. Negara Brunei Darussalam. (HTRC, UNISSA)

Universiti Teknologi Brunei, Negara Brunei Darussalam. (UTB)

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IAM 123
PORTABLE FILM VIEWER

KOLEJ VOKASIONAL KEMENTERIAN PENDIDIKAN MALAYSIA
KOLEJ VOKASIONAL SANDAKAN

KOLEJ VOKASIONAL SANDAKAN
PORTABLE FILM VIEWER

PENGENALAN

Projek ini merupakan sebuah projek yang digunakan untuk membaca dan menganalisis imej Xray secara langsung. Ia juga boleh menjadi tempat meletakkan filem Xray semasa pemeriksaan dilaksanakan. Selain itu, ia membolehkan kecacatan kimpalan yang dirakam pada filem Xray dianalisis. Dengan adanya projek ini kecacatan yang terdapat pada filem Xray dapat dicatat.



PENYATAAN MASALAH

1. Tidak mempunyai kit khas untuk memeriksa hasil kimpalan untuk Ujian Radiografik.
2. Sukar melakukan pemerhatian film Xray hasil kimpalan.
3. Keputusan akan mempunyai ralat.

AHLI KUMPULAN
Ts. FIZROLROY BIN FRANCIS
RADZWAN BIN BAZAR
VILIVIAN HERMAN
MOHAMMAD HAIKHAL DZAKWAN BIN NOOR AHMAD

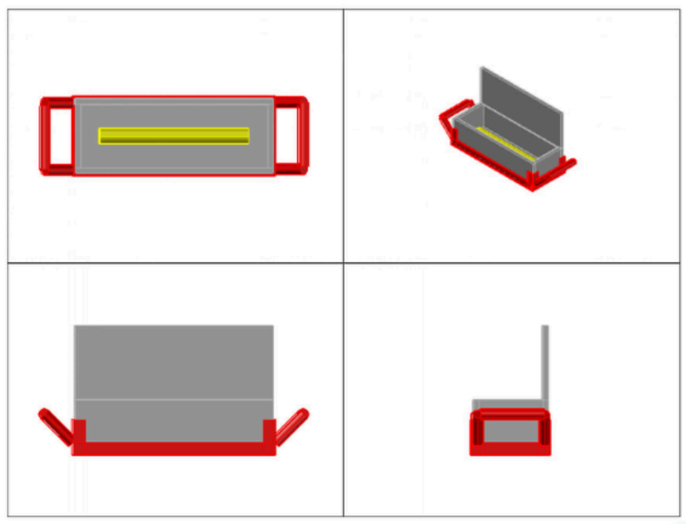
OBJEKTIF

1. Merekabentuk *Portable Film Viewer* untuk kegunaan di Bengkel Kimpalan Kolej Vokasional Sandakan.
2. Membangunkan *Portable Film Viewer* untuk kegunaan di Bengkel Kimpalan Kolej Vokasional Sandakan.



KELEBIHAN

1. Memudahkan pensyarah dan pelajar.
2. Lebih menjimatkan masa.
3. Pengunaan kos yang kurang.
4. Mudah untuk digunakan.
5. Mendapatkan hasil pemeriksaan yang berkualiti.



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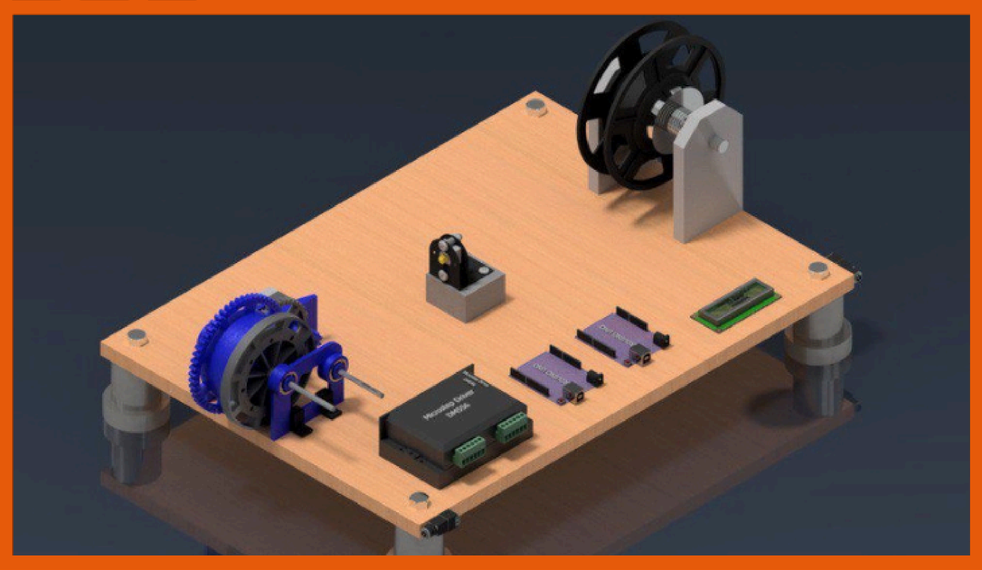
IAM 124
FILAMENT EXTRUDER

KOLEJ VOKASIONAL KEMENTERIAN PENDIDIKAN
bersama membina masa depan
KOLEJ VOKASIONAL SUNGAI PETANI 1

KEMENTERIAN PENDIDIKAN

IAM

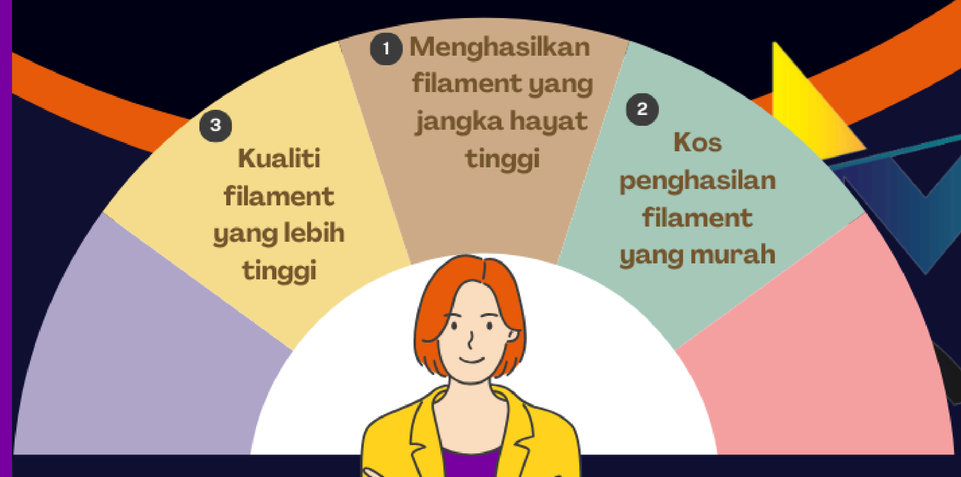
FILAMENT EXTRUDER



PENGENALAN

"Tujuan Filament Extruder ini dihasilkan bagi memudahkan para penggunakan 3D Printer untuk mendapatkan filamen ini ialah botol yang digunakan untuk menghasilkan filamen ini ialah mampu membantu pengguna 3D printer untuk menjimatkan kos pembelian filamen , menjimatkan masa bagi mendapatkan filamen dan mengelakkan pembaziran filamen terjadi. Filament yang dihasilkan ini dapat digunakan sebagai percubaan pencetakkan atau lebih mudah lebih mudah difahami ialah percubaan pencetakkan sebelum menggunakan filamen yang dihasilkan oleh industri.

OBJEKTIF



PERNYATAAN MASALAH

1. Tempoh masa filament yang singkat
2. Kos pembelian
3. Permukaan kompenen yang dicetak tidak lincin

KEASLIAN

MESIN	MESIN EXTRUDER	MESIN FILAMENT EXTRUDER
SALURAN BAHAN MENTAH	Bijih plastik	Tali daripada botol plastik
SISTEM PENCAIRAN	Sepenuhnya cair dan ada sistem penyejuk	Separa cair

KOMERSIAL

- Membangunkan mesin pencetak benang yang memenuhi standard kualiti, kecekapan, dan kebolehpercayaan untuk memenuhi keperluan industri pencetakan 3D.
- Menyediakan sokongan teknikal dan latihan kepada pengguna mesin untuk memastikan penggunaan yang berkesan dan pengoperasian yang selamat.

IAM 125
A-PORT SIMULATION



NURUL DAFIQAH KAMARULZAMAN | POLITEKNIK SULTAN IDRIS SHAH
NUR SHAHIRAH MAT SHARF | POLITEKNIK SULTAN IDRIS SHAH
HASHIM A.RAHIM @ ABD RAHMAN | POLITEKNIK SULTAN IDRIS SHAH

A-PORT SIMULATION

INTRODUCTION

- A sophisticated virtual reality platform that offers a comprehensive 360-degree interactive map with virtual reality (VR) features.
- Enhances the entire International departure, transit, and arrival process at at the airport while engaging users with interactive educational games.

OBJECTIVES

- Empowering users with knowledge and skills related to airport management, including check-in procedures, international departure, and arrival processes for educational and guidance purpose.
- Enhancing the learning experience by providing a user-friendly platform that makes tourism education enjoyable and interactive.

PRODUCT DESIGN

Main Interface



Departure



Transfer



Arrival



TO THE PLATFORM

TO MANUAL BOOK

Utilized technology tools

Thinglink Application

Microsoft Clipchamp

Canva

Insta360

Camera

CapCut

ViralFaces

VR experience & Special Needs accessibility

educaplay

PROBLEM STATEMENT

73.6% NO EXPERIENCE

Have no experience with the departure and arrival process at the airport

94.4% NEED PLATFORM

Need a platform or support reference material related to the departure and arrival process at the airport

BURDEN

A visit to the airport to understand the process **is a huge time consumption and financial burden,** especially for educational **institutions located far** from the airport

Majority of respondents were **not familiar** with the arrival, transit, departure process and clearance process at the airport

COMERCIALISATION

- Product copyright from MYIPO: CRAR2024W03514
- A-Port Simulation has been commercialized to 20 Polytechnics and College Community.
- The product has been handed over and applied to travel agencies: TraverseAsia Sdn Bhd and HuaHana Services.
- The product has been handed over to Malaysia Airport Holding Berhad.

NOVELTY OF PRODUCT

- The first comprehensive 360-degree interactive map that implements virtual reality and enhanced with AI to improve the entire airport process.
- LRN 3 Digital Entrepreneurship-certified innovator developed the platform from scratch, leveraging several award-winning experience in interactive digital education tools to benefit users with innovative technology.
- Product copyright from MYIPO: CRAR2024W03514

COPYRIGHT ACT 1987
COPYRIGHT (NOTIFICATION) REGULATIONS 2012
CERTIFICATE OF COPYRIGHT NOTIFICATION
(Subregulation 5(2))

KAMAL BIN KOIRAN
CONTROLLER OF COPYRIGHT
MALAYSIA

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IAM 126
CAR WHEEL LIFTER

INTERNATIONAL INNOVATION ARSVOT MALAYSIA 2024

KOLEJ VOKASIONAL
KEMENTERIAN PENDIDIKAN MALAYSIA
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CAR WHEEL LIFTER

IAM

"Empowering Tomorrow: Pioneering The Future Through Innovation Technology"

PENGENALAN

Kajian ini dibangunkan untuk memudahkan para pelajar dalam menyelenggara roda kenderaan. Selain itu, produk ini menekankan bagaimana transformasi pembelajaran amali vokasional dalam tajuk penyelenggaraan roda kenderaan. Tambahan pula, transformasi ini mampu memberi perubahan yang positif di mana ianya diyakini boleh mengubah cara kerja menyelenggara roda kenderaan untuk diaplikasikan pada masa hadapan.

PENYATAAN MASALAH

- Pelajar sukar mengamalkan cara kerja konvensional dalam kerja amali menyelenggara roda kenderaan semasa P&P amali dilaksanakan
- Tiada alat bantuan bagi melakukan kerja berkaitan penyelenggaraan roda kenderaan untuk pelajar automotif kolej vokasional klang semasa melakukan P&P amali

OBJEKTIF

- Memudahkan pelajar dalam melakukan kerja amali penyelenggaraan roda kenderaan melalui produk yang dibangunkan.
- Membangunkan alat bantuan untuk kerja penyelenggaraan roda kenderaan untuk pelajar automotif di kolej vokasional klang gunakan semasa P&P amali

PENGKOMERSILAN

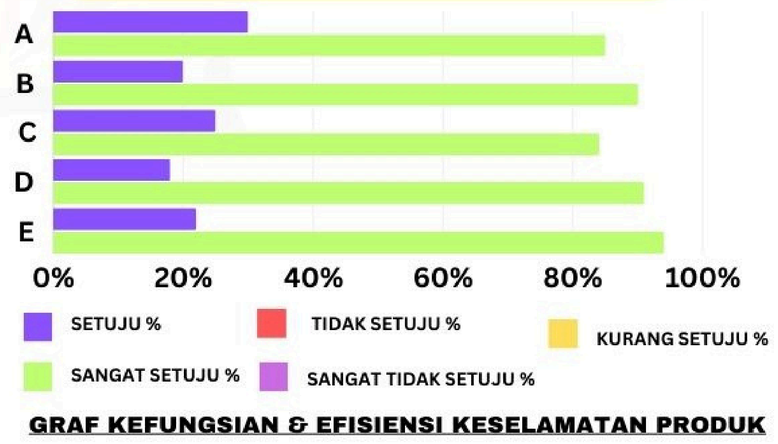
Produk ini diyakini mampu dikomersilan kepada Pusat Servis Kenderaan di industri dan juga pusat pengajian lain yang mempunyai program Teknologi Automotif. Ini kerana keupayaan produk ini yang mempunyai ciri mampu memudahkan kerja penyelenggaraan roda dan meminimumkan risiko kemalangan dan kesihatan yang mampu menarik minat penguna lain untuk memilikinya.

KEASLIAN PRODUK

- ·Produk dibangunkan dengan menekankan aspek ergonomik agar pelajar akan merasa mudah, mempunyai postur yang selesa dan meminimumkan risiko bahaya semasa melakukan kerja penyelenggaraan roda kenderaan.
- ·Produk ini mampu memudahkan dan mengurangkan penggunaan tenaga bagi kerja-kerja menanggal dan memasang roda kenderaan serta kerja-kerja pengalihan roda dari suatu tempat ke suatu tempat.

KEBERKESANAN

Hasil dapatan kajian menunjukkan bahawa majoriti pelajar setuju bahawa produk ini memudahkan pelajar dalam melakukan latihan PdP amali tajuk penyelenggaraan roda kenderaan.



GRAF KEFUNGSIAN & EFISIENSI KESELAMATAN PRODUK

PRODUK



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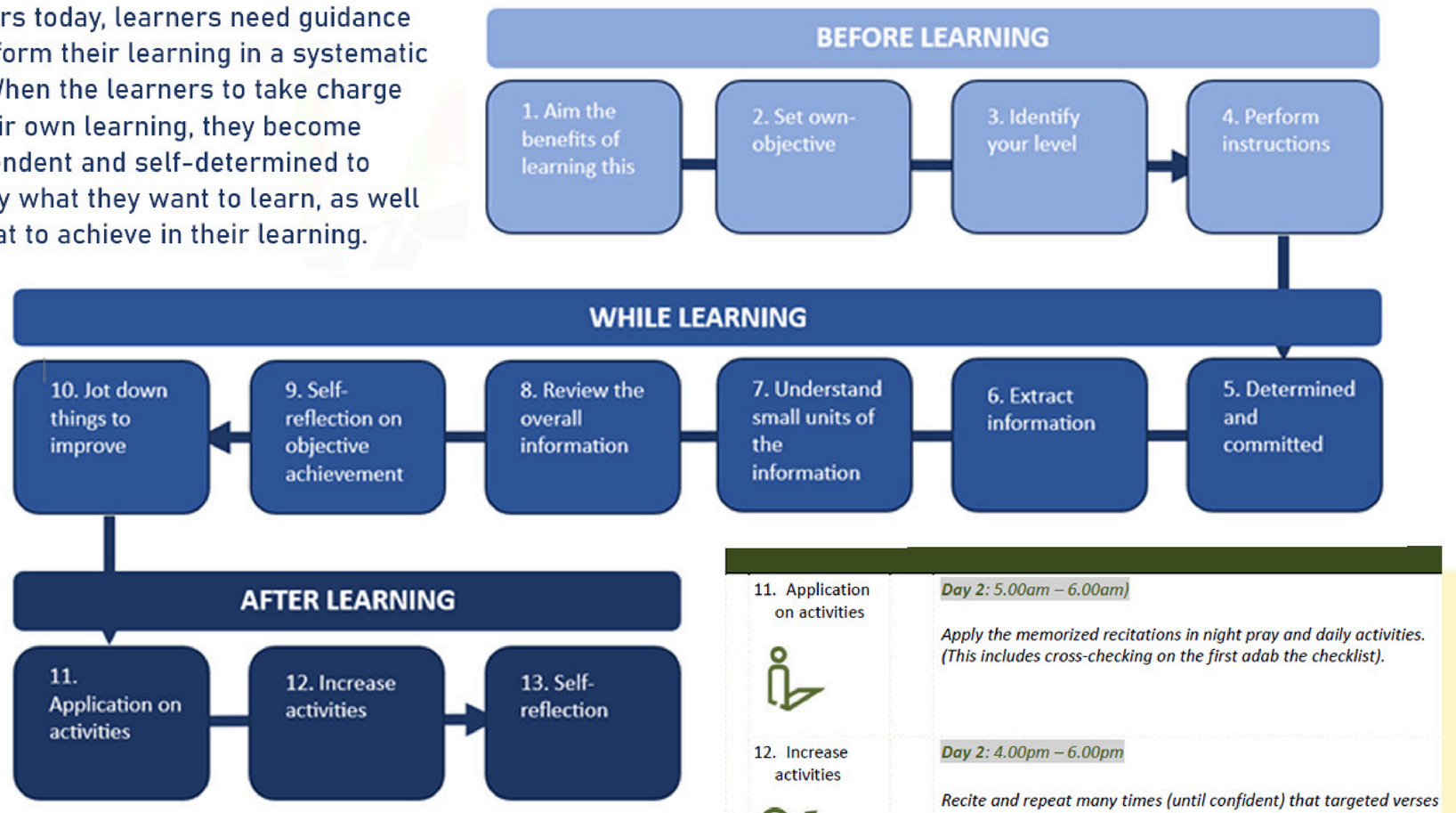
IAM 127
DARE FRAMEWORK FOR HEUTAGOGY LEARNING



DR. RONALDI SALEH BIN UMAR
(UNIVERSITI PENDIDIKAN SULTAN IDRIS)
ASSOC. PROF. TS. DR. MUHAMMAD ZAFFWAN BIN IDRIS
(UNIVERSITI PENDIDIKAN SULTAN IDRIS)
ASSOC. PROF. DR. NIK MD. SAIFUL AZIZI BIN NIK ABDULLAH
(UNIVERSITI ISLAM ANTARABANGSA)

DARE FRAMEWORK FOR HEUTAGOGY LEARNING

With the phenomenon of autonomous learners today, learners need guidance to perform their learning in a systematic way. When the learners to take charge on their own learning, they become independent and self-determined to identify what they want to learn, as well as what to achieve in their learning.



11. Application on activities	***Day 2**: 5.00am – 6.00am)* *Apply the memorized recitations in night pray and daily activities. (This includes cross-checking on the first adab the checklist).*
12. Increase activities	***Day 2**: 4.00pm – 6.00pm* *Recite and repeat many times (until confident) that targeted verses to improve the memorization. (This includes cross-checking on the second adab the checklist).*
13. Self-reflection	*When recitation is fluent, Tahfiz students will be more confident.*

DARE FRAMEWORK IS UPSI COPYRIGHTED (MyIPO Ly2024W02394)

DARE FRAMEWORK HAS BEEN IMPILEMENTED BY MTAQWAS (DARE INSTRUCTIONAL STRATEGY)

DARE FRAMEWORK HAS BEEN PUBLISHED IN ALAM CIPTA JOURNAL (SCOPUS INDEXED)

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IAM 129
JIG GABUNGAN PEMOTONGAN PLASMA DAN OKSIASETILENA (JGPA)

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KOLEJ VOKASIONAL SULTAN AHMAD SHAH

IAM



JIG GABUNGAN PEMOTONGAN PLASMA DAN OKSIASETILENA (JGPA)

PENGENALAN

Portable Tungsten Sharpener (PTS) ialah satu produk asahan yang dicipta khusus untuk mengasah rod tungsten yang menggunakan kertas pasir sebagai bahan asahan utama. Seterusnya, mesin ini digerakkan oleh motor arus terus (DC) dimana ianya sesuai digunakan dimana-mana sahaja tempat yang mempunyai bekalan elektrik yang sama. Pentingnya di sini, mesin inovasi PTS ini dapat menjimatkan masa, mudah alih, dan selamat digunakan berbanding mesin canai tangan yang konvensional.

PERNYATAAN MASALAH

PTS ini beroperasi secara separa automatik dengan menggunakan kuasa motor (DC). Selain itu, produk ini dibangunkan kerana terdapat kesukaran dan masalah yang timbul berikutan proses penyediaan rod tungsten secara manual. Rekabentuk PTS ini telah mencapai objektif yang telah ditetapkan iaitu, projek PTS dibangunkan dengan sistem separa automatik untuk menggerakkan kertas pasir dengan menggunakan motor elektrik. Secara keseluruhannya didapati, penggunaan rekabentuk ini akan memudahkan pelajar-pelajar di institut-institut kemahiran untuk menjalankan aktiviti penyediaan rod tungsten.

OBJEKTIF

- Memudahkan pelajar untuk mengasah rod tungsten dengan lebih halus dan berkualiti.
- Meningkatkan kestabilan nyalaan tungsten semasa mengimpal proses GTAW.
- Meningkatkan kualiti hasil arka untuk proses GTAW.

KEASLIAN PRODUK

PTS ini mempunyai rekabentuk yang berlainan daripada produk yang terdapat dipasaran arus perdana dimana ianya dicipta khusus untuk mengasah rod tungsten dan telah mengambil kira keupayaan ergonomik dan kesesuaian bahan (material) yang perlu digunakan. Rekabantuk PTS ini juga telah melalui satu proses randering 3D menggunakan perisian Autocad bagi memastikan produk akhir yang dihasilkan adalah mengikut spesifikasi yang telah ditetapkan dan berada dalam kawalan toleransi yang dibenarkan.

KOMERSIALAN

STS ini berpotensi besar dalam memudahkan kerja mengasah rod tungsten di bengkel-bengkel teknologi kimpalan atau tempat kerja logam yang berkaitan. Oleh yang demikian, produk STS yang dibangunkan ini sesuai digunakan di institusi-institusi kemahiran yang menawarkan programkimpalan di seluruh Negara dan juga sesuai untuk orang perseorangan yang mengendalikan kerja kimpalan.



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IAM 130
ALAT BANTU MENGAJAR (ABM) WATER COOLER DISPENSER

ALAT BANTU MENGAJAR (ABM) *WATER COOLER DISPENSER*



PENGENALAN

Water Cooler Dispenser adalah peranti yang berfungsi menghasilkan air sejuk menggunakan sistem penyejukan air dengan mengaplikasikan prinsip penyejatan cecair penyejuk. Dalam sistem ini, satu cecair yang dinamakan sebagai bahan penyejuk bergerak dari satu komponen ke satu komponen dalam saluran untuk memindahkan haba ke beberapa komponen lain.

Model *Water Cooler Dispenser* telah direka bentuk sebagai alat bantu mengajar yang membantu guru dalam proses pengajaran dan pembelajaran. Secara tidak langsung juga akan membantu para pelajar untuk lebih mengetahui komponen utama dalam sistem penyejukan.

IMPAK KOMERSIAL

1. Sasaran terhadap pendidik untuk memiliki ABM yang mudah alih dalam melaksanakan aktiviti PdPc dijalankan dengan lebih mudah.
2. Dengan memperkenalkan produk inovatif ini, ianya tidak hanya bertujuan untuk meningkatkan kualiti pendidikan tetapi dapat mendorong penglibatan pendidik dalam mengintegrasikan teknologi dan kaedah pembelajaran yang baru.

PENYATA MASALAH

- Kekurangan alat bantu mengajar yang sebenar merupakan faktor utama yang menyumbang kepada kurang fahaman dalam proses pengajaran dan pembelajaran berkaitan dengan sistem penyejukan.

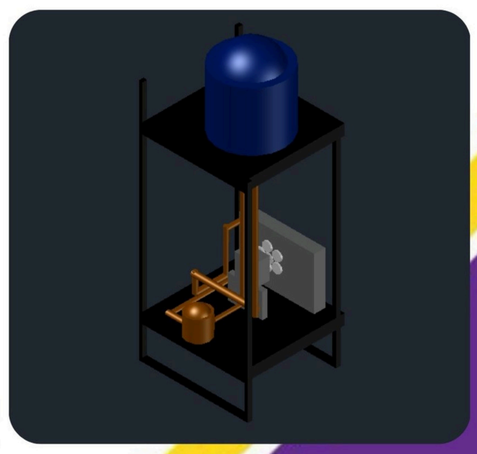
- Pelaksanaan pembelajaran dan pemudahcaraan (PdPc) yang lebih tertumpu dalam penerapan teori berkaitan konsep sistem penyejukan berbanding kepada praktikal.

OBJEKTIF

- Membangunkan ABM *Water Cooler Dispenser* yang mesra pengguna dan mudah alih untuk kegunaan PdPc.
- Menghasilkan ABM yang lengkap dengan komponen utama sistem penyejukan.
- Membangunkan ABM yang membantu memberi pendekatan yang lebih interaktif, menyeronokkan, dan berkesan bagi pelajar.

KEASLIAN PRODUK

Melalui inovasi yang menggabungkan idea asal dengan penyesuaian daripada sistem sedia ada dalam mengadaptasi pengetahuan yang ada untuk mencipta yang baru dan lebih baik.



IAM 135
CHITO - BIOCOMPOSITE

HAIKAL HAMDAN | SITI NOORBAINI SARMIN | NURROHANA AHMAD | MARWAH RAYUNG

Department of Wood Technology,
Faculty of Applied Sciences,
Universiti Teknologi MARA,
26400 Bandar Tun Abdul Razak
Jengka, Pahang, Malaysia

CHITO-BIOCOMPOSITE

1 WHY???

do we need this

TO STOP POLLUTION





2 HOW ???

to stop it
CREATE SOMETHING THAT
BIODEGRADABLE







3 CHITOSAN

- ☑ From shrimp shells, shells & etc
- ☑ Biodegradable
- ☑ Non-toxic

4 PBAT

POLY (BUTYLENE ADIPATE CO-TEREPHTALATE)



- ☑ Eco-friendly
- ☑ Biodegradable
- ☑ Bio-compatibility

SOLUTION

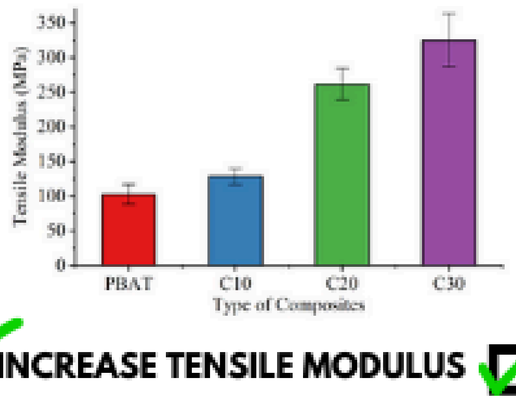


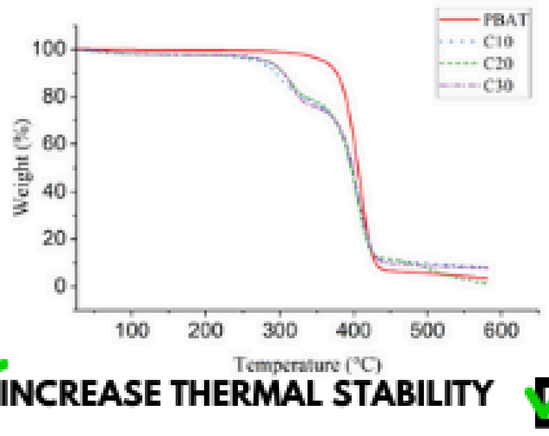
CHITOSAN + PBAT =

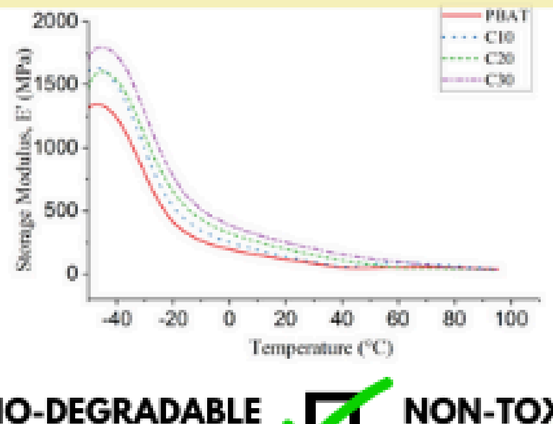
POLY (BUTYLENE ADIPATE CO-TEREPHTALATE)











☑ INCREASE TENSILE MODULUS ☑ INCREASE THERMAL STABILITY ☑ BIO-DEGRADABLE ☑ NON-TOXIC

- The characteristics of the bio-composite were enhanced with the increase in Chitosan loading.
- The success of this endeavor will likely involve an attempt to decrease the existing use of synthetic filler in the production of polymer composites for advanced engineering purposes, such as packaging, modern manufacturing, and pharmaceutical applications.

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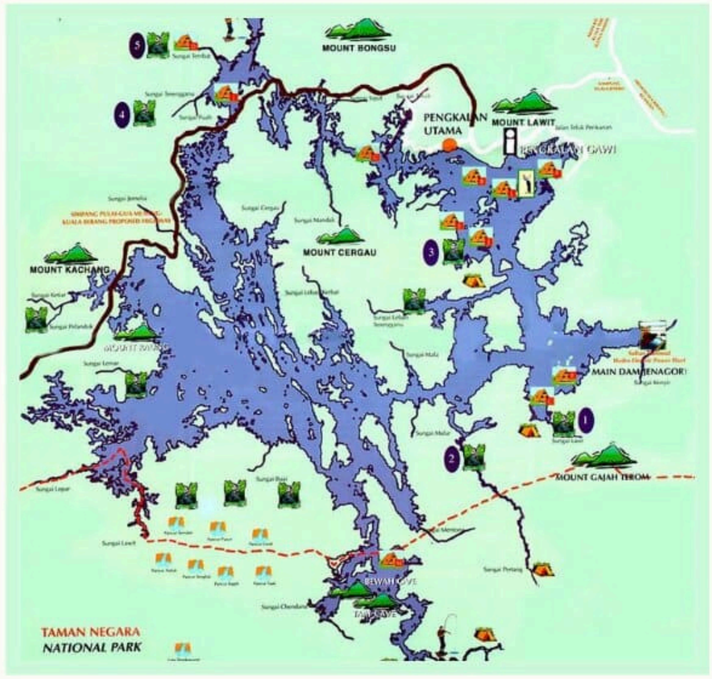
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IAM 136
DOWN BY THE BAY : CAN ARTIFICIAL REEF BECOME A GAME-CHANGER FOR TASIK KENYIR?

DOWN BY THE BAY: CAN ARTIFICIAL REEFS BECOME A GAME-CHANGER FOR TASIK KENYIR?

INTRODUCTION

Tasik Kenyir, or Kenyir Lake, is Malaysia's largest artificial lake, located in the state of Terengganu on the eastern side of Peninsular Malaysia (Wahab et al., 2023). Created in 1985 as part of the Kenyir Hydroelectric Project, the lake spans approximately 260,000 hectares (640,000 acres) and features over 340 islands, the peaks of submerged hills (Shahrom, 2012). This vast body of water primarily supports the Sultan Mahmud Hydroelectric Project, providing electricity to the surrounding regions(Fulazzaky et al., 2023). The area surrounding Tasik Kenyiris is rich in biodiversity and is home to numerous species of birds, fish, and other wildlife, including many indigenous and endangered species (Abdul-Latiff et al., 2021). Visitors can engage in boating, kayaking, and fishing on the expansive lake. The surrounding forests and hills offer excellent opportunities for jungle trekking, bird watching, and wildlife photography





ISSUE

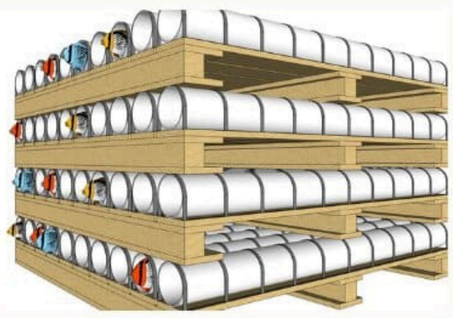
The limited scope of water activities at Tasik Kenyir currently may seem less attractive (Rahman et al., 2023), especially given the rising number of divers seeking new experiences (Hermoso et al., 2021). However, Tasik Kenyir holds potential for diving activities that could invigorate interest in the area (Mohamad et al., 2022). The water conditions at the lake are conducive to new initiatives such as diving, which could simultaneously serve the dual purpose of providing new recreational opportunities and restoring marine habitats through the implementation of artificial reefs in selected safe areas.

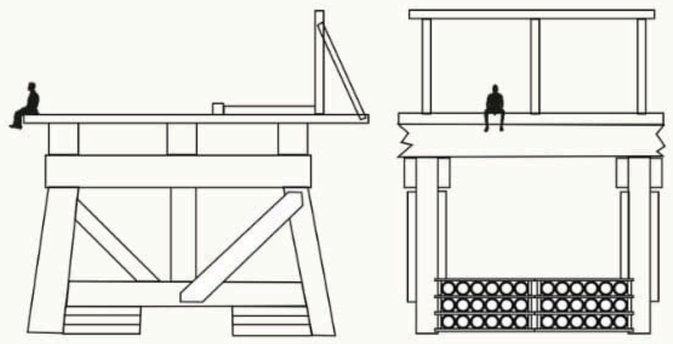
RECOMMENDATION

- Purpose-Built Structures: Specifically designed and constructed for reef development, often using materials like concrete, steel, wood, and specially designed reef modules.

Considerations in Artificial Reef Development:

- Environmental Impact: Proper site selection and design are crucial to avoid adverse impacts on existing marine ecosystems and ensure that artificial reefs provide genuine ecological benefits.
- Materials Used: Selecting non-toxic and durable materials is essential to provide a long-term habitat for marine life without causing pollution or degradation.









CONCLUSION

In conclusion, the implementation of artificial reefs in Tasik Kenyir represents a multifaceted opportunity to enrich the region's ecological and economic landscape. By expanding the scope of water activities to include diving, these reefs can attract divers and boost tourism, while also playing a crucial role in restoring marine habitats. The creation of new habitats for fish and other marine life enhances fisheries, providing additional benefits such as increased catches and reduced pressure on natural reefs. Furthermore, artificial reefs contribute to coastal protection by mitigating erosion and safeguarding infrastructure. They also offer valuable sites for scientific research and public education, fostering a deeper understanding of marine conservation. With careful planning and adherence to environmental and regulatory standards, artificial reefs can transform Tasik Kenyir into a vibrant destination that supports sustainable tourism, fisheries, and ecological preservation.

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IAM 137
EASYFORMEET 2.0



IAM 138
CQR APPLICATION



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CQR Application

Predictive quantitative analytics software for research

PRODUCT DESCRIPTION

The CQR Application is an advanced tool designed to assist researchers and analysts in analyzing and calculating quantitative data. By integrating cutting-edge statistical methodologies with a user-friendly interface, the CQR Application simplifies complex data analysis processes, reduces human error, and delivers accurate and reliable results.

PRODUCT FEATURE

The CQR Application allows users to upload data, perform calculations, and analyze quantitative data. Currently, features under development include calculations for validity, reliability, SUS scores, and UEQ results. The application provides in-depth and comprehensive analysis results.

PROBLEM STATEMENT

Processing and analyzing quantitative data is time-consuming and prone to human errors.

Traditional methods are complex and require deep statistical understanding.

Many users find it challenging to obtain accurate and reliable results.

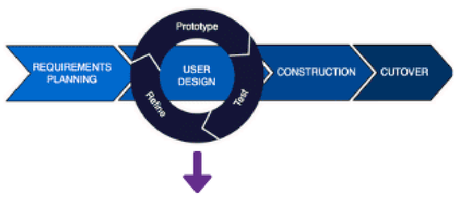
OBJECTIVE

Develop the CQR Application to simplify and expedite the process of quantitative data analysis.

Reduce human errors in data processing.

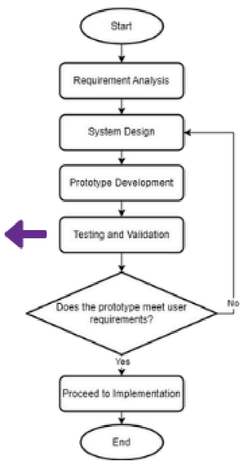
Provide a user-friendly tool for evaluating validity, reliability, SUS scores, and UEQ results.

METHODOLGY



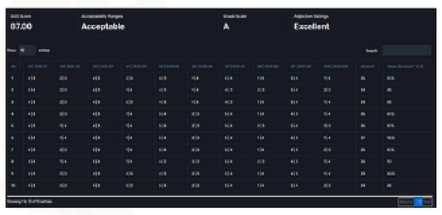
The method used is Rapid Application Development (RAD), which consists of four main phases: In the requirements planning phase, the primary objectives of the application are identified. The user design phase involves creating interactive prototypes based on user feedback. During the construction phase, the application is developed according to the approved prototypes. The cutover phase includes the implementation and testing of the application in the operational environment.

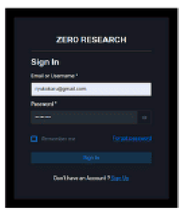
The development stages of the CQR application begin with requirements analysis to gather and understand user needs. Next, system design is carried out, including architecture and user interface design. After that, an initial prototype is developed to receive early feedback. Testing and validation stages are conducted to ensure the prototype meets user requirements. If the prototype is successful, implementation follows. Post-implementation, ongoing evaluation and maintenance are performed to ensure the application continues to function well. If issues arise during testing, the process loops back to the design stage for improvements.





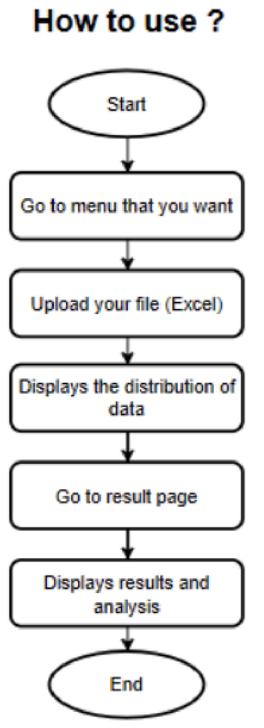


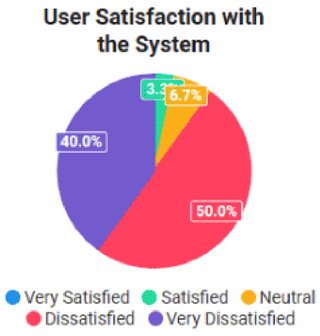




USER INTERFACE SYSTEM (PRIMARY FEATURES)

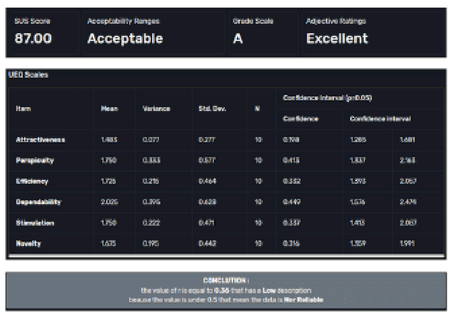
RESULTS AND DISCUSSION





This pie chart illustrates user satisfaction with the system, showing that 40.0% of users are very satisfied, 6.7% are satisfied, 3.3% are neutral, and 50.0% are dissatisfied. Notably, there are no users who are very dissatisfied. The data reveals a polarized user base with a significant portion highly satisfied, but an equally large portion expressing dissatisfaction. This suggests areas for potential improvement to increase overall user satisfaction.

SAMPLE OF USE



SUS Score	Acceptability Ranges	Grade Scale	Adjective Ratings
87.00	Acceptable	A	Excellent

UEQ Scales

Item	Mean	Variance	Std. Dev.	N	Confidence interval (p=0.05) Confidence	Confidence interval
Attractiveness	1.485	0.077	0.277	10	0.198	1.285 1.681
Perspicuity	1.750	0.333	0.577	10	0.415	1.337 2.163
Efficiency	1.725	0.276	0.464	10	0.332	1.393 2.057
Dependability	2.005	0.395	0.628	10	0.449	1.556 2.476
Stimulation	1.750	0.222	0.471	10	0.337	1.413 2.087
Novelty	1.535	0.195	0.442	10	0.316	1.359 1.991

CONCLUTION :
the value of r is equal to 0.36 that has a Low description
because the value is under 0.5 that mean the data is Not Reliable



CONCLUSION

Conclusion: The CQR Application is an innovative solution for the challenges of quantitative data analysis. With features supporting data upload, calculation, and analysis, this application speeds up the analysis process, reduces human errors, and delivers accurate and reliable results. Its potential use spans various sectors, including education, research, and government, making it an invaluable tool for anyone needing quantitative data analysis.

COMMERTIAL POTENTIAL

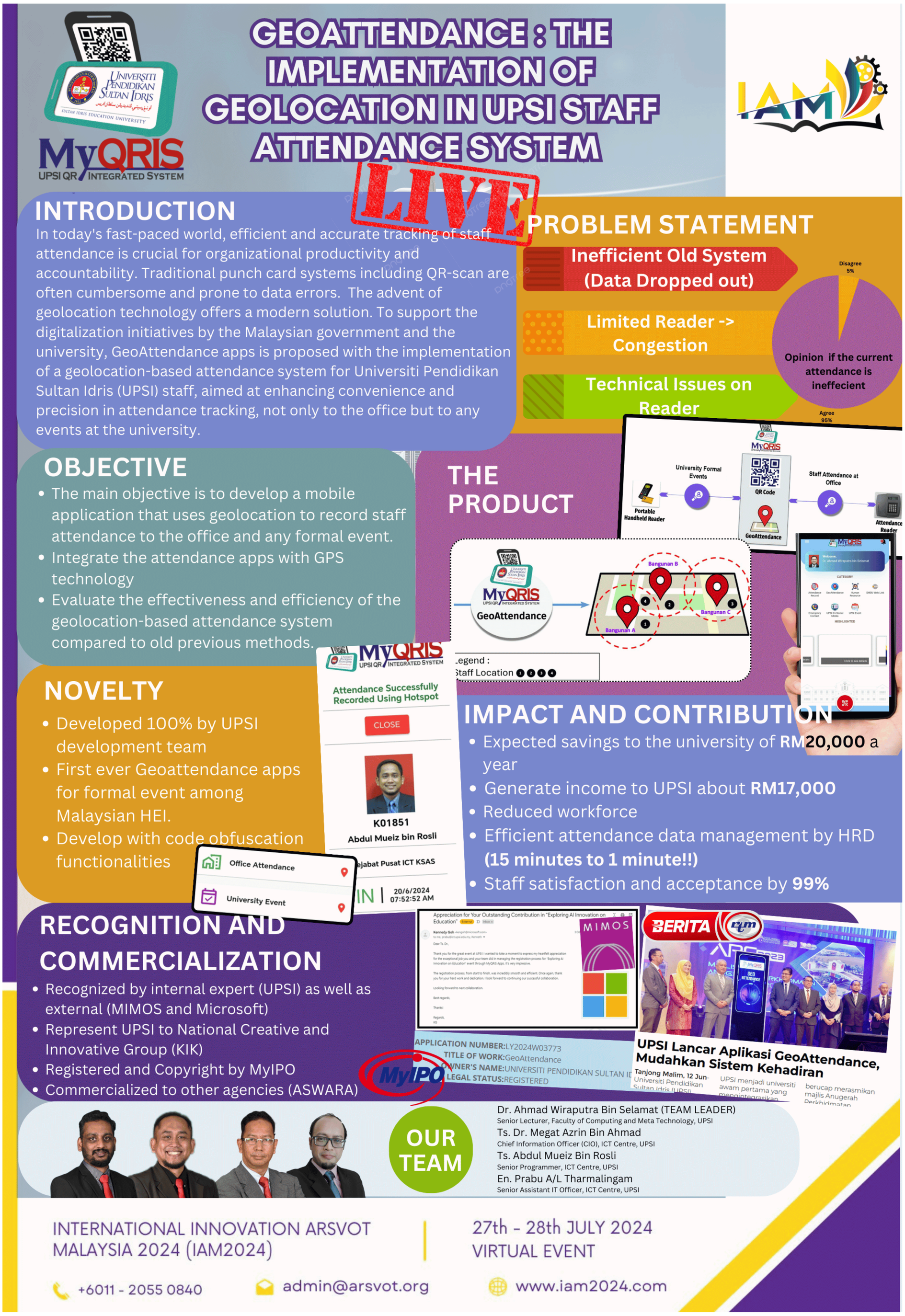
- *Usable by educational institutions for research data analysis.*
- *Beneficial for research companies in processing quantitative data.*
- *Market potential includes academic, commercial, and governmental sectors.*

NOVELTY

- *Integrated analysis in one platform*
- *User-friendly interface*
- *Quick and accurate data analysis*

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IAM 139
GEOATTANDANCE : THE IMPLEMENTATION OF GEOLOCATION IN UPSI STAFF ATTENDANCE SYSTEM



IAM 142
THE TRANSFORMABLE BACKPACK

THE TRANSFORMABLE BACKPACK

for the convenience of all

01.INTRODUCTION

The Transformable Backpack Changing Room is a versatile design that combines a regular backpack with a portable changing room. Ideal for outdoor enthusiasts, it provides a quick and discreet way to change clothes on the go.

02.PROBLEM STATEMENT

When attending outdoor events or travelling, people frequently find it difficult to find private, suitable places to change clothing. The challenges of flexibility, privacy, and hygiene make the current options inadequate. An innovative fix to these issues is provided by the Transformable Backpack Changing Room.

03.OBJECTIVES

- To offer those who travel or attend outdoor events a portable, private and practical changing area with the Transformable Backpack Changing Room.
- To create a durable, waterproof transformable backpack that provides a private space for changing clothes and storing personal items.

04.PRODUCT DESIGN

1.Switch Button:
- A dedicated switch button allows the user to transform the backpack into a dressing room effortlessly.

2. Material:
- PUL (Polyurethane Laminate)
- Reinforced Seams.

3. Design and Structure:
- Foldable Compartment.
- Waterproof Inner Lining.
- Ventilation Panels.

4. Storage and Organization:
- Multiple Compartments.
- Dedicated Hygiene Section.

5. Comfort and Ergonomics:
- Adjustable Straps
- Back Support.

6. Additional Features:
- Security Features
- Lightweight Construction

05.COMMERCIALISATION

- Target Market : Travelers, Athletes
- Marketing Startegy : Online Campaigns, Partnerships
- Sales Channels : E-commerce platforms, sports shops

06.PROTOTYPE

- Transformability: Multiple Configurations
- Material and Durability: High-Quality Materials
- Modular Components: Detachable Straps





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IAM 143
EMPLOYING DIGITAL APPLICATIONS IN SPANISH LANGUAGE TEACHING AND LEARNING

Employing Digital Applications in Spanish Language Teaching and Learning

Cheow Sze Huay (Schumy)
Universiti Sains Malaysia
schumycheow@gmail.com

❋ ABSTRACT

In this digital era, almost everyone is holding a device on hand. This trend is common and this goes the same to students in class. Physically or virtually, students are using their device every moment and it seems that they are losing interest in class if a traditional teaching method is applied. Learning atmosphere is important and students are found demotivated in classes most of the time especially in foreign language classes. Thus, this product has been created to study if students in Universiti Sains Malaysia are more motivated in Spanish language class with the appliances of different digital applications. There are many digital applications in this era such as Facebook, Instagram, TikTok, Twitter, Reddit, etc. In this product, the digital applications that being used are Canva, Instagram and Facebook. The result has shown that students are more engaged in learning Spanish language if digital applications are used. In conclusion, the advances of technology will not cease anytime, therefore the usage of digital applications in the class is encouraged to maintain students' focus.

❋ OBJECTIVES

→ To engage students to participate actively in a relaxing learning ambience

→ To prepare students' soft skills for the future



❋ RECOGNITION

→ *"The best marketing is education!"* – Nylus Stanton

→ *"As teachers, it's our responsibility to authentically integrate digital citizenship into the curriculum in a positive way."* – Edtech Endeavours

→ *"Education is the most powerful weapon which you can use to change the world."* – Nelson Mandela

❋ COMMERCIALIZATION POTENTIAL

This product could be used as a motivation for students in learning foreign languages

❋ USEFULNESS

Anyone can access the platforms to gain interest and to practice easily.

❋ VALUE ADDED

→ Sustainable and enrichment of students' learning experience

→ Productive and comfortable in learning anywhere anytime

→ Gamification to motivate students

❋ AWARDS

→ ITLC 2018 Silver Award
→ I-CITeD 2023 Bronze Award
→ IUCEL 2023 Bronze Award
→ ICIILE 2023 Silver Award



❋ INVENTOR

➡ Cheow Sze Huay (Schumy) is a teacher in Teaching Spanish as Foreign Language in Universiti Sains Malaysia, she emphasized on using blended learning approach before the pandemic and has entered fully into virtual method during the pandemic.

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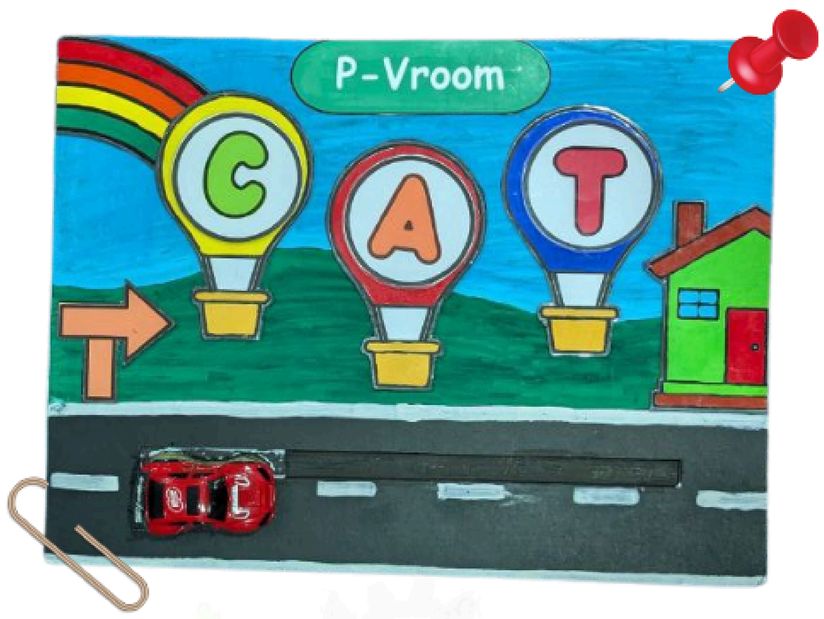
IAM 144
INTERACTIVE WORD BLENDING FOR EARLY READERS

IAM2024 P-VROOM PHONICS: INTERACTIVE WORD BLENDING FOR EARLY READERS

Introduction

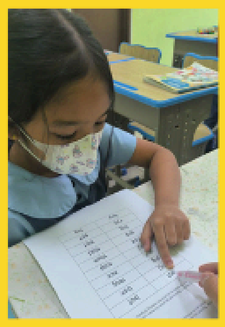
Vygotsky highlighted play's pivotal role in children's cognitive and social development. He saw play as essential for learning and concept formation, fostering exploration, experimentation, and complex social interactions. Inspired by this theory, P-Vroom innovates phonics blending through engaging and effective interactive tools for students.

"With P-Vroom, we're pioneering the future of phonics, empowering tomorrow's readers through cutting-edge innovation."



Problem Statement

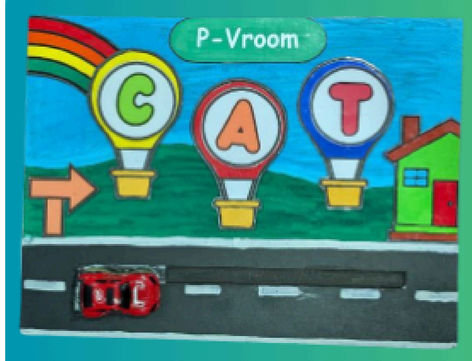
Student lack interest in learning phonic blending because it's confusing. This gap calls for innovative solutions that integrate phonics blending with interactive play to better engage children.


Objectives

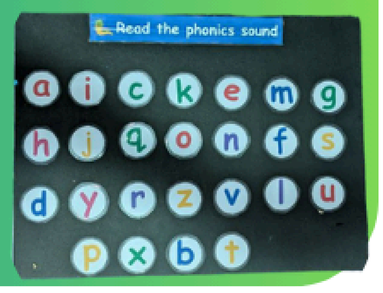
P-Vroom is designed to effectively integrate play into phonics blending, enhancing engagement and improving interest on phonic blending among students.

Product Design



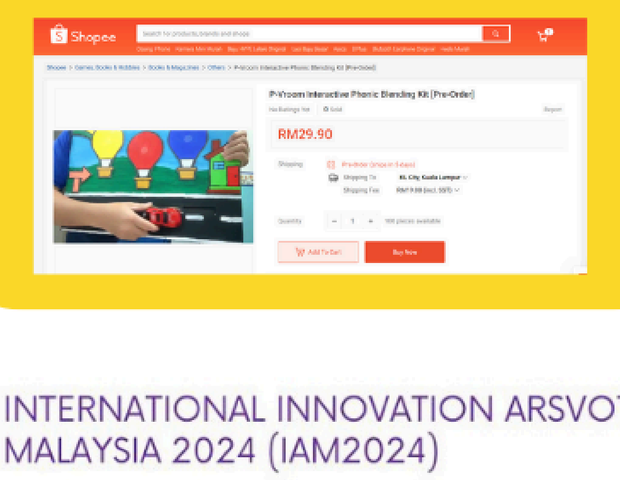
P-Vroom design is a simple board, with few interactive function on it, such as sliding car, and velcro strap letters.

P-Vroom also contained match and pair game at the back, which also works as a phonic sound revision side.

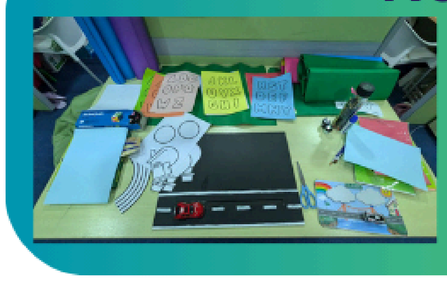


Commercialisation

With the P-Vroom Pre-Order Kit Pack, buyer are able to buy a ready made P-Vroom. We have release our product on Shopee websites. We also have promoted this product among fellow teachers.



Novelty



P-Vroom is a unique and is an original design that wasn't inspired by any other product. There is no similar looking product currently on the market.

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IAM 145
SECURITY & MONITORING LOCK SYSTEM WITH IOT BY USING PLC & ESP 8266

SECURITY & MONITORING LOCK SYSTEM WITH IOT BY USING PLC & ESP 8266



KOLEJ VOKASIONAL KEMENTERIAN PENDIDIKAN MALAYSIA
KOLEJ VOKASIONAL SULTAN ABDUL SAMAD

IAM

PENGENALAN PROJEK



PENYATAAN MASALAH PROJEK

Pengguna tidak dapat mengesan keadaan tempat penyimpanan dokumen sekiranya berlaku pencerobohan kerana tiada sistem pemantauan yang baik

Tempat penyimpanan dokumen sulit sedia ada tidak mempunyai keselamatan yang baik

OBJEKTIF PROJEK

Sistem Keselamatan Penguncian

Menggunakan kad RFID sebagai kunci dan memberi notifikasi kepada telefon pintar melalui NodeMcu ESP8266

Sistem Kawalan Pemantauan

Menggabungkan Sistem kawalan penyeliaan dan perolehan data (SCADA) yang menggunakan *visual box* (V-Box) dan kawalan penguncian melalui telefon pintar sebagai *(IoT)*.

IMPAK PROJEK

Smart Security Drawer System with IoT merupakan projek yang digunakan untuk penyimpanan ketas soalan Penilaian Akhir.

Pembinaan projek ini meningkatkan kemahiran dan kebolehan pelajar menghasilkan projek yang kreatif dan inovatif dengan penggunaan teknologi terkini.

NOVELTI PROJEK

Sistem keselamatan penguncian yang menggunakan kad RFID dan aplikasi *Vnet* di telefon pintar

Sistem kawalan pemantauan melalui telefon pintar dengan menggunakan peranti V-box.

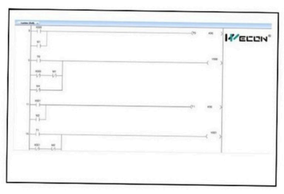
KEFUNGSIAN PROJEK



SENSOR



+



KAWALAN & PEMANTAUAN IOT



PENGGUNAAN KAD RFID



PERANTI WECON



PENGAURCARAAN PLC

IAM 150
GOVERN XCEL : THE PREMIER BOD GOVERNANCE METRIC



INTRODUCTION

A groundbreaking innovation designed to assists organizations in evaluating adherence to the Malaysian Code on Corporate Governance (MCCG) 2021.

Comprehensive Assessment: Focuses on the effectiveness of a company's board of directors.

PROBLEM STATEMENT

MCCG 2021 Guidelines: Emphasizes transparency, accountability, and ethical conduct.

Implementation Challenges: Companies struggle to measure their compliance with these principles.

Need a measure focusing on key governance variables (Bebchuk et al. 2009) as existing measures fail to capture essential elements (O'Connell & Ward, 2020).

OBJECTIVES

- To offer a reliable and validated tool for assessing corporate governance practices.
- To assist firms in assessing MCCG compliance level.
- To contribute to advancing corporate governance in Malaysia and beyond.

COMMERCIALIZATION

- Educational Training Content: Promotes understanding of the code.
- Regulatory Collaboration: Partner with Securities Commission Malaysia.
- Digital Apps: Enhance accessibility and usability.

NOVELTY OF THE PRODUCT

- Tailored to MCCG 2021: Specific compliance assessment.
- Evidence-Based Approach: Uses practical and empirical studies.
- Self-Assessment Capability: Encourages proactive governance improvement.

PRODUCT DESIGN



TEAM MEMBERS

- En. Mohd Fairuz Adnan
- Dr. Nurhazrina Mat Rahim
- Dr. Yusri Hazrol Yusoff
- Dr. Siti Mariam Mansor

FACULTY OF ACCOUNTANCY
UNIVERSITI TEKNOLOGI MARA
PUNCAK ALAM CAMPUS

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IAM 151
ELECTROPNEUMATIC TRAINER KIT WITH PLC

TAJUK

ELECTROPNEUMATIC TRAINER KIT WITH PLC

REKABENTUK PRODUK



PENGENALAN

- Electropneumatic trainer kit adalah bahan bantu mengajar untuk kursus Industrial Automation DEB3223 .

OBJEKTIF

- Meningkatkan pengetahuan pelajar tentang kursus Industrial Automation.
- Meningkatkan kemahiran pelajar tentang litar kuasa, PLC dan komponen input dan output.
- Menghasilkan set trainer kit untuk kursus industrial automation.

KELEBIHAN PRODUK

- Meningatkan kemahiran guru dan pelajar untuk kursus Industrial Automation.

PENGKOMERSIALAN PRODUK

- Kit ini boleh dikomersialkan di sekolah menengah dan kolej vokasional di seluruh Malaysia.

PENYATAAN MASALAH

- Pelajar tidak mempunyai set alat bantu mengajar untuk kursus Industrial Automation DEB3223.



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IAM 152
ECLAIR CENDAWAN KUKUR

BAHAGIAN PENDIDIKAN DAN LATIHAN TEKNIKAL VOKASIONAL
KEMENTERIAN PENDIDIKAN

KOLEJ VOKASIONAL
KEMENTERIAN PENDIDIKAN MALAYSIA
bersama membina masa depan
KOLEJ VOKASIONAL (ERT) AZIZAH

IAM



ECLAIR CENDAWAN KUKUR

INOVASI ECLAIR SAVORI

ID-IAM152

PENCIPTA PRODUK

NUR SYUHADA BINTI MOHAMED HAUZA
NURSYUHAIDAH BINTI ZAID

MAKLUMAT UNTUK DIHUBUNGI

KOLEJ VOKASIONAL (ERT) AZIZAH
JALAN DATIN HALIMAH
80350, JOHOR BAHRU, JOHOR
syuhadahauza@gmail.com

INTRODUCTION

- Eclair Cendawan Kukur ini terhasil dari idea kumpulan kami bagi menghasilkan eclair berintikan savori dan sesuai dengan citarasa asia.
- Doh eclair kami campurkan bersama serbuk cendawan kukur yang telah dikisar bg menambah rasa cendawan.
- Cendawan kukur kami jadikan masak lemak bagi intinya dan kuahnya pula disalut pada atas permukaan eclair.

PROBLEM STATEMENT

- Punca obesiti adalah pengambilan gula berlebihan daripada keperluan badan (Berita Harian, 2023)
- Pemakanan sayur dan buah perlu diperbanyakkan oleh rakyat Malaysia ketika ini untuk mengatasi peningkatan obesiti (2023). Pakar Nutrisi UITM Shah Alam, Prof Madya Dr Raseetha Vani Siva Manikam..

PRODUCT NOVELTY

- Eclair savori cendawan kukur masak lemak
- Tekstur eclair yang lembut
- Aroma yang membangkitkan selera
- Rupa yang unik

OBJECTIVE

- Menghasilkan produk eclair savori iaitu Eclair Cendawan Kukur
- Menghasilkan formulasi terbaik bagi produk Eclair Cendawan Kukur

PRODUCT DESIGN



COMMERSIALISATION

- Memperkenalkan snek tenaga untuk kanak□kanak kepada Industri Kecil Serderhana (IKS) dan juga kepada Usahawan Makanan. Kerjasama dengan pihak MARDI, JAKIM dan organisasi berlesen bagi penyelidikan produk makanan yang lebih baik dan berkualiti.

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IAM 153
KEROPOK DAGING SEGERA



PENGENALAN

Kajian ini dihasilkan adalah bertujuan untuk memperkenalkan produk 'Keropok Daging Segera' kerana kami mendapati masih belum ada produk keropok segera yang berasakan daging dikomersialkan secara meluas di pasaran. Ini juga adalah sebagai salah satu inisiatif untuk mempelbagaikan lagi produk makanan bersaskan daging kerana selain ikan, daging juga mempunyai khasiat dan nutrien tersendiri di mana ianya merupakan sumber baik tenaga dan membantu golongan yang mempunyai masalah kekurangan darah. Selain itu, daging merah juga mempunyai tinggi zat besi dan zink. Oleh itu, kami ingin membuka pandangan masyarakat mengenai keropok berasakan daging ini agar dapat diterima dalam kalangan seluruh peringkat umur.

PENYATAAN MASALAH

Gaya pemakanan yang tidak sihat dalam kalangan masyarakat Malaysia amat banyak dan susah untuk dikawal. Mereka lebih memilih makanan segera untuk dijadikan sebagai makanan sampingan kerana kekangan masa dan juga beberapa faktor lain. Tambahan pula, kepelbagaian keropok yang dipasarkan di pasaran kini tidak mempunyai khasiat yang seimbang dan boleh menyumbang kepada pelbagai penyakit merbahaya yang boleh mengundang kepada semua lapisan umur termasuk golongan dewasa mahupun kanak-kanak. Terdapat beberapa penyataan masalah yang boleh dibangkitkan dalam kajian ini dan memberi idea untuk kami mencipta satu produk inovasi snek makanan ringan berasakan daging.

OBJEKTIF KAJIAN

1. Menghasilkan snek yang sihat berasakan daging lembu.
2. Memudahkan gaya pemakanan produk berasakan daging kepada seluruh lapisan umur.
3. Mempelbagaikan variasi keropok di pasaran bagi masyarakat yang mempunyai alahan terhadap makanan laut.

TUJUAN PRODUK

1. Memberi pilihan baru kepada penggemar keropok segera berasakan daging dan menyumbang variasi baru kepada industri makanan.
2. Mendedahkan khasiat yang terdapat dalam bahan keropok daging segera seperti daging yang boleh membantu golongan masyarakat yang mempunyai alahan terhadap makanan laut untuk menikmati snek keropok sihat.
3. Membantu masyarakat menjimatkan masa dalam penyediaan hidangan harian berasaskan daging dengan hanya menikmati snek keropok segera yang mudah untuk dinikmati dalam pelbagai situasi dan dimana-mana sahaja.



IAM 155
EXPLOREONE

EXPLOREONE

MOBILE APPLICATION FOR WANDERERS

1 INTRODUCTION

ExploreOne is a travel app that uses advanced technologies to enhance your experience. It offers real-time data, augmented reality, and seamless navigation, providing live updates on weather, detailed maps, and hidden gems. This app is perfect for avid travelers, curious learners, and business travelers and others.

2 PROBLEM STATEMENT

The current travel experience for spontaneous tourists is fragmented and stressful, as they often struggle to find the right attraction places during their journey, diminishing their overall travel experience.

3 OBJECTIVE(S)

- Leveraging real-time location data and proximity alerts.
- Encouraging serendipitous discovery and exploration
- Ensuring offline usability

4 PRODUCT/PROTOTYPE DESIGN

- This design makes it easy for travelers to find attractions, plan trips, and navigate with visuals on their mobile device.
- The application can be used even when offline, providing continuous access to travel information without requiring an internet connection.
- Utilize GPS for real-time location tracking and navigation. GPS works without an internet connection, allowing users to find their location and navigate to destinations using pre-downloaded maps.
- These apps provide real-time notifications directly on the lock screen about nearby attractions. This feature enhances travelers' experience by constantly updating them about interesting places around them as they explore

5 COMMERCIALIZATION

- Commissions and booking fees
- Partnerships and sponsorships
- Affiliate Marketing
- Freemium model

6 NOVELTY OF PRODUCT

1) WIFI MAP (main Feature)

2) Khabar geng (Social Feature / side feature)

3) Online Payment method

7 REFERENCES

Mohd Salleh, N. A., Hashim, H., & Musa, R. (2022). Systematic review of mobile travel apps and their smart features and cost. Journal of Hospitality and Tourism Insights. Retrieved from http://myscholar.umk.edu.my/bitstream/123456789/4640/1/10-1108_JHTI-02-2022-0087%20%281%29.pdf

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IAM 158
EMCEE WANNABE ONE STOP CENTRE



EMCEE WANNABE ONE STOP CENTRE

Now Everyone Can Be Emcee Wannabe!

Kumpulan IAM158

MAZURA BINTI STAPAH (*LEADER & CONTENT CREATOR*)

IZZATI HUDA BINTI ZULKIFLI (*SITE DEVELOPER*)



PENGENALAN

1 LATARBELAKANG INOVASI

Pusat sehenti informasi berkaitan pengacaraan majlis termasuklah hal-hal berkaitan teknikal menyediakan skrip teks emcee, melontar suara, asas protokol dan majlis seperti panggilan hormat dan susunan tempat duduk dalam majlis. Video pembelajaran langkah demi langkah pengacaraan dan koleksi skrip pengacaraan pelbagai jenis majlis juga disediakan di dalam pusat sehenti ini.

2 PENYATAAN MASALAH

1. Masalah kekurangan barisan bakat pengacaraan majlis terutamanya di kalangan pelajar di Politeknik Kota Kinabalu, Sabah.
2. Menghadapi kesukaran untuk menggilap bakat pengacaraan majlis kerana kekurangan sumber informasi berkaitan yang diletakkan di dalam satu platform.
3. Tiada bimbingan khusus kepada pelajar bagi memupuk bakat mereka di dalam bidang pengacaraan majlis.

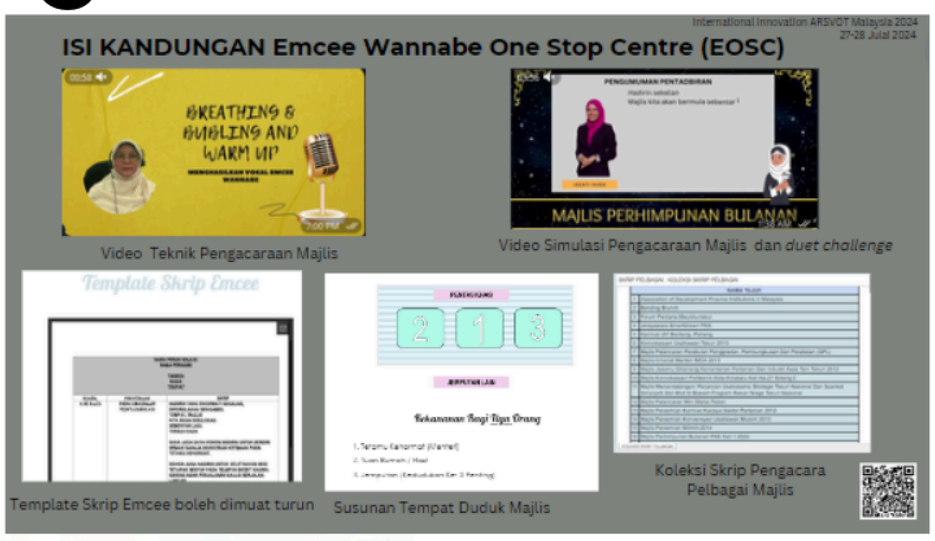
Justeru, Emcee Wannabe One Stop Centre dibangunkan sebagai sumber rujukan utama bagi melahirkan bakat-bakat pengacaraan majlis samada di kalangan pelajar ataupun orang awam.

3 HASIL PEMBELAJARAN DARI INOVASI

1. Siapakah emcee wannabe dan peranannya dalam majlis
2. Teknik menyediakan skrip emcee
3. Soalan-soalan cepu emas perlu ditanya kepada penganjur majlis
4. Langkah demi langkah mencipta suara emas
5. Asas protokol dan etiket dalam majlis rasmi
6. Contoh-contoh skrip emcee pelbagai majlis

PRODUK INOVASI

5 KANDUNGAN INOVASI



Video Teknik Pengacaraan Majlis

Video Simulasi Pengacaraan Majlis dan *duet challenge*

Template Skrip Emcee boleh dimuat turun

Susunan Tempat Duduk Majlis

Koleksi Skrip Pengacara Pelbagai Majlis

6 IMPAK & KOMERSIL INOVASI

Produk inovasi digital ini boleh digunakan secara dalam talian secara pembelajaran kendiri ataupun digunakan bersama semasa sesi kursus secara fizikal.

Pelajar atau penasihat kelab boleh merujuk terus kepada link/QR Emcee Wannabe One Stop Centre. Kesemua elemen diperlukan untuk menjadi pengacara berkaliber ada di sini.

Isi kandungan disampaikan dalam pelbagai kaedah seperti template word, video, video simulasi, audio dengan cara yang menarik dan mudah.

Produk inovasi digital yang bersifat tahan lama dan boleh dikemaskini oleh pembangunnya dari semasa ke semasa dengan mudah secara percuma.

4 METODOLOGI PENGHASILAN INOVASI

Mengenalpasti masalah	Menjana Idea	Membangunkan Inovasi	Ujian Penggunaan	Menjenama Inovasi
• Mengenalpasti isu berkaitan pengurusan majlis • Maklumbalas daripada Penasihat Kelab • Maklumbalas daripada JKuasa Pengacaraan Majlis	• Mengenalpasti inovasi bagi penyelesaian masalah • Elemen akan diterap dalam produk inovasi • Isi kandungan dan sasaran pengguna • Teori pembelajaran digunakan • Platform/Idea Inovasi	• Menyenaraikan learning outcome • mengenalpasi medium bagi kaedah penyampaian • menyusun pecahan isi kandungan • mencari maklumat tambahan bagi isi kandungan • menyusun isi kandungan, grafik dan animasi • Membangunkan isi kandungan grafik & animasi pada tapak inovasi • Memasukkan elemen aktiviti pembelajaran • Aktiviti penyuntingan dan melakukan uji lari	• Pengujian fasa pembangunan projek (tujuan tambahbaik) • Pengujian fasa akhir projek (maklumbalas pengguna) iaitu soal selidik, senarai semak pemerhatian, soalan temubual dan rakaman video.	• Surat dan poster hebahan penggunaan produk inovasi • menyediakan dokumen bagi tujuan permohonan hak cipta produk • inovasi ini akan digunakan juga sebagai bahan kursus pengacaraan bagi kelab pelajar di organisasi

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IAM 159
ENERGY 4U

ENERGY 4U

PENGENALAN

Penggunaan bahan yang berasakan elektrik dan elktronik semakin meluas dan canggih. Walaubagaimanapun, sesetengah pengguna menghadapi pelbagai masalah untuk menari penyambung (extension) yang panjang. Oleh itu, kami membangunkan projek untuk menghasilkan generator dengan menggunakan solar untuk memudahkan pengguna. Projek yang akan kami cipta adalah solar generator yang diberi nama Energy 4U.

OBJEKTIF

1) REKABENTUK - Solar generator untuk memudahkan pengguna membawa kemana-mana sahaja

2) MEMBANGUNKAN - Membangunkan sistem Energy 4U yang boleh membekalkan tenaga elektrik

3) MENGUJI- Menguji kebolehfungsian solar generator untuk kegunaan pengguna ketika tiada elektrik

PERNYATAAN MASALAH

- Pengguna susah untuk mencari sumber bekalan
- Pengguna banyak menggunakan tenaga elektrik
- Generator sedia ada tidak mesra alam seperti pencemaran bunyi dan udara

REKABENTUK PROJEK



TEKNOLOGI ELEKTRIK KOLEJ VOKASIONAL BAEUFORT

PENSYARAH : Ts. Mohd Faez Ezaz Bin Abdullah
PELAJAR : 1) Izz Azri Bin Usri
2) Nur Aisyah Binti Buratin
3) Puteri Nurhasyirah Nashikin

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IAM 160
DUALSTRIDES



IAM 161
I-SWITCH KIT

I - SWITCH KIT

KOLEJ VOKASIONAL
KEMENTERIAN PENDIDIKAN MALAYSIA
KOLEJ VOKASIONAL BEAUFORT

PENGENALAN

Alat bantu mengajar (ABM) merupakan suatu kelengkapan yang digunakan oleh guru-guru dan pelajar untuk membantu dalam pembelajaran dan pemudahcaraann (PdPc) semasa di bilik darjah. Oleh itu, projek I - SWITCH KIT diperkenalkan agar pelajar lebih mudah untuk memahami dalam membuat penyambungan suis 1 hala, suis 2 hala dan suis perantaraan.

PERNYATAAN MASALAH

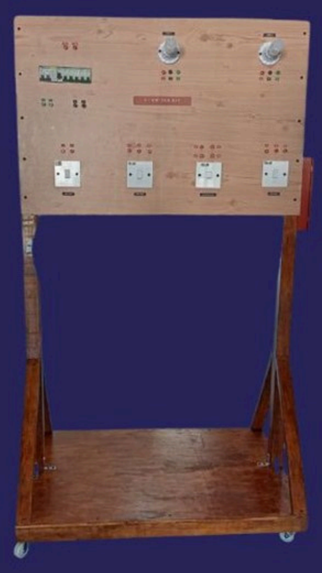
- Pelajar baharu Teknologi Elektrik kurang memahami konsep suis perantaraan di dalam subjek pendawaian.
- Kekurangan alat bantu mengajar yang berkaitan dengan suis perantaraan menjadikan satu kekangan untuk para guru Teknologi Elektrik untuk menerangkan pelajar mengenai konsep suis perantaraan.
- Konsep penyambungan suis perantaraan yang agak rumit menyebabkan pelajar kurang berminat untuk memahami tentang suis ini.

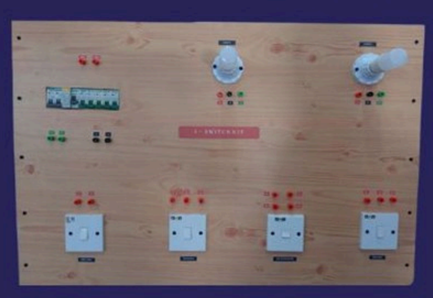
OBJEKTIF PROJEK

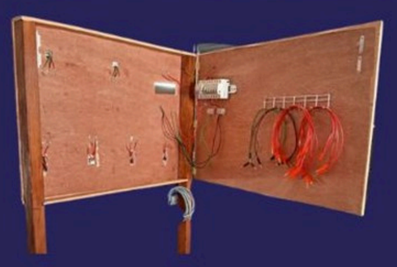
- Menarik minat para pelajar agar lebih menumpukan perhatian semasa sesi pembelajaran sedang berlangsung.
- Pelajar lebih memahami dan menguasai konsep penyambungan suis perantaraan.
- Memudahkan para guru untuk menerangkan pelajar mengenai konsep suis perantaraan.

GAMBARAJAH PROJEK









TEKNOLOGI ELEKTRIK KOLEJ VOKASIONAL BEAUFORT

PENSYARAH: Fatin Nazira Binti Abd Salim

PELAJAR:
Mohamad Fikri Nazrul Mashairi Bin Abdullah
Jericho Marcus Junior
Mayvia Anak Melvin

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IAM 163
SMART AC LIFTER



Smart Ac Lifter

Pengenalan

Tujuan smart ac lifter ini di rekacipta ialah untuk sesuatu produk baru dan pengubahsuaian produk sedia ada untuk menyelesaikan masalah kehendak pengguna masa kini. Fungsi produk ini adalah mengangkat dan menurunkan unit luar di lokasi yang tinggi.

Penyataan Masalah

1.Tiada lagi peralatan mengangkat unit luar menggunakan elektrik

2.Kerja mengangkat unit luar penyamanan udara menggunakan tenaga manusia mengambil masa yang lama

3. Risiko untuk dapat sakit dibahagian belakang apabila menggunakan tenaga manusia ketika menurunkan dan mengangkat unit luar penyaman udara semasa proses pemasangan.

Objektif

1.Mereka bentuk produk smart ac lifter untuk membantu dan mengangkat dan menurunkan unit luar penyamanan udara semasa proses pemasangan dilakukan

2. Membangunkan produk smart ac lifter untuk membantu dan mengangkat dan menurunkan unit luar penyamanan udara semasa proses pemasangan dilakukan

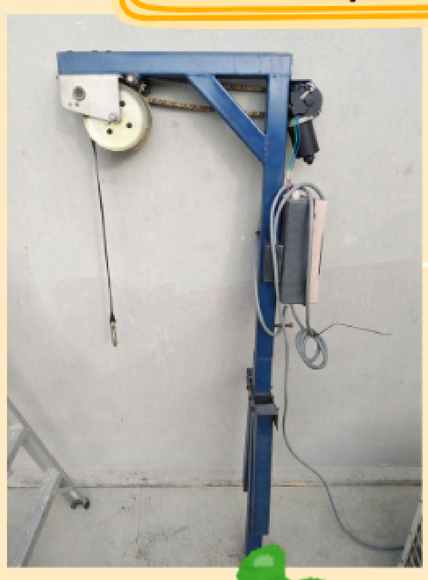
3.Menguji kebolehfungsian produk smart ac lifter untuk mengangkat unit luar semasa proses pemasangan dilakukan .

DESIGN

Kebaharuan Produk/Prototaip

Prototaip ialah contoh produk berfungsi sepenuhnya. Prototaip dibina menggunakan bahan dan saiz yang sebenar. Prototaip ini diuji dalam situasi yang sebenar untuk menganalisis fungsi serta kecekapannya bagi tujuan penambahbaikan sebelum dipasarkan.







Contoh yang sedia ada di pasaran menggunakan alatan manual untuk menaikkan dan menurunkan unit luar penyamanan udara.

Contoh inovasi yang telah ditambah baik ialah boleh digunakan secara automatik ketika menaikkan dan menurunkan unit luar penyamanan udara.

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IAM 168
VERDANT VOYAGER - ECO TRAVEL KIT

VERDANT VOYAGER - ECO TRAVEL KIT

INTRODUCTION

Verdant Voyage's eco-friendly travel kits help minimize environmental impact with sustainable items like solid toiletries, natural deodorants, bamboo toothbrushes, reusable water bottles, and cloth towels. These products reduce reliance on single-use plastics and support a greener lifestyle, promoting a reduced ecological footprint for travelers.

PROBLEM STATEMENT

Travelers often rely on single-use plastics, leading to significant environmental pollution. Verdant Voyage's eco-friendly travel kits offer a sustainable solution with reusable items like solid toiletries, bamboo toothbrushes, and reusable water bottles, helping to reduce your ecological footprint and promote a greener lifestyle.



OBJECTIVE

- Provide convenient and sustainable alternatives to single-use plastics
- Offer eco-friendly items like solid toiletries, natural deodorants, and bamboo toothbrushes
- Minimize travelers' environmental impact
- Promote a greener lifestyle
- Actively reduce ecological footprint while on the go

PRODUCT DESIGN

Sustainable Materials

- The Verdant Voyager travel kit is ideal because of the small and light design.
- With a minimum environmental impact, we use natural items of recyclable and biodegradable materials like bamboo fiber or recycled plastic.

Eco-Friendly Accessories and Packaging

- he kit comes with a reusable organic cotton pouch for carrying and storing the products.

Recyclable and Reusable

- Promote items that can be filled again or used again, such reusable travel bottles, bags, and travel-sized hygiene packages.

COMMERCIALISATION

1. Reduced enviromental impact
2. Promote Healthier choices
3. Cost effective convenience

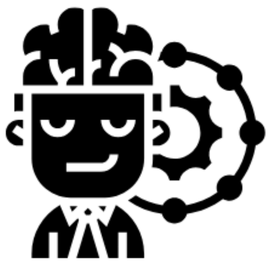
- Students - internships/study abroad programs, environmentally conscious & seek sustainable options
- Young professionals - who travel frequently for work/leisure tend to prioritize eco-friendly products
- Parents - teach their children sustainable habits & look for safe & eco-friendly travel options
- Athletes - competitions/training require durable, sustainable travel essentials that support their active lifestyles

NOVELTY

- Comprehensive eco-friendly travel solution
- Includes solid toiletries, natural deodorants, bamboo toothbrushes, reusable water ottles, and cloth towels
- Reduces reliance on single-use plastics
- Promotes a greener, sustainable lifestyle on the go

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IAM 169
HYBRID MODELING TO PREDICT EQUIPMENT CONDITION IN OIL AND GAS



HYBRID MODELING TO PREDICT EQUIPMENT CONDITION IN OIL AND GAS

Introduction

Equipment downtime is a major threat in oil & gas, leading to costly repairs, safety risks, and production disruptions, due to ineffective traditional maintenance schedules that cause:

- Miss critical issues
- Lead to unnecessary maintenance
- Lack precision

Objective

Develop a machine learning algorithm and **evaluate** the accuracy of the proactive maintenance scheduling to **improve equipment health monitoring**

Methodology

CRISP-DM is a comprehensive methodology for data mining project

How does it work?

Combines two or more different types of machine learning models to leverage their individual strengths and create a more powerful model using python

Results

Hybrid Model	Equipment A	Equipment B
LSTM	• RMSE = 1.56 • R2 = 0.99	• RMSE = 1.28 • R2 = 0.99
LSTM + MLP	• RMSE = 1.17 • R2 = 0.99	• RMSE = 0.90 • R2 = 0.99
LSTM + RNN	• RMSE = 2.00 • R2 = 0.99	• RMSE = 0.94 • R2 = 0.99
LSTM + CNN	• RMSE = 1.24 • R2 = 0.99	• RMSE= 1.68 • R2 = 0.99

Discussion

- **The Best Model:** The best model for equpment A and B is LSTM + MLP.
- **Good Performance:** High R^2 score and low RMSE score shows that the hybrid model is highly accurate in predicting and indicate its effectivenss
- **Hybrid Model**: Initial models using only LSTM showed decent performance but adding a another model improved the accuracy.

Conclusion

Implementation of predictive maintenance optimizationusing machine learning showed promising results

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IAM 170
SPEAK FOR GUANGZHOU

Speak for Guangzhou

Zhang Wei (SEGi), Lee Phaik Gaik (SEGi), Xiao Yishu (Huarong Primary School), Zhao Xiran (SEGi)

Introduction

This IPBL thematic programme encompassed three tasks: “Guangzhou Poor Travel Guide,” “Healthy Cantonese Food Blogger,” and “Ambassador of Guangzhou Intangible Cultural Heritage.” These thematic tasks involve pertinent social events in the students’ lives to establish an authentic learning context. The objective is to cultivate students' inclination towards participation in IPBL activities, enhance collaborative problem-solving skills, evoke curiosity, and foster proactive engagement in exploratory research endeavors.

Learning Outcomes

1) Engage actively in the learning activities
2) Solve problem during the learning activities
3) Collaborate with teachers and peers in learning
4) Apply interdisciplinary knowledge to solve problems

Audience

- For all the primary school student at the age 11-12
- For teachers from different disciplines who teach IPBL

Scope

Mathematics, Science, Information Technology, Chinese， English, Arts (Music and Visual Arts), History, and Culinary Arts

Novelty

Embrace and include elementary students from diverse cultures, learning abilities, interest orientations, and educational backgrounds to experience interdisciplinary project-based learning practices.

Commercialisation Potential

Build partnerships and collaborate with other primary schools and institutions to develop teaching materials and IPBL curriculum.

Flipped Book

Padlet

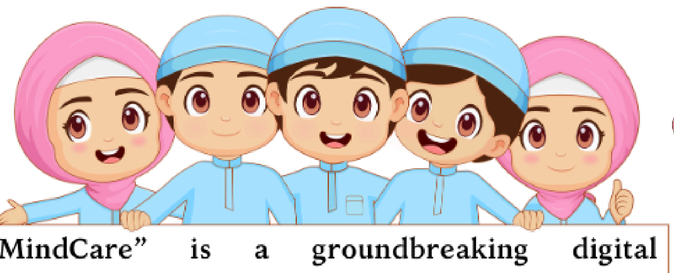
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IAM 171
MINDCARE : AN INNOVATIVE DIGITAL THERAPUTIC PLATEFORM FOR MUSLIM YOUNG ADOLOSCENTS

Name- Nahreen Zannat
Supervisor- Prof. Dr. Murni Bt. Mahmud
International Islamic University Malaysia

Problem Statement

1. Not enough specific platforms
2. Lack of Islamic based platforms for young adoloscents
3. Increasing mental health issues
4. User are more inclined to online platform due to privacy and convenience



"MindCare" is a groundbreaking digital therapeutic platform designed specifically for Muslim young adolescents. Our mission is to provide mental health support that is integrated with Islamic design ,values and teachings.

Benefit to users

- Provide support for mental well being and mindfulness
- Focused for Muslim young adolescents users to boost their mind
- Holistic Support
- Convenient Access

Objectives

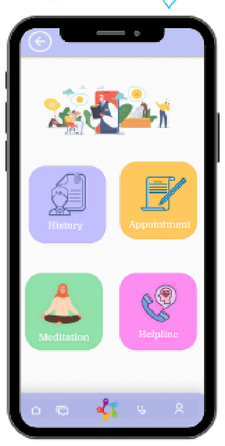
1. Assessing Mental Health Needs and Challenges
2. Contains Islamic design and content
3. Feasibility and Scalability
4. Enhancing User Engagement and Experience

User Interface design

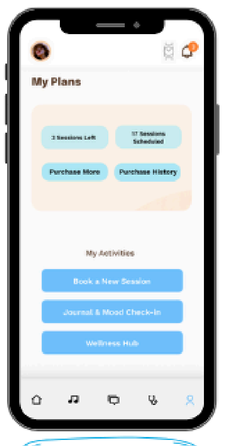
Splash Screen



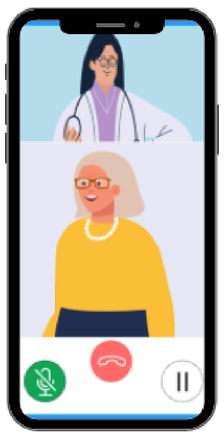
Home Page



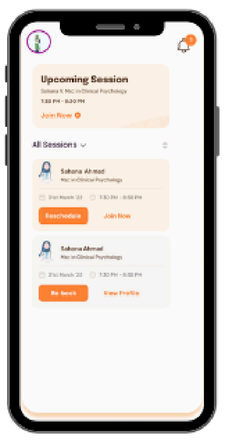
Counselor Page



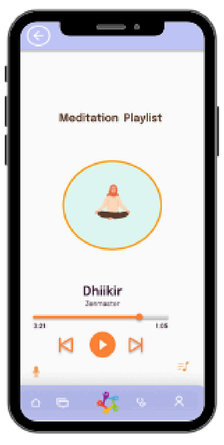
Online session



Session records



Helpline



Benefits to society

1. Increase their mental strength
2. Provides a better life to teenagers
3. Assist mentally affected teens
4. Boost mind to get better health

Commercialization & Potential

1. Increased demand in post-pandemic situation
2. Integration with Existing Health Systems
3. Developers and caregivers can be benefitted financially
4. Provide premium membership

Novelty

1. Unique and simplified Design
2. User-centric design
3. Completely designed for Muslim adolescents

IAM 172
EMPOWERING SUSTAINABLE MOBILITY : SOLAR- CHARGEABLE BATTERIES FOR E-SCOOTERS ON CAMPUS

schoot

inovulab

EMPOWERING SUSTAINABLE MOBILITY: SOLAR-CHARGEABLE BATTERIES FOR E-SCOOTERS ON CAMPUS



IAM

1 INTRODUCTION : BUSINESS IDEA GENERATION

Inovulab introduces a new product innovation ;

Universal Solar-powered Charger for E-Scooter

1 **MANUFACTURING**
Customizing solar panels and other compartments

2 **ASSEMBLING**
Assembling compartments into one unit of Schoot

3 **INSTALLING**
(Optional) Service fee for installation of charger on e-scooter

PROBLEMS FACED BY FOUNDATION STUDENTS IN UTP

Majority of foundation students use E-scooters on a daily basis and face common problems such as;

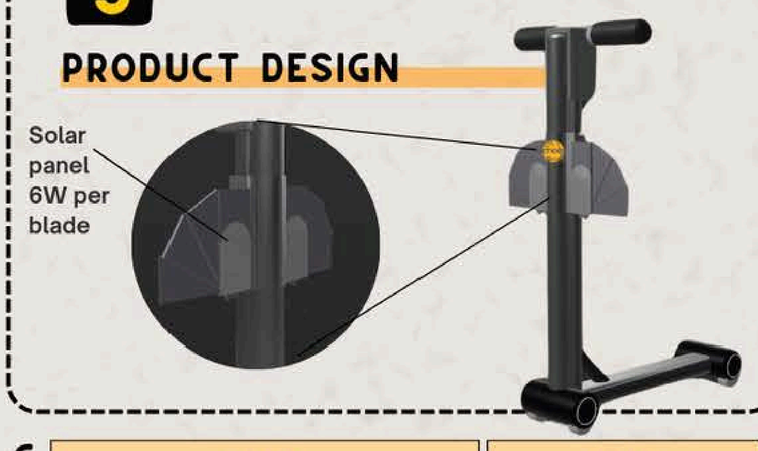
- RESTRAINTS ON BRINGING OWN VEHICLE
- LIMITED CHARGING PORTS
- HIGH OPERATIONAL COSTS

2 OBJECTIVES

This business aims to achieve;

- Added convenience and encourages use of E-scooters for students
- Normalise use of solar energy and decrease dependency on electric consumption
- Minimize operational costs incurred while approaching a more sustainable lifestyle

3 PRODUCT DESIGN



COST

ITEM	PRICE
SOLAR PANEL	MYR180
MPTT SOLAR CHARGE CONTROLLER	MYR40
INSTALLATION SERVICE	MYR60
MAINTENANCE	MYR20

4 COMMERCIALISATION

Targetting foundation students

CFS
CENTRE FOR FOUNDATION STUDIES
Connect with CFS (Centre of Foundation Studies)

TECHNO
TECHNOPRENEURSHIP OFFICE
Business pitch to CSD (Centre for Student Development) funded under technoprenuership

5 NOVELTY



- **Detachable**
Once installed, solar charger can be detached and applied to other owned e-scooters.
- **Replaceable**
If broken, user can buy a new one without buying a new scooter.

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eUDHCI

Ebook of Universal Design in Human Computer Interaction

1 Introduction

eUDHCI is aimed at use by 3rd semester students majoring in Diploma in Information Technology (Digital Technology), Department of Information and Communication Technology at Polytechnic Malaysia.

2 Problem Statement

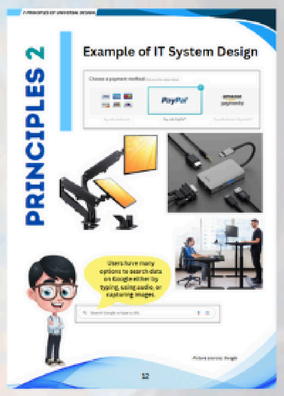
- The original HCI notes were developed in a conventional and somewhat outdated design, lacking interactivity.
- Previously, students were exposed to HCI notes that could only be accessed through the CIDOS eLearning platform.

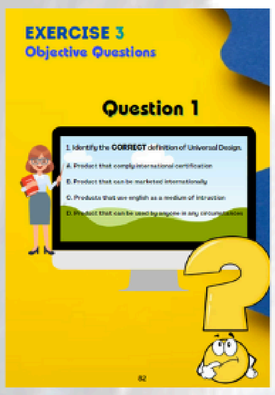
3 Objectives

- Make learning more engaging and interactive by developing eUDHCI, as this subject is theoretical.
- Diversify access methods for users through QR codes, the National Library of Malaysia's online catalog system, and the Politeknik Muadzam Shah website.

4 Product







5 Commercialisation

This ebook has been registered with an eISBN and is accessible through the National Library of Malaysia's Online Catalog System and on the Politeknik Muadzam Shah website.

6 Novelty of Product

- eUDHCI features various types of exercises including pop quizzes, crossword puzzles, matching questions, objective questions, and structured questions.
- The ebook's design is visually appealing with fresh colors and incorporates numerous images that relate to the content, enriching the learning experience beyond mere text.

TEAM MEMBER



LEADER
NOORROHANI BINTI AHMAD
Jabatan Teknologi Maklumat & Komunikasi, PMS



ABDULLAH AZRAAI BIN HASAN
Jabatan Teknologi Maklumat & Komunikasi, PMS



LINAWATI BINTI RAZAK @ ALI
Jabatan Teknologi Maklumat & Komunikasi, PMS

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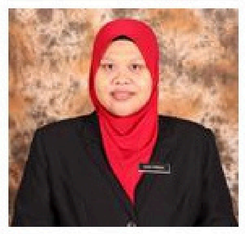
IAM 175
ARDUINO UNO R3 DIY KIT

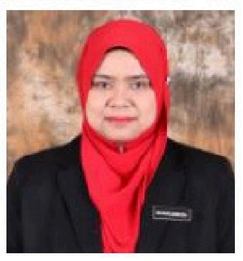
ARDUINO UNO R3 DIY KIT

Kategori: Tertiary Institution

Ketua: Tuan Rozilaazawani binti Tuan Mat
Ahli 1: Hasyireen binti Abdul Halim
Ahli 2: Dr. Khairunnisa binti A Rahman







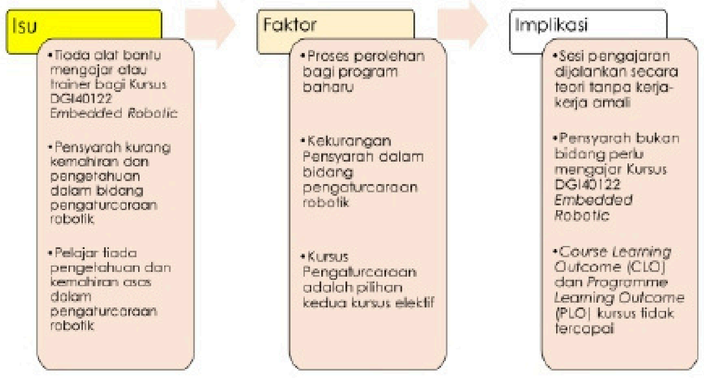
Pengenalan

Projek inovasi ini bermula dengan merujuk kepada **isu pengajaran dan pembelajaran** di Politeknik Tun Syed Nasir Syed Ismail. Dalam merealisasikan agenda negara dalam **Pelan Pembangunan Pendidikan Malaysia (Pendidikan Tinggi) 2015-2025** dan penetapan ***Key Performance Indicator*** **(KPI 2022)** menjadi cetusan idea untuk memulakan projek ini.

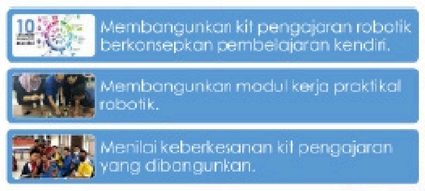
Kemenjadian graduan holistik, berciri keusahawanan dan seimbang menjadi teras pertama dalam Pelan Pembangunan Pendidikan Malaysia (Pendidikan Tinggi) memfokuskan menambahbaik pengalaman pembelajaran pelajar. Ia seiring dengan agenda negara untuk memenuhi kehendak pelanggan dan pemegang taruh bagi memastikan graduan Institut Pengajian Tinggi Awam (IPTA) terutama Politeknik dapat menghasilkan tenaga kerja separa profesional dalam bidang Pendidikan dan Latihan Teknikal dan Vokasional (TVET) Negara.

- Projek ini berkait rapat dengan Misi JPPKK iaitu **melahirkan graduan holistik, berciri keusahawanan dan seimbang** – menambahbaik pengalaman pembelajaran pelajar.
- Pemberian perkhidmatan separa profesional dilaksanakan memenuhi piawaian yang telah ditetapkan dalam dasar kualiti (Piagam Pelanggan).
- IPT perlulah mengamalkan pendekatan pengajaran yang sejajar dan sesuai kepada bidang ilmu dan kemahiran yang ditetapkan oleh pernyataan *Programme Learning Outcomes* (PLO) : **PPPM (PT) Teras 1 – Graduan Holistik, Berciri Keusahawanan dan Seimbang.**

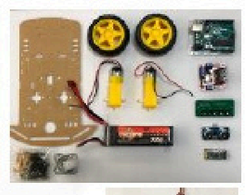
Pernyataan Masalah

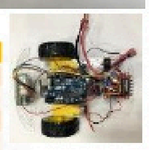


Objektif

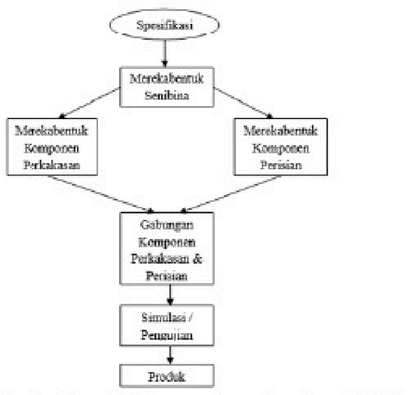


Metodologi





No	Perkakasan/Perisian	Bilangan
1	Arduino UNO R3 Microcontroller	1
2	2WD Smart Robot Car Chassis	1
3	Ultrasonic Sensor HC-SR04	1
4	Auto-calibration Line Sensor	1
5	Bluetooth Module HC-05	1
6	Dual H-Bridge Driver L298	1
7	LiPO Rechargeable Battery 11.1V 2200mAh	1
8	Multi-Function LiPO Balance Charger	1
9	Arduino Editor	1
10	Proteus Software	1



Rajah 1: Adaptasi Metodologi Sistem Terbenam Thoma & Fuchs (1999)

Pembangunan Produk

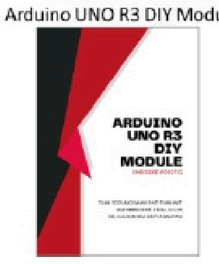


Arduino UNO R3 DIY Robot



- *Do-It-Yourself*
- PBL, pengalaman pembelajaran, kemahiran teknikal robotik

Arduino UNO R3 DIY Module



- *Do-It-Yourself*
- PBL, pengalaman pembelajaran, kemahiran teknikal robotik
- Pencapaian CLO & PLO Kursus *Embedded Robotic*

Set Soal Selidik Keberkesanan Produk

- Soal selidik praujian dan pascaujian
- Analisis dengan kaedah statistik deskriptif

Kit pengajaran *Do-It-Yourself* yang boleh diubahsuai isi pengajaran bergantung kepada penggunaan dan fokus peserta.

Pembelajaran kendiri dapat meningkatkan kemahiran teknikal.

Diaplikasikan dalam Program Mini Teater STEM Johor di SMK Tunku Putra, Batu Pahat.



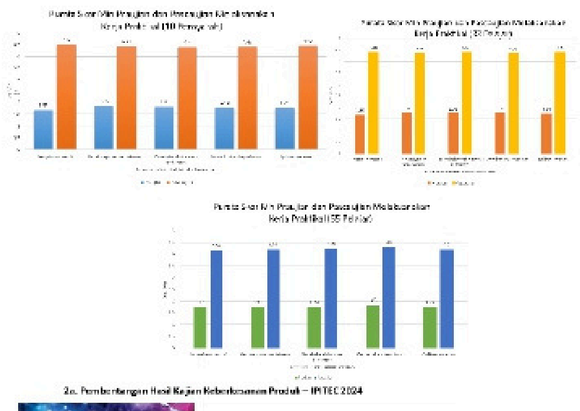
Bahan promosi booth pameran untuk menarik minat lepasan SPM memilih Diploma Kejuruteraan Elektrik dan Instrumentasi (DEI) sebagai pilihan pertama.

Diaplikasikan dalam Program Pembelajaran Sepanjang Hayat yang menyokong IR4.0 iaitu Clinic Robotic dan Robot Sumo.

6 kertas penyelidikan berkaitan pembangunan dan keberkesanan produk telah dibentangkan di peringkat antarabangsa iaitu *International TVET Academic and Research Symposium* (ITARS 2022 & 2023) dan *International PSA Innovation, Technology, Engineering & Commercialization Conference* (iPITEC 2024).

Rujukan utama Projek Akhir Pelajar Diploma Kejuruteraan Elektrik dan Instrumentasi (DEI) dalam pembangunan projek berasaskan pengawalmikro dan telah memenangi Pingat Emas, Perak dan Gangsa di SINERGIE.

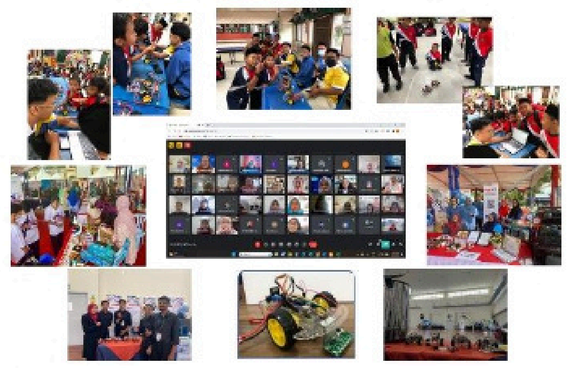
Keberkesanan



2a. Pembentangan Hasil Kajian Keberkesanan Produk – IPTEC 2024

PENGKOMERSIALAN

Bil	Program/Aktiviti	Tempat	Tarikh	Bil. Penyertaan
1	Pameran robotik sempena Hari Keusahawanan	SK Parit Yusoff Muar	25 September 2022	80
2	Pameran robotik sempena Sambutan Hari Belia Negara 2022 Peringkat Negeri Johor	Dataran Tanjung Emas, Muar	28-30 Oktober 2022	40
3	Pameran robotik sempena Karnival Pengajian Tinggi Keluarga Malaysia	Parit Sulong, Batu Pahat	3-4 November 2022	40
4	Pameran robotik sempena Program CEO@ PolyCC	Dewan Serbaguna HPTP	21 Mac 2023	95
5	Program Mini Teater STEM Johor melibatkan Persatuan STEM Kebangsaan, Kerajaan Negeri Johor dan IPTA Johor	SMK Tunku Putra, Batu Pahat	2023 – 2025 Program 3 tahun	10
6	Pameran robotik sempena Sambutan Hari Kanak-kanak Mega dan Karnival Usahawan Cilik Tahun 6 Bersama Komuniti	SRAB Daerah Muar	4 Disember 2023	37
7	Pameran dan Demonstrasi Sempena Program Eksplorasi STEM Peringkat Daerah Muar	SMK Bandar Maharani, Muar	26 Oktober 2023	43
			JUMLAH KESELURUHAN	295



Novelti













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IAM 177
PHISHING LINK DETECTION USING LOGISTIC REGRESSION ALGORITM

PHISHING LINK DETECTION USING LOGISTIC REGRESSION ALGORITHM:

Technological Innovation for Cybersecurity

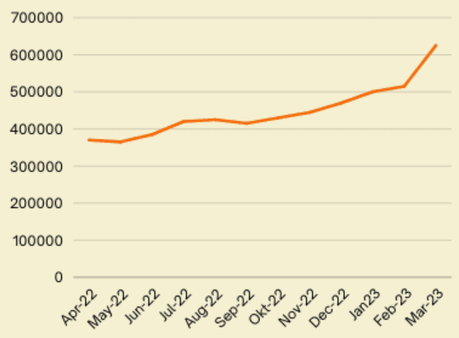


Cybersecurity is becoming increasingly **important** as phishing threats rise. **Detecting phishing links** can be a **key solution** to addressing this problem.

Hilya Anbiyani Fitri Muhyidin — hilyaanbiyani@upi.edu
Dr. Suprih Widodo, S.Si., M.T. — supri@upi.edu
Liptia Venica, S.T., M.T. — liptiavenica@upi.edu

PROBLEM STATEMENT

Phishing threats **tended** to **increase** from the second quarter of 2022 to the first quarter of 2023.



Source: Anti Phishing Working Group Trends Report, 2023

Phishing is a **gateway** to more **complex cybercrimes** and contributes to the rise of major crimes like ransomware, according to BSSN 2023.

Phishing causes **financial harm.** The largest percentage of phishing attacks, **23.5%**, targets the financial industry (Anti Phishing Working Group Trends Report, 2023).



OBJECTIVE

Reduce the **risk** of phishing attacks or **victims**, we detect potentially phishing links. Users input suspicious URLs so the product can **protect** them **while** they're **using internet**.

COMMERCIALISATION

Our **market** plan **targets** individuals and groups who **use** the **internet**. We will market this product through **partnerships** with **cybersecurity** providers, aiming for **integration into existing cybersecurity** solutions.

OUR PRODUCT

https://github.com/hilya09/phishing-detection



NOVELTY

LOGISTIC REGRESSION

Applying the **logistic regression** algorithm to create a link detection model.

DATASET

The **dataset** used to train the model is obtained from a **combination** of several **sources**.

7 FEATURES

Using 7 important features (predictor variables) **based** on the **highest correlation** analysis results.

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GROUP ID - IAM179

WANDER STEP- TRAVEL SHOES

INTRODUCTION

Wander step shoes are travel shoes that are particularly well-suited for travellers who are travelling over extended distances. Consequently, these travel shoes offer a variety of benefits, including practicality, style, flexibility, and convenience.

PROBLEM STATEMENT

- As shoes are sometimes too big for daily usage, travellers must balance comfort, practicality, and style. For those with joint or foot concerns, a multipurpose shoe for daily usage and trekking is essential. Long walks are tiring.

OBJECTIVES

- Soles are designed to provide excellent grip and stability on different surfaces.
- The stylish design is suitable for multiple settings, eliminating the need to pack multiple pairs of shoes.
- Lightweight construction for ease of travel and reduced fatigue.

PRODUCT DESIGN

- Breathable Materials: It uses high-quality, breathable fabrics to keep feet cool and dry, even during long periods of wear.
- Adjustable Fit: The shoe features adjustable elements such as laces and straps to ensure every user's secure and personalized fit.
- Compact Design: The design is compact and easily packable, making it an ideal choice for travellers with limited luggage space.

NOVELTY

- The ultimate sports shoe with clip-on interchangeable soles is rarely available.
- Effortlessly switch between hiking, jogging, and sports soles for optimal performance in any activity. Experience unparalleled versatility, comfort, and style in one innovative shoe.
- Perfect for athletes, adventurers, and fitness enthusiasts.



COMMERCIALISATION

- Market Appeal: Focus on promoting the convenience, flexibility, and stylishness of Wander Step shoes to travellers looking for practical yet fashionable footwear at a reasonable price.
- Branding: Emphasize the unique blend of comfort and style, positioning Wander Step as the go-to choice for travel shoes.
- Space-saving packaging: Suitable for traveling and saving space in a travel bag

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IAM 181
SMART CYCLIST SAFETY - A RISK PERCEPTION DEVICE FOR ENHANCED COMMUNITY CYCLING



Smart Cyclist Safety- A Risk Perception Device for Enhanced Community Cycling

"Empowering Tomorrow: Pioneering the Future Through Innovative Technology"

INTRODUCTION

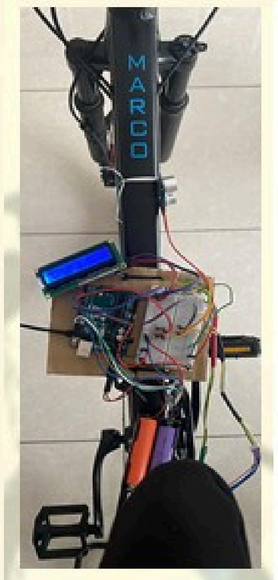
Promoting active mobility in cities requires bicycle safety. This project develops a prototype gadget to measure car overtaking distance to improve rider safety. The initiative evaluates its performance and overtaking behavior to improve cyclist risk perception and safety.

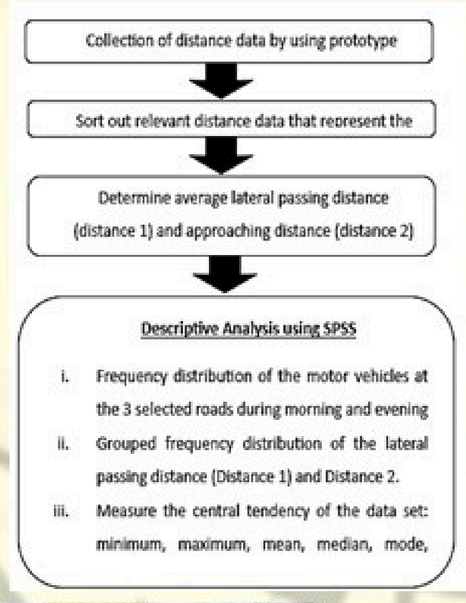
PROBLEM STATEMENT

- Increased bicycle fatalities and injuries owing to inadequate awareness and protection from overtaking automobiles underscore the need for stronger safety measures.
- Current techniques of assessing vehicle passing distances and speeds are insufficient, thereby obscuring bike safety considerations, especially in limited road space.
- Road lane width and peak traffic hours impact overtaking vehicle speed and behavior, requiring further research for improved safety standards.

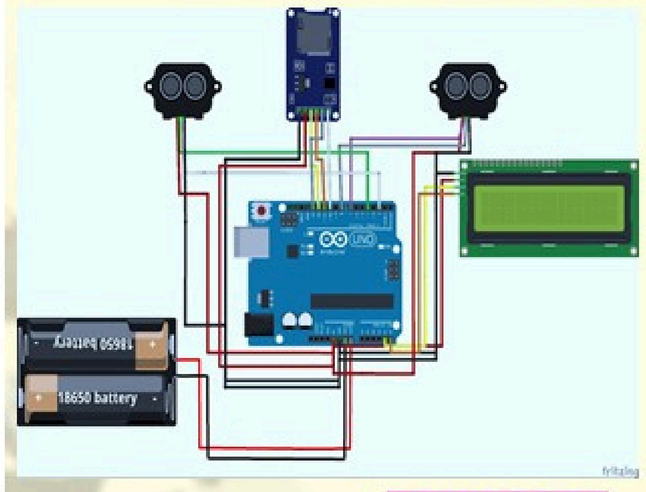
OBJECTIVES

1. To create a prototype that accurately measures the overtaking distances between vehicles and cyclists by evaluating its power efficiency and efficacy.
2. To determine how passing distance and road lane width affect the vehicle overtaking bicycle's passing distance



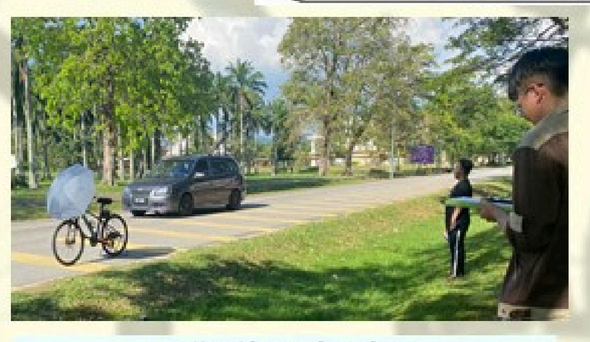


PRODUCT DESIGN



NOVELTY

The device integrates road lane width and peak traffic hours data to understand how they affect vehicle behavior, a capability not often found in safety equipment.

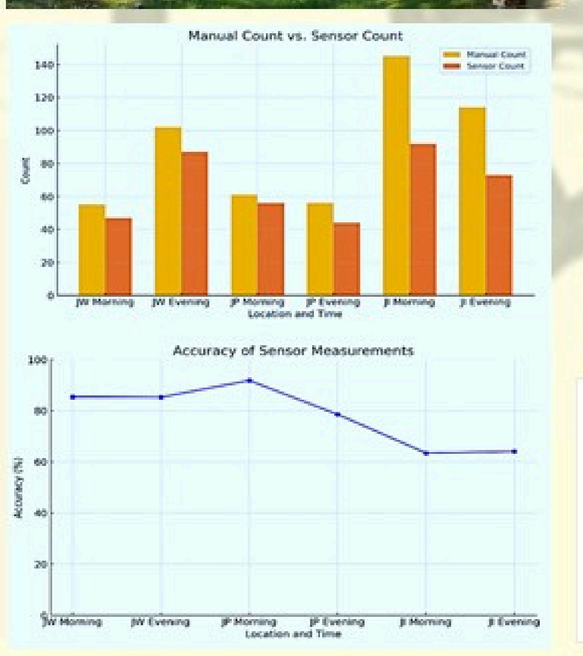


RESULTS

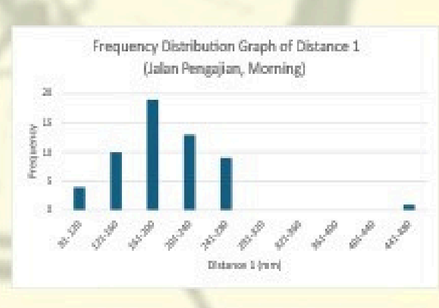
Location	Time	Manual Count	Sensor count	Difference	Accuracy (%)
Jalan Wawasan	Morning	55	47	8	85.45
	Evening	102	87	15	85.29
Jalan Pengajian	Morning	61	56	5	91.80
	Evening	56	44	12	78.57
Jalan Inovasi	Morning	145	92	53	63.45
	Evening	114	73	41	64.04

$$\text{Accuracy (\%)} = \frac{\textit{Sensor Count}}{\textit{Manual Count}} \times 100$$

$$Mode = l + \left(\frac{f_1 - f_0}{2f_1 - f_0 - f_2}\right) \times h$$

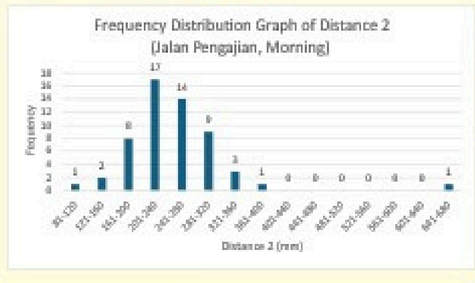






COMMERCIALISATION

1. Urban riding and road safety awareness drive demand for cyclist safety solutions. The device meets a market demand.
2. Individual cyclists, bicycle clubs, and city planners can use it in smart city traffic safety projects.



" Technology is best when it brings people together"

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IAM 182
IMOMS

IMOMS

Information Monitoring of Mentees' Sales

Noraini bte Hashim, Hariyaty Ab Wahid & Nurul Ashikin Mohd Taib

Pengenalan

- Mentor adalah aspek penting dalam mengekalkan perniagaan pemula (St-Jean & Jacquemin, 2022; Hartmann, Backmann, Newman, Brykman, & Pidduck, 2022; Dost, Shah, & Saleem, 2021)
- kerana pementoran ini bukan sahaja membangunkan kecekapan dalam kepimpinan, malah akan membantu usahawan pemula untuk menyusun strategi perniagaan (Chang & Cheng, 2022) dan meningkatkan jaringan perniagaan (Street et al., 2022; Haneberg & Aaboen, 2020) sekaligus akan menjadikan menti boleh menjadi lebih berdikari sendiri (St-Jean, et al., 2017).
- Mentor kepada perniagaan permulaan (*start-up*) dianggap penting dan merupakan sumber kekuatan (Abd. Rahman et al., 2020) untuk melengkapkan usahawan pemula dengan asas-asas yang akan mempersiapkan diri mereka bagi mengembangkan potensi penuh mereka sebagai usahawan supaya mereka boleh mengikut peredaran globalisasi dan bersedia menghadapi realiti pasaran yang dinamik. Mentor adalah merupakan satu sistem sokongan yang diperlukan oleh usahawan pemula (Street et al., 2022; Kubberød & Ladegard, 2021; Haneberg & Aaboen, 2020; Bone et al. 2019; Kubberod & Fosstenløkken, 2018; Kram, 1985b)

Pernyataan masalah

Masalah yang sering berlaku dikalangan usahawan pemula adalah tidak menetapkan sasaran jualan. Sekalipun jika ada penetapan, agak sukar bagi mereka untuk memantau pencapaian tersebut. Jika di dalam sesebuah organisasi, ada ketua yang akan memantau dan mengawal pencapaian KPI jabatan. Jika terdapat mentor di dalam perniagaan mereka, mentor boleh membantu usahawan menetapkan sasaran jualan yang perlu dicapai samada secara harian, mingguan atau bulanan. Mentor boleh sentiasa memantau sasaran dan pencapaian jualan ini. Adakah tercapai atau tidak? Jika mereka memantau, mereka akan nampak jurang antara sasaran dan jualan sebenar. Jika berlakunya jurang tersebut, apakah pula tindakan yang perlu diambil oleh usahawan? Seperti yang kita sedia maklum, usahawan pemula / pemilik kedai biasanya sangat sibuk untuk mengawal hal ini, tetapi mereka kurang mampu untuk membayar staf yang berkemahiran di bidang kewangan khusus untuk perniagaan mereka. Maka produk ini dibangunkan agar mentor dapat sama-sama membantu, membimbing dan memantau prestasi jualan perniagaan menti. Di dalam sesebuah pementoran perniagaan, wujud kelonggaran di dalam proses kawalan kewangan yang melibatkan pemantauan sasaran dan pencapaian yang kurang sistematik. IMOMS dibina untuk memantau pencapaian sasaran jualan bulanan bagi sesebuah perniagaan pemula. Ianya juga bertujuan untuk melakukan perancangan sasaran jualan, pemeriksaan dan laporan pencapaian penjualan secara bulanan. IMOMS ini juga akan memudahkan pemantauan, pengawalan, penyimpanan, pengemaskinian dan mencari data jualan untuk peringkat pengurusan sesebuah perniagaan.

Objektif

Penyelidik-penyelidik mencipta produk inovasi ini untuk

1) menyediakan platform pangkalan data bagi rekod sasaran dan pencapaian jualan secara sistematik berkomputer yang boleh dinilai dan dipantau oleh mentor usahawan.

2) ianya juga untuk memudahkan bagi mentor membantu perancangan aktiviti di peringkat pengurusan kedai bagi mencapai sasaran jualan yang ditetapkan.

3) memudahkan carian dan pemantauan data dan pencapaian jualan yang dilakukan oleh menti

Pengkomersialan

Kadar harga cadangan produk

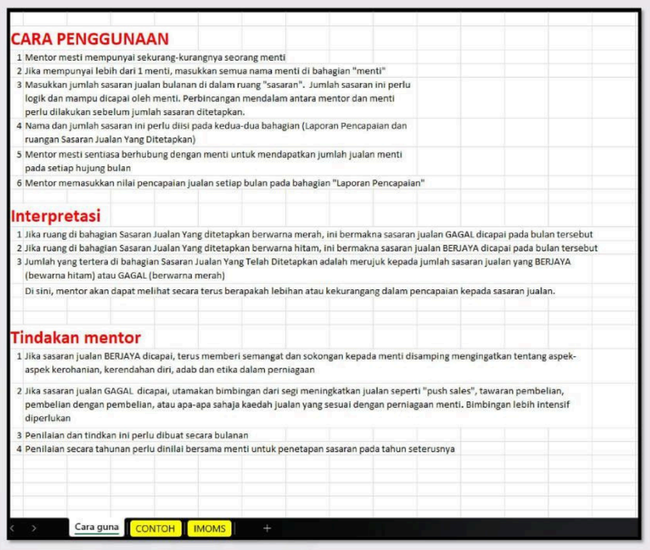
Pakej	Harga	Perkhidmatan ditawarkan
A	RM150	IMOMS sahaja beserta CD cara Penggunaan
B	RM300	IMOMS sahaja beserta CD cara Penggunaan Latihan penggunaan
C	RM480	IMOMS sahaja beserta CD cara Penggunaan Pemantauan 3 bulan (RM60 sebulan) oleh penyelidik
D	RM760	IMOMS sahaja beserta CD cara Penggunaan Latihan penggunaan Pemantauan 6 bulan daripada pihak penyelidik

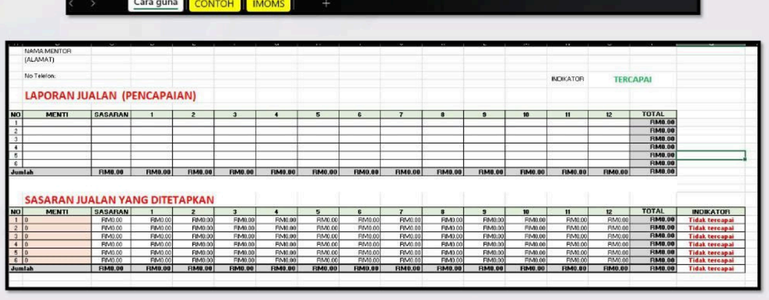
Prototaip produk

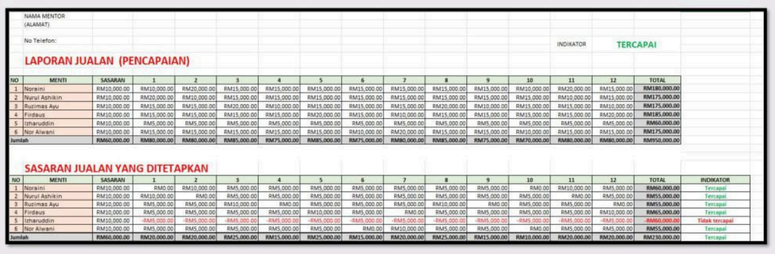
Inovasi ini dibina dengan menggunakan Perisian Microsoft Office - Excel 2017. Pembangunan IMOMS ini menggunakan formula-formula yang tertentu di dalam setiap "cell" Microsoft Office - Excel 2017.

Kos produk

Kos bagi IMOMS adalah melibatkan sebuah komputer dan perisian Microsoft Office – Excel 2017 sedia ada.







Novelty/Pembaharuan

Nilai baharu yang ada dalam produk ini adalah satu sistem penyimpanan maklumat yang menyimpan data pengurusan kawalan kewangan yang akan menjadikan pengurusan kewangan yang lebih sistematik dan berkesan. Sistem pangkalan data yang seringkali dibangunkan kebiasaannya bertindak sebagai platform penyimpanan data sahaja. Manakala sistem pangkalan data IMOMS ini juga mampu memandu pengurus perniagaan ke arah perancangan, pengemaskinian dan semakan pencapaian sasaran jualan. Ini dapat memastikan aktiviti perniagaan yang dijalankan berada pada laluan yang tepat ke arah nilai sasaran jualan. Produk ini berpotensi untuk digunakan oleh semua mentor usahawan di Malaysia terutama pensyarah-pensyarah institusi pengajian tinggi yang dilantik menjadi mentor kepada usahawan pemula.

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IAM 183
MODUL ART-RATION



IAM 184
SUPER K-NAF BOARD

SUPER K-NAF BOARD

The study aims to utilize Kenaf core into Rubberwood and Acacia Mangium Board, to understand the interactions of Kenaf core with Acacia Mangium, contributing to eco-friendly composite material development. The study also focuses on investigating the effect of the Kenaf core on the composite mechanical and physical properties and addressing cultivation waste issues.



Authors
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Mr Muhammad Hazwan Bin Khalid (UiTM Cawangan Pahang)
Dr Hasnizawati Binti Hashim (UiTM Cawangan Pahang)
Mrs. Nor Khairunnisa Binti Mat Yunus (UiTM Cawangan Pahang)
Ts Mohd Za'im Mohd Noor (Lembaga Kenaf dan Tembakau Negara)

INTRODUCTION

The Super K-Naf Board (SKB) is made from Rubberwood and Acacia Mangium supplemented by kenaf core. 95% rubberwood, Acacia Mangium, and 5% kenaf core strands will be weighed and mixed with phenol-formaldehyde (PF) resin in an OSB mixer.

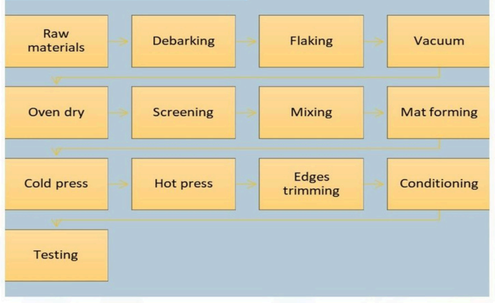
The targeted density of the SKB was 700 kg/m3. The PF resin content used will be 7%, 9%, and 11%.

The blended strands will be divided into 3 portions by weight, which is 25% face, 50% core, and 25% back to form a three-layer SKB.

OBJECTIVE

- To determine the bending properties of SKB using Rubberwood (Hevea Brasiliensis) and Acacia Mangium, supplemented by kenaf core.
- To evaluate the effect of PF resin content on the bending properties of the SKB

METHODOLOGY



COMMERCIALIZATION POTENTIAL

The Super K-Naf Board meets this demand by utilizing renewable resources like kenaf.

Many countries are implementing stricter environmental regulations and encouraging the use of sustainable materials. The Super K-Naf Board aligns with these trends and can benefit from government incentives and support.

The combination of rubberwood or acacia with kenaf provides a unique product that differentiates the Super K-Naf Board from other composite materials in the market.

NOVELTY

SKB made with Rubberwood and Acacia Mangium supplemented by kenaf core was produced and enhanced bending properties such as higher MOR (Modulus of Rupture) and MOE (Modulus of Elasticity) compared to standard wood-based boards and even the industry benchmark (BS EN300:1993).
The bending properties of the SKB were increased along with increasing PF content.
From an economical point of view, cut-off points on the 7% PF resin content level used were identified in this study based on the physical and mechanical evaluation of the SKB.
By incorporating kenaf, a renewable and fast-growing resource, the project promotes sustainability. Kenaf requires less time and fewer resources to grow compared to traditional wood sources. It will undoubtedly encourage the expansion of kenaf planting practices in the country.

ANALYSIS





Effects of Bending Strength on Species Ratio and Resin Content forSuper K-Naf Board

CONCLUSION

The Super K-Naf Board project stands out due to its innovative approach to combining rubberwood or acacia with kenaf, leading to enhanced mechanical properties and sustainability. This combination offers a novel solution to the challenges faced by traditional wood-based boards, providing a more robust, eco-friendly alternative with versatile applications. Furthermore, the findings of this study significantly contributed to the body of knowledge held within the scientific community regarding how resin content influences the characteristics of SKB.

By targeting key market segments and leveraging strategic partnerships, the Super K-Naf Board can achieve significant market penetration and success.



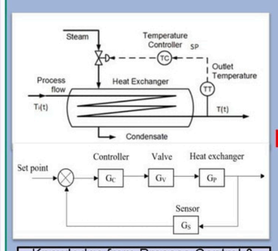
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IAM 185
INTEGRATION OF COMPUTATIONAL SIMULATION WITH PRACTICAL TRAINING CONTROL LABORATORIES FOR INDUSTRY 4.0 EDUCATION

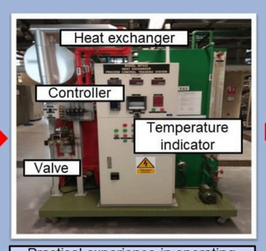
INTEGRATION OF COMPUTATIONAL SIMULATION WITH PRACTICAL TRAINING IN PROCESS CONTROL LABORATORIES FOR INDUSTRY 4.0 EDUCATION

Serene Lock Sow Mun
Chemical Engineering Department, Universiti Teknologi PETRONAS

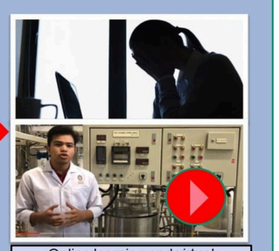
MOTIVATION / PROBLEM / BACKGROUND



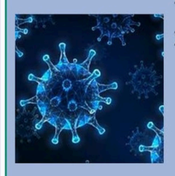
Knowledge from Process Control & Instrumentation course



Practical experience in operating instrumentation and controller



Online learning and virtual laboratory via video recordings



- Process control and instrumentation is important since it is used in all engineering industries to maintain quality and improve performance.
- Practical experience is vital for teaching and learning experience in process control since many interrelated automations and computational technologies are involved [1].
- The global COVID-19 pandemic has crudely forced an unprecedented transition from conventional classroom settings to remote learning, which has encouraged many online distance learning classes.
- Students are not able to master the real skills as they are not exposed to the real devices by only watching video recordings in online curriculum [2].

TEACHING & LEARNING THEORY & FRAMEWORK

EDUCATION 4.0 FRAMEWORK

Aimed at providing graduates with the capabilities and competencies required by the digital-driven industry [3].

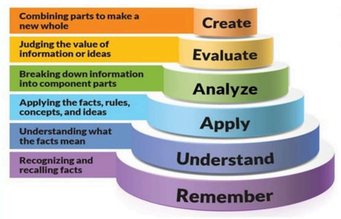
FIVE ES INQUIRY BASED LEARNING



Explore

Students can carry out hands on activities through online learning experience to make sense of a concept [4].

HIGHER LEVEL BLOOM TAXONOMY (CREATION)



Conventional physical laboratory

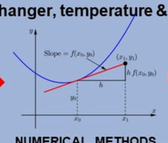
Simulation based laboratory

Students can create laboratory setup in simulation environment by putting parts or unit operation together [5].

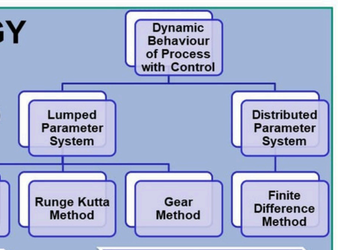
METHODOLOGY

Tool: Aspen HYSYS
Process simulation laboratories: 3
(heat exchanger, temperature & cascade control)

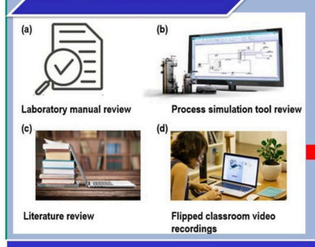
MATHEMATICAL ELEMENTS



NUMERICAL METHODS

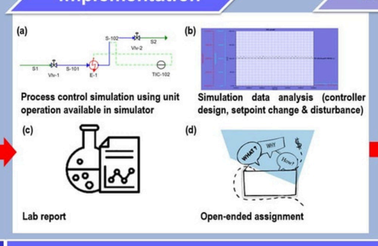


Pre-implementation



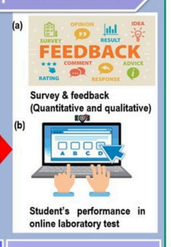
Review and flipped classroom video recordings

During implementation



Process control simulation and analysis with summative assessments

Post-implementation

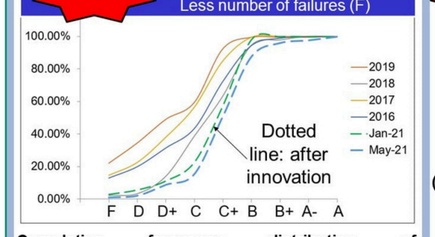


Survey & results

RESULTS / IMPACT

Target students: CEB3032 Jan/ May 2021
Class size: 207/ 162 students

Grades — Higher number of A and median, Less number of failures (F)



Cumulative frequency distribution of CEB3032/CDB3062 laboratory test from 2016 to 2021

CLO

January 2019 (Before innovation)



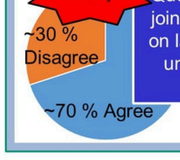
From ~11 % to ~40% B to A grades

May 2021 (After innovation)



Comparison between student's attainment of course learning outcome with comparable difficulty

Survey



Question: Implementation of joint computation and hands on laboratory is helpful in my understanding of process control laboratory

Feedback

Selected student feedback



SOURCE OF FUNDING / POTENTIAL FOR COMMERCIALIZATION / TRANSFERABLE PRACTISE

- The innovation has the potential to be implemented at all higher learning intuitions to create an IR 4.0 oriented laboratory learning experience
- The innovation is easily transferable since it conveniently adapts conventional and existing simulation software resources used in engineering curriculum in a convenient, time and cost efficient manner.
- The innovation is also consistent with direction of Malaysia education system to go digitalized in order to minimize physical contacts during the COVID-19 pandemic.



RECOGNITION / PUBLICATION







Awards

1. Anugerah Persatuan Sains Matematik Malaysia (PERSAMA 2022) Rekacipta Matematik: Hadiah Sanjungan
2. Malaysia Invention & Innovation Expo 2023: Engineering Innovation Special Award (International)
3. Malaysia Invention & Innovation Expo 2023: Gold (International)
4. International Invention Innovative Competition 2022: Gold (International)
5. International University Carnival on E-Learning 2022: Gold (International)
6. 7th Teaching and Learning Innovation Festival (TLIF) 2021: Gold (National)
7. Association of Science Technology and Innovation (ASTI) Young Inventors Journal (YIJ) Paper Writing Competition: 3rd Place (International)





Journal publication

1. I.S.M. Lock & S.S.M. Lock, Enriching Process Control Distance Learning: A Paradigm Shift to Modelling and Simulation Integrated Laboratory, Young Inventors Journal (2021), 1-10



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Team Member:

1) **Dr. Ts. Serene Lock Sow Mun,** Chemical Engineering Department, Universiti Teknologi PETRONAS
2) **Ts. Irene Lock Sow Mei,** Group Technical Solutions, PETRONAS
3) **Dr. Lim Lam Ghai,** School of Engineering, Monash University Malaysia







References

1. Sanuk S, Caganova, D., Saniuk, A. Knowledge and Skills of Industrial Employees and Managerial Staff for the Industry 4.0 Implementation. Mob. Netw. Appl. 2021.
2. Gamage K.A.A., et al. Online Delivery of Teaching and Laboratory Practices: Continuity of University Programmes during COVID-19 Pandemic. Educ. Sci. 2020, 10(10), 291
3. Benesova A, Tupa J. Requirements for Education and Qualification of People in Industry 4.0. Proc Manuf. 2017;11, 2195-202.
4. Duran, L., & Duran, E. The 5E Instructional Model: A Learning Cycle Approach for InquiryBased Science Teaching. Sci. Educ. Rev. 2004, 3(2), 49-58.
5. Delgado, et al. Pandemic Teaching: Creating and teaching cell biology labs online during COVID-19, Biochem. Mol. Biol. Educ. 2020, 49(1), 32-37

Email: sowmun.lock@utp.edu.my

BUKU KIA SYSTEM

Maternal Health System

Tan Yit Jie/ SEGI College Penang

Introduction

Maternal Health Record System proposes the development of a new online platform to revolutionize the management of maternal health information. The goal of the Digital Maternal Health Record System, named Buku KIA System, is to replace the traditional paper-based record keeping system with a user-friendly online system. This platform will be a centralized repository of maternal health information and will provide several key features to improve efficiency and improve communication in maternal health care.

Objective

- Aims to provide a simple and user-friendly online portal that allows efficient entry, retrieval and updating of maternal health information.
- To provide real-time access to health care providers: seeks to provide real-time access to maternal health records for empowered health care providers.
- To implement a push notification system via email to provide in maternal and child health improve promotion by sending timely reminders to expectant mothers about their upcoming antenatal check-ups.

Problem Statement

- Traditional paper-based record-keeping methods are prone to errors, redundancies, and inefficiencies, leading to underutilization management of maternal health data.
- Physical records stored in designated areas are often inaccessible to healthcare professionals, especially in emergency situations.
- Expectant mothers may struggle to remember or prioritize important prenatal check-ups and postnatal planning due to various factors such as forgetfulness or competing priorities.

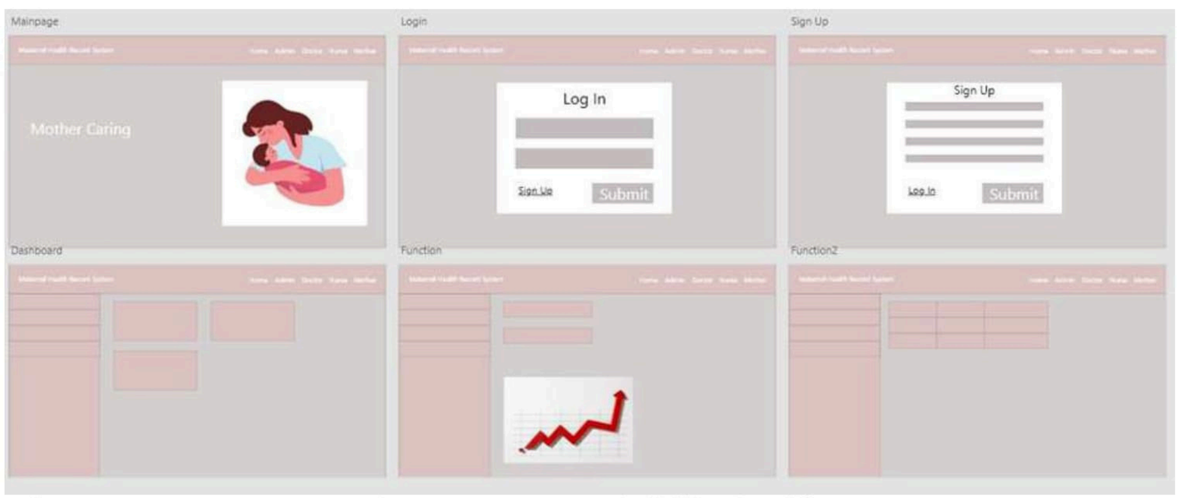
Novelty

- Integration of advanced digital technologies for maternal healthcare management.
- Real-time health data management and secure storage.
- Personalized educational content delivery tailored to individual needs.
- Proactive notification systems for timely reminders and updates.
- Focus on optimizing prenatal and postpartum care outcomes through innovation and efficiency.

Commercialization

- Innovation: Integrating advanced technology for real-time maternal health management.
- Market Focus: Targeting healthcare providers and expectant mothers with personalized care solutions.
- Customer Support: Comprehensive training and ongoing technical assistance.
- Marketing Approach: Digital campaigns and partnerships to enhance market penetration.

Prototype Design





IAM 187
KID'S FIT BAR

KEMENTERIAN PENDIDIKAN
BAHAGIAN PENDIDIKAN DAN LATIHAN TEKNIKAL VOKASIONAL

KOLEJ VOKASIONAL
KEMENTERIAN PENDIDIKAN MALAYSIA
KOLEJ VOKASIONAL (ERT) AZIZAH

IAM



KID'S FIT BAR

ID - IAM187

Inovasi Makanan Tenaga Untuk Kanak-Kanak

Product Innovators:

AZHAR BIN BUHARI
NURSYUHAIDAH BINTI ZAID

Contact:

KOLEJ VOKASIONAL (ERT) AZIZAH
JALAN DATIN HALIMAH
80350 JOHOR BAHRU, JOHOR
azharbuhari89@gmail.com

INTRODUCTION

- Kid's Fit Bar is one of our group ideas to make a snack that children love and innovate based on broccoli.
- The choice of broccoli is because this vegetable is not fully yet commercially available as a children's snack product.
- Broccoli is rich in vitamins and minerals, however it is necessary to diversify the products to attract children to enjoy and will generally make the snack healthier.

PROBLEM STATEMENT

- Broccoli is a good source of dietary fiber, which aids digestion, promotes a feeling of fullness, and contributes to a healthy digestive system. (Syed et.al, 2023).
- Based on the Malaysian Dietary Guidelines for Children and Adolescents (2013), growing children are advised to consume additional snacks to ensure that their energy and nutrient needs are adequate. (Daily Metro newspaper 30/1/2018).

PRODUCT NOVELTY

- Crispy texture
- Great broccoli flavor
- Healthy energy snack

OBJECTIVES

- Developing innovative energy snack products for children.
- Commercializing broccoli vegetables in children energy snacks.
- Producing a basic formulation of the vegetable-based Kid's Fit Bar.

PRODUCT DESIGN



COMMERSIALISATION

- Introducing energy snacks for children to Industri Kecil Sederhana (IKS) and also to Food Entrepreneurs.
- Cooperation with MARDI, JAKIM and licensed organizations for research on better and quality food products.

MARDI
HALAL
Chemlab CHEMLAB Chemical Technology

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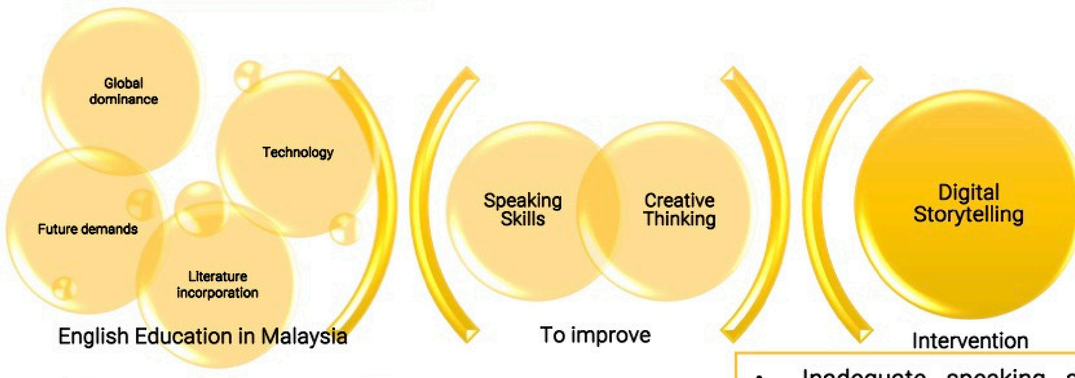
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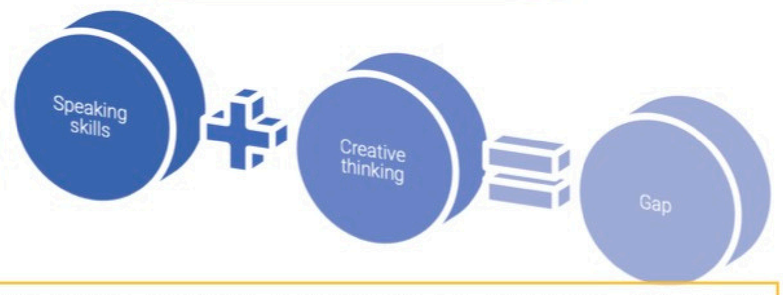
IAM 189
INTEGRATING KEYNOTE AND GARAGEBAND IN DIGITAL STORYTELLING : AN INNOVATIVE PROGRAM FOR ESL LEARNERS

Integrating Keynote and GarageBand in Digital Storytelling: An Innovative Program for ESL Learners

Introduction



Problem Statement



- Inadequate speaking skills hinder academic achievement, job prospects, and global participation. Challenges in English language education include the practical application of Communicative Language Teaching (CLT) and CEFR-aligned assessments
- Secondary school pupils in Malaysia are lack of creative thinking skills, where it is essential for adapting to the 21st-century workforce. Hence, it is difficult to adapt to changes, seize opportunities and think creatively.
- There's a gap between policy intentions and practical outcomes in promoting creative thinking and speaking skills.

Methodology

Analyse	• Pre questionnaire • Need analysis

Design	• Plan activity based on the theories:
	  • Constructivism
	  • Multiple Intelligence

Develop	• Using iPad apps to produce digital storytelling:
	  • GarageBand
	  • Keynote

Implement	• Students given a period of time to produce digital storytelling
Evaluate	• Post questionnaire

Innovation Objectives

1. To assess the improvement in pupils' speaking skills
2. To measure the enhancement of creative thinking abilities
3. To evaluate pupils' engagement and motivation

Results & Discussion



		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	SpeakingSkills_Pre - SpeakingSkills_Post	-.328	.205	.023	-.374	-.283	-14.306	79	.000

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	CreativeThinking_Pre - CreativeThinking_Post	-.201	.216	.024	-.249	-.153	-8.344	79	.000

Speaking Skills

- significant enhancement in speaking skills among secondary school pupils post-DST program
- aligning with Malaysia's adoption of innovative digital tools to address challenges identified in previous research
- underscoring the efficacy of technology-driven approaches in ESL instruction

Creative thinking

- significant enhancement in creative thinking among secondary school pupils post-DST program
- promotes 21st-century learning skills like creativity and critical thinking
- aligning with the Malaysian Education Blueprint 2013-2025's strategic use of ICT



Novelty

Pedagogical
- DST transforms traditional language teaching by engaging students through interactive multimedia and promoting active, student-centered learning.

Theoretical
- DST integrates constructivist and social learning theories to enhance cognitive development, creativity, and critical thinking.

Practicality
- DST is easily integrated into existing curricula, uses readily available digital tools, and is adaptable to diverse educational settings.

Design & Development
- DST platforms are user-friendly, scalable, and include collaborative features that enhance social learning and peer feedback.

Conclusion

The study demonstrates the effectiveness DST in enhancing English speaking skills and fostering creative thinking among secondary school pupils.

Enables educators to nurture confident communicators with critical 21st-century skills for success in a globalized world.

Pioneering the future of education through innovation of Digital Storytelling

Commercialisation

Inventiveness
Position the product as a novel educational technology solution that combines multimedia presentation (Keynote) and audio production (GarageBand), offering a comprehensive digital storytelling tool.

Mobility
Emphasize the tool's usefulness for remote and hybrid learning environments, providing continuity in education regardless of location, enhancing learning opportunities outside traditional classroom settings.

Feasibility
Conduct pilot programs in select schools to demonstrate feasibility. Ensure seamless integration with existing school infrastructure and other educational technologies, making adoption straightforward.

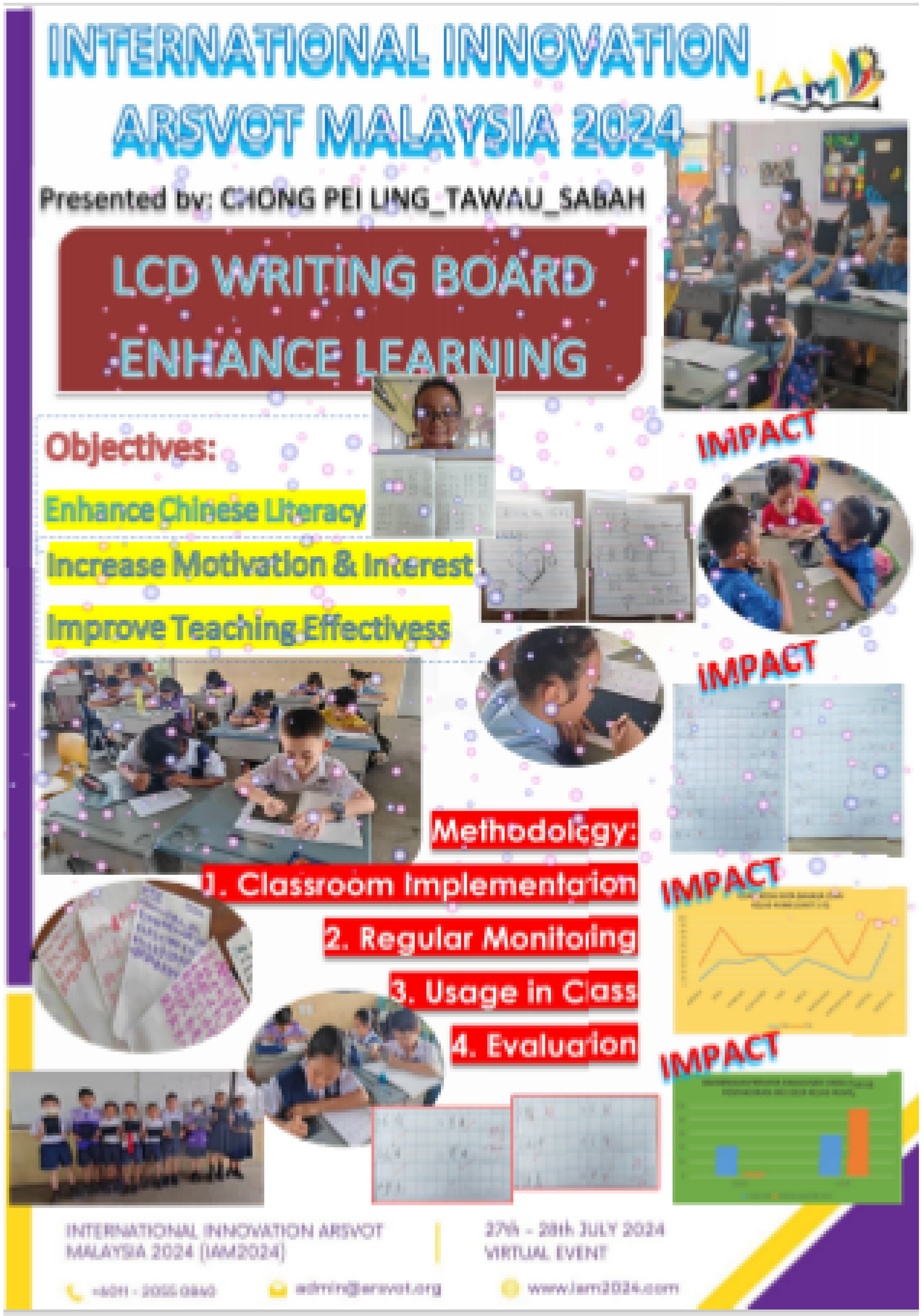
Cost-Effectiveness
Highlight the cost-effectiveness of using existing devices (iPads and MacBooks) that schools already have, reducing the need for additional hardware investments. Provide bundled packages that include training and support, offering comprehensive solutions.



Geoffrey Lim Fu Chien
Harwati Hashim

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IAM 191
LCD WRITING BOARD ENHANCE LEARNING



IAM 192
CYBER HERO

Already adopted by the school!



Download Now!



Reisa Aulia Sodikin
Universitas Pendidikan Indonesia

Nuur Wachid Abdul Majid, S.Pd., M.Pd.
Universitas Pendidikan Indonesia

CYBER HERO

An interactive learning application designed to educate students about the importance of **cybersecurity, identifying cyber threats,** and **acquiring basic skills to safeguard themselves and their personal information** when using digital technology.

CYBER HERO IS MORE THAN JUST A LEARNING APP

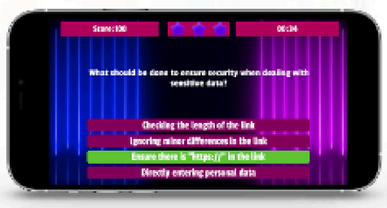
Presents the material in **ENGAGING** formats!



Comic-style Narratives



Educational Video



Interactive Quizzes with Progressive Difficulty Levels



Skill-Building Game

COMPREHENSIVE COVERAGE of Cybersecurity Topics!

- Strong passwords
- Phishing mitigation
- URL spoofing awareness
- Malware handling
- Theoretical explanations and practical solutions.

Features **CHARACTERS!**



Why this is IMPORTANT?

Boston Consulting Group (BCG) research has found that

72% of **children** around the world have **experienced** at least one **a cyber threat online**.

This era of **Society 5.0** demands the education sector to prioritize **the use of technology to improve the quality of learning**.

With an interactive and enjoyable approach, Cyber Hero aims to..

Enhance cybersecurity awareness among children, build essential skills to recognise and respond to various cyber threats, and provide an engaging learning experience.

Let's dive into a fun-filled journey of cybersecurity learning with Cyber Hero!

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IAM 193
HEALTHTRACK
PERSONALIZED FAMILY HEALTH MONITORING SYSTEM

UNIVERSITI TEKNOLOGI MARA

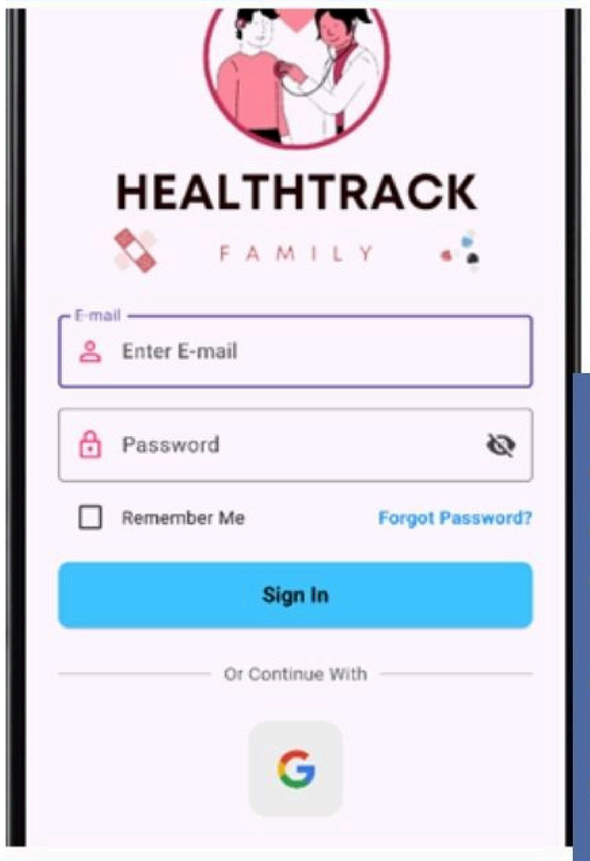
HEALTHTRACK
PERSONALIZED FAMILY HEALTH MONITORING SYSTEM

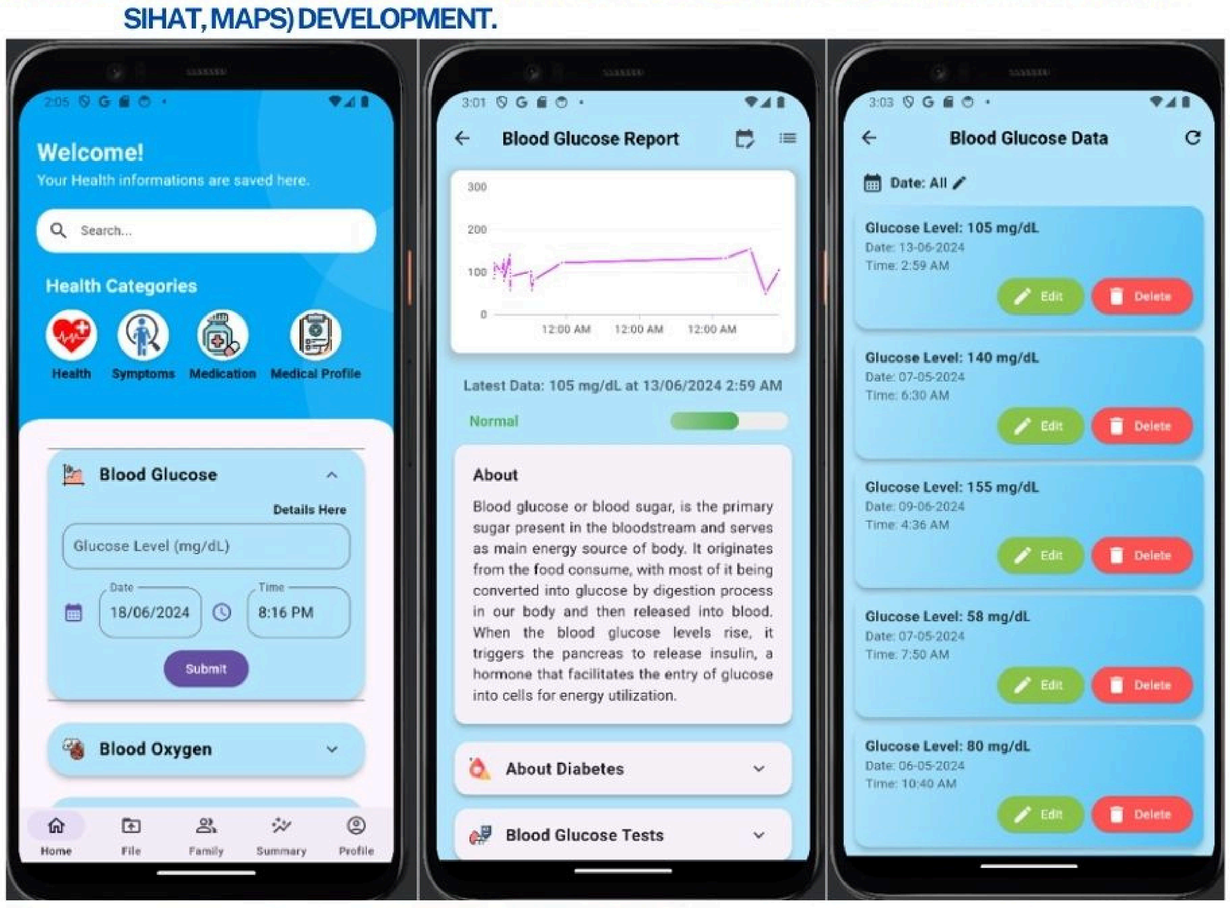
Nur Fatihatul Husna Ahmad Razi Suraya Masrom Seng Boon Lim Jamalunlaili Abdullah

This project was funded by the project grant number 600-RMC/VCSP 5/3 (003/2024) entitled SUSTAINABLE-SMART-HEALTHY (MAMPAN-PINTAR-SIHAT, MAPS) DEVELOPMENT.

Problem Statement

- Difficulty in recalling and managing health information..
- Risks of misdiagnosis and increased anxiety due to inaccurate health records.
- Need for tools that support both individual and family health management.

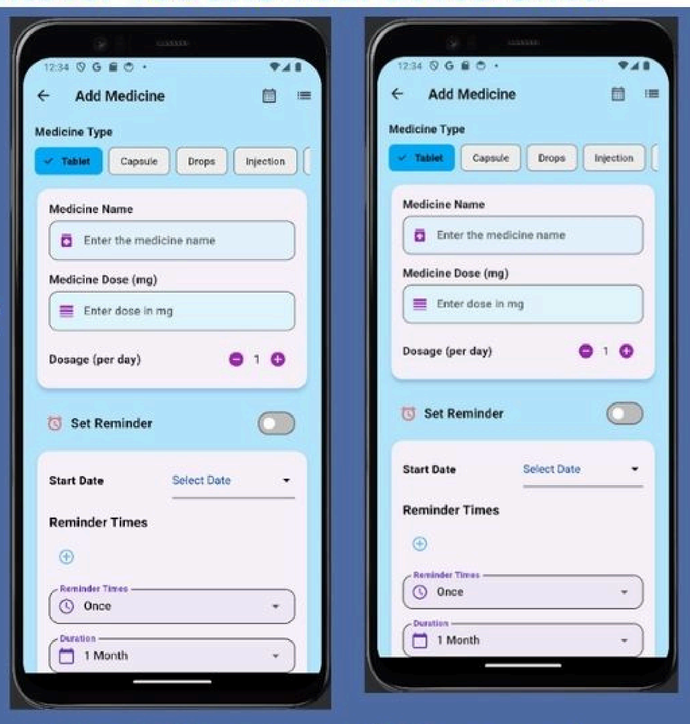




"Daily Health Insights for You and Your Loved Ones"

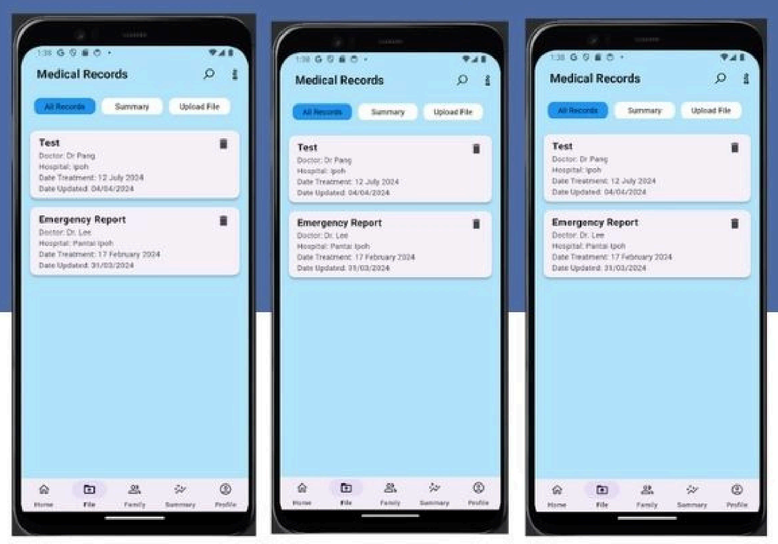
Application Features

- Daily health monitoring tools
- Symptom analysis and health recommendations
- Family member health tracking capabilities
- Gmail Single Sign On (SSO) - easy to use
- Medical and doctors' records

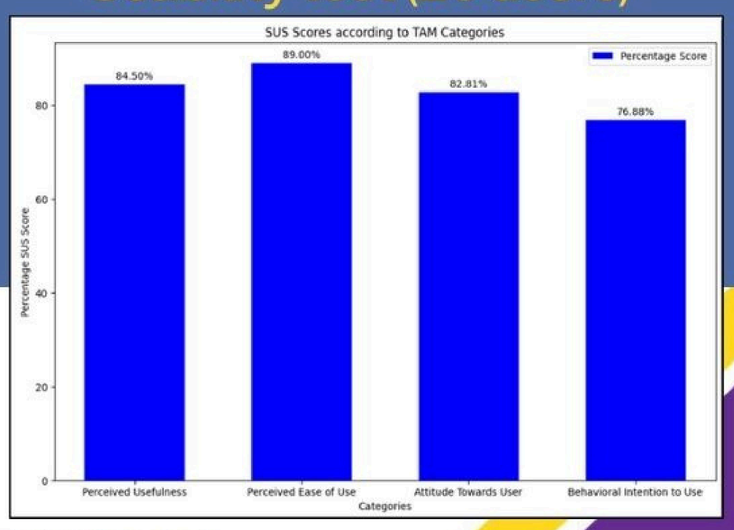


Objectives

- To Identify requirements for a health monitoring system
- To develop a user-friendly mobile health application
- To evaluate the functionality and usability of the application



Usability test (20 users)



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IAM 194
Aplikasi Mobile Sip JuHOG
(Sistem Presensi Jurnal Harian Online Guru)

Aplikasi *Mobile* SiPJuHOG (Sistem Presensi Jurnal Harian *Online* Guru)

A. Pendahuluan (Introduction)

Kebutuhan dalam administrasi pendidikan untuk seorang guru berkaitan dengan peran dan fungsinya. Salah satu yang harus dipenuhi adalah agenda atau jurnal harian. Pada dasarnya, agenda harian diisi guru dengan manual. Aktivitas ini memiliki beberapa dampak yang dapat mempengaruhi kinerja guru. Pengisian jurnal secara manual dinilai kuranglah efektif dan efisien dalam mendukung kapabilitas guru dan juga pembuatan laporan agenda harian yang harus diserahkan kepada pihak sekolah (Muslimin dan Sopian, 2019).

B. Rumusan Masalah (Problem Statement)

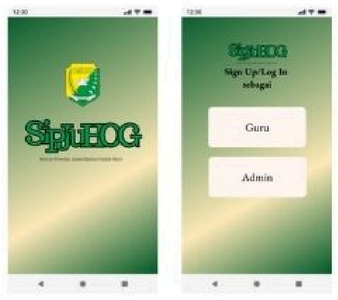
1. **Masalah**
   - Kesenjangan antara ASN dan non-ASN perihal presensi.
   - Presensi guru di kelas ditulis secara langsung pada agenda kelas menjadi permasalahan bagi pihak sekolah, karena tidak dapat memonitor secara langsung kehadiran guru-guru tersebut di kelas.
   - Belum memiliki sistem presensi jurnal harian guru di SMK Negeri 2 Purwakarta.
2. **Rumusan Masalah**
   - Bagaimana pembuatan aplikasi mobile sistem presensi jurnal harian guru online (SiPJuHOG) ?

C. Tujuan (Objective(s))

1. Mempermudah dan mempercepat guru dalam mengisi kehadiran di kelas dalam jurnal hariannya.
2. Mempermudah pihak sekolah dalam merekap kehadiran Bapak/Ibu guru ASN dan non-ASN dalam mengajar, karena selama ini khususnya guru non-ASN belum memilikinya, jadi saat diadakan penilaian guru teladan atau penilaian apapun pihak sekolah tidak mengalami kesulitan.

D. Desain Produk/Prototipe (Product/Prototype Design)

Berikut merupakan desain awal yang akan dilihat *user* dan *admin*.



E. Komersialisasi (Commercialisation)

Keunggulan-keunggulan dari aplikasi *mobile* SiPJuHOG :

- Mempercepat guru dalam mengisi presensi jurnal hariannya.
- Mengurangi pemakaian kertas (*paperless*).

F. Keterbaruan Produk/Prototipe (Novelty of the Product/Prototype)

- Kamera di jurnal harian (*user*).
- Muncul nama lengkap, nip, hari, dan jadwal pelajaran di jurnal harian (*user*).
- Pengajuan izin dan cuti (*user*).
- Fitur *Searching* (*admin*)

Grup ID : IAM194
1. **Ulfa Ladayya (Leader)**
2. **Dian Permata Sari, S.Kom., M.Kom. (Dosen Pembimbing dan 1st Member)**
3. **Ahmad Musyadad Haury (2nd Member)**
4. **Alya Syifa Fadilah (3rd Member)**

Universitas Pendidikan Indonesia

IAM 196
ALPHASIGN SYSTEM : ALPHABET SIGN LANGUAGE RECOGNITION SYSTEM FIRST STEP LEARNING ON SIGN LANGUAGE

REFERENCE NO: ARSVOT/IAM2024/INNO/AL/IAM196

ALPHASIGN SYSTEM: ALPHABET SIGN LANGUAGE RECOGNITION SYSTEM FOR FIRST STEP LEARNING ON SIGN LANGUAGE



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ALPHASIGN

ABSTRACT

ALPHASIGN System: Alphabet sign language recognition system is a proposed system that was established specifically for teaching and learning the alphabet of sign language to individuals especially beginners as the first step in acquiring sign language skills. In order to fulfil the demand for more user-friendly interfaces, the system encourages the intuitive prediction of sign language based on images. It has the potential to bridge the communication barriers, as well as to enhance inclusivity and cultural interchange, through the development of efficient classification systems for sign language. It contributes to the development of precise and efficient methods in recognising sign language, which in turn serves to increase accessibility for those individuals who are deaf or hard of hearing. The insights that were gathered from this study led to the breakthroughs that were made in computer vision. Additionally, these insights have the potential to inspire future developments in image recognition, which will be beneficial to the wider field of communication diversity and accessibility. In order to complete the operation, it is necessary to create an interface that is more user-friendly and includes buttons labelled "Browse" and "Predict," then combine the interface with the block of code, and finally add features for image selection and prediction display. The simplicity of the study is the most important aspect of its significance, since it aims to provide a user-friendly tool that can easily classify images of alphabet for sign language recognition.

ALPHABET SIGN LANGUAGE



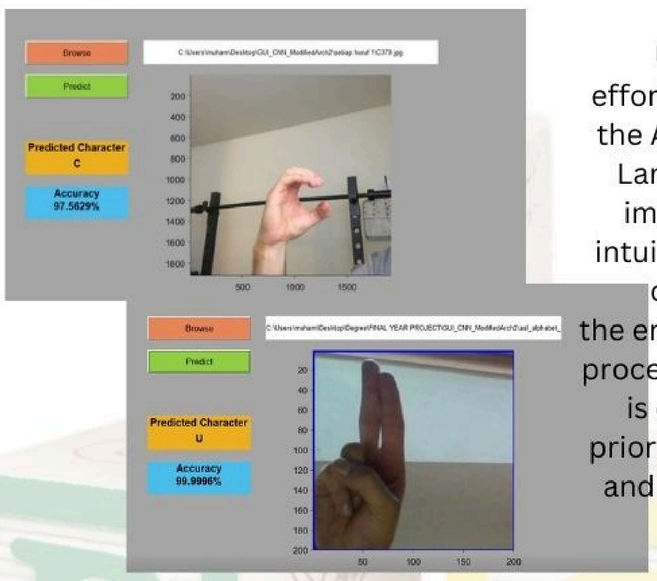
Fingerspelling method used in sign language to spell out words letter by letter

IMPORTANCE



ENHANCED COMMUNICATION | EDUCATION RESOURCES | COMMUNICATION ENGAGEMENT

SYSTEM DEMONSTRATION

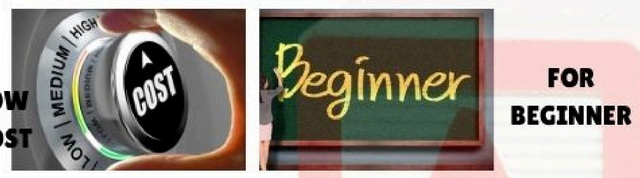


Users can effortlessly upload the American Sign Language (ASL) images via the intuitive interface, optimizing the entire prediction process. The system is designed to prioritize simplicity and accessibility.

NOVELTY



USER FRIENDLY



LOW COST | FOR BEGINNER

COMMERCIALIZATION





EDUCATION INDUSTRY | HEALTHCARE APPLICATIONS

IAM 198
SELF-ENROLMENT SYSTEM (SES)

SELF-ENROLMENT SYSTEM (SES)

Chia Teik Hua, Mohd Amizar Abdul Majid / SEGi College Penang

Introduction

This project aims to revolutionize tertiary education with a Self-Enrolment System (SES). Program Leaders gain flexibility in program management, and Administrators experience seamless data handling. The SES streamlines Examination Department processes, minimizing manual efforts. Additionally, the system enhances financial management in the Bursary Department and empowers students with a user-friendly enrolment experience.

Problem Statement

- Inefficient Administrative Processes
- Lack of Integration
- Limited Student Empowerment
- Manual Data Handling
- Poor Financial Transparency
- Inadequate Real-Time Access
- Overburdened Due to Redundant Task

Objectives

- To reduce the number of *human errors* resulting from human input during the application procedure
- To create a *user-friendly* and *intuitive* self-enrolment system for students
- To develop a *robust* and *secure* database to manage student information

Novelty

- Pioneering Holistic Fusion
- Multifaceted Stakeholder Harmony
- Agile Program Orchestration
- Role Dynamics Ballet
- Data Symphony Export
- User-Centric Enrolment Experience
- Centralized Communication Hub

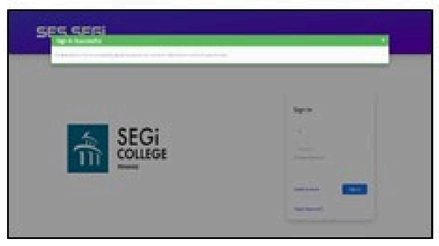
Impact

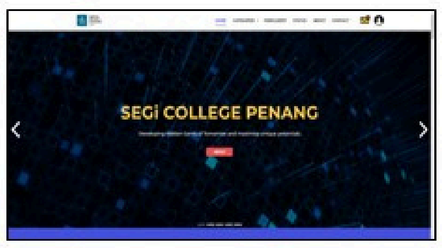
- Enhanced Administrative Efficiency
- Empowered Student Experience
- Dynamic Program Adaptability
- Minimized Errors in Grading
- Resource Optimization
- Facilitated Communication
- Improved Financial Transparency

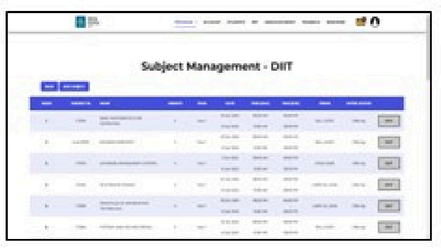
Potential of Commercialization

- Aims *market dominance*, streamlining academic administrative processes
- SES adapts *globally*, offering solutions for diverse educational systems
- Regular updates, premium features, ensuring ongoing *profitability*
- Provide expert guidance, training for *seamless SES integration*

Product/Prototype Design







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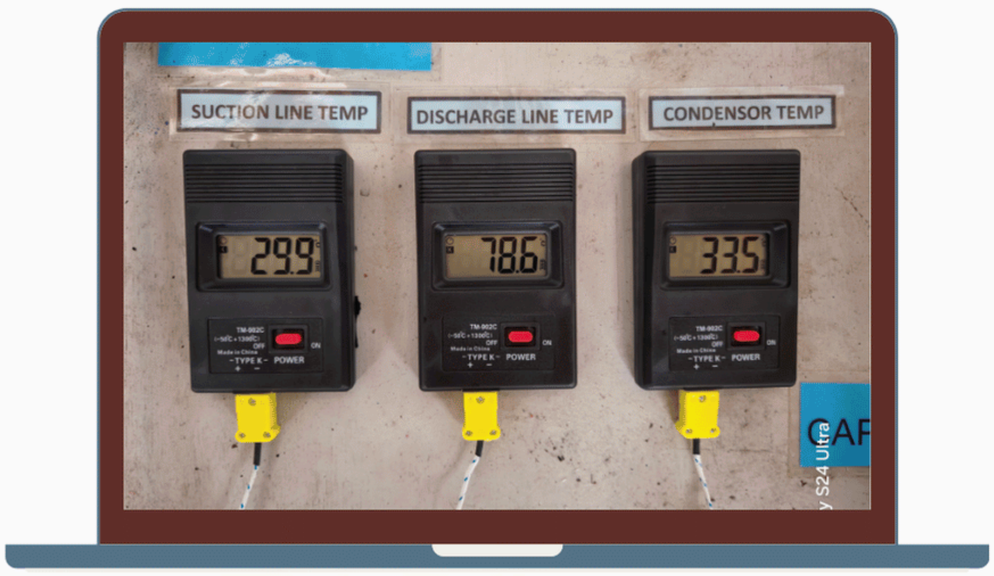
IAM 199
ABBM FOR THERMAL EXPANSION VALVE & CAPILLARY TUBE DIFFERENTIAL

KOLEJ VOKASIONAL
KEMENTERIAN PENDIDIKAN MALAYSIA
KOLEJ VOKASIONAL KEMAMAN
bersama membina masa depan

IAM

ABBM FOR THERMAL EXPANSION VALVE & CAPILLARY TUBE DIFFERENTIAL





OBJEKTIF PROJEK

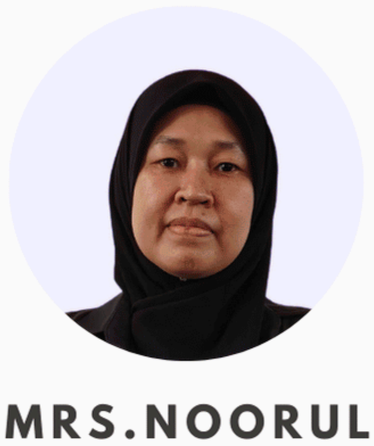
- MENGHASILKAN ABBM BERASASKAN KITARAN SISTEM PENYEJUKAN
- MENJELASKAN KITARAN ASAS PENYEJUKAN DAN PENYAMANAN UDARA
- MENYATAKAN PERBEZAAN SUHU DAN TEKANAN ANTARA CAPILLARY TUBE DAN METERING DEVICE

KELEBIHAN PROJEK

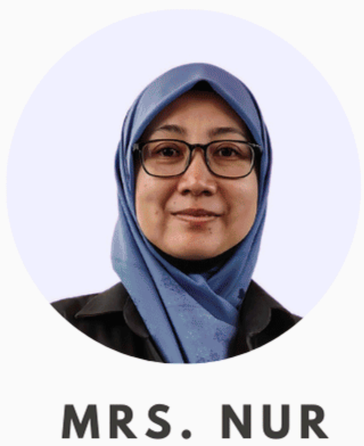
- PELAJAR MUDAH MEMAHAMI KITARAN ASAS PENYEJUKAN
- PENSYARAH LEBIH MUDAH UNTUK MENERANGKAN KITARAN ASAS PENYEJUKAN
- PELAJAR DAN PENSYARAH MUDAH UNTUK MENDAPATKAN BACAAN SUHU DAN TEKANAN DENGAN LEBIH TEPAT



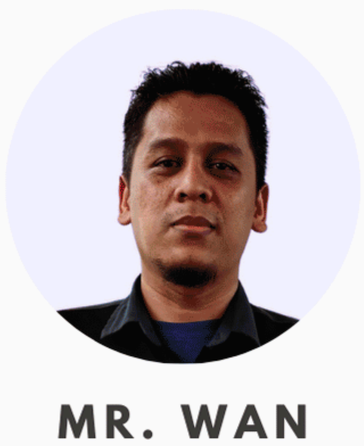
MR. MOHD ATAN



MRS.NOORUL HUDDA



MRS. NUR HIDAYAH



MR. WAN FAIZAL

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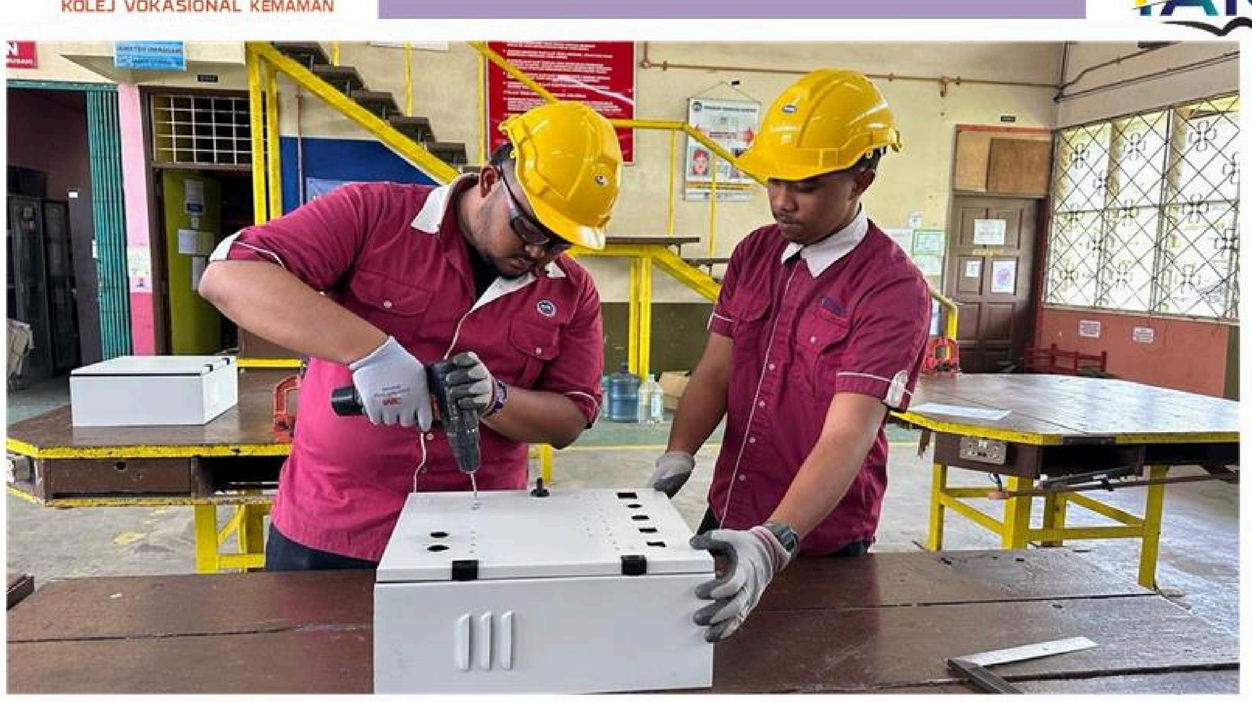
IAM 200
HEALTHTRACK PERSONALIZED FAMILY HEALTH MONITORING SYSTEM



IAM 202
FUN WIRING TRAINING KIT (FWTK)

KOLEJ VOKASIONAL
KEMENTERIAN PENDIDIKAN MALAYSIA
KOLEJ VOKASIONAL KEMAMAN

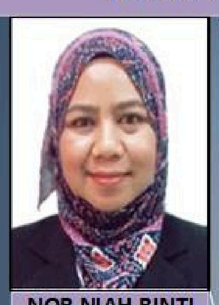
GroupID : IAM202



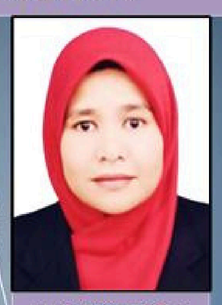
NAMA PROJEK: FUN WIRING TRAINING KIT (FWTK)

KATEGORI PENYERTAAN : VOCATIONAL COLLEGE

NAMA PESERTA



NOR NIAH BINTI MOHAMOOD (KETUA)



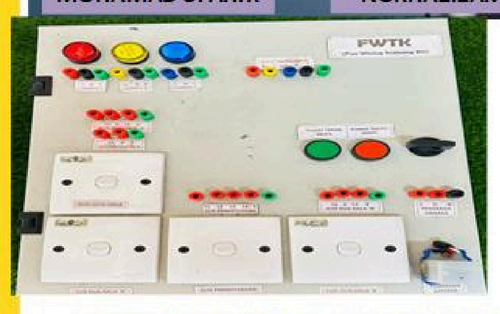
NUR SYUHADA BINTI ZAHARI



MOHAMAD SYAHRUL AIZAD BIN MOHAMAD SYAHIR



NOR AMIRUL HAKIM BIN NORHAZIZAM



PERNYATAAN MASALAH

Kami dapati bahawa para pelajar 1 SVM, Program Teknologi Elektrik di Kolej Vokasional Kemaman menghadapi masalah untuk memahami gambarajah litar dan membezakan cara penyambungan bagi sesetengah suis. Hal ini menyebabkan mereka mengambil masa yang lama bagi meguasai modul Pendawaian Elektrik Satu Fasa.

OBJEKTIF

i. Merekabentuk *Fun Wiring Training Kit (FWTK)* yang berfungsi untuk memudahkan pelajar memahami konsep pendawaian litar satu fasa.
ii. Membangunkan *Fun Wiring Training Kit (FWTK)* dan aksesori dengan lengkap.
iii. Menguji kebolehfungsian 5 set modul latihan kepada pelajar.

KELEBIHAN PRODUK

1. Pelajar :-
Memudahkan pelajar dalam mempelajari litar pendawaian satu fasa.
2. Pensyarah :-
Dapat mengajar dengan lebih mudah dan dapat menjmatkan masa pembelajaran.

PASARAN PRODUK

1. Program Elektrik Kolej Vokasional
2. Sekolah menengah untuk subjek rekabentuk dan elektrik domestik

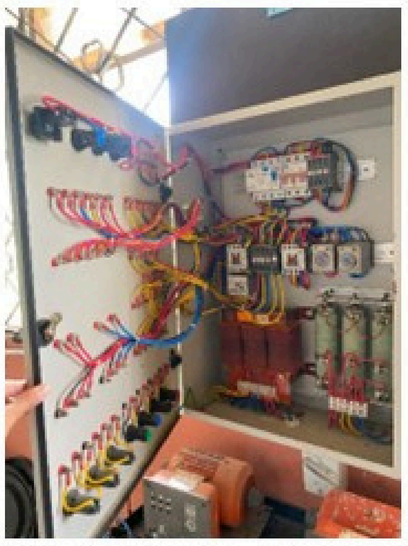
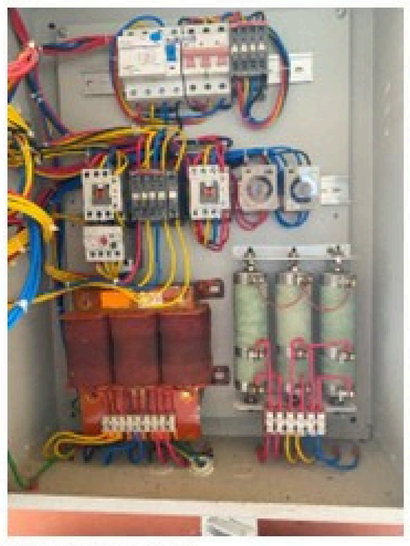
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IAM 203
MOTOR CONTROL TRAINING KIT

KOLEJ VOKASIONAL
KEMENTERIAN PENDIDIKAN MALAYSIA
KOLEJ VOKASIONAL KEMAMAN

IAM

NAMA PROJEK: MOTOR CONTROL TRAINING KIT

KATEGORI PENYERTAAN : KOLEJ VOKASIONAL

PERNYATAAN MASALAH

Kami dapati bahawa pelajar Teknologi Elektrik di Kolej Vokasional Kemaman menghadapi masalah untuk menguasai penyambungan litar kawalan motor.

Mereka sukar memahami dan dan mengingati label punca sambungan pada komponen kawalan motor.

Di atas permasalahan inilah kami mencipta satu modul mudah yang diberi nama "*MOTOR CONTORL TRAINING KIT*"

OBJEKTIF

i. Memudahkan proses pembelajaran litar kawalan motor bagi pelajar Teknologi Elektrik.

ii. Memudahkan pengajaran dan pembelajaran litar kawalan motor.

iii. Menjimatkan masa pengajaran dan pembelajaran.

iv. Menjimatkan penggunaan kabel. -

KELEBIHAN PRODUK

1. Pelajar :-
Memudahkan pelajar memahami dan menyambung litar kawalan motor.

2. Pensyarah :-
Dapat mengajar dengan lebih mudah dan menjmatkan masa pengajaran dan pembelajaran.

PASARAN

Kolej Vokasional dan Intitusi Pengajian lain yang berkaitan.

NAMA AHLI KUMPULAN



AHMAD TARMIDI BIN MUHAMMAD **(KETUA)**



NURUL IZZATI BINTI MOHD ZAIN



MUHAMMAD IZZ BIN ABDULLAH



MUHAMMAD KHAIRUL IMAN



MUHAMMAD FAKHRUL AIMAN BIN ZAWAI

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IAM 204
SMART CONTROLLER GENERATOR (SCG)

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KOLEJ VOKASIONAL KEMAMAN

IAM

GROUP ID: IAM204

NAMA PROJEK: SMART CONTROLLER GENERATOR (SCG)





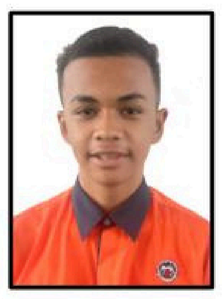
KATEGORI PENYERTAAN : VOCATIONAL COLLEGE

PERNYATAAN MASALAH	OBJEKTIF	KELEBIHAN PRODUK
Kebanyakan Pengajar tidak sempat untuk menghidupkan generator ini menyebabkan generator susah dihidupkan kerana dibiarkan terlalu lama.	• Memudahkan pengguna untuk menghidupkan dan mengawal. • Mengelakkan gangguan pembelajaran bagi generator yang terletak di sekolah. • Mengurangkan penggunaan tenaga untuk menghidupkan generator yang terletak jauh.	➢ Harga controller yang digunakan murah. ➢ Produk ini dapat dipasarkan ke seluruh negeri di Malaysia termasuK Sabah dan Sarawak. ➢ Sistem boleh dikawal melalui telefon. ➢ Pemasangan mudah. **PASARAN** Kolej-Kolej Vokasional & Intitusi Pengajian Tinggi

NAMA AHLI KUMPULAN



MUHAMAD SAYUTI BIN ABDULLAH



MUHAMMAD HARITH HAMKA HIDAYATULLAH BIN NUR AZAMAN



ZUL AIDIL ISKANDAR BIN ZAIDI



EZUDDIN HANIFA BIN NASIR



SITI MERYAM BINTI AHMAD ZAKI

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IAM 205
SUPPLY TOOLS BOX

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KEMENTERIAN PENDIDIKAN MALAYSIA
KOLEJ VOKASIONAL KEMAMAN

NAMA PROJEK: SUPPLY TOOLS BOX



KATEGORI PENYERTAAN : VOCATIONAL COLLEGE
GROUP ID : IAM 205

PERNYATAAN MASALAH

1) Sukar untuk mendapatkan bekalan semasa melakukan pendawaian di tempat yang sukar.
2) Pengguna memerlukan soket alir keluar untuk disambung pada peralatan elektrik di mana-mana sahaja.
3) Pendawai elektrik memerlukan sumber cahaya ketika melakukan pendawaian di tempat yang gelap.
4) Pengguna memerlukan *USB Port* diperlukan untuk cas peralatan elektrik seperti telefon ketika ketiaadaan bekalan.
5) *Supply Tools Box* dibina untuk memudahkan pengguna dengan pelbagai fungsi yang mesra pengguna serta berasaskan teknologi hijau iaitu solar.

OBJEKTIF

i. Mereka bentuk supply Tools Box yang berasaskan teknologi hijau.

ii. Membangunkan supply Tools Box yang mesra pengguna

iii. Menguji kebolehfungsian Supply Tools Box kepada pelajar 2 SVM ETE Kolej Vokasional Kemaman

KELEBIHAN PRODUK

1. Pelajar :
   Memudahkan pelajar untuk membuat serta menyelenggara pendawaian satu fasa atau pendawaian tiga fasa

2. Pengguna Awam :
   Memudahkan pengguna untuk mendapatkan bekalan tenaga yang cukup dan dapat digunakan dalam jangka masa yang lama

PASARAN

Kolej-Kolej Vokasional &
Pengguna awam terutamanya pendawai elektrik

NAMA AHLI KUMPULAN



NOOR JANNAH BINTI MAAROP



MOHD TAUFIK BIN SUMARI



MOHAMAD IRFAN AIMAN BIN MOHD KHAIRUL



MUHAMMAD ANIQ NAIMAN BIN RAMLI



AHMAD MUJAHIDDIN BIN ABU BAKAR

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IAM 207
PORTABLE SMART SOLAR SYSTEM

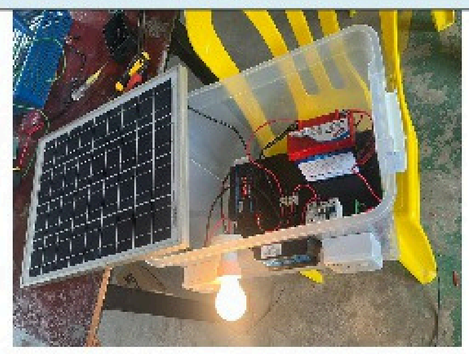
KOLEJ VOKASIONAL
KEMENTERIAN PENDIDIKAN MALAYSIA
KOLEJ VOKASIONAL KEMAMAN

IAM

NAMA PROJEK : PORTABLE SMART SOLAR SYSTEM

Group ID : IAM207





KATEGORI PENYERTAAN : VOCATIONAL COLLEGE

NAMA AHLI KUMPULAN



PN.NARUL AIN BINTI ROZIS (KETUA)



MUHAMMAD AMIR BIN MOHD AZMAN



ABDUL MUSTAQIM BIN ABDUL MANAF



MUHAMMAD NOOR ADAM CHE YUSUF

PERNYATAAN MASALAH

Kami menghasilkan produk ini untuk mengatasi masalah yang sering dihadapi oleh para pelajar yang gemar melakukan aktiviti luar dan jalan alternatif kepada pengguna di rumah kediaman jika menghadapi masalah bekalan elektrik.

Selain itu, jangka hayat bateri basah dan kering yang tidak tahan lama.

Seterusnya, penjana mudah alih yang berada dipasaran seperti generator sukar untuk dibawa serta menggunakan bahan bakar untuk berfungsi, berat dan menyumbang kepada pencemaran udara.

OBJEKTIF

1. Merekabentuk Portable Smart Solar System yang mampu menjimatkan tenaga elektrik menerusi penggunaan tenaga solar.

2. Membangunkan Portable Smart Solar System yang merupakan produk mesra alam, mudah dibawa ke mana sahaja dan menjadi sumber tenaga alternatif kepada penguna.

3. Menguji kebolehfungsian Portable Smart Solar System kepada pelajar yang gemar melakukan aktiviti luar dan pengguna yang mempunyai masalah bekalan elektrik.

KELEBIHAN PRODUK

- Menjimatkan tenaga elektrik
- Produk mesra alam
- Mudah dibawa ke mana sahaja
- Sumber tenaga alternatif kepada penguna

PASARAN

Pelajar dan pengguna yang gemar
melakukan aktiviti luar

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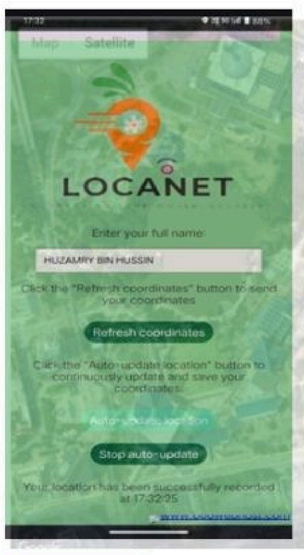
IAM 208
NETWORK-BASED MAPPING AND VISITOR TRACKING SYSTEM

UNIVERSITI TEKNOLOGI MARA

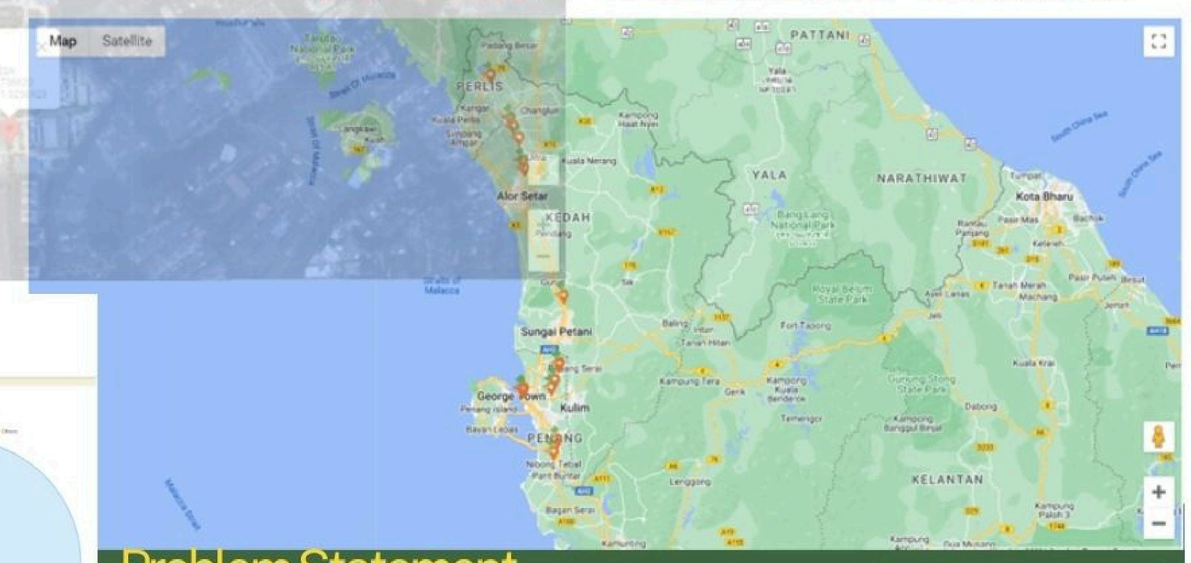
NETWORK-BASED MAPPING AND VISITOR TRACKING SYSTEM

huzalyny@gmail.com

Intan Huzalyny Hussin Suraya Masrom,PhD Mohammad Hafiz Yusof, PhD



HOW TO
SURVIVE LOST IN FOREST
TRACK YOUR KIDS
COLLECT VISITORS' DATA



Problem Statement

There are needs for

1. Emergency quick response
2. Child safety
3. Building safety and visitor tracking
4. Logistic management need tracking of items

Limitations of Satellite-based tracking such as

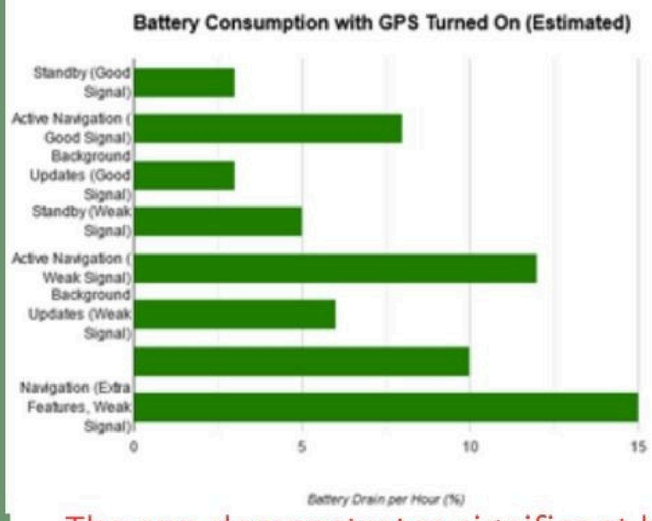
1. Signal obstacles in indoor environment
2. High energy/power consumption
3. Hardware dependency (expensive)

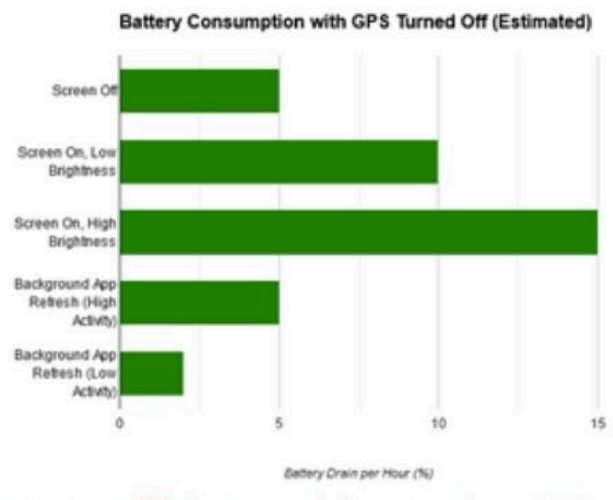
Objectives

- To Identify the requirements of a Network-Based Mapping and Tracking System
- To develop an integrated Network-Based Mapping and Tracking System
- To evaluate the performance of the integrated mapping and tracking system

Application Features

- Network-based location tracking
- Comprehensive visualization via interactive charts (New module), interactive Map and tables
- Diverse environment (urban, suburban, indoor)
- User-friendly interfaces





The app demonstrates significant battery efficiency without using GPS, with consumption reduced to only 1% or 2% per hour.

The technology introduced for tracking network address has been given
SILVER AWARD
in the
THE 13TH INTERNATIONAL INVENTION, INNOVATION & DESIGN COMPETITION 2024

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IAM 209
BEKALAN KUASA ALIRAN AIR

BEKALAN KUASA ALIRAN AIR

GROUP ID : IAM209



IAM 210
GREEN PASSPORT - LANGKAWI TALENT BANK IN HOSPITALITY INDUSTRY

GREEN PASSPORT – LANGKAWI TALENT BANK IN HOSPITALITY INDUSTRY

PUBLIC – PRIVATE PARTNERSHIPS (PPPs) : SCHOOL OUTREACH PROGRAM


NOR ASFARUL LAIL AZWAN BIN HARIS
LTA


NOR MAIZURA BINTI IBRAHIM
LTA


AHMAD FAUZI ARSHAD BIN MOHD SIDIK
LTA


HASRUL BIN ABDUL HAMID
TWL


FAZLIANA BINTI MOHD SALLEH
PPD LANGKAWI

Langkawi Tourism Academy@Kolej Komuniti Langkawi (LTA)
The Westin Langkawi Resort & Spa (TWL)
Pejabat Pendidikan Daerah (PPD) Langkawi

1 Pengenalan

School Outreach Program: Green Passport – Langkawi Talent Bank in Hospitality Industry adalah program kolaborasi diantara Hotel The Westin Langkawi Resort & Spa, Langkawi Tourism Academy@Kolej Komuniti Langkawi (LTA) dan Pejabat Pendidikan Daerah (PPD) Langkawi. Program ini sebagai platform untuk memperakui pelajar yang berjaya tamat sebagai individu yang telah terasuh, terdidik serta terampil dalam mengikuti Standard Operating Procedure (SOP) umum bidang hospitaliti secara amnya serta SOP yang dipraktikkan di The Westin Langkawi Resort & Spa khususnya.

2 Pernyataan Masalah

1. Sekolah menengah di Langkawi pula berdepan dengan isu kadar ketidakhadiran pelajar yang perlu diberi perhatian yang khusus.
2. Industri hospitaliti di Langkawi berhadapan dengan masalah terhadnya tenaga kerja yang berkemahiran di dalam bidang hospitaliti untuk menjadi sebahagian daripada tenaga kerja mereka.
3. Penyelesaian jangka masa panjang terhadap masalah keciciran, kurang berminat terhadap bidang akademik dan mengenalpasti potensi serta minat pelajar terhadap industri yang boleh diceburi oleh para pelajar sekolah di Langkawi.

3 Objektif

1. Mencungkil, mengasah serta memperkaya kemahiran pelajar ke arah melahirkan individu yang kompeten serta berpengetahuan dalam bidang hospitaliti.
2. Memupuk dan memperkukuh kerjasama strategik daripada pelbagai pihak dalam memperkasa dan mengupayakan pelajar sekolah di Langkawi.
3. Mewujudkan persekitaran yang menyokong ke arah kemenjadian pelajar yang berdikari, holistik serta mempunyai ketahanan yang tinggi terhadap cabaran.

4 Rekabentuk Program

Perancangan, pembangunan, kawal selia serta perlaksanaan program telah dibangunkan oleh Langkawi Tourism Academy@Kolej Komuniti Langkawi (LTA) dengan sokongan, pemantauan serta penilaian daripada The Westin Langkawi Resort & Spa (TWL) serta Pejabat Pendidikan Daerah (PPD) Langkawi.

01 PENGAMBILAN DAN PEMILIHAN PELAJAR
- Kriteria pemilihan ditetapkan oleh pihak TWL dan LTA
- Sesi temubual dan temusuai oleh pihak PPD Langkawi

02 ORIENTASI DAN LATIHAN *HARD SKILL & SOFT SKILL*
- Pelaksanaan program oleh LTA.
- Penilaian dan ketersediaan pelajar.

03 *HOSPITALITY INDUSTRY EXPERIENTIAL LEARNING (HIEL)*
- Sesi *Industry Mentoring & Coaching* oleh TWL.
- Penilaian pelajar.

04 SOKONGAN DAN LAWATAN PENILAIAN PROGRAM
- Isu, cabaran dan amalan terbaik.
- Proses penambahbaikan serta sumbang saran.

05 PENGANUGERAHAN SIJIL PENYERTAAN

School Outreach Program: Green Passport – Langkawi Talent Bank in Hospitality Industry

1. Perakuan sebagai telah mengikuti latihan dalam bidang hospitaliti
2. Bertindak sebagai dokumen sokongan dalam menghadir sesi temuduga.

5 Pelaksanaan

Program ini terbahagi kepada dua (2) fasa iaitu:

Fasa 1 (6 hari)	Latihan Kemahiran (LTA)
Fasa 2 (14 hari)	*Industry Experiential Learning* (TWL)

15	Pelajar Tingkatan 4
2	Sekolah Menengah
6	Modul Latihan Kemahiran





Modul Kemahiran 6
1. Personal Grooming
2. Greeting Standard
3. Food and Beverage
4. Kitchen Operation
5. Front Office
6. Housekeeping

6 Impak



Agenda SDG 4: Pendidikan Berkualiti

Program ini menyediakan peluang dan akses kepada pelajar dalam latihan kemahiran teknikal dan vokasional terutamanya bidang hospitaliti seterusnya mengurangkan kadar ponteng sekolah di kalangan pelajar.

Agenda SDG 8: Membuka Ruang Pekerjaan dan Pertumbuhan Ekonomi

Menyediakan bakat tenaga kerja terlatih kepada industri hotel di Langkawi dan mewujudkan peluang pekerjaan melalui latihan kemahiran dan *Industry Experiential Learning*.

Agenda SDG 17: Kerjasama Demi Matlamat

Program ini telah mengukuhkan kerjasama ***Public-Private Partnership*** diantara institusi pendidikan (LTA & PPD) dan industri hotel (TWL) dalam pertukaran ilmu dan kemahiran seterusnya menyediakan tenaga kerja mahir.

7 Keaslian Projek

Program ini adalah program rintis dan pertama kali diperkenalkan bukan sahaja di Langkawi malahan di Malaysia yang melibatkan kerjasama ***Public-Private Partnership*** tiga (3) pihak dalam mengurangkan kadar ponteng sekolah dan meningkatkan kemahiran serta minat pelajar dengan latihan kemahiran yang disediakan.

8 Potensi Inovasi

Kejayaan serta keberhasilan program ***School Outreach Programme - Green Passport*** yang telah dilaksanakan pada 16 Februari hingga 7 Mac 2024 ini, diteruskan dengan memberi peluang kepada pelajar-pelajar Program Pendidikan Khas Integrasi (PPKI) di Langkawi dengan program yang dinamakan ***HOSPITALITY INCLUSIVE PROGRAMME*@THE WESTIN LANGKAWI RESORT & SPA. Program ini telah bermula pada 23 Jun 2024 melibatkan 12 orang pelajar PPKI dari 3 buah sekolah menengah di Langkawi.**

Maklumbalas Peserta

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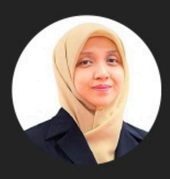
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IAM 213
URBANITE X RURALITE

IAM2024

TEAM CHAMPION

UNIVERSITI SAINS MALAYSIA



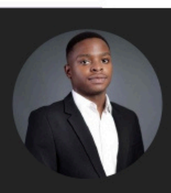
Ts Dr Noramalina
School of Electrical and Electronic Engineering
Universiti Sains Malaysia



Khoo Keng Suen
Mechatronics Engineering
School of Electrical and Electronic Engineering
Universiti Sains Malaysia



Sam Yu Jie
Mechatronics Engineering
School of Electrical and Electronic Engineering
Universiti Sains Malaysia



Chris Junior Tapererwa
Mechanical Engineering
School of Mechanical Engineering
Universiti Sains Malaysia

URBANITE X RURALITE

A Smarter Lighting System for A Sustainable Tomorrow

This project integrates urban and rural streetlighting innovations. Urbanite optimizes city streets with motion sensors and smart controls, while Ruralite introduces solar-powered, wireless lamps for remote areas. Together, they pioneer sustainable, intelligent lighting solutions for diverse environments.

Problem Statements

- **Energy Waste and Sustainability**: Traditional streetlights waste energy and lack sustainability features.
- **Delayed Maintenance and Lack of Diagnostics**: Slow detection and reporting of defective lights, with no diagnostics for street conditions.
- **Inefficient Algorithms and Communication**: Poor balance between safety and energy-saving, and reliance on outdated wired communication.

Objectives

- **Enhance Energy Efficiency and Sustainability**: Develop energy-efficient streetlighting with motion detection and solar power to minimize waste and promote sustainability.
- **Improve Maintenance Efficiency and Diagnostics**: Fault detection & real-time monitoring for prompt maintenance and enhanced system reliability.
- **Optimize Safety and Energy Balance**: Refine algorithms and adopt wireless communication to ensure safe, energy-saving lighting solutions tailored for diverse environments.

Novelty

Smart Lighting Control:
- Urbanite: Motion sensors adjust lamp brightness based on traffic.
- Ruralite: Standalone lamps with motion sensors for rural areas.

Sustainability:
- Urbanite: Energy-efficient lighting with sensors.
- Ruralite: Solar-powered lamps.

Fault Detection:
- Urbanite: Centralized fault detection with current sensors.
- Ruralite: Real-time fault detection in each lamp.

IoT Integration:
- Both systems use Blynk IoT for monitoring and control via web dashboard and mobile app.

Wireless Communication:
- ESPNOW wireless communication.

Safety and Environmental Focus:
- Urbanite: Circle of light concept, and adjusts lighting based on day/night and rain conditions.
- Ruralite: Independent operation ensures continuous lighting.

Results

Streetlight		1	2	3	4	5
Case 1	Sensor	absent	absent	absent	absent	absent
	Lamp	bright	dim	dim	dim	bright
Case 2	Sensor	present	absent	present	absent	present
	Lamp	bright	bright	dim	dim	bright
Case 3	Sensor	absent	absent	absent	present	present
	Lamp	bright	dim	bright	bright	bright
Case 4	Sensor	absent	absent	present	absent	absent
	Lamp	bright	bright	bright	bright	bright

Percent Savings vs Dimmed Lamps

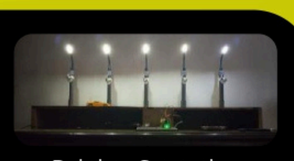


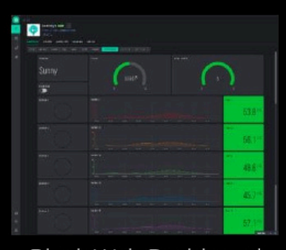
Product Description

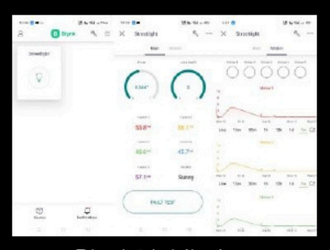
URBANITE
- Smart urban streetlighting with motion sensors for efficient energy use.
- Dynamic lighting adjustments based on traffic flow and environmental conditions.
- Seamless control and monitoring via Blynk IoT for enhanced management.

RURALITE
- Sustainable lighting solution for rural, park, and residential areas.
- Solar-powered, standalone lamps with wireless communication for flexibility.
- Real-time fault detection and maintenance notifications for reliable operation.


Motion-based Operation

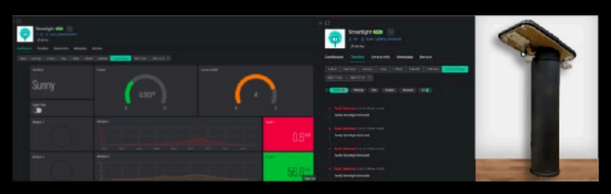

Raining Operation


Blynk Web Dashboard


Blynk Mobile App


Fault Test Algorithm


App Notification


Dashboard Alert

Ruralite



Commercialization

RM 199.68 savings per system per year

RM 65.94 cost per system

RM 133.74 nett savings

Return of Investment within 4 Months

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IAM 215
SMART FLOOD DETECTOR

SMART FLOOD DETECTOR

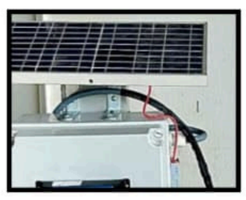
KOLEJ VOKASIONAL KEMENTERIAN PENDIDIKAN MALAYSIA
KOLEJ VOKASIONAL SULTAN ABDUL SAMAD

PENGENALAN

- Dapat memberi amaran awal kepada pengunjung
- Mempunyai 3 sensor untuk megesan kenaikan paras air
- Pengaturcaraan yang oleh diubah-ubah
- Mempunyai 3 siren amaran serta lampu petunjuk paras air

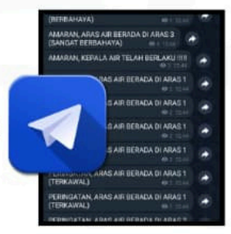


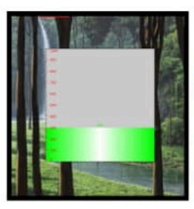
OBJEKTIF



Mengunakan panel solar sebagai bekalan Kuasa utama projek ini

Mencipta sistem yang mampu memberi amaran dalam bentuk pesanan notifikasi





Membangunkan projek yang boleh dipantau melalu web scada

NOVELTI

Penggunaan IoT untuk mendapatkan informasi paras air yang terkini



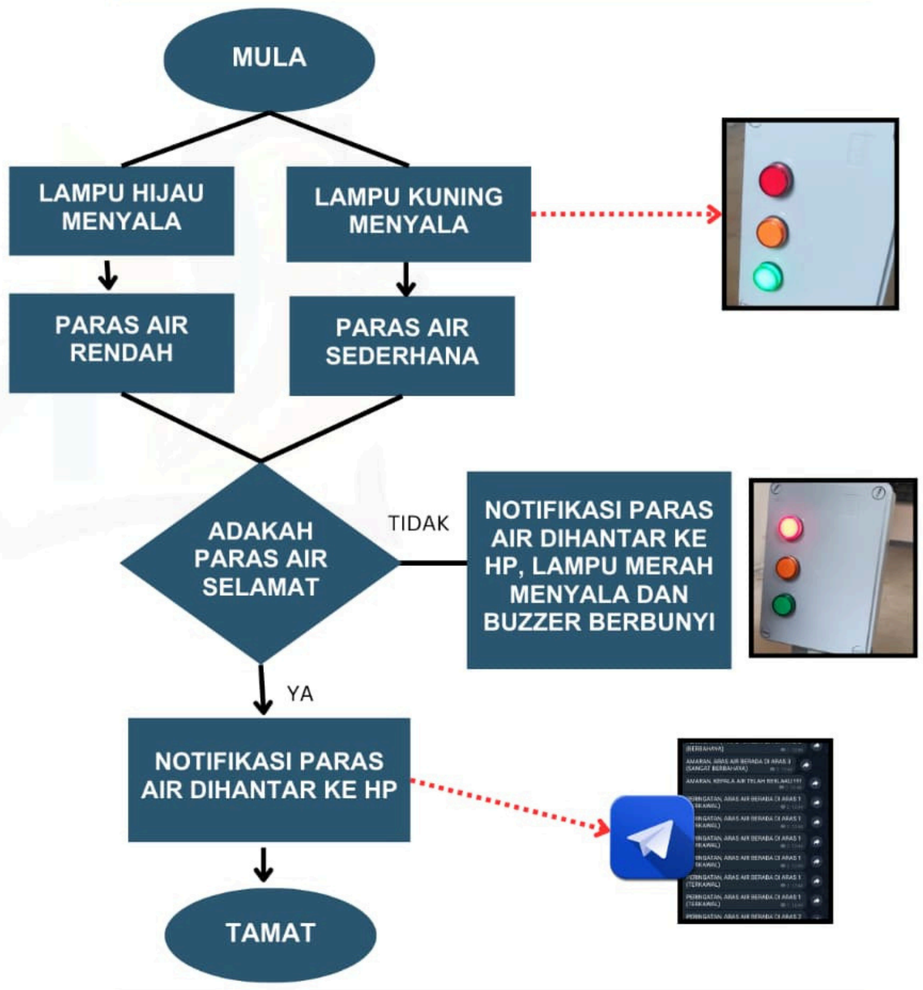
Mengaplikasikan teknologi hijau dengan menggunakan solar sebagai sumber tenaga



PENYATAAN MASALAH

1. Pengunjung tidak peka dengan paras air sungai.
2. Sistem amaran sedia ada kurang berkesan mengakibatkan banyak berlakunya kemalangan
3. Pada musim hujan pengunjung berasa takut untuk melakukan aktiviti

FUNGSI PROJEK



HASIL PROJEK



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PENAPIS PASIR BOLEH LARAS

PENAPIS PASIR BOLEH LARAS






PENYELIA: NUR BAZILAH BINTI ISHAK

1. ABU HAMID MUHAMMAD BIN YUSAK
2. MUHAMMAD AIDID BIN ABU BAKAR
3. MUHAMMAD ANIQ IZZUDDIN BIN CHE' MOHD KHIR

ABSTRAK

Industri pembinaan semakin berkembang maju mengikut peredaran masa. Bahan binaan yang berkualiti merupakan komponen yang paling penting bagi menjamin sesuatu projek pembinaan yang dibina selamat untuk digunakan pada jangka masa yang panjang. Proses kerja di tapak bina juga memainkan peranan untuk mengelakkan berlakunya kelewatan untuk menyiapkan pembinaan. Sebelum terhasilnya produk ini, terdapat segelintir pekerja binaan masih menapis pasir secara manual. Kaedah ini memerlukan tenaga kerja yang banyak dan memerlukan masa yang lama untuk menapis pasir. Oleh itu, inovasi Penapis Pasir Boleh Laras atau PEPABOLA telah direkabentuk bagi memudahkan kerja-kerja pembinaan terutamanya bagi industri kecil serta proses pengubahsuaian. Melalui soal selidik yang dilakukan inovasi ini mendpat respon yang positif dari pengguna. Rekabentuknya yang mesra pengguna memudahkan sesiapa Sahaja untuk mengendalikannya buat pertama kali kerana penciptaannya tidak terlalu kompleks. Saiz yang tidak terlalu besar dan mudah untuk dikendalikan dan disimpan. Kesimpulannya, PEPABOLA ini dapat meningkatkan teknologi dalam industri pembinaan kecil di Malaysia dan memberi impak yang positif kepada komuniti setempat.

PERNYATAAN MASALAH

Pada masa kini, terdapat segelintir pekerja pembinaan sukar untuk menapis pasir. Hal ini kerana, pekerja pembinaan masih menapis pasir secara manual. Kaedah ini memerlukan tenaga kerja yang banyak. Selain itu, penapis pasir manual memerlukan masa yang lama untuk menapis pasir. Oleh itu, dengan adanya inovasi ini pekerja pembinaan dapat menjimatkan tenaga dan masa bagi menapis pasir.Penapis pasir yang terdapat di bengkel bata menggunakan rangka kayu. Perkara ini menyebabkan penapis pasir tidak kukuh dan mudah reput. Penapis pasir ini tidak boleh dibiarkan terdedah kepada hujan kerana ia akan menyebabkan kayu menjadi reput. Penapis pasir ini juga tidak dapat menapis pasir dengan kuantiti yang banyak. Seterusnya, kebanyakan mesin penapis masa kini menggunakan enjin petrol. Enjin petrol ini menghasilkan bunyi yang agak kuat dan mengeluarkan asap. Hal ini boleh menggangu kawasan persekitaran dan mencemarkan alam sekitar.

PERINCIAN DAN PRODUK INOVASI

Terciptanya sebuah mesin penapis pasir ini dapat memendekkan masa proses pengasingan pasir dan menjimatkan tenaga. Mesin ini dicipta setelah melihat proses pengasingan pasir masih menggunakan kaedah manual Penapis Pasir Boleh Laras atau PEPABOLA ini menggunakan enjin elektrik, jaring keluli tahan karat dan mempunyai roda. Mesin ini juga boleh digunakan secara manual kerana mempunyai pemusing. Mesin ini mempunyai penapis. Selain itu, mesin ini juga boleh menapis bahan seperti batu baur dan tanah. Mesin ini turut dilengkapi dengan roda untuk memudahkan pergerakan.

Rekabentuknya yang mesra pengguna memudahkan sesiapa sahaja untuk mengendalikannya buat pertama kali kerana penciptaannya tidak terlalu kompleks. Penapis pasir ini perlu diselenggara setiap kali selepas digunakan terdapat kayu atau beban berlebihan agar memudahkan proses penapisan pasir. Ini kerana untuk mengelakkan berlakunya kerosakan terhadap jaring.

ANGGARAN KOS

Besi angle bar = RM 63.00
Roda = RM 45.00
Motor Elektrik = RM 350.00
Takal dan Belt = RM 80.00
Jaring Penapis = RM 45.00
Cat Besi = RM 18.00
Total = RM 601.00

KEPENTINGAN INOVASI

1. Membantu kontraktor-kontraktor kecil dalam proses pembinaan bangunan serta pengubahsuaian rumah. Dengan terhasilnya mesin ini, hasil tapisan pasir dapat ditingkatkan.

2.Inovasi ini dapat membantu pekerja pembinaan untuk menapis pasir dengan cepat dan boleh dilakukan dengan sendiri tanpa memerlukan tenaga kerja yang banyak.

3.Kontraktor-kontraktor dapat mengurangkan kos untuk membayar gaji pekerja dengan adanya mesin ini. Mesin ini juga boleh digunakan oleh sesiapa sahaja kerana saiz yang tidak terlalu besar dan mudah untuk dikendalikan.

OBJEKTIF

Antara objektif penciptaan Penapis Pasir Boleh Laras atau PEPABOLA, ini ialah :

a) Mereka bentuk dan membina Penapis Pasir Boleh Laras.
b) Menganalisis kuantiti pasir yang dapat ditapis dengan menggunakan Penapis Pasir Boleh Laras dari segi kuantiti pasir yang dapat ditapis dalam masa yang ditetapkan.
c) Mengkaji keberkesanan PEPABOLA dari segi tahap kebisingan dan kekemasan.



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E CREW
DIGITAL SELF-ORDERING FOR FOODTRUCK

ecrew Digital self-ordering for foodtruck

INTRODUCTION

This project involves the integration of technology, food service operations, and consumer behavior through the implementation of digital self-ordering in mobile food trucks.

OBJECTIVES

The eCrew digital self-ordering for food trucks aims to revolutionize customer experience and operational efficiency.

COMMERCIALISATION

- Branding opportunities
- Efficiency in Operations
- Streamlined Operations



PROBLEM STATEMENT

- Long wait times
- Order inaccuracies
- Inefficient payment processes

PRODUCT DESIGN

- **Peruse Menus**: Customers can browse the digital menu displayed on tablets.
- **Place Orders**: Orders can be placed directly through the tablet interface, which supports personalized order options.
- **Order Customization**: Allowing customers to easily customize their orders (e.g., adding or removing ingredients) increases satisfaction.
- **Complete Transactions**: Integrated payment processing allows for seamless payment directly through the tablet.

NOVELTY

- Automated order-taking
- Multiple payment options
- Seamless integration with existing food truck operations

GROUP ID

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SPORTIQEU STYLE



FOS - SASY2024

1.0 INTRODUCTION

The frame of spray (FOS) is a car frame holder needed when painting process to be carried out. The rotating panel car is designed to hold different car frames, including the front door, rear door, fender, car hood , and so on, for an easier preparation and painting process. The process of painting the car is very difficult, takes a long time, and requires excellent techniques to produced a good quality paints. Therefore, many rotating frame holders have been used in every automotive workshop to facilitate the painting process.

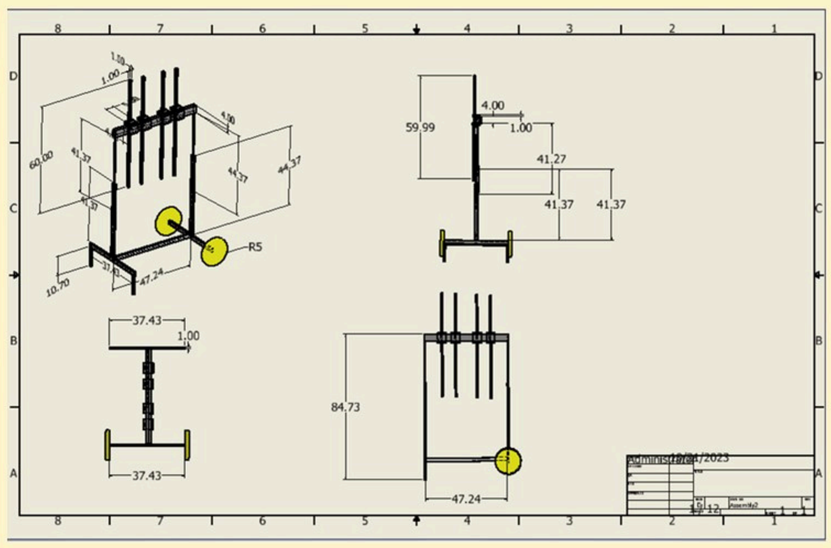
2.0 PROBLEM STATEMENT

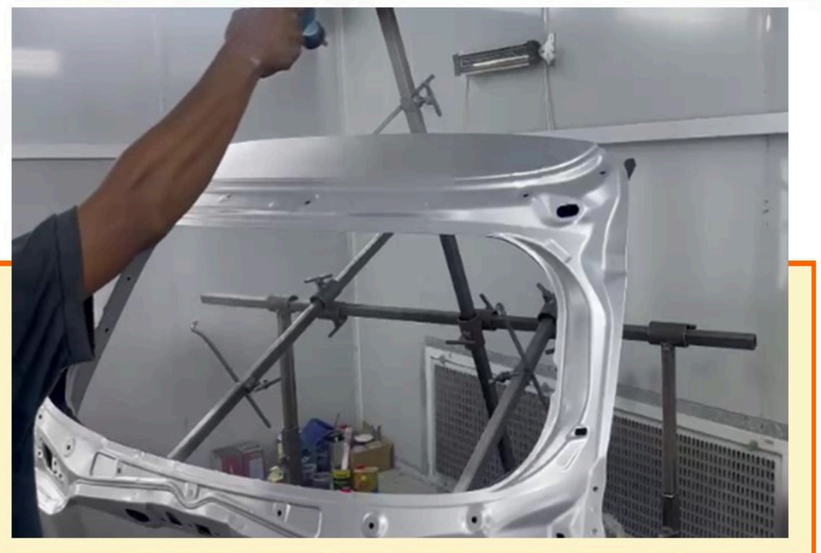
MH PROAUTOSPRAY uses a non-adjustable frame holder when painting. Unfortunately, it will take two to three hours to complete a task. When the process is complete, the workers need to move the frame of the car to pick up the parts that want to be painted. Workers have to wait for the painted part to dry completely before turning the car frame over and taking the next part to be painted. Although this method has been used since 2009 and has produced quality goods, the use of man power is not efficient.

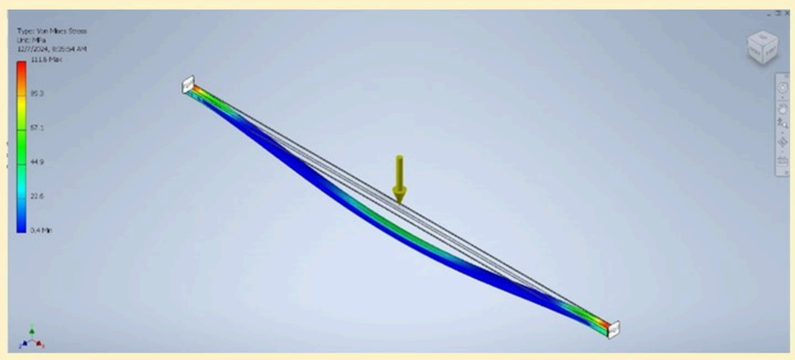
3.0 OBJECTIVE

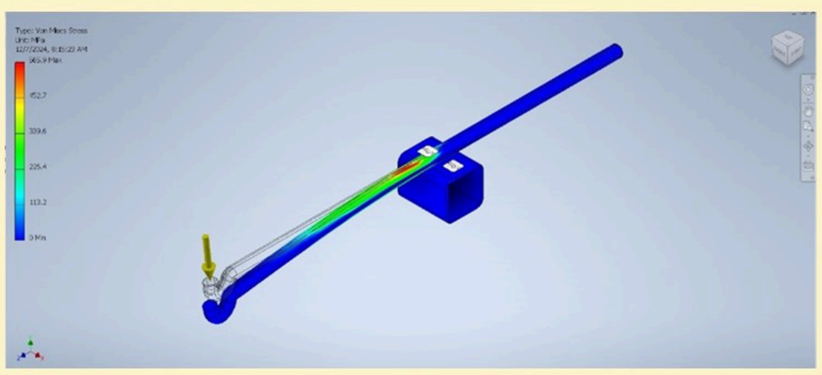
Reduce the frame weight,
Reduce work area,
Improve working coverage

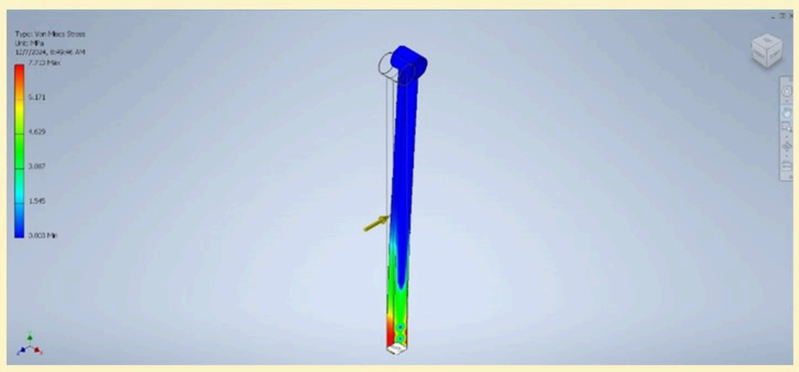
4.0 PROTOTYPE DESIGN











5.0 COMMERCIALIZATION

Able to be part of the real example for Strength of Material subject. The device is absolutely a practical advantages for an examples to be shown and performed to the student as it defines all the problem shown and the solution offers.

6.0 NOVELTY

As for its multi role application, spray frames are useful equipment in the automotive sector. FOS offer a secure and stable platform. These stands lessen user strain and fatigue while increasing productivity, efficiency, and quality of painting. Overall, a smoother and more efficient car finishing process is made possible using frame of spray equipment. It can be vary to any industry requirements even can be suits upon its features to ease the job done by worker. This advantage seems to be useful in other industry areas that requires the same characteristics of task.

IAM 221
ONLINE APPLICATION REQUEST FOR MAINTENANCE SYSTEM STATUS

ONLINE APPLICATION REQUEST FOR MAINTENANCE SYSTEM STATUS

UNIVERSITI MALAYSIA PERLIS
RAED ASADEL (1553643-A)
NUR ALIANI BINTI JOHARI
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ID : IAM221

ABSTRACT

Developed using Agile methodologies, the Online Application Request for Maintenance System is designed to address the inefficiencies of traditional maintenance request processes by introducing a digital solution. This user-friendly, web-based application enhances maintenance operations through seamless technology integration into existing workflows. Key features include user authentication, request submission, status tracking, and comprehensive reporting, built with PHP and MySQL. This system enhances operational efficiency, communication, and decision-making through real-time data analytics and performance metrics.

PROBLEM STATEMENT

Manual methods of managing maintenance requests are inefficient and cause delays in addressing maintenance needs.

Manual processes are error-prone and lead to miscommunication, incorrect prioritization, and overlooked issues.

Manual systems lack a mechanism for tracking and documenting the history of requests, hindering data-driven decision making and continuous improvement.



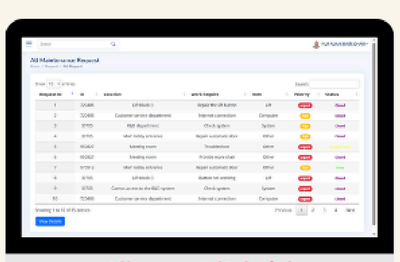
OBJECTIVE

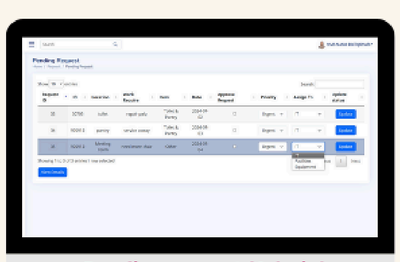
To analyze the current maintenance processes, identify the problems and needs, and specify the requirements for a real-time application system.

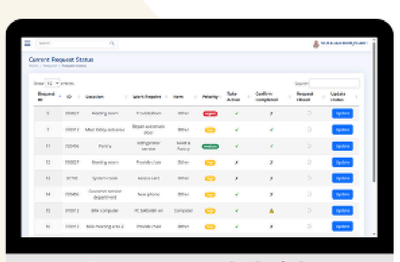
To design and develop the system architecture for an efficient and user-friendly online maintenance request system, and to implement it effectively.

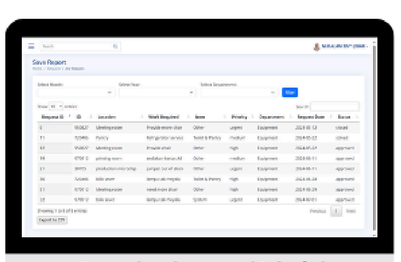
To thoroughly test the system for functionality, usability, and reliability.

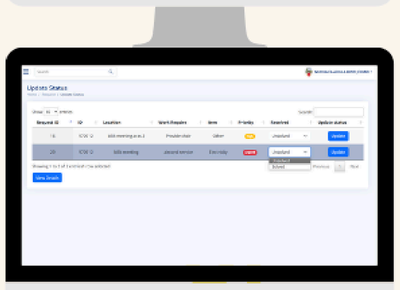
INNOVATION PRODUCT

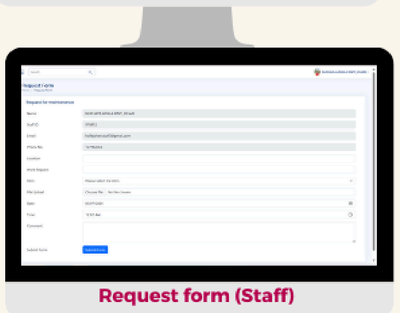

All request (Admin)

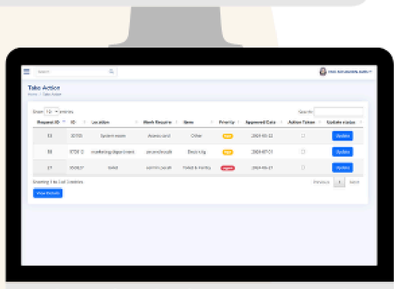

Pending request (Admin)

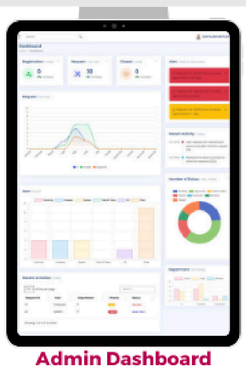

Current status (Admin)


Download report (Admin)


Confirm completed (Staff)


Request form (Staff)


Take action (Maintenance Team)


Admin Dashboard

AUTHENTICITY/NOVELTY

- **Original Concept:** The Online Application Request for Maintenance System introduces a novel approach to digitizing and automating the maintenance request process.
- **User Interface Design:** The system features a user-friendly interface, making it accessible for users to submit requests, track status, and manage maintenance tasks efficiently.
- **Integration Capability:** The system's ability to send automated email notifications at various stages of the maintenance process demonstrates advanced integration capabilities.
- **Comprehensive Coverage:** This system comprehensively covers all aspects of maintenance management, from request submission and status tracking to detailed reporting and priority assignment.

USES AND APPLICATION



COMMERCIAL POTENTIAL

- **Market Demand:** Addresses the need for efficient maintenance management across various sectors.
- **Cost Savings:** Automates processes, reducing time and resources spent on manual tracking.
- **Scalability:** Suitable for businesses of all sizes, handling multiple users and requests.
- **Customization:** Can be tailored to different industries' specific needs.
- **Real-Time Monitoring:** Provides immediate insights and improves service quality with real-time notifications.

IAM 222
BUILDING A KNOWLEDGE GRAPH FOR UNIMAP ACADEMIC CHATBOT ASSISTANCE

BUILDING A KNOWLEDGE GRAPH FOR UNIMAP ACADEMIC CHATBOT ASSISTANCE

IAM222

UNIVERSITI MALAYSIA PERLIS

INTRODUCTION

This theme deeply reflects the widespread trends in Knowledge Management. The new technique in knowledge graphs and tool Neo4j, managing UniMAP's Academic Guide data, and the rise of chatbots like HA-RIBOT can revolutionize how we access and interact with academic information, enhancing data integration, retrieval, and user engagement through intelligent automation and graph-based data management.

PROBLEM STATEMENT

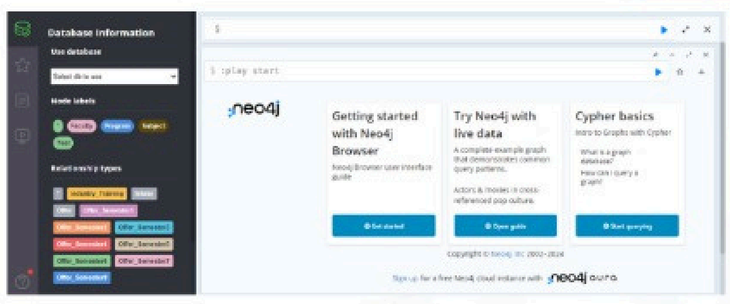
- Students face difficulties in finding and navigating crucialacademic information at UniMAP.
- There is no single, easily accessible platform for students to receive information on course schedules, registration procedures, UniMAP regulations, and other academic matters.
- Relevant information is dispersed across multiple systems,making it hard for studentsto
  quickly obtain accurate and current information

OBJECTIVES

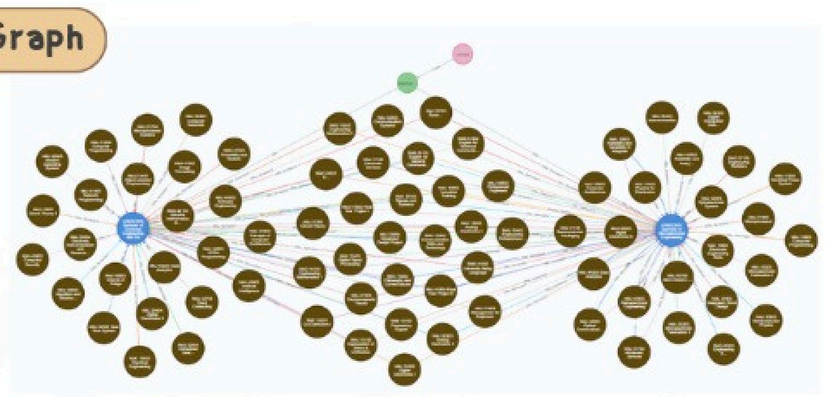
- To design knowledge graph database using Neo4j for UniMAP Chatbot AssistanceAcademic Information
- To design and develop the user-friendly interaction chatbot system-
- To test the chatbot functionality

INNOVATION PRODUCT

Knowledge Graph

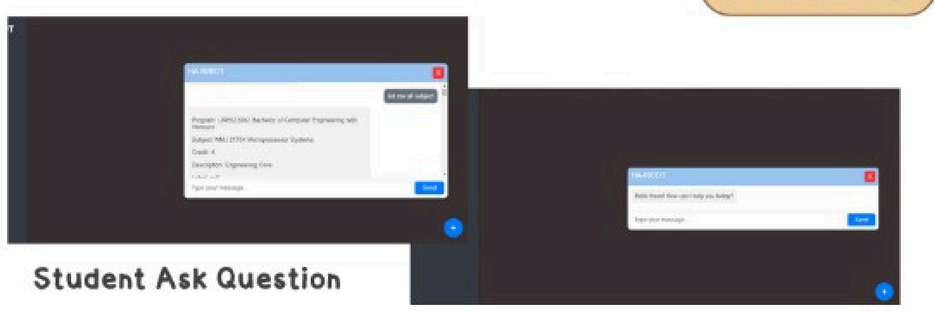


Neo4J Database Information



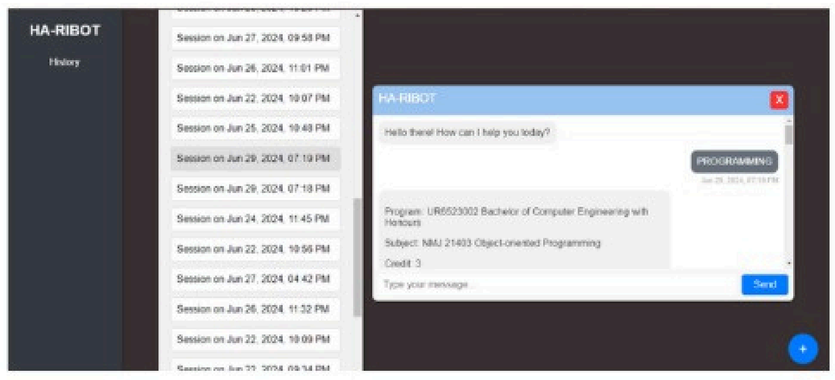
Complete Structure of Knowledege Graph

Ha-ribot



Student Ask Question

Ha-ribot interface



Can check the history of chat

COMMERCIALISATION

RAED ASADEL

- Collabaration with Company Raed Asadel Sdn Bhd (RASB)
- Educational Institution: Adopting By Universities Or College To Using The Chatbot
- Industrial Adoption: Capabilities For Collecting Complex Data
- Expand Market Reach: Using Web Browser, HA-RIBOT Can Target A Broader User Base

NOVELTY OF THE PRODUCT

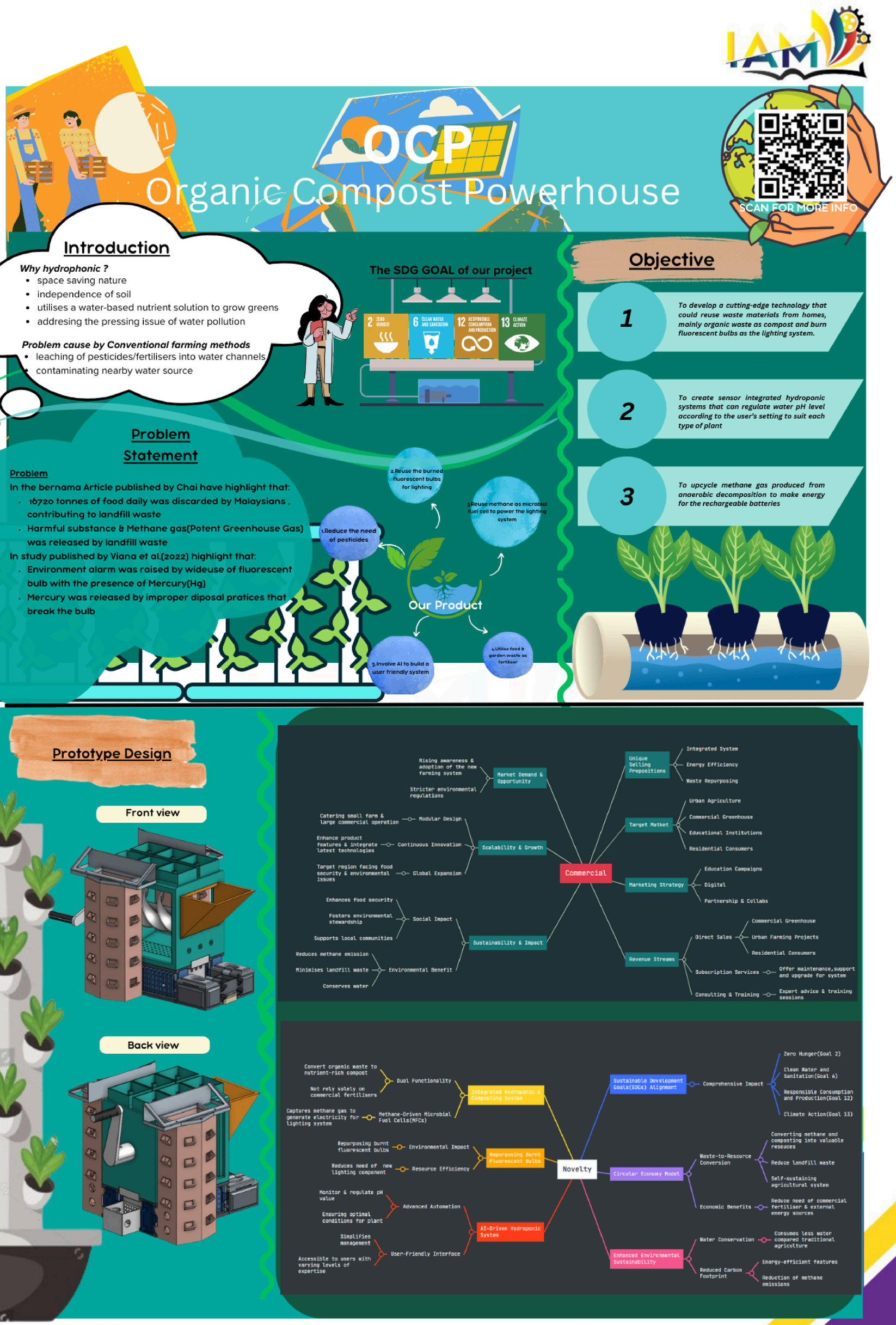
- Graph-Based Representation: Neo4j models complex relationships between academic entities like courses, students, and professors more intuitively than traditional databases.
- Dynamic Querying: Cypher query language enables efficient and flexible retrieval of interconnected data, supporting complex academic queries.
- Scalability and Flexibility: Scalable architecture supports growth in data volume and complexity, adapting to expanding academic programs and institutional needs.
- Improved Efficiency: Centralizing academic information improves accessibility and operational
- Efficiency, benefiting students, faculty, and administrative staff alike.

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IAM 223
ORGANIC COMPOST POWERHOUSE



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IAM 224
SMARTTRACKER : INNOVATIVE WIFI-POWERED HUMAN PRESENCE AND LOCATION APP

SMARTTRACKER: INNOVATIVE WIFI-POWERED HUMAN PRESENCE AND LOCATION APP

Wi-Fi is now ubiquitous, found in homes and public spaces, with nearly every household equipped with it. People commonly own multiple Wi-Fi-enabled devices such as laptops, tablets, and smartphones. The Smart Tracker app leverages this widespread availability of Wi-Fi by utilizing existing Wi-Fi information (SSID, BSSID, RSSI) to innovatively track human presence and location. By using common Wi-Fi devices like smartphones, tablets, and laptops, Smart Tracker offers a novel approach to monitoring and localization without the need for additional hardware.

Problem Statement:

- **Traditional method using Infrared sensor:** Challenge in distinguishing humans from other living things
- **Traditional method using CCTV:** raise privacy concerns and security risks, additional hardware installations is expensive

Commercialiasation:

- The Smart Tracker Mobile Apps has been demonstrated for use in Kompleks Dewan Kuliah (DK7, DK8, DK9,DK 10) and Hostel UniMAP (Living Room & Bedroom)
- Letter of Intent with RAED ASADEL SDN BHD (RASB) for the commercialization potential such as Smart Homes, Healthcare & Educational Institutions

Novelty:

- Develop TWO (2) enhances algorithm; Trilateration and WiFi fingerprinting
- K-Nearest Neighbours(KNN) algorithms is used to match the current Wi-Fi signals to the closest pre-recorded fingerprints
- User-friendly SmartTracker Android Mobile Application allows users to interact easily with the app and track their locations

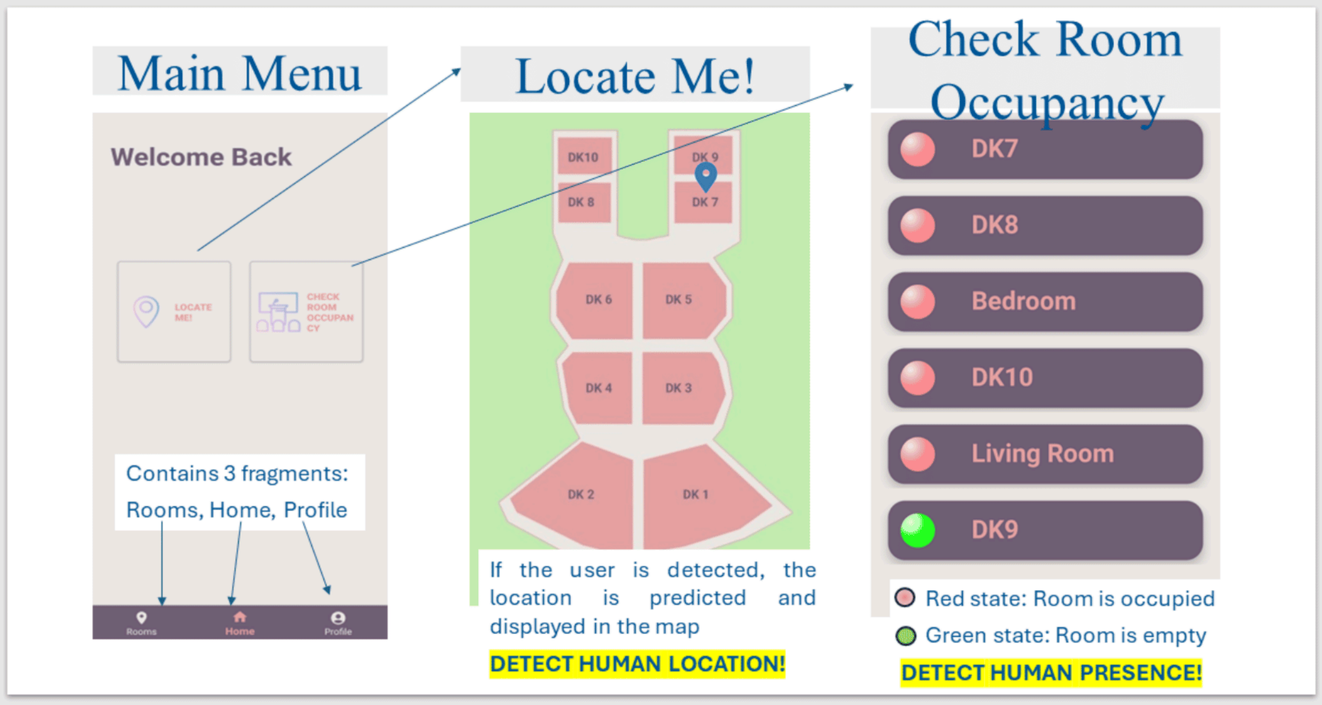
Objectives:

- To develop an algorithm to detect human presence and his location using Wi-Fi sensing technique and to evaluate the algorithm accuracy
- To develop a mobile application on Android for the human presence detection and localization based on the Wi-Fi sensing technique

Features

- Sign In using Google
- Real-time Location Tracking
- Check Rooms Occupancy
- View list of rooms and can enter desired room
- View people in the same room

How does the app work?



SmartTracker *addresses the* ***IAM2024 theme of "Empowering Tomorrow: Pioneering The Future Through Innovation Technology"*** *by utilizing existing Wi-Fi infrastructure, demonstrating how everyday technology can be repurposed for advanced applications.*

Tang Shelvine,
Assoc. Prof. Ir. Ts. Dr. Siti Zuraidah Ibrahim,
Ts. Dr. Aini Syuhada Md Zain,
Dr. Salina Mohd Asi

Universiti Malaysia Perlis (UniMAP)

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IAM 225
BANANA PEEL SYRUP

TITLE:BANANA PEEL SYRUP

Pengenalan

Kulit pisang ini mengandungi nutrisi yang tidak jauh beza dengan buahnya. Kulit pisang juga mempunyai aroma yang sama seperti buahnya. Tujuan produk ini dicipta adalah untuk mempromosikan khasiat dan kegunaan kulit pisang kepada masyarakat. Selain itu, bagi menghasilkan sebuah produk yang baru dan sukar ditemukan di pasaran. Konsepnya sama seperti madu. Produk ini boleh dijadikan penambah perisa kepada makanan seperti Pancake, Ice Blended, Waffle dan sebagainya.

Fakta Banana Peel Syrup

- Ketahanan produk baik sebelum 3-4 minggu pada suhu bilik dan 2-4 bulan didalam peti sejuk.
- Mempunyai rasa pisang tanpa sebarang perisa tambahan.

Nutrisi kulit pisang

Antara nutrisi yang terdapat pada kulit pisang ialah Vitamin B12, Fiber, Magnesium, Potassium & Protein.

Objektif

- Mencipta produk baharu daripada bahan yang dibazirkan (kulit pisang).
- Menghasilkan sirap makanan dengan harga yang lebih murah dan berpatutan.
- Menambah variasi pilihan sirap makanan di pasaran.
- Menghasilkan produk sirap makanan tempatan.

Pernyataan Masalah

- Mengurangkan kadar pembaziran kulit pisang daripada dibuang.
- Pilihan sirap makanan di pasaran masih lagi terhad.
- Produk sirap makanan kebiasaannya di import.
- Harga sirap makanan di pasaran mahal.

IAM 226
BIOS FACADE

BIOS FACADE

BEYOND GREEN; INTEGRATING HOME-GROWN MICROALGAE PHOTOBIOREACTOR (PBR) INTO TROPICAL BUILDING FACADE **IAM226**

INTRODUCTION

Microalgae, known for their remarkable adaptability and significant contributions to oxygen production over billions of years, are emerging as a promising renewable energy source with profound environmental benefits. Despite global research highlighting their potential, Malaysia has yet to fully explore microalgae as an innovative sustainable solution within technological design contexts.

This innovation seeks to pioneer microalgae integration at the domestic scale, envisioning their application as building facades in tropical climates. By harnessing photosynthesis to reduce CO2 levels, increase oxygen production, and enhance biomass generation, this technology aims to elevate building comfort levels while mitigating heat gain.

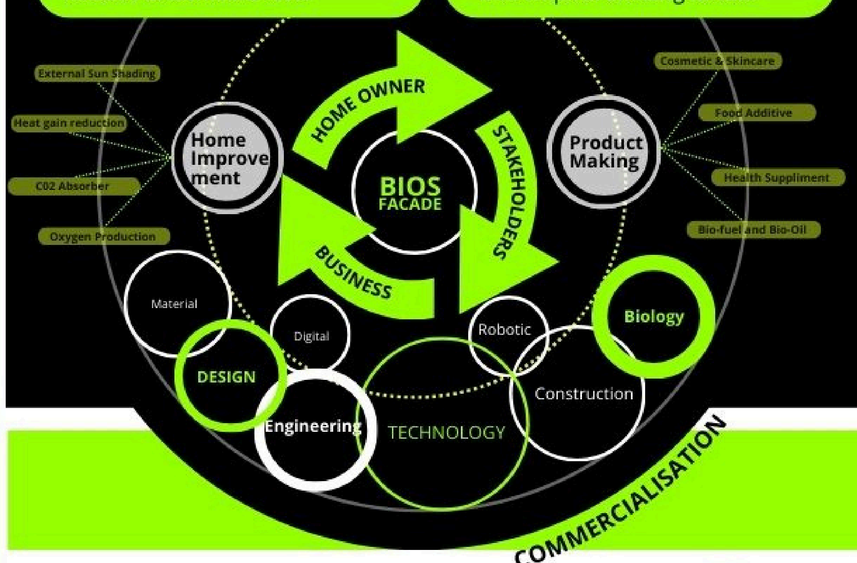
The modular nature of microalgae cultivation systems using modular photobioreactor promises scalability and adaptability, addressing the unique challenges posed by Malaysia's climate. By systematically using precise measuring tools for environmental performance, this study lays the groundwork for future developments in symbiotic microalgae-architecture applications, positioning Malaysia at the forefront of sustainable building innovation.

PROBLEM STATEMENT

In tropical climates like Malaysia, traditional green facades often struggle to provide sufficient cooling and environmental benefits due to their limited ability to actively reduce CO2 levels and enhance oxygen production. This limitation underscores the need for alternative solutions that can effectively harness the potential of microalgae. Therefore, understanding the reasons and advantages of using microalgae facades over traditional green facades becomes crucial for enhancing building sustainability and occupant comfort in such environments

OBJECTIVE 1:
Develop a **scalable and efficient microalgae photobioreactor (PBR)** system tailored for integration into tropical building facades at domestic level

OBJECTIVE 2:
Assess the **environmental performance** and demonstrate the **environmental benefits** of integrating microalgae PBRs into tropical building facade





THERMAL HEAT GAIN EXPERIMENT

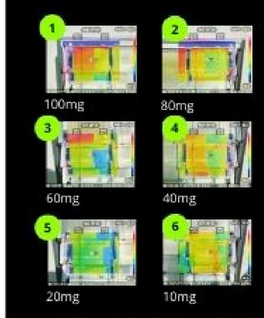
- FLUKE TIS75 THERMAL IMAGING CAMERA

SUMMARY OF RESULT

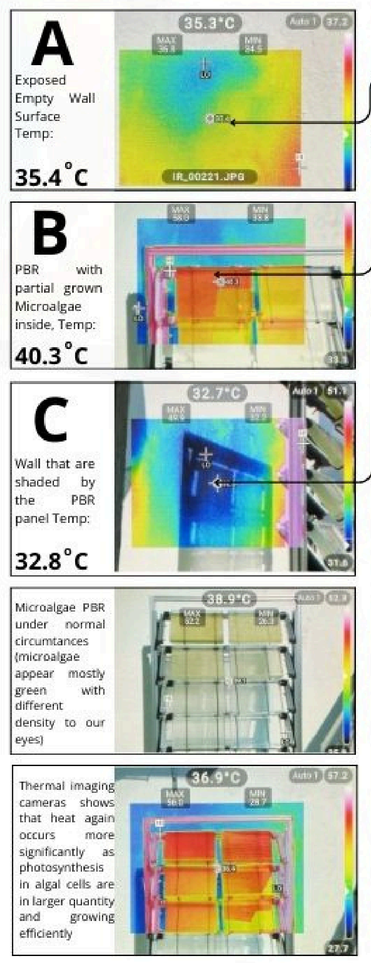
Using Fluke Thermal Imaging Camera, it can be concluded that the area shaded by the PBR modular (C) has a significant drop of temperature on the wall surface. There is a two-degree Celsius temperature difference compared to the surface of the exposed wall (A)

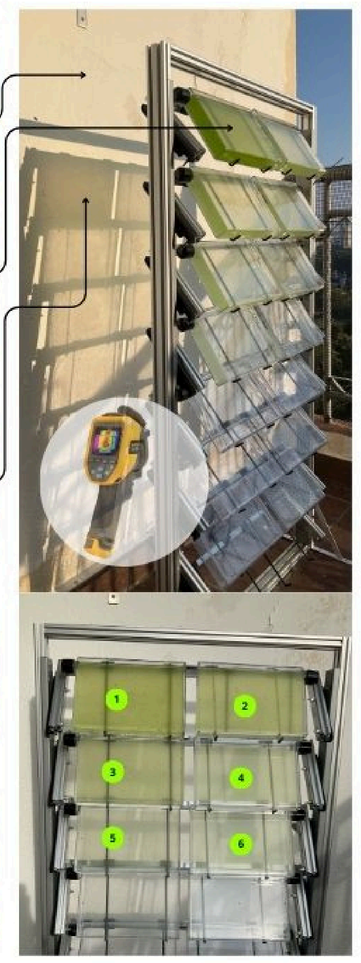
SCIENTIFIC REASONING

Photosynthesis occurs, where chlorophyll in algae absorbs sunlight and does not reflect or allow sunlight to pass through the algal cells. Some wavelengths of light are not utilized by the algae; predominantly green wavelengths are reflected. Therefore, algae appear mostly green to our eyes



6 modular are filled with algal cell with different quantity to monitor their growth in one week. All facing the same sun path direction. Chroella species is selected as it is more robust toward harsh condition of the sunlight

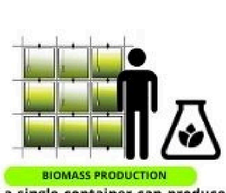






There are needs to initiate **BIOS Facade** among the Malaysian community. Microalgae's undemanding nature can easily become part of the homegrown plant at any residential house and has the potential to be utilized at a bigger scale.

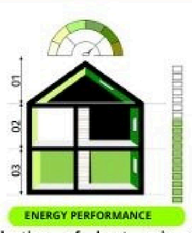
NOVELTY



BIOMASS PRODUCTION
a single container can produce up to 100mg of Biomass (Chroella / Spirulina) ready for harvest in just one week



ENVIRONMENTAL BENEFIT
Excellent Carbon sequestration (CO2) and conversion into oxygen. ten-to-fifty times better than trees



ENERGY PERFORMANCE
Reduction of heat gain (2-3 degree celcius) through External sun shading thus improved overall energy performance

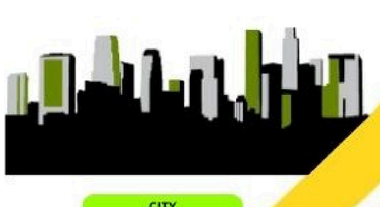
CONCLUSION



HOUSE
It is time to start cultivate microalgae from our home



BUILDING
Only then, we can start applying this innovative approach into our building.



CITY
and maybe one day, we can surely create a more sustainable cities

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IAM 227
SCAM GUARD : YOUR GUIDE TO CALL AND EMAIL SCAM PREVENTION AND FLWARENESS

Online scams pose significant dangers globally, over 30,000 online fraud cases with RM1.3B in losses recorded. Despite concerted efforts to enhance public knowledge and counteract fraudulent schemes, there is still a significant deficiency in offering users easily accessible and highly efficient resources for preventing and detecting scams. Therefore, present to you

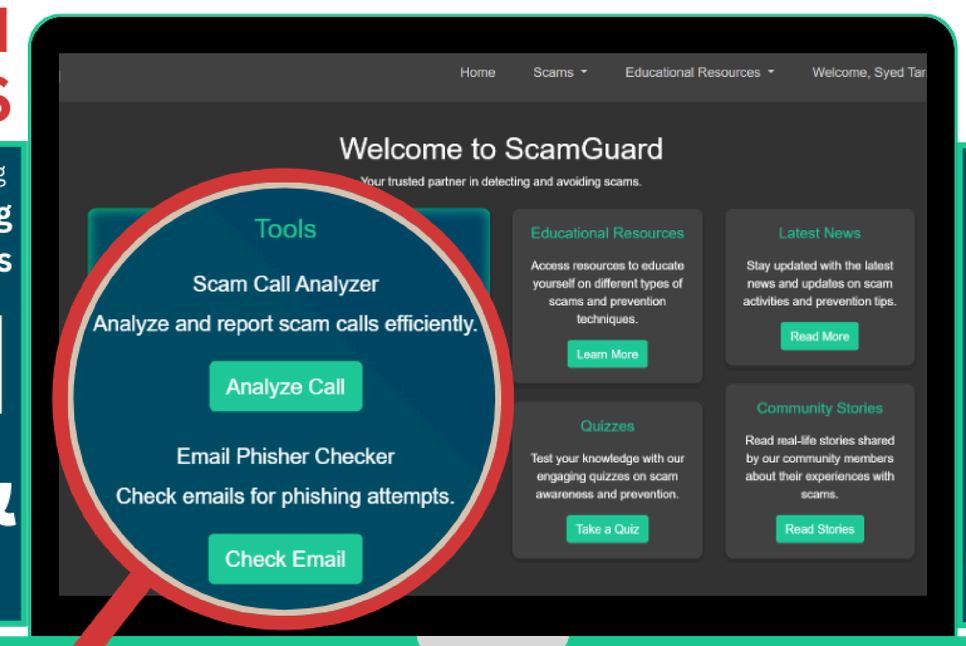
SCAM GUARD:
Your Guide to Call and Email Scam Prevention and Awareness

by : Syed Tameem Ahmed | Liyana Rosely (Dr)
GROUP ID : IAM227

SCAM CHECKERS

using machine learning algorithms

HIGH accuracy & precision **> 90%**



LEARN & EXPLORE MORE

with varies selections

Educational Resources
Quizzes
Latest News
Community Stories

AIM TO Provide a dynamic interface is combined with vast educational resources and community participation to provide comprehensive fraud avoidance.

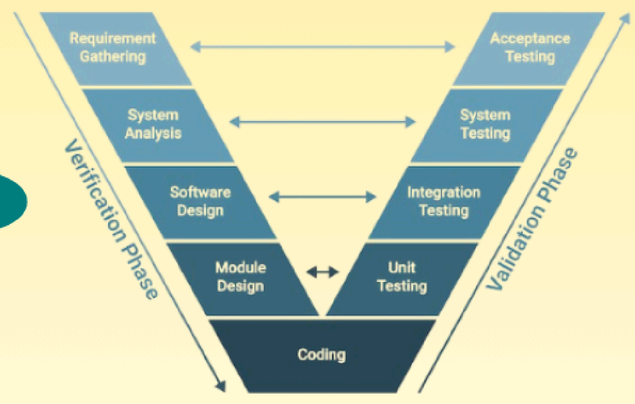
How is Scam Guard innovative than the other available platforms?

Existing Scam System / Requirements	Scam Adviser	Smart Investor	Financial Fraud Alerts from BNM	ScamGuard
Interactive Tools	X	X	X	/
Educational Resources	X	X	X	/
Community Collaboration	X	X	X	/
Reporting Mechanisms	/	X	/	/
Remark	Limited interaction and educational resources impede user engagement and knowledge gain.	The lack of interactive aspects and community engagement tools decreases user participation.	There are no comprehensive educational resources available, and chances for community engagement are restricted.	A dynamic interface is combined with vast educational resources and community participation to provide comprehensive fraud avoidance.



Benefits of ScamGuard innovation

1. Enhanced Consciousness
2. Friendly Scam Checkers
3. Easy Resource Accessibility
4. Community Engagement



Scan to watch ScamGuard working

SCAM ALERT SCAM ALERT SCAM ALERT SCAM ALERT SCAM ALERT SCAM ALERT SCAM ALERT SCAM ALERT SCAM ALERT SCAM ALERT SCAM ALERT SCAM ALERT SCAM ALERT SCAM ALERT SCAM ALERT

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IAM 230
AN ADAPTIVE CLOTHING FOR BEDRIDDEN PATIENTS INSPIRED BY PARROT

INNOVATION PROJECT

AN ADAPTIVE CLOTHING FOR BEDRIDDEN PATIENTS INSPIRED BY PARROT

PN.NUR AKMAR BINTI AHMAD | NURUL AYUNI BINTI YUSOF |
NURUL SYAFIQAH BINTI MOHD RIZAIDI | NUR ILYANAJLA BINTI NASARUDIN FITRI
email : n.akmarahmad@gmail.com
n.ayuniyusof@gmail.com

PRODUCT DESCRIPTION

Penghasilan rekaan pakaian "An Adaptive Clothing for Bedridden Patients" merupakan pakaian yang direkakan khas untuk pesakit terlantar dengan menumpukan pada aspek ciri reka bentuk, kefungsian, dan keselesaan sebagai reka bentuk yang lebih menarik dan menyenangkan untuk dipakai bagi memudahkan pengurusan diri pesakit. Selain itu, rekaan pakaian ini diinspirasikan daripada burung kakak tua iaitu Spix Macaw yang berasal dari negara Brazil. Penyelidik telah mengenalpasti kepentingan bagi meningkatkan keperluan kefungsian dan keselesaan bagi memudahkan pergerakan kepada pesakit yang terlantar untuk membuang air tanpa perlu berulang alik ke tandas atas faktor kekangan pergerakan yang agak terbatas. Secara keseluruhannya, penyelidikan ini juga berjaya mencipta reka "An Adaptive Clothing for Bedridden Patients" yang akan membantu mereka berasa lebihselesa dan mudah untuk pesakit menguruskan diri dalam menjaga kesihatan dan kekemasan diri. Pakaian ini akan memberikan keselesaan kepada pesakit kerana ia diperbuat daripada ciri -ciri fabrik yang menyerap haba dan lembapan yang baik, ringan dan keteguhan yang baik.

APPLICATION

- Mudah dikendalikan
- Mesra pengguna (Bedridden Patient)
- Sesuaiuntuk semua peringkatumur
- Produk masih dalam proses pendaftaran
- My IPPO

OBJECTIVE

1. Untuk mengetahui tahap kesukaran atau keterbatasan pesakit terlantar.
2. Untuk mengenalpasti ciri-ciri yang boleh digunakan pada pakaian pesakit terlantar sambil menawarkan ciri kefungsian, kebersihan dan keselesaan.
3. Untuk merekacipta pakaian sakit terlantar yang merangkumi aspek fungsi dan ciri yang boleh digunapakai oleh pesakit terlantar.

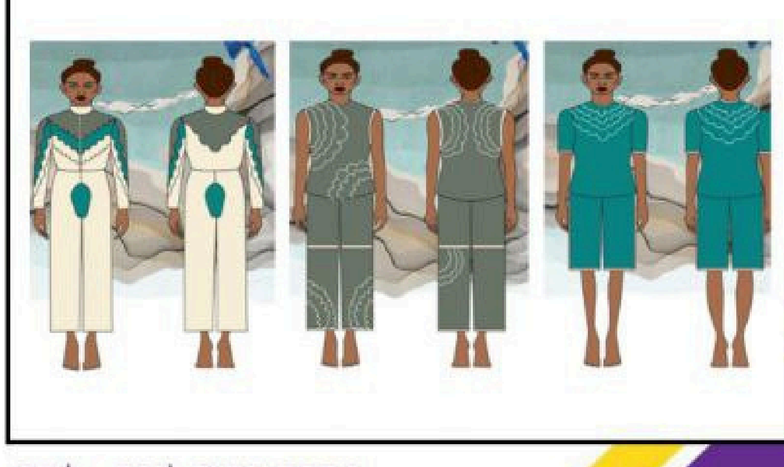
MARKET POTENTIAL

- Memfokuskan kepada golongan wanita dan lelaki yang terdiri daripada pesakit terlantar melibatkan semua peringkat umur.
- Mempunyai potensi pasaran yang tinggi bagi golongan pesakit yang terlantar yang memfokuskan pakaian multifungsi yang menawarkan ciri kefungsian, keselesaan dan keselamatan dalam menjaga kesihatan, kebersihan dan kemasan diri.

GENUINELY

- Produk inovasi ini merupakan hasil karya asli daripada Projek Tahun Akhir 2024 (Diploma).
- Produk inovasi ini dihasilkan khas untuk pesakit terlantar bagi memudahkan pesakit mengurus diri tanpa memerlukan bantuan orang lain seperti membuang air sambil menawarkan ciri serta elemen kebersihan dan kekemasan dalam pengurusan penjagaan diri.

PRODUCT PICTURE



IAM 232
PORTABLE COMPRESSOR 2IN1



IMPAK

- Dapat mengkitar semula pemampat daripada peti sejuk yang telah rosak.
- Menghasilkan inovasi yang tinggi terdapat pemampat yang dapat melaksanakan hasil inovasi pemampat.

NOVELTI

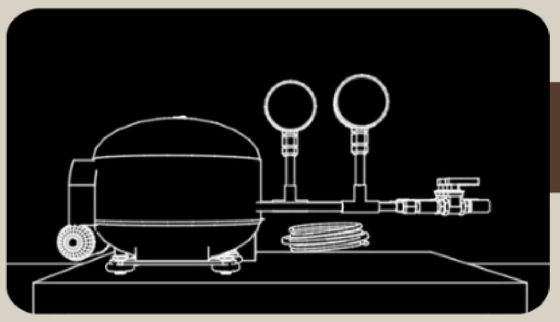
- Dapat menjimatkan kos kerana diperbuat oleh barangan terpakai.
- Menyahut seruan Malaysia diarah negara Industrial Revolution 4.0 yang berasaskan inovasi.

DESKRIPSI PRODUK

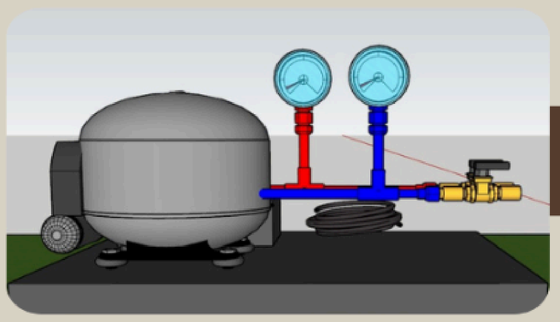
- Portable Compressor 2in1 adalah sebuah pemampat peti sejuk yang dibuahsuai yang boleh melakukan kerja memvakum dalam proses penyelenggaraan unit penghawa dingin. Alat ini adalah inovasi daripada pemampat peti ais yang diubahsuai yang boleh menjalankan kerja memvakum dan juga pelbagai kegunaan,

OBJEKTIF

- Mencipta alat penyelenggaraan penghawa dingin menggunakan pemampat peti ais.
- Untuk menguji alat pemampat yang dibina dari seri tahap keselamatan, penjimatan tenaga dan masa.
- Untuk menghasilkan sebuah alat untuk proses vakum dan pelbagai kegunaan



2D



3D

LAKARAN PRODUK

PENYATAAN MASALAH

- Kerja-kerja memvakum unit penyaman udara yang rumit untuk dilakukan kerana bahan untuk melakukan kerja-kerja tersebut sukar untuk dibawa ke mana-mana. Kami mendapati bahawa masalah ini dapat diselesaikan. Projek ini dapat membantu memudahkan kerja-kerja memvakum dan pelbagai kegunaan unit penyaman udara dengan lebih mudah.



PRODUK SEBENAR

AHLI KUMPULAN



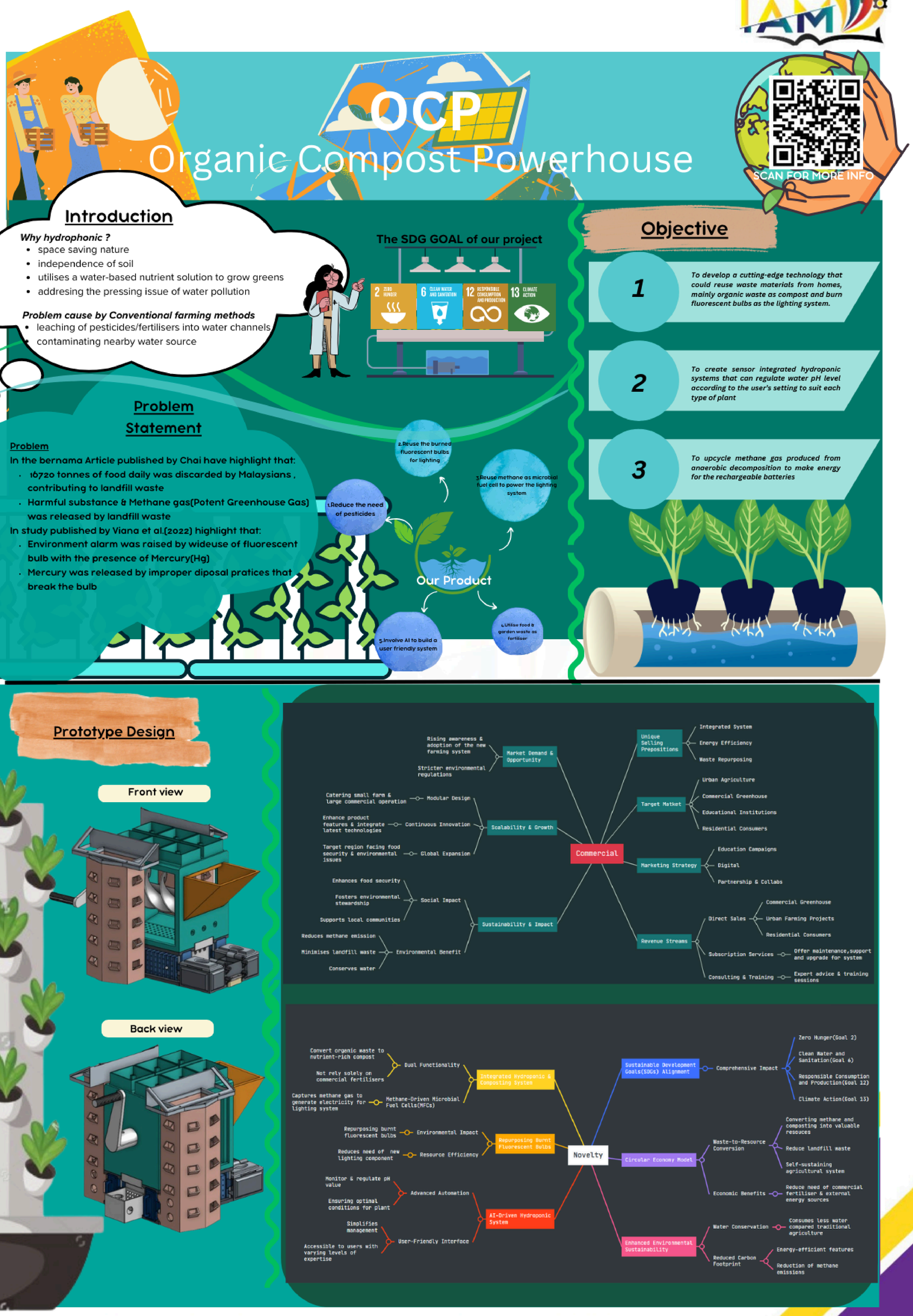
QR CODE VIDEO PENGUJIAN PRODUK

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IAM 233
ORGANIC COMPOST POWERHOUSE



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IAM 236
N.INT : AN INTEREST-BASED SOCIAL MEDIA PLATFORM FOR REDUCING SOCIAL ANXIETY AND ENCOURAGE POSITIVE INTERACTIONS

N.INT: AN INTEREST-BASED SOCIAL MEDIA PLATFORM FOR REDUCING SOCIAL ANXIETY AND ENCOURAGE POSITIVE INTERACTIONS

INTRODUCTION

Social anxiety disorder (SAD) affects a significant portion of the population, leading to considerable challenges in social interactions and engagement, both offline and online. With the rise of social media as a primary mode of communication, it becomes crucial to design platforms that cater to the unique needs of socially anxious individuals. This project focuses on developing and evaluating **an interest-based social media platform** aimed at **reducing social anxiety** and **enhancing user interactions** by incorporating features specifically designed to support socially anxious users.

PROBLEM STATEMENT

Current social media platforms often **fail to address the specific needs** of socially anxious individuals, leading to **heightened anxiety** and **avoidance behaviors**. These platforms typically **lack features that can alleviate social anxiety**, such as supportive content sharing mechanisms, robust privacy controls, and environments that foster positive interactions. Consequently, socially anxious users may find it challenging to engage meaningfully, leading to a **reduced quality of social interactions** and overall dissatisfaction with social media experiences.

OBJECTIVE

- To **Identify** and Evaluate Features:
  Determine key features and functionalities that support both socially anxious and non-socially anxious users through literature review and user feedback.
- To **Develop** the Platform:
  Create an interest-based social media platform incorporating identified features using user-centered design and iterative development processes.
- To **Evaluate** Impact:
  Assess the impact of the platform's usability, functionality, and its impact on user satisfaction, social interaction, and anxiety levels through pre- and post-usage surveys.

COMMERCIALISATION

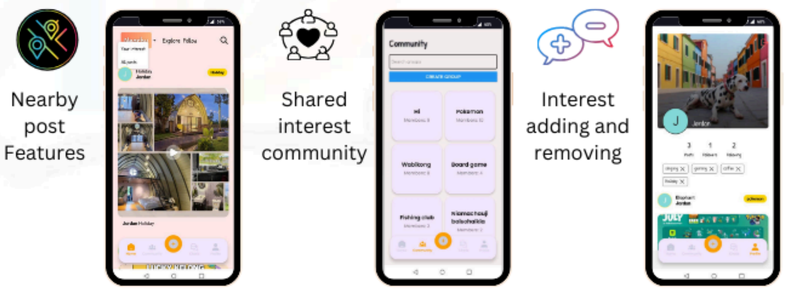
The commercial potential of the interest-based social media platform lies in its unique focus on reducing social anxiety, a growing concern among social media users. By addressing niche market with tailored features that promote mental well-being and positive social interactions, the platform can attract a significant user base. Commercialisation strategies include:

1. **Targeted Marketing Campaigns**:
   - Emphasize the platform's unique benefits for socially anxious individuals.
   - Collaborate with mental health organizations to reach potential users.
2. **Product Promotion**:
   - Utilize the platform's ability to identify specific interest groups, making it easier for businesses to target their audience.
   - Businesses can search for and join interest groups, promoting products to their target audience more effectively.
3. **Premium Features**:
   - Offer enhanced features that improve user experience and interaction.
   - Subscription models or one-time purchases for advanced functionalities.

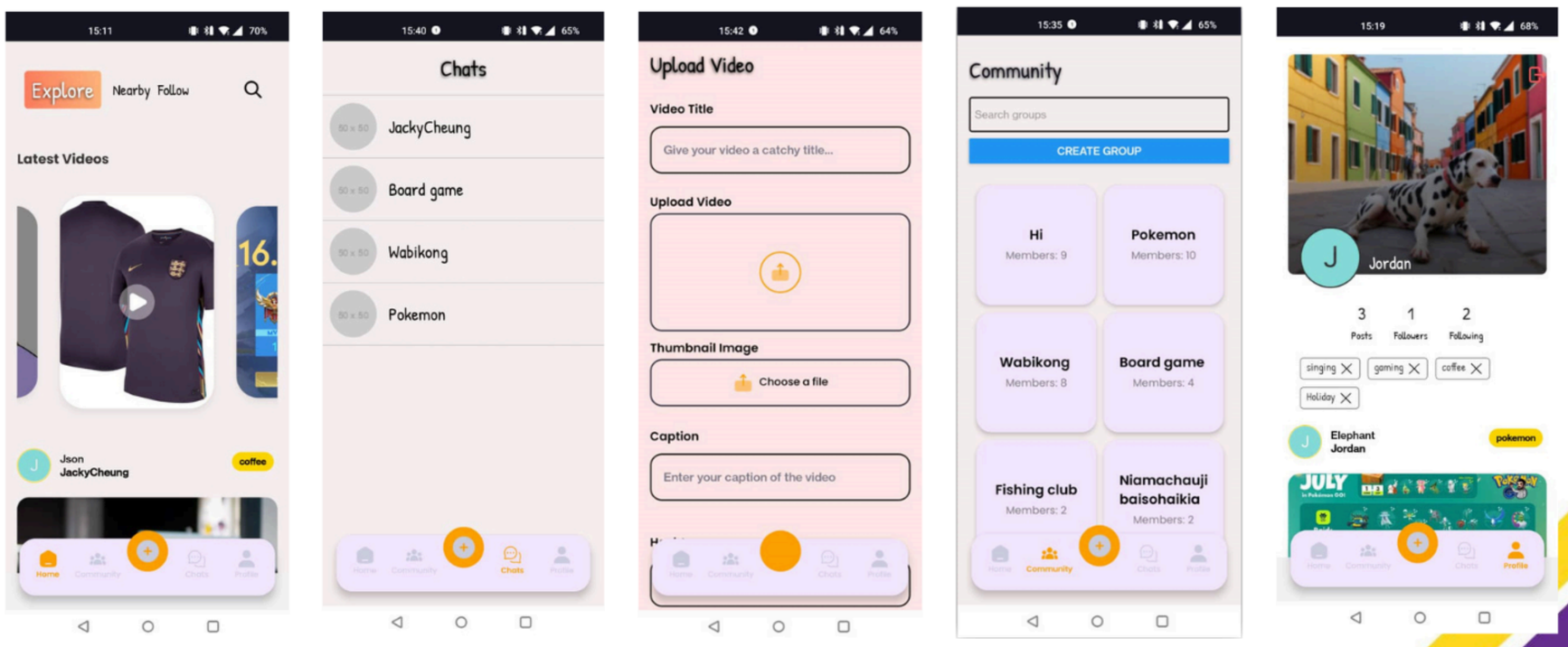
The platform's appeal to **both socially anxious and general users** broadens its market reach, increasing its commercial viability.

NOVELTY OF THE PRODUCT/PROTOTYPE

The novelty of this social media platform lies in its targeted approach to addressing social anxiety through **interest-based interactions**. Unlike existing platforms, this prototype integrates features specifically designed to reduce anxiety and enhance social support, such as **filters post based on user's interest and location**, **community with shared interest**, and **interest adding and removing**. By combining psychological insights with innovative technology, the platform offers a unique solution that not only meets the general needs of social media users but also provides substantial benefits for those struggling with social anxiety, setting it apart from traditional social media solutions.



PRODUCT DESIGN



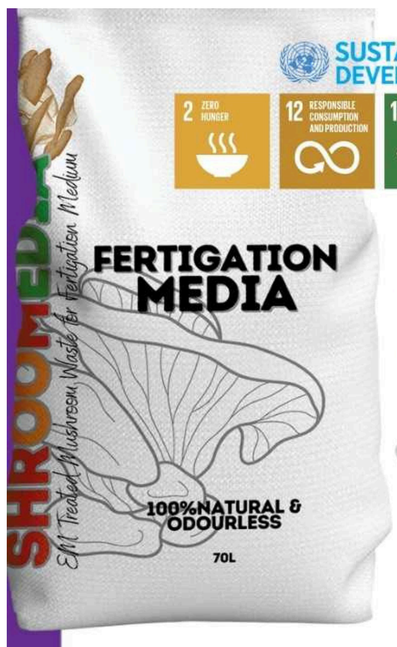
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IAM 237
SHROOMEDIA

SUSTAINABLE DEVELOPMENT GOALS

2 ZERO HUNGER | 12 RESPONSIBLE CONSUMPTION AND PRODUCTION | 13 CLIMATE ACTION | 15 LIFE ON LAND | 17 PARTNERSHIPS FOR THE GOALS

UCAM University College of Agroscience Malaysia | UPM Universiti Putra Malaysia Berilmu Berbakti | WNM Agro Trading | IAM



SHROOMEDIA

EM Treated Mushroom Waste for Fertigation Medium





GROUP MEMBERS



PROBLEM STATEMENT

The disposal of mushroom waste after use poses environmental challenges and contributes to waste accumulation.

Conventional fertigation systems often require significant start-up capital investment, including the purchase of medium materials.

Exploring alternative approaches, such as using EM treatment for plant disease prevention, can help reduce the dependency on chemical inputs.

Approximately 5 kilograms of mushroom waste are generated for every kilogram production.

PRODUCT OBJECTIVE

- To highlight the zero waste management practice.
- SHROOMEDIA as a solution that provides stable plant support, improved crop quality and reduced post-harvest losses.
- Highlight the environmental benefits of utilizing recycled waste materials and reducing the reliance on chemical inputs.
- Enhance nutrient availability and soil health using SHROOMEDIA EM treatment.
- SHROOMEDIA as a commercially viable and scalable solution that can be easily adopted by farmers and growers.

IMPLEMENTATION LEVEL


Research plot at Smart Solar House UCAM

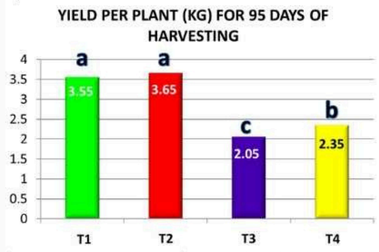




TREATMENT	PERCENT OF SURVIVAL
T1 (waste mushroom's medium+ EM)	100%
T2 (Coco peat + EM)	100%
T3 (waste mushroom's medium only)	80%
T4 (Cocoa peat only)	100%

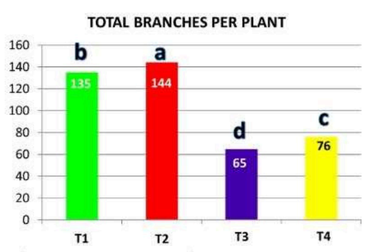
1) Plant dead on **T3** is due to a **disease attack.**
2) Shows that **EM** could **treat** waste mushroom's medium.

YIELD PER PLANT (KG) FOR 95 DAYS OF HARVESTING



1) P value = 0.00 (There is significance different between treatments).
2) Based on Tukey's Multiple test, T1 & T2 significantly higher compared with T3 & T4

TOTAL BRANCHES PER PLANT



1) P value = 0.00 (There is significance different between treatments).
2) Based on Tukey's Multiple test, T2 is significantly higher compared with other treatments





Study shows 20% of seedling grown on untreated medium died because of Bacteria Wilt (Ralstonia solanacerum) disease infection.

INNOVATION PRODUCT



Ingredients for EM formulation.

Treate mushroom waste for fertigation media.

Product can be use in fertigation system to produce variety of crops.

USES AND APPLICATION



The problem of fungal attack on chilies when using untreated waste mushroom's medium.



The study found that 85% of leaf spots (Cercoporacapsici) infected plants were successfully recover after 2 weeks of applying EM.

Formulated EM can enhance the chilli production up to...
50%

Shroomedia product can reduce fertigation medium cost as...
90%

10 ton mushroom waste (3000 polybag) =
RM 50

Cost for 3000 polybag - coco peat =
RM 4500

Cost for - **EM SHROOMEDIA**
RM 2/l

Cost for commercial EM
RM 20 - RM35

AUTHENTICITY/NOVELTY

1. Unique Utilization of Mushroom Waste: The novelty of the product lies in its utilization of mushroom waste as an alternative fertigation medium.
2. Effective Microorganism Treatment: The application of Effective Microorganisms (EM) developed at the UCAM laboratory provides an additional layer of novelty to the product.
3. SHROOMEDIA as a Fertigation Medium: The introduction as a fertigation medium is an authentic and innovative concept.
4. Addressing Specific Agricultural Challenges: The research addresses specific challenges in agriculture, such as cost constraints, environmental impact, and crop stability
5. Research-backed Evidence and Results: The authenticity of the product is supported by the research conducted.

COMMERCIALISATION

Succesfully usage of SHROOMEDIA on fertigation media help reduce cost and increase production.









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IAM 238
SIWAK-DER

SIWAK-DER

1.0 INTRODUCTION

1) A toothbrush is an oral cleaning tool used to clean teeth, gums, and tongue. It consists of a small brushed head (on which toothpaste can be used), attached to a handle that facilitates the cleaning of the oral area including hard-to-reach spaces.
2) Miswak is a dental twig made from the Salvadoran Persica tree. The properties of miswak are described as follows: "Apart from the antibacterial activity that can help regulate the formation and activity of dental plaque, it can be effectively used as a natural toothbrush to clean teeth. These rods are effective, inexpensive, common, available and have many medicinal properties.
3) In this product, we innovated a toothbrush that has a design similar to a general toothbrush, which has the advantage that the brush part can be interchangeable with natural materials such as Miswak, wood or bamboo.

2.0 PROBLEM STATEMENT

1) A regular toothbrush, increase the amount of garbage.
2) The use of a regular toothbrush cannot be applied using natural materials, as the shape is different.
3) Designed, ready-to-build toothbrushes made from natural materials have a high cost and are completely discarded after one duration use.

3.0 OBJECTIVE

A new design came up with the idea of creating a toothbrush whose general frame can be reused and which can be attached with natural fibres as a brush, for the toothbrush.

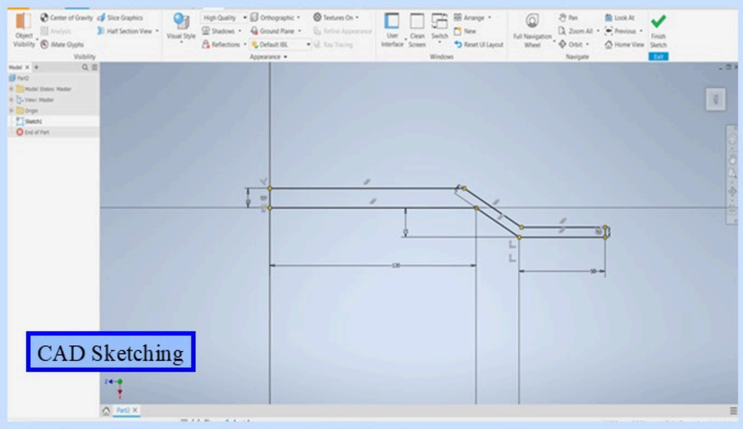
5.0 COMMERCIALIZATION

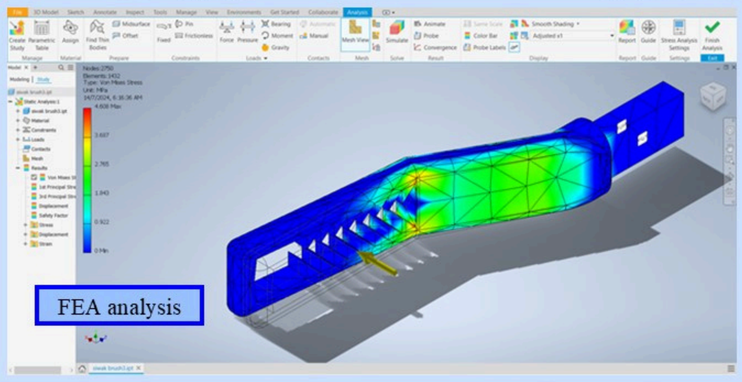
This product has commercial value because;
1) It can reduce the amount of waste produced by reusing about 90% of the current toothbrush.
2) It can contain natural fibres as brushes which can take advantage of the medical elements in the natural fibres (as recommended by Islam).
3) It can prevent you from getting involved in micro plastic poisoning from using a regular toothbrush.

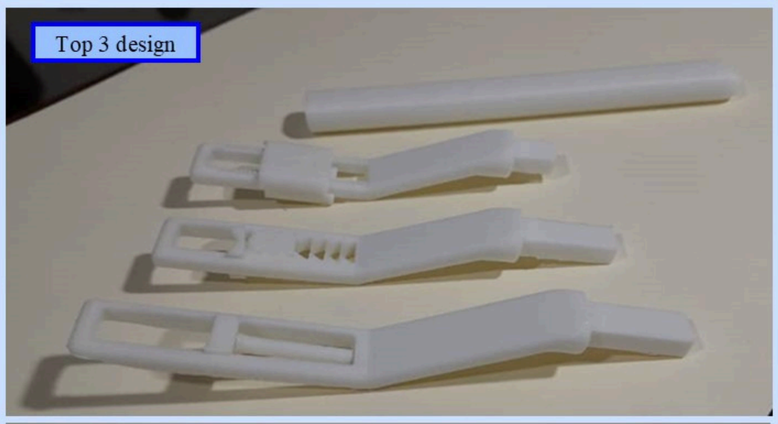
6.0 NOVELTY

This product has far-reaching innovation value because;
1) No commercially available product yet has the function of being able to reinstall or swap the brush head while retaining the handle stem. For Miswak, the support equipment that he has is only a storage container for Miswak.
2) If there is a natural fiber brush attached to the appliance, it is only a permanent installation and the fiber brush needs to be changed in its entirety including the brush handle.
3) In addition, none of the brush handles that hold natural fibers have a toothbrush-like design that allows cleaning

4.0 PROTOTYPE DESIGN


CAD Sketching

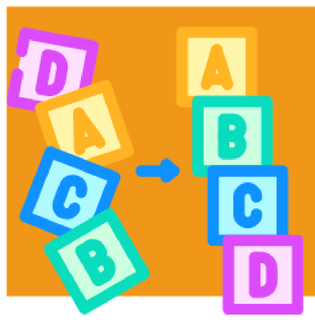

FEA analysis


Top 3 design



Product comparison

IAM 239
DEVELOPMENT OF A GAMIFIED MULTI-MARKER AR APPLICATION TO ENHANCE ENGAGEMENT IN LEARNING SORTING ALGORITHMS



DEVELOPMENT OF A GAMIFIED MULTI-MARKER AR APPLICATION TO ENHANCE ENGAGEMENT IN LEARNING SORTING ALGORITHMS

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- Nadira Hamidah Fenton

XIAMEN UNIVERSITY MALAYSIA
厦門大學馬來西亞分校

INTRODUCTION

Sorting algorithms are a fundamental concept in data structures and algorithms, which typically introduced at the beginning of undergraduate computing degrees. **Understanding these algorithms** is important as they form the foundation for solving more complex problems, provide a basis for understanding algorithm design and analysis, encourage critical thinking, and support efficient algorithm implementation.

Despite their importance, sorting algorithms are often viewed as a challenging subject due to their abstract nature and the involvement of programming elements, which can be difficult for some students to visualize, understand, and differentiate. Meanwhile, traditional teaching methods using textbooks and classroom materials can be time-consuming and less effective in conveying these concepts.

Visualization is a common strategy to solve problems in understanding complex and abstract concepts. However, relying solely on visualization may not be sufficient. The effectiveness of visualization depends on **student engagement** through active participation, making student engagement essential for successful learning with visualization technology. Currently, most existing studies that present visualization tool for learning sorting algorithm focus more on the effectiveness, meanwhile **little attention** has been given on the engagement aspect of these tools.

Gamification is a popular approach for enhancing student engagement in learning. Combining gamification with visualization technology can lead to better engagement and more effective learning outcomes. Moreover, advancements in technology have enabled the utilization of **Augmented Reality** (AR) to create interactive visualizations that can enhance students' spatial abilities and understanding of abstract concepts. Nevertheless, the use of AR, specifically the **multi-marker method, has not yet been explored** as a visualization tool for learning sorting algorithms.

Therefore, the goal of this study is to create a **gamified multi-marker AR application** to enhance engagement in learning sorting algorithms. This innovative approach aims to make the learning process more interactive, engaging, and fun.

PROBLEM STATEMENT

- Traditional teaching methods can be **time-consuming and less effective** in providing a conceptual understanding of sorting algorithms.
- Most existing visualization tools for learning sorting algorithms focused primarily on their effectiveness. However, **little attention** has been given to the **engagement** aspect of these tools.
- At the moment, the utilization of AR, specifically the use of the **multi-marker method**, has not yet been explored. Meanwhile, this approach has the potential to improve student engagement in learning by increasing interactivity and promoting active participation through hands-on learning experiences.

NOVELTY

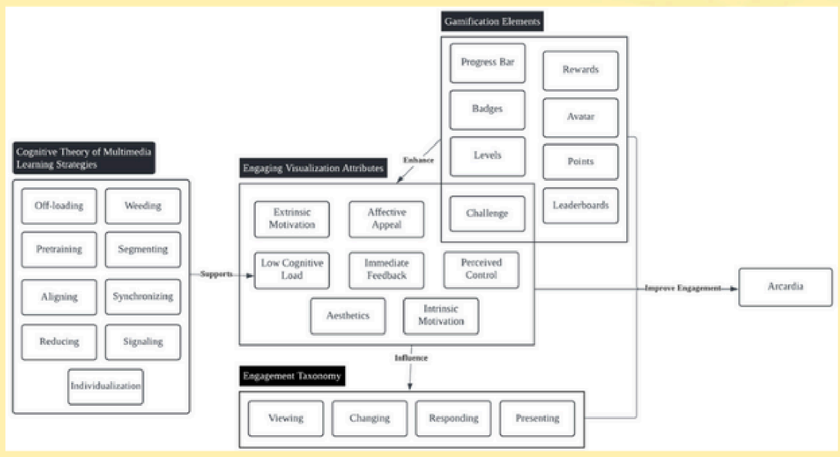
- **Integration of multi-marker AR method with gamification:** provides a unique approach for learning sorting algorithms using combination between gamification and multi-marker AR method.
- **Engagement-centric design:** developed based on conceptual framework to enhance engagement in learning.
- **Interactive hands-on learning experience:** designed to enhance student engagement through interactive learning experience.

OBJECTIVES

1). To **identify** elements that contribute to student engagement in learning sorting algorithms.

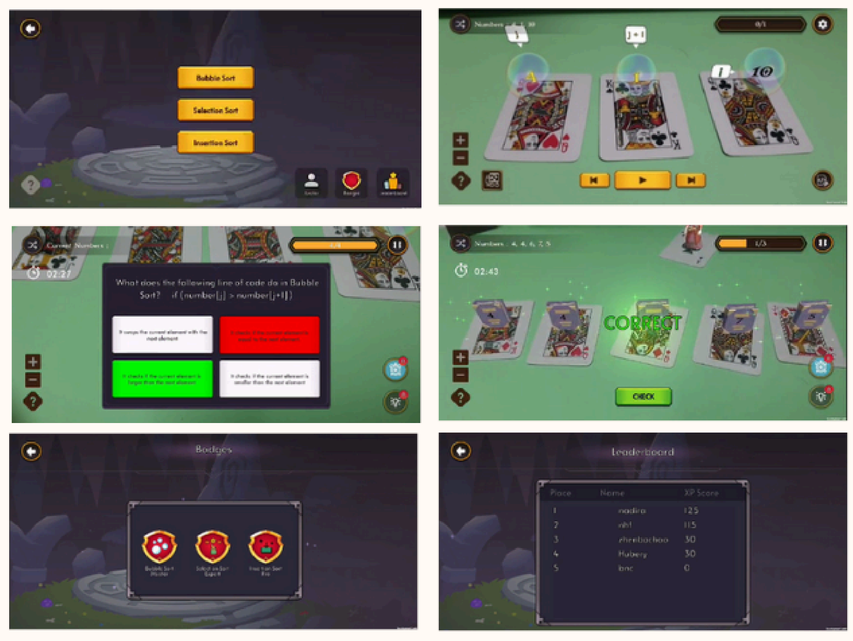
2). To **develop** a gamified multi-marker AR application based on the engagement elements.

Developed Using a Conceptual Framework Derived from Identified Elements in Literature Review



- Gamification elements
- Attributes for creating engaging visualization
- Engagement taxonomy
- Cognitive Theory of Multimedia Learning Strategies

PROTOTYPE: ARCARDIA



BENEFITS TO SOCIETY

- **Enhance student engagement** in learning sorting algorithm
- **Encourage active participation** in learning
- **Improve student understanding** of complex concept

COMMERCIALIZATION POTENTIAL



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IAM 240
DEVELOPING NEOPHYTE JOB-SEEKERS ABILITIES

Developing Neophyte Job-seekers Abilities

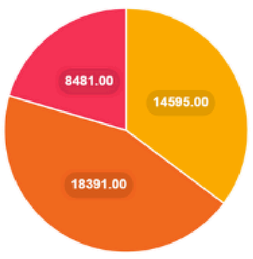
Project Members: Lt. Col. Dr Enock Amalanathan, Dr Lee Phaik Gaik, Mohamad Arieff Shamida bin Samsul Kamil, Wan Nurul Jannah binti Md Isa
Institution: SEGi University, Selangor

Abstract

The issue of employability among college graduates has become a pressing concern, as highlighted by Muhammad Hisyam (New Straits Times, 2022), who identified a significant gap in crucial employability skills such as effective communication, soft skills, problem-solving abilities, and technical proficiencies. Despite efforts to address these deficiencies through improvements in the teaching-learning process, many graduates still struggle to meet employment standards. In response, the higher education sector is rapidly adapting to Industry 4.0 (IR4.0), aiming to better prepare students for the evolving job market. The initiative many graduates still struggle to meet employment standards. In response, the higher education sector is rapidly adapting to Industry 4.0 (IR4.0 This development encompasses a wide range of skills beyond just technical abilities. Key strategies include integrating cognitive and analytical resources within the job market context to improve decision-making proficiency in digital environments and fostering the development of innovative and higher-order thinking skills through the effective use of communication and technology. Additionally, these workshops also inculcate the concept of SDG 4:" To ensure inclusive and equitable quality education and promote lifelong learning opportunities for all," whereby educators encourage inclusive and equitable teaching and learning processes for undergraduates. Despite this, educators are encouraged to effectively employ teaching guidelines that integrate methodologies aimed at enhancing analytical and communication skills, which are essential for improving graduates' employability. A comprehensive teaching module is proposed as a strategic guide to equip undergraduates with the necessary skills and knowledge for job market success. This development encompasses a wide range of skills beyond just technical abilities. Key strategies include integrating cognitive and analytical resources within the job market context to improve decision-making proficiency in digital environments and fostering the development of innovative and higher-order thinking skills.

Background

14.5 percent of 41,467 Malaysian graduates are still unemployed (MOHE, 2021)



14,595 are from public universities, 18,391 from private universities, and the rest are from the other institutions

Problem Statement



Graduates lack employability skills



Graduates struggle to meet the standards for higher employment rates



Insufficient handbooks on employability skills in the market

Objectives

- To integrate cognitive and analytical resources within the job market context to facilitate decision-making in digital environments.
- To foster the development and advancement of innovative and higher-order thinking skills by leveraging communication and technology.
- To provide support and guidelines for educators to effectively incorporate teaching methods that enhance analytical and communication skills, thereby enhancing undergraduates' job employability
- To develop a comprehensive teaching module to serve as a roadmap for preparing undergraduates for success in the job market.

Milestones

Phase 1: March-May 2023
- Conducted Need Analysis on communication and digital skills
- Analyze the data
- Planning 5 series of workshops to fill the skills gap

Phase 2: May - June 2023
- Expert's feedback on the content of the workshop
- Refining the content of the workshop

Phase 3: July - October 2023
- Conducted the workshops to the undergraduates
- Conducted interview with 12 undergraduates
- Designing the Websites

Phase 4: October 2023- May 2024
- User acceptance testing (UAT) at two private university
- Feedbacks from the user
- Refine the website.

Novelty of the Website

- To make the undergraduates aware of the preparation for job employability
- To provide a platform for trainers, lecturers, and undergraduates on employability requirements and readiness.

Prototype of the Website

Please scan the QR Code to access the website https://sites.google.com/view/developingneophytejob-seekers

Commercialisation

- Partnership and collaborations with private and public universities
- Revenue streams through subscriptions and partnerships
- Marketing strategies for awareness and adoption of the programme

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IAM 241
ENGINE OVERHAUL SMART RACK 2.0

ENGINE OVERHAUL SMART RACK 2.0 [IAM241]

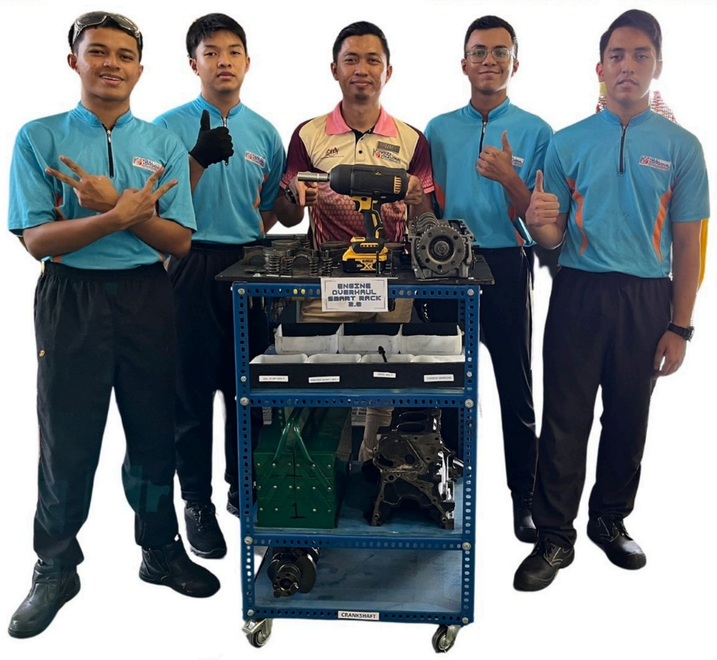
KOLEJ VOKASIONAL KEMENTERIAN PENDIDIKAN MALAYSIA
KOLEJ VOKASIONAL PASIR GUDANG

PENGENALAN

- *Engine Overhaul Smart Rack* merupakan sebuah rak pintar yang digunakan semasa sesi latihan merombak rawat enjin.
- Rak ini dapat membantu pelajar mengingat dan menyusun komponen enjin dengan lebih teratur.
- Dengan menggunakan rak ini juga, tempoh masa latihan amali merombak rawat enjin dapat dikurangkan.

AHLI KUMPULAN

MOHD FARISH PUTRA BIN AHMAD PADIL | RAZIQ UKAIL BIN SUFIAN | MOHAMAD IZZAT BIN SATAR | SHAH RAJ KHAN BIN SHAHZAD KHAN | MUHAMMAD FAIQ LUQMAN BIN MOHD FAIZAL



PENYATAAN MASALAH

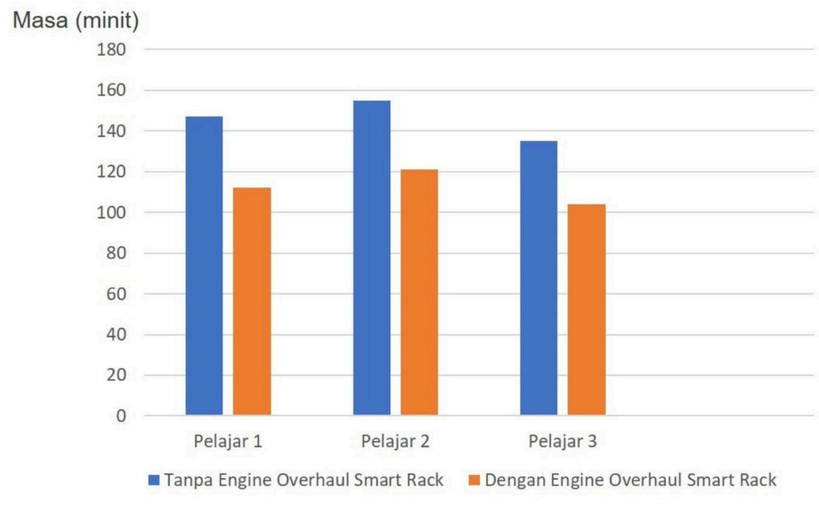
- Pada setiap sesi latihan amali merombak rawat enjin, tempoh masa sesi latihan menjadi lama dari 2 jam kepada 3-4 jam setiap sesi.
- Ini kerana pelajar sukar mengenalpasti susunan dan sentiasa silap memasang komponen enjin.
- Masalah ini telah mengganggu sesi pengajaran.
- Untuk mengatasi masalah tersebut, sebuah rak pintar merombak rawat enjin telah dibina.

OBJEKTIF

- Untuk menghasilkan sebuah rak pintar merombak rawat enjin yang dapat memudahkan pelajar menyusun dan mengingat komponen enjin yang telah ditanggalkan serta mengurangkan tempoh sesi latihan amali.

PENGGUNAAN PRODUK DAN IMPAK

- Uji lari dilakukan dengan menetapkan masa amali kepada 120 minit dan melalui dua kaedah iaitu tanpa *Engine Overhaul Smart Rack* dan dengan menggunakan *Engine Overhaul Smart Rack*



Graf perbezaan masa di antara dua kaedah sesi amali

KESIMPULAN

- Sebagai kesimpulan, *Engine Overhaul Smart Rack* telah direkabentuk dan diuji dan hasil dari pengujian telah menunjukkan bahawa masa sesi latihan dengan menggunakan rak pintar telah menjadi lebih singkat berbanding tanpa menggunakannya.
- Dengan menggunakan rak pintar ini akan dapat menyelesaikan masalah gangguan sesi pengajaran.

IAM 242
COCONUT FIBER COMPOSITE HULL
KOLEJ VOKASIONAL PASIR GUDANG

Coconut Fiber Composite Hull
Kolej Vokasional Pasir Gudang

1. ABSTRACT

The development of high-performance materials made from natural resources is increasing worldwide. The coconut fiber can be a potential candidate to replace the industrial core which is this industrial core is used to increase the thickness of the sandwich panel which is worldwide used in the construction of fiberglass boat. The construction of fiberglass boat will need certain thickness to comply with the rules and regulation. It is not efficient and will affect the weight of the fiberglass boat if all the laminating schedule made from the synthetic fiber. In this research, 3 types of testing panel are constructed and the 10 mm various type of foam and core which is Coconut Fiber, 3D Core Foam and Infusion Grooved PVC Foam. All this panels are constructed by using resin infusion method which is produce quality final products. All this flat panels are to be tested for the mechanical bonding of each foam and core towards the synthetic fiber. The mechanical testing that will be carried out based on the standard is ASTM D3039 Tensile test, ASTM D790 Flexural Test and ASTM D256 Impact test.

2. OBJECTIVES

Potential Usage of Coconut Fiber in Fiberglass Boat Construction

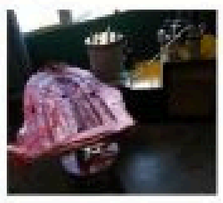
To identify the mechanical properties of coconut fiber, 3D core foam and infusion grooved PVC foam toward syntetic fiber

To determine the tensile, flexural and impact properties of coconut fiber, 3D core foam and infusion grooved PVC foam toward syntetic fiber

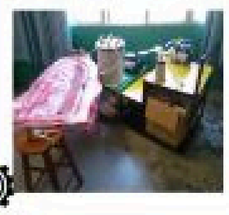
3. METHODOLOGY

Laminating Schedule

Panel Testing	1st Layer	2nd Layer	3rd Layer
Panel Testing 1	2 x CSM	10 mm Infusion Grooved PVC Foam	2 x CSM
Panel Testing 2	2 x CSM	10 mm 3D Core Foam	2 x CSM
Panel Testing 3	2 x CSM	10 mm Coconut Fiber	2 x CSM









- ASTM D3039 tensile testing is used to measure the force required to break a polymer composite specimen and the extent to which the specimen stretches or elongates to that breaking point. Tensile tests produce a stress-strain diagram, which is used to determine tensile modulus.

- The ASTM D256 Izod impact test is a testing method used to judge a material's toughness. It's offered by leading material science testing providers. This test utilizes a swinging pendulum hammer to strike a sample of the material hence mimicking real-world conditions.

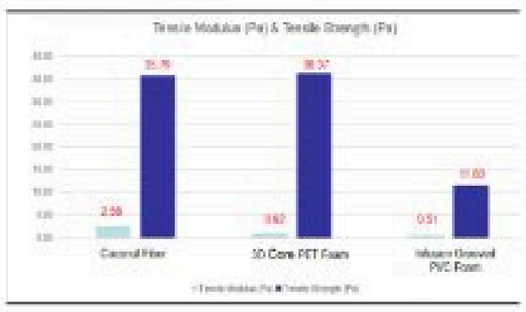
- ASTM D790 is a testing method to determine the flexural (bending) properties of reinforced and unreinforced plastics, high-modulus composites, and electrical insulation materials.

Testing was carried out at 23±2°C and relative humidity of 50±5% room condition

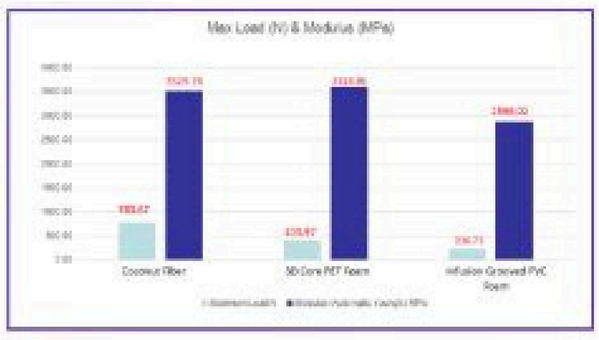
Testing Equipment
Universal Testing Machine
Machine Brand: INSTRON
Model: 5582

4. RESULTS

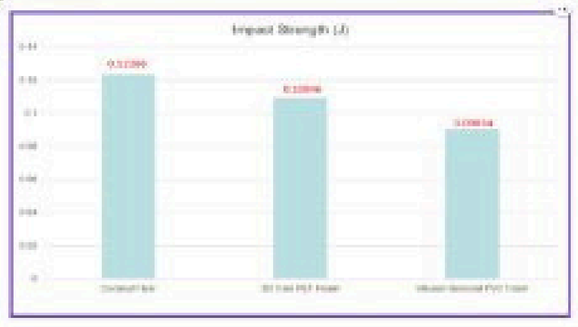
ASTM D3039 tensile testing



ASTM D790 flexural testing



The ASTM D256 Izod Impact test



5. ADVANTAGES

- Can be used as one of the laminating schedule for the construction of the fiberglass boat
- Easy to extract and the construction cost is quite low
- Improve the strength of the fiberglass boat
- Hybrid hull material which is inline with sustainability and environmental friendly

6. COMMERCIALIZATION POTENTIAL

- Can be used as one of the laminating schedule for the construction of the fiberglass boat
- Very low in term of construction cost

Potential commercialize to all department that using the fiberglass boat such as APMM, BOMBA, JPAM etc. This kind of design can propose to the fisherman too.

7. CONCLUSION

Based on the Mechanical Bonding Properties and the consideration on the weight and also the cost of coconut fiber, it is quite suitable to become as one of the laminating schedule for the construction of the fiberglass boat hull.

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IAM 243
ENHANCING STUDENT'S LEARNING EXPERIENCE THROUGH COOPERATIVE GAME-BASED LEARNING STRATEGY

Enhancing Students' Learning Experience Through Cooperative Game-based Learning Strategy

Innovation Background

- ✓ Game-based Learning incorporated with Cooperative Learning was implemented in this project.
- ✓ The main purpose is to motivate students to learn and also achieve higher-order thinking skill to answer questions.
- ✓ The focused learning objective for this project is to:
  - Integrate geological and geophysical data for exploration and reservoir appraisal.



LOW PERFORMANCE



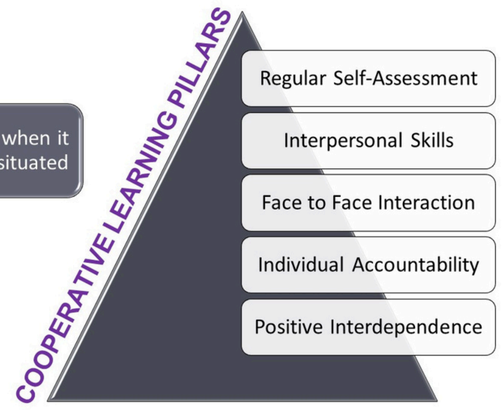
NO INTEREST

Learning Theory

Social Constructivism (Vygotsky, 1978) — learning takes place when it is social, active and situated

Flow Theory (Csikszentmihalyi, 1990) — flow causes the players to lose time and goal-directed activities are driven by pleasure

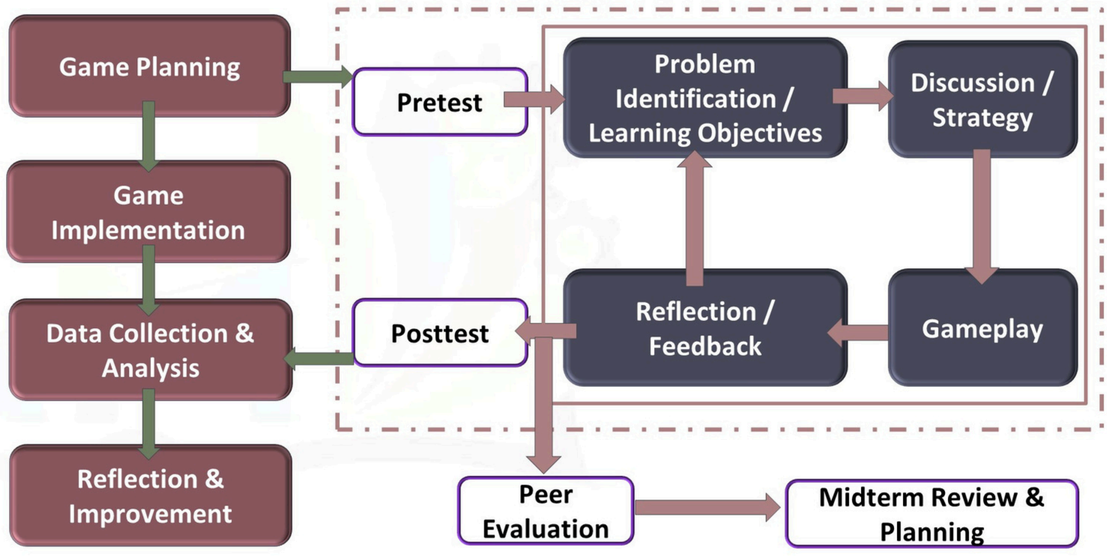
Theoretical Framework



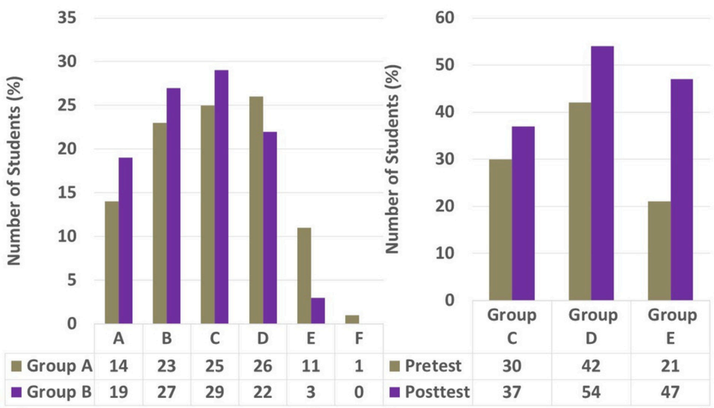
Game Implementation

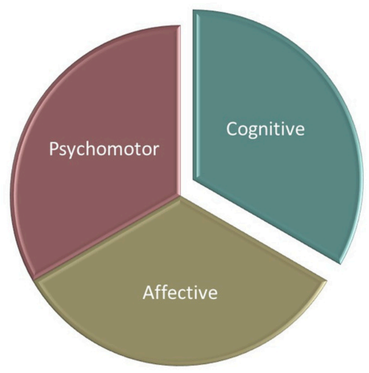
- Week 1: Team Formation and Ice Breaking
- Week 2: Crossword Puzzle
- Week 3: Jeopardy
- Week 4: Bingo
- Week 5: FlipQuiz
- Week 6: Oil Investment Game
- Week 7: Socrative
- Week 8: Geology Deal
- Week 9: Geology Headbanz
- Week 10: Plickers
- Week 11: "Save the Egg"
- Week 12: Geology Hunt

CGBL Framework



Results





1. Improvement of communication and teamwork skills
2. Improvement of critical thinking and problem-solving skills
3. Improve students' knowledge & understanding
4. Increase students' interest & motivation to learn

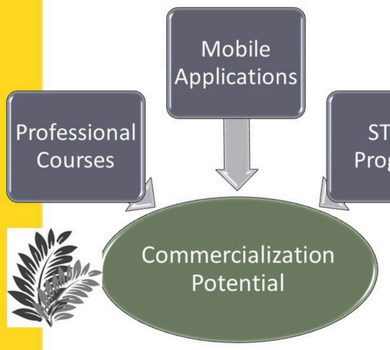
Publication & Dissemination

- ✓ PRESENTED PAPER AT WEEF 2017 & ICOTAL 2018
- ✓ PUBLISHED 1 ISI JOURNAL
- ✓ PUBLISHED 1 SCOPUS PROCEEDINGS

Recognition

GOLD MEDAL — K-NOVASI UKM 2018

SILVER MEDAL — TLIF UTP 2017



STEM PROGRAM IN:
- ✓ UTP, PERAK
- ✓ UNIVERSITAS PERTAMINA, INDONESIA
- ✓ UNIVERSITAS TRISAKTI, INDONESIA

References:
M. Csikszentmihalyi, Flow: The Psychology of Optimal Experience, Harper Perennial, New York. (1990)

L. Vygotsky, Mind and Society. 79-97 (1978)

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ABSTRACTS

TAJUK: KAJIAN TERHADAP PENGGUNAAN MIKROORGANISMA EFEKTIF MENGGUNAKAN JUMLAH MUDBALL DAN MASA TAHANAN AIR SISA YANG BERBEZA-BEZA

*Noor Assikin Abd Wahab, Mohd Lotfi Ahmad & Muhammad Shamir Hassan Basri

Kolej Komuniti Kota Marudu

*Corresponding author e-mail: *sikinwahab@gmail.com*

Abstrak

Rawatan air sisa penting sebelum sumber air dicemari di mana ianya perlu dirawat untuk mengelakkan pencemaran air sebelum air itu kembali kepada persekitaran. Sistem pembentungan yang tidak mencukupi menyebabkan sungai-sungai tercemar dan menjadikannya sebagai pembentung terbuka iaitu pembuangan terus ke dalam sungai yang akan menjejaskan alam sekitar, kesihatan manusia dan kualiti kehidupan. Oleh itu, kajian terhadap Penggunaan Mikroorganisma Efektif menggunakan jumlah mudball dan masa tahanan air sisa yang berbeza-beza dilakukan. Ini untuk melihat potensi merawat air sisa kolam pengoksidaan dengan menggunakan Mikroorganisma Efektif (EM) mudball sebagai kaedah rawatan. Skop kajian ini adalah untuk menentukan bahan organik yang ada di dalam sampel air sisa dan EM mudball yang bertindak untuk merawat air sisa yang di ambil daripada kolam pengoksidaan dan dianalisa di makmal. Data yang telah diperolehi dianalisis mengikut bilangan hari tertentu selama sebulan dengan menggunakan EM mudball sebagai bahan rawatan. Lima parameter telah dianalisis meliputi pH, keperluan oksigen biokimia (BOD), keperluan oksigen kimia (COD), Oksigen terlarut (DO) dan Ammonia Nitrogen (AN). Proses penentuan dos EM mudball yang bersesuaian untuk rawatan dapat ditentukan dengan penggunaan 1 hingga 4 biji EM mudball. Masa tahanan bagi tempoh rawatan dipantau selama sebulan iaitu pada hari ke-7, ke-14, ke-21 dan ke-28. Proses kajian air sisa kumbahan telah dijalankan menggunakan akuarium sebagai protataip. Keputusan kajian menunjukkan bahawa penggunaan 1 biji EM mudball sudah mencukupi bagi proses rawatan jangka pendek iaitu hari ke-7. Dalam kajian ini, penggunaan 4 biji mudball ditentukan sebagai dos yang terbaik kerana mempunyai keberkesanan penyingkiran BOD, COD dan AN yang tertinggi. Penentuan pertumbuhan bakteria dapat dikesan daripada hari pertama hingga hari ke-28. Oleh itu, dapat disimpulkan bahawa proses rawatan ini mempunyai potensi untuk dimanfaatkan kerana parameter-parameter yang telah diuji dapat disingkirkan dengan berkesan.

Kata Kunci: *Air sisa, Perbezaan Masa Tahanan, Bahan Organik, Sampel Air Sisa*

THE RESEARCH OF VIRTUAL REALITY (VR) TECHNOLOGY IN DESIGN EDUCATION

*Ong Ei Lin, Teo Pei Kian & Chuan Sie Pei

Southern University College

*Corresponding author e-mail: *elong@sc.edu.my*

Abstract

Driven by fast technological developments, Virtual Reality (VR) technology is particularly noteworthy for its ability to transform the way teaching methods in higher education. It has the potential to provide students with a more realistic and immersive experience of the design study. The integration of VR technology into design courses is essential to enhance students' learning outcomes and interest. This paper aims to explore and discuss VR technology engagement and implementation in design education. This paper will discuss the engagement of Virtual Reality technology in design studies. It examines the benefits and challenges of incorporating VR technology into design education across various categories, including its impact on student learning and design enhancement. Next, the integration of VR technology presents challenges and limitations related to cost, skills, and physical constraints for both students and educators. Overall, the findings suggest that VR technology has the potential to revolutionize design education. Students experienced a more interactive and experiential learning environment. On the other hand, the implementation of VR technology in design education faces challenges and limitations through infrastructure development, cost reduction, and skillful training.

Keywords: *Virtual Reality (VR), Design Education, Learning Experience, Higher Education*

RELATIONSHIP OF STUDENT'S KNOWLEDGE AND READINESS TOWARDS INDUSTRIAL REVOLUTION 4.0: A STUDY AT POLITEKNIK HULU TERENGGANU

[1]*Nurul Aseaking Ismail & [2]Aznida Wati Abdul Ghani,

[1]Politeknik Hulu Terengganu
[2]Politeknik Sultan Haji Ahmad Shah

*Corresponding author e-mail: aseaking@pht.edu.my

Abstract

Technology has advanced quickly as a result of the establishment of the Industrial revolution 4.0 (IR 4.0), especially in the area of education. The existence of numerous educational electronic tools and applications that communicate with one another increases the flexibility and interactivity of the learning system. This study, which was undertaken at the Politeknik Hulu Terengganu, aimed to determine the relationship between students' knowledge and their readiness to face the challenges of the Industrial revolution 4.0 (IR 4.0). It can also create the newest teaching and learning strategies in accordance with technological advancements. A series of questionnaires served as the research tool for this descriptive study. Participants in this study included 241 individuals who completed their Diploma in Tourism Management (DUP), Diploma in Resort Management (DHR), Diploma in Recreational Tourism (DRT), and Diploma in Accountancy (DAT) programs at Politeknik Hulu Terengganu during semesters 1 through 5. Questionnaires are gathered, completed, and examined. Statistics were used in the data collection and analysis processes. The results indicate that, with a mean score of 3.52, the understanding and preparedness of Politeknik Hulu Terengganu students for the difficulties of IR 4.0 is still at a modest level. It is suggested that the polytechnic hold seminars and other events pertaining to IR 4.0 technology to expose students to this technology and raise their level of knowledge and preparedness for the upcoming era of industrial revolution 4.0. This will help to develop a generation of students who are not only proficient in using technology but also creative and innovative in their thinking.

Keywords: *Knowledge, Challenges, Industrial Revolution 4.0*

KAJIAN FAKTOR KESEDIAAN PENGLIBATAN DALAM PEMBANGUNAN INOVASI DI KALANGAN PELAJAR POLITEKNIK HULU TERENGGANU

[1*]Faridah binti Mohamad & [2]Wati binti Mohamad

[1]Politeknik Hulu Terengganu
[2]Politeknik Kuala Terengganu

*Corresponding author e-mail: *faridah_md@pht.edu.my*

Abstrak

Kajian ini dijalankan bagi mengenalpasti faktor-faktor kesediaan pelajar dalam melibatkan diri secara aktif untuk pembangunan inovasi di kalangan pelajar Politeknik Hulu Terengganu (PHT). Kajian ini dilakukan apabila pengkaji melihat pelajar PHT agak keberatan untuk turut serta dalam pembangunan inovasi dan program inovasi yang dianjurkan. Dapatan dari kajian ini dapat membantu dan menyediakan maklumat yang penting kepada institusi dalam menyediakan strategi bagi menghasilkan pelajar teknikal dan vokasional yang berkualiti. Maka dengan itu, kajian ini dilakukan bertujuan untuk mengenalpasti faktor-faktor yang wujud dalam mewujudkan kesediaan kepada penglibatan pelajar dalam program pembangunan inovasi dan mengenalpasti hubungan yang terlibat antara faktor-faktor berkenaan. Terdapat tiga faktor yang dikaji dalam kajian ini iaitu sikap pelajar, faktor persekitaran pelajar dan strategi yang sesuai dalam menggalakkan pembangunan inovasi. Kajian ini dilaksanakan dengan mengedarkan borang soal selidik kepada 111 orang pelajar bagi empat program di PHT bagi menjawab empat objektif kajian. Data kajian dianalisis secara deskriptif dan inferensi. Dapatan kajian adalah berdasarkan data-data yang diperolehi daripada analisis Statistical Package for Social Science (SPSS) Version 26.0. Dapatan kajian menunjukkan faktor sikap pelajar berada pada tahap tinggi. Manakala faktor persekitaran dan strategi berada pada tahap sangat tinggi. Hubungan korelasi bagi ketiga-tiga faktor adalah berhubung secara positif dan ia menunjukkan faktor tersebut saling berhubungkait antara satu sama lain.

Kata Kunci: *Faktor Kesediaan, Pembangunan Inovasi, Program Inovasi*

THE ROLES OF SHIPPING FEE, TRUST AND LOGISTIC SERVICE QUALITY IN ONLINE REPURCHASE INTENTION

[1]*Tuan Mastiniwati Tuan Mansor, [2]Nur Hani Zamhuri, [3]Azizah Mohd Tamamuddin, [4]Syarifah Nur Athirah Syed Mohamed Ghazali & [5]Abdul Hafaz Ngah

[1]Politeknik Hulu Terengganu
[2]Politeknik Sultan Haji Ahmad Shah
[3]Politeknik Hulu Terengganu
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[5]Faculty of Business, Economics and Social Development, Universiti Malaysia Terengganu

*Corresponding author e-mail: *mastiniwati@pht.edu.my*

Abstract

The advancement in technology and the unique criteria of modern consumers encourage businesses to shift their business to selling products online. The emergence of many platforms and individual online sellers enhances the competition. Thus, retaining their current customers becomes a major issue for online sellers. To enhance repurchase intention, many online sellers offer free delivery or reduce the shipping cost to celebrate events during festivals. However, the role of shipping delivery as a promotional factor on trust, logistics service quality, and repurchase intention is still under study among online shoppers. On top of that, while the SOR model has been largely applied in various areas to predict consumer future behavior, there is a lack of studies employing the SOR Model to predict repurchase intention among online shoppers. To fill the gaps in the literature, the study objective is to investigate the role of shipping delivery as a stimulus factor between logistics service quality and trust in the promotion, as a variable representing the organism factor, and repurchase intention as a response factor in the model. Using the purposive sampling method, a total of 357 data were gathered online and were usable for the analysis. Employing Structural Equation Modelling with Smart Partial Least Squares (PLS) as a statistical analysis technique, the study found that all hypotheses were supported. The findings of the study provide insight understanding of the role of shipping delivery as a factor influencing repurchase intention and can help online retailers recognize the expectations and preferences of consumers in providing better services.

Keywords: *Trust, Logistics Service Quality and Repurchase Intention*

PELAKSANAAN AUDIT DALAMAN MS ISO 9001:2015 TERHADAP PENCAPAIAN PRESTASI DI KOLEJ KOMUNITI KULIM

*Nurul Huda Zainol, Siti Jariah Sahar & Rizal Kasyrno Ghazali

Kolej Komuniti Kulim

*Corresponding author e-mail: *nurulzainol@gmail.com*

Abstract

This study aims to identify the level of implementation of internal audit MS ISO 9001:2015 and to identify the relationship between the implementation of internal audit MS ISO 9001:2015 and performance achievement at Kolej Komuniti Kulim. The research design is quantitative study using a survey method that utilizes specific questionnaires to collect data from the respondents that was verified by three experts to ensure its validity. The reliability of the questionnaire was tested using Cronbach's alpha, which showed a value of 0.946. Simple random sampling was used to select the respondents. The population of the study is 38 people, which consists of the Kolej Komuniti Kulim employees. The sample size is 35, based on Krejcie & Morgan's Table (1970) that comprises academic and administrative staff. The study data were collected and analyzed using the Statistical Package for the Social Sciences (SPSS) version 23.0. The findings from the study show that the level of implementation of internal audit MS ISO 9001:2015 at Kolej Komuniti Kulim is at a high level (Min = 4.76). The results from the study also found that the implementation of internal audit MS ISO 9001:2015 has a positive and significant relationship with achievement of performance at Kolej Komuniti Kulim (Pearson correlation = 0.834 and significance value 0.000).). This study is expected to provide organizational benefits in terms of enhancing audit implementation towards achieving organizational performance. Further studies can be conducted using Confirmatory Factor Analysis (CFA) to identify the variables that contribute to the effective implementation of the MS ISO 9001:2015 internal audit.

Keywords: *Implementation, Internal Audit and Performance Achievement.*

SELF-EFFICACY AND TEACHING PASSION AS PREDICTORS OF PRACTICAL TEACHING COMPETENCE AMONG CULINARY ARTS EDUCATORS

Nur Sabrina Zakaria [1] & Rahimah Jamaluddin [2*]

[1] Sekolah Menengah Kebangsaan Selandar
[2]Department of Science & Technical Education, Faculty of Educational Study, University Putra Malaysia

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Abstract

The implementation of practical cooking class demands proficient skills and extensive knowledge among teachers, coupled with meticulous planning. Challenges such as misaligned teacher placements, insufficient training, and heavy workloads often lead to a decline in teaching passion and burnout among instructors. This study aims to explore the interplay between self-efficacy, teaching passion and practical teaching competence among culinary arts and bakery teachers. This quantitative survey involves a total of 258 vocational college culinary arts and bakery teachers in Peninsular Malaysia. Stratified random sampling was employed to select respondents. The questionnaire drew from competency assessments, Teacher Sense of Efficacy Scale (TSES), and Passion Scale. Descriptive analysis was used to examine respondents' demographic and identify self-efficacy, teaching passion, and teaching practical competence. While inferential analysis was employed to assess differences in practical teaching competency based on teaching experience and relationship between variables.Data analysis utilizing Statistical Package for the Social Sciences (SPSS) revealed a significant positive relationship between self-efficacy and practical teaching competence ($r=0.71$, $p=0.01$) as well as between teaching passion and practical teaching competence ($r=0.35$, $p=0.01$). However, the strength of the relationship between teaching passion and practical teaching competence was slightly lower than self-efficacy. It is concluded that culinary arts and bakery teachers exhibit high levels of self-efficacy, teaching passion and practical teaching competence. To sustain this competence, it is imperative to bolster teacher welfare through continuous training to enhance self-efficacy. Moreover, fostering a positive ecosystem of support among teachers and administrations is crucial for managing workload and ensuring sustained passion among teachers.

Keywords: *Competency, Self-efficacy, Passion, Culinary Arts and Bakery, Vocational College.*

KAJIAN TAHAP MINAT DAN KEMAHIRAN PELAJAR KOLEJ KOMUNITI DI BAWAH UNIT KEJURUTERAAN AWAM & ALAM BINA TERHADAP PERISIAN REVIT

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Abstrak

Penggunaan Autodesk Revit di kalangan pelajar Kolej Komuniti di Malaysia adalah suatu perkara yang penting pada masa kini. Autodesk Revit adalah perisian Building Information Modeling (BIM) yang membolehkan pelajar merancang, membina dan menguruskan projek pembinaan secara efisien. Kajian ini bertujuan untuk mengetahui minat dan mengenalpasti tahap kemahiran pelajar terhadap perisian Revit. Kajian ini dijalankan secara kuantitatif iaitu menggunakan soalselidik. Data diambil dari 92 orang pelajar daripada 7 buah Kolej Komuniti iaitu Kolej Komuniti Teluk Intan, Kolej Komuniti Tapah, Kolej Komuniti Temerloh, Kolej Komuniti Kuching, Kolej Komuniti Kuala Terengganu, Kolej Komuniti Bandar Penawar dan Kolej Komuniti Bentong. Pelajar Kolej Komuniti ini terdiri daripada pelajar Sijil Penyeliaan Tapak Bina, Sijil Teknologi Senibina, Sijil Teknologi Pembinaan dan Sijil Penyelenggaraan Bangunan. Hasil dapatan kajian menunjukkan tahap minat dan kemahiran pelajar Kolej Komuniti di bawah Unit Kejuruteraan Awam & Alam Bina terhadap perisian Revit berada pada tahap skor min yang tinggi iaitu 3.97 dan 3.81. Jelas disini menunjukkan minat dan kemahiran saling berkait yang mana apabila pelajar berminat dengan Revit, maka kemahiran mereka tentang Revit juga akan meningkat. Proses pengajaran dan pembelajaran (PdP) di Kolej Komuniti didapati berkesan dalam menyediakan pelajar yang mahir tentang perisian Revit yang mana mereka dapat mempersiapkan diri dengan kemahiran praktikal yang diperlukan untuk memasuki pasaran tenaga kerja setelah tamat belajar.

Kata Kunci: *Revit, Minat, Kemahiran*

HUBUNGAN KOMPETENSI VOKASIONAL DENGAN TINGKAH LAKU INOVATIF DALAM KALANGAN TENAGA PENGAJAR TVET

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Abstrak

Kajian ini bertujuan untuk menentukan hubungan kompetensi vokasional dengan tingkah laku inovatif dalam kalangan tenaga pengajar TVET. Objektif kajian adalah untuk mengenalpasti tahap dan hubungan kompetensi vokasional dari aspek efikasi kendiri, profesionalisme serta pengajaran dan pembelajaran dengan tingkah laku inovatif dalam kalangan tenaga pengajar TVET. Kajian ini berbentuk kuantitatif secara tinjauan menggunakan borang soal selidik yang mengandungi konstruk efikasi kendiri, profesionalisme serta pengajaran dan pembelajaran sebagai instrumen kajian. Seramai 110 orang responden terdiri daripada tenaga pengajar TVET dari 3 buah Kolej Vokasional telah terlibat dalam kajian ini. Statistik inferensi berdasarkan ujian korelasi Spearman's Rho digunakan dalam analisis data kajian. Dapatan kajian menunjukkan terdapat hubungan yang signifikan antara kompetensi vokasional daripada aspek kompentensi vokasional iaitu efikasi kendiri, profesionalisme serta pengajaran dan pembelajaran dengan tingkah laku inovatif dalam kalangan tenaga pengajar TVET. Justeru, tingkah laku inovatif haruslah dipupuk dalam diri tenaga pengajar TVET agar terhasil guru yang kompeten dan profesional selaras dengan hasrat Kementerian Pendidikan Malaysia.

Kata Kunci: *Kompetensi Vokasional, Efikasi Kendiri, Profesionalisme, Pengajaran dan Pembelajaran, Tingkah Laku Inovatif, Pendidikan Latihan Teknikal dan Vokasional*

4K MOKAYA: INOVATIF SERI KAYA UNTUK VEGETARIAN

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Abstrak

Kelor atau moringa merupakan tumbuhan yang terkenal dengan profil pemakanannya yang kaya dengan khasiat dan menjadi subjek banyak kajian yang meneroka potensi manfaat kesihatann darinya. Kajian ini memberi tumpuan kepada inovasi produk makanan baharu, Mokaya gabungan nama Moringa dan Seri Kaya yang diinovasikan bagi memenuhi diet vegetarian menggunakan bahan berasaskan tumbuhan sepenuhnya. Tumbuhan Moringa, yang sering digelar sebagai pokok ajaib, digabungkan ke dalam formulasi seri kaya untuk menghasilkan Mokaya yang bukan sahaja enak tetapi juga padat dengan nutrisi. Objektif utama penyelidikan ini adalah untuk membangunkan Seri Kaya mesra vegetarian yang memaksimumkan faedah pemakanan tumbuhan Moringa.Proses ini melibatkan penggunaan daun Moringa dan dan buahnya, sebagai bahan utama dalam pembuatan Mokaya. Ramuan berasaskan tumbuhan lain dipilih dengan teliti untuk melengkapkan profil pemakanan Moringa sambil memastikan produk memenuhi sekatan diet vegetarian. Produk akhir tertakluk kepada penilaian untuk menilai penerimaannya dari segi rasa, tekstur, dan kepuasan keseluruhan. Tambahan pula, inovasi dalam menggunakan Moringa sebagai bahan utama dalam pembuatan Seri kaya bukan sahaja membuka kemungkinan masakan baharu tetapi juga menyediakan produk makanan berfungsi yang menyokong kesihatan dan kesejahteraan keseluruhan. Kajian ini menggariskan potensi penyatuan Moringa ke dalam pelbagai produk makanan untuk menambahkan nutrisi dan menggalakkan tabiat pemakanan yang lebih sihat di kalangan vegetarian.

Kata Kunci: *Moringa, Inovasi, Seri Kaya, Diet Vegetarian, Makanan Sihat*

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