

“Hello,World!” Group 1

Members:

1. Fadhil Raihan Gunawan
2. Goh Chang Zhe
3. Chong Zu Wei
4. Chua Shang Yeet

Overview of the program visit

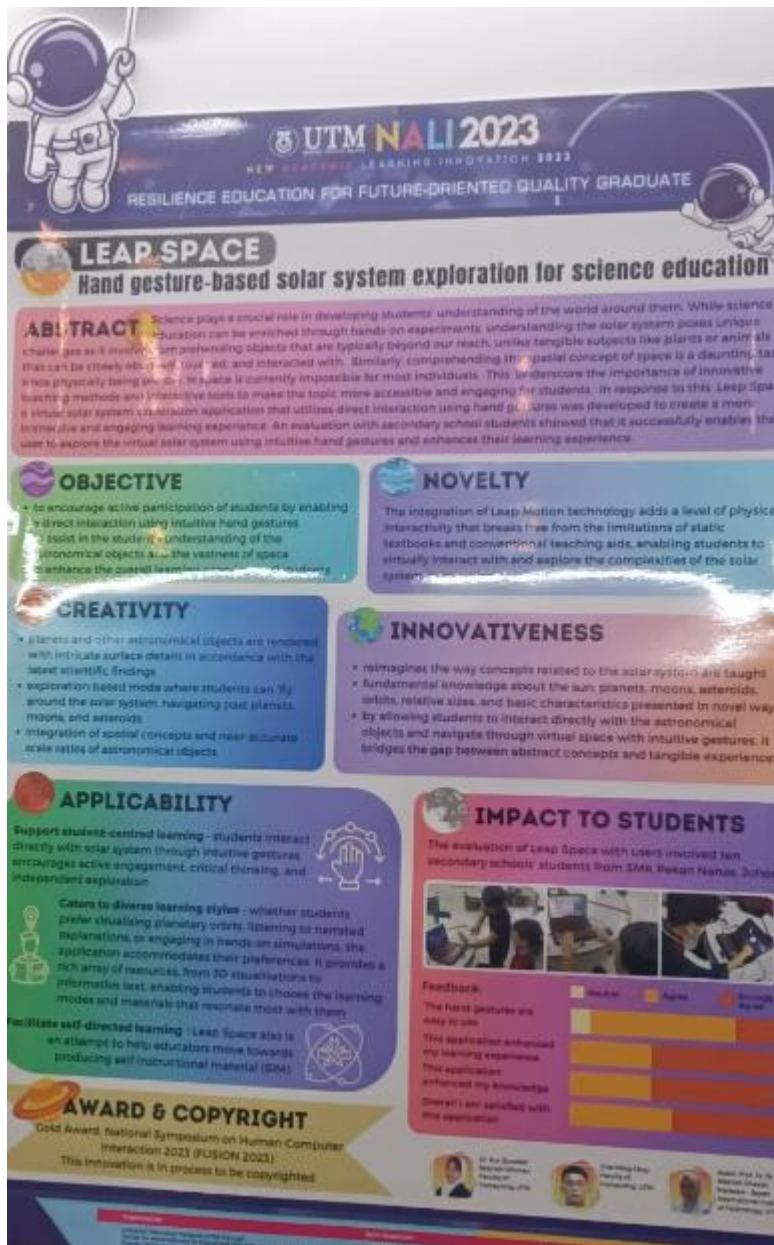
NALI is an annual knowledge exchange event that prepared by Universiti Teknologi Malaysia (UTM) through the Center for Advancement in Digital and Flexible Learning (UTM CDex).It is also known as New Academic Learning Innovation.

The objective of NALI 2023 is to introduce and support creative teaching ways and learning practices in education. It embraces a student-centered and blended learning philosophy, incorporating multiple learning modes and materials to cultivate entrepreneurial academia. The first edition of NALI took place in 2018.

Booth 1:

On the 7th of November,we arrived at DSI around 11a.m. and visited many booths that looked interesting.The first booth that we visited was Leap Space.The innovator was very excited to introduce his revolutionary product when we came to visit his booth.

Leap space is an application that shows the solar system and you can explore the solar system by using your hand gesture.The objective of Leap Space is to encourage the participation of students by enabling direct interaction using hand gestures to enhance their learning experience.Leap Space is allowed to test the student’s understanding because a quiz will be provided after the student finishes his exploration of the solar system.It also helps teachers and lecturers have the opportunity to use different kinds of teaching methods to teach their students so they can get a better learning experience.Therefore,it is very useful to many students and teachers.



Video link: <https://youtu.be/WXhbZS18KyE>

Script:

1) What do you think about your product?

The main purpose of Leap Space actually is to let secondary school students to learn more interactively especially of the topic of solar system. This application can help students and allow them to explore the whole virtual solar system environment.

2) How can your product brings benefits to the user and does it give any disadvantage in user's daily life?

It is beneficial to the user because their learning way would not be sitting there and refer to the lecture. This app provides more interactive learning with students and lets them know how to use their hand gestures to control it which really helps them focusing as they more engaged learning on

the topic of the solar system. The disadvantage is that they need some time to understand the hand gestures required to operate or control application before using it, and sometimes for those who have motion signal cannot be detect if you move is too fast.

3) How can you improve your product in future so the user have a better experience?

For my future improvement,I plan to make a fusion with virtual reality so the user can have more immersive experience because hand tracking device can help them focus on their learning.

4) What is the comment or feedback that given by user after using your product?

I went to Pekan Nanas,Johor

and tested the application from the secondary school students.From their feedback ,I have give a posttest and pretest actually they mention the hand gesture's usage is simple and easy to learn .Overall my application also enhance their knowledge related to the topic of solar system and is really fun and interactive way to learn rather than using the common teaching way that is used in secondary school right now.

5) How does your product work ?Can you explain it .

So, this is my application device, and this is my Collin motion which detect your hand gestures. First, I have few module so this is the first module where you can control the movement of camera and holding the fist will move forward so this is to let the user explore virtual solar system environment and the second module will be the planet views.For planet view,we will have information on the planet and the next module is planet module view user can actuallygrab the 3 D planet to know more clearly on the each surface characteristic of planet. The last module will be quiz since they have learn on the characteristics of planet So last part is quiz test your understanding after exploring the solar system.This can enhance their knowledge and understanding after exploring the solar system

Reflection:

Leap space is hand gesture-based solar system exploration for science education. It is revolutionary for education because it shows a new teaching method that can create a more immersive and engaging learning experience for our students.

The objective of Leap Space is to urge the students to explore the virtual solar system environment by using hand gestures to improve the understanding of student about the solar system and enhance their learning experience.

Furthermore,the integration of software, graphics, and the solar system can facilitate the teaching process and help the student explore the solar system virtually so they can gain a better experience. Moreover,Leap Space can also help students to facilitate their learning process and educate them to become motivated self-learners.

Beside that,the feedback of students is notable. From their feedback, we can know the statisfication of students and the creator toward the Leap space.The majority of them feel that this application is

simple to use, but they didn't have an immersive experience with Leap Space. For the creator, His satisfaction of this application is neutral because he plans to make a fusion with virtual reality so that the user can have a better experience.

In conclusion, Leap Space is a revolutionary product that might change the world's configuration in the future if the improvement are taken.

Booth 2:

Besides of that, we visited the second booth. The second booth we visited was Property management system. The presenter from the booth is a lecturer from faculty of built environment and surveying (FABU), her name is Dr. Hariati Abdullah Hashim. She introduce her property management system and demonstrate functions and feature inside the system to us.

Property management system is an application that allow users like property manager, property management, professional get access to residential data, make announcement and check status on different residential area an so on through website. The website known as Condo Master. The objective of this applications is to enhance student's mastery in real estate technology because it expose the students to the property management system adopted in the industry at the beginning of the course. Besides, it increase student's digital skill in handling current real estate technology and it help to store and access residential data. Overall, application stands out for its user-friendly interface and comprehensive features, making it an excellent choice for both students and professionals.

UTM NALI 2023
NEW ACADEMIA LEARNING INNOVATION 2023
RESILIENCE EDUCATION FOR FUTURE-ORIENTED QUALITY GRADUATE

Application of Property Management System to Enhance Student's Mastery in Real Estate Technology

ABSTRACT

Technology has revolutionized the real estate industry, especially property management practice. This innovation focuses on the student's experience in mastering property management systems as a preparation to embrace the advance of technology within the industry. The students were given an opportunity to apply the property management system provided by the industry to develop a property management business plan for a real case study in UTM campus. This innovation exposes the students to how the technology centralizes the whole property management services and allows them to grasp the overall process of property management business.

PROJECT OBJECTIVES

- To expose the students to the property management system adopted in the industry
- To increase students' digital skills in handling current real estate technology
- To maximize students' capabilities in conducting property management tasks and responsibilities.

NOVELTY

The innovation for the teaching and learning of Property Management course involves the adoption of latest technology and real case study in producing a property management business plan. In contrast to the conventional approach, the students have been given training to use the property management system named **Condo Master** and apply the system to a real case study which is UTM campus building.

INNOVATIVENESS

- **Condo Master** have been introduced at the beginning of the course.
- Data collection process at the **UTM** buildings were guided by the **Condo Master** features
- Property management strategies were proposed based on the **real data** integrated in the system.

CREATIVITY

- Students have been assigned to various types of building: academic building, administration building, arcade, and hostel.
- This diversity enhances the utilization of the **Condo Master** system.
- **Condo Master** system encompasses the elements of **people, processes, places, and technology** in property management.

APPLICABILITY

- **Demonstration** on the system and **user guide (manual)** were provided to the students to master the **Condo Master** system
- The application of system equips students with **knowledge and skills** for handling property management systems in the industry after graduation.
- Engagement with industry system providers ensures ongoing application of the innovation each semester.

IMPACT ON STUDENTS' LEARNING

- Students understand professional property manager roles and responsibilities in a dynamic context.
- System application boosts student engagement and motivation in task completion.
- Activities designed for system use cover operation, administration, and financial aspects of property management.
- Increases students' visibility among the UTM community.

COMMERCIALISATION POTENTIAL

- The knowledge and skills provided through the application of the system will contribute to the marketability of UTM real estate graduates.
- The collaboration with system providers opens an opportunity to conduct paid training on the system.

Dr. Hariati Abdullah Hashim, **Prof. Dr. Maimunah Sapri**, **PtM Dr. Muhammad Najib Mohamed Razali**, **Dr. Fitriyah Razali**, **Dr. Esther Hamzah**

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Video link: <https://www.youtube.com/watch?v=yEJM1L7DRik>

Script:

1. what do you think about your own system?

This is the system that we call as property management system, basically the name is condomaster (website), this system is developed to assist the property manager, property management, professional out there to manage the building and assist the practitioner in coordinating their roles and responsibility.

2. how can your system bring the benefit to users and does it give any disadvantages to the users' daily life?

basically in property management practice, users are dealing with a lot of data, users are dealing with lots of complaints for example the suitability from condominium apartment, there is a lot of common properties and a lot of complaints about common property such as lift, playground, swimming pool and gym. So in this system, all data will be centralized and the complaint system and some of the work process will be conducted by the property management to make it a lot easier and smooth.

3. how can you improve your system in the future so that the user can have a better experience.

Now we already have a user card to access all the residential data to understand how this system operate. But most of the user using this system only in residential property, like condominium apartment. So hopefully to advance this system, we can bring this system to other property type as well such as commercial, shopping complex and other more complex to be use by the property manager.

4. what are the comment or feed back that you get from the user after using your system?

Even though there is a lot of property management system available out there, but this system is the most friendly user system. As I mention earlier, we also have the user card, it is basically a guidance for this system and allow each tab or each function available in this system, so every user, the building owner as well and the management can access to this system.

5. how does your system work, can u demonstrate it or explain it?

At the left side of this website, we have all the function (all function list on left side) available on the system, the data feature is basically where we put all the residential data. We also have unit (feature), where unit if I click here, u can see what unit development in the building, together where is the information about the owner, where is the parcel, and then for example let say the lot have the tenants, not the buyer living in there, so we have info about the tenants, like what are the vehicle, so that the guard can monitor what vehicle come in and come out and also a few other functions, down here we have operation and financial feature, these are the two main fundamental function or task to be delivered by the property managers. In here we have document, notice, issues, maturity equipment, maintenance, legal cases. So without these two function, they do it manually, let say they want to do announcement, they just paste the announcement on the notice board, now with this system, they can just click and put the announcement in this system and the system should email to all the resident, so all the resident that living in the condominium will know about the notice so that's how this system works.

Reflection:

The application of property management system (Condo Master) is an innovative approach to teaching property management at UTM. It brings benefits to student because it introduces students to the latest technology and also provides a hands-on experience with real case studies, enhancing their understanding of the dynamic real estate industry because this system have been introduced at the beginning of the course, so the student would have sufficient time to get use to it.

The impact on students' learning deserve massive attention because of its potential. The impact come from understanding professional roles and responsibilities in a dynamic context, practical insights gained from the system. The engagement with the Condo Master system not only boosts motivation, provide convenience to students but also increases visibility among the UTM community.

I think the potential for commercialization is promising. The knowledge and skills acquired are marketable, contributing to the employability of UTM real estate graduates. The collaboration with system providers not only benefits students but also opens avenues for potential paid training opportunities.

I learn that implement innovative education approach through internet would be impactful, for example integrating Condo Master into the curriculum, guiding data collection through its features, and proposing management strategies based on real data sets this approach will apart with other education approach and produce effective education. The emphasis on creativity and applicability is

evident in assigning students various building types, ensuring diverse utilization of the system. It is an innovation for teaching and learning of Property Management course.

I found that this project is not just intriguing to students, it's downright excellent in education. Its objectives, which involve exposing students to industry-adopted property management systems, enhancing digital skills, and optimizing capabilities in property management tasks, align seamlessly with the goal of preparing students for the ever-evolving real estate landscape.

In conclusion, this booth help me understand course material better, because it shows the effectiveness of integrating technology and real case studies in property management education through property management system, offering students a holistic and industry-relevant learning experience at UTM.

Booth 3:

On the 7th of November, I arrived at DSI after lunch about 2 o'clock. I wandered around in DSI and visited some booths those are fascinating while waiting for my group member. After we met and discuss about the booth they have chose to interview, I decided to visit the 3rd booth, that is Programming Resilience Skills Through Competition- Based Learning Using Mobile Robot In Real-Time Software Engineering Course booth. The objective of this program is to identify the level of programming resilience of Real-Time Software Engineering (RTSE) students for a problem-based task to perform timing analysis on robot software and to analyse the programming resilience skills based on the Programming Resilience Scale for University Students (PRSUS) through a CBL using mobile robot. The mobile robot that is named Robocar is used in this program, the software engineers or the user need to program Robocar to allow Robocar to move. Then, we have an interview session with Gee. She told us about Robocar is the valuable robot that is used in the program, Robocar is made up of the accessories those bought by themselves. The robots are used in the class session for student to program the robots to move on the multiple design of the tracks. It enhances the creativity and critical thinking of the student. After the interview session, we take the picture of the poster and went back home.

RESILIENCE EDUCATION FOR FUTURE-ORIENTED QUALITY GRADUATE

PROGRAMMING RESILIENCE SKILLS THROUGH COMPETITION-BASED LEARNING USING MOBILE ROBOTS IN REAL-TIME SOFTWARE ENGINEERING COURSE

1

ABSTRACT

Implementing the Collaborative Assignments and Projects (CAP) framework in teaching a Real-Time Software Engineering (RTSE) course encourages student collaboration in problem-solving through practical application of real-time concepts and theories. This study shares our continuous effort to improve the CAP framework by embedding the Programming Resilience and Competition-Based Learning (CBL) in teaching and learning activities for the RTSE course. The primary goal is not just to focus on technical skills in real-time software development using mobile robots but also to equip learners with programming resilience skills that are crucial for software engineers to address stakeholder problems in real-world contexts.

2

OBJECTIVES

- To identify the level of programming resilience of RTSE students for a problem-based task to perform timing analysis on robot software
- To analyse the programming resilience skills based on the Programming Resilience Scale for University Students (PRSUS) through a CBL using mobile robot

CREATIVITY

4

Mobile Robots Problem Solving



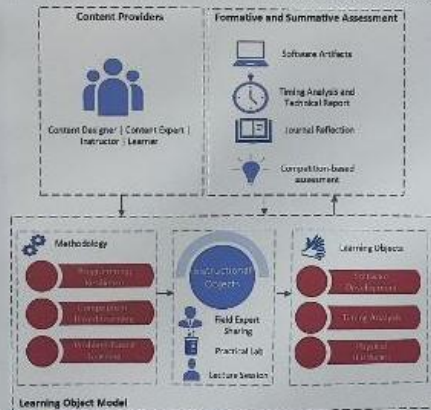
Competition



3

NOVELTY

The enhancement of Collaborative Assignment and Project (CAP) framework for the Real-Time Software Engineering course.



INNOVATIVENESS

5

Innovative Elements:

- Programming Resilience
- Competition-Based learning

APPLICABILITY

6

CAP approach through problem-solving activities for programming embedded systems course



6

COMMERCIALIZATION POTENTIAL AND AWARDS

Lab Modules

Adopted by aiinLab[®] programming embedded systems course

Gold Medal - New Academia Learning Innovation 2021 Excellence (NALI 2021)

Media, Anugerah, dan Model Pendidikan Malaysia (AMPM) 2022 (Penerapan Inovatif) 2022 (Kategori 2022)

IMPACT

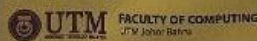
7



Analysis shows high programming resilience despite different Gender, Nationality, Final Year Project (FYP) Track and Internship Experience



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Nor Anisah Sa'edon, Dayang Nurhayati Apeng Jawawi, Mohd Adham Isa, Muhammad Khatibayrahini, Nurul Mastihah Jamal
Faculty of Computing, Universiti Teknologi Malaysia,
81310 Johor Bahru, Johor
anisah.saedon@utm.my

Organized by:

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Video link: <https://youtu.be/YPYlaqupeO>

Script:

CSY: I am Chua Shang Yeet. I am having Gee by my side. I'm got to interview her with some question. What do you think about your product?

Gee: Okay, this is the line following mobile robot that UTM develop for the student as a teaching tool, it is a part of teaching session. So we call this Robocar. Yeah, the name given to this robot is Robocar. It can adapt by any sensors, but we have here is the red line sensors or the black one and we have like obstacle and this is how it looks like. This is based on the level of the student. This how the Robocar works.

CSY: Okay, now. The second question. How can your product bring benefit to the user, then does it give any disadvantages in users daily life?

Gee: Okay. The first one is benefits right? So basically, we do use this tool which is we call it Robocar as our teaching tool as I said before in classes. For example, we are from faculty of computing, so we have many subjects in programming right? So when we teach people I mean the student programming, we just like not sit at lab and doing something on the online website. We also use Robocar, like this video shows. This video show these student construct their program or which is programming to move the robot at the track. That is the simple task we have done with this robot. About the disadvantage, this is just a basic skill, the one who didn't know programming as well can learn this programming. I think the disadvantage is came from the student, he or she want to do or not and the other one is about the costing. From my review, we can see this robots expensive like Lego and others company right? But this Robocar is one of the affordable one because we built ourselves. We just buy the component and then we built it.

CSY: The next question. How can you improve your product in the future so the user can have a better experience?

Gee: Because this Robocar, we targeted to the school students, so the language is very basic one. Like the sensors we use are very simple one. So maybe we can enhance our product by adapting other sensors which can be more challenging for them. Especially, if we want to target the university students.

CSY: Next, what is comment or feedback that given by the user after using Robocar (product)?

Gee: We have done this activity in 2012 until now, so basically what we get from them is positive one because it can let them be more creative on how to move a robot because we have provided them with multiple designs of tracks and we have different type of tasks. So the program might be and need to deflect the track. So this attract their interest, so they excited to do this program.

CSY: Last question, how does your product work, can you show it?

Gee: Unfortunately, we didn't bring our track but we use Arduino IDE, the environment to communicate with this one. As you can see, there's three sensors, these read the binary number. You learn like 1010 like that. In Arduino IDE we upload the program and we just put in the track so we can see how it's worked. It seems simple but we do competition, we have parallel tracks and we can see one group is very slow, one group is very fast, so we evaluate them by searching the time taken of their robot from the start until the end checkpoint and also the speed of the robot.

CSY: Thanks for the interview.

Gee: So join us.

Others group member: Thank you!

Reflection:

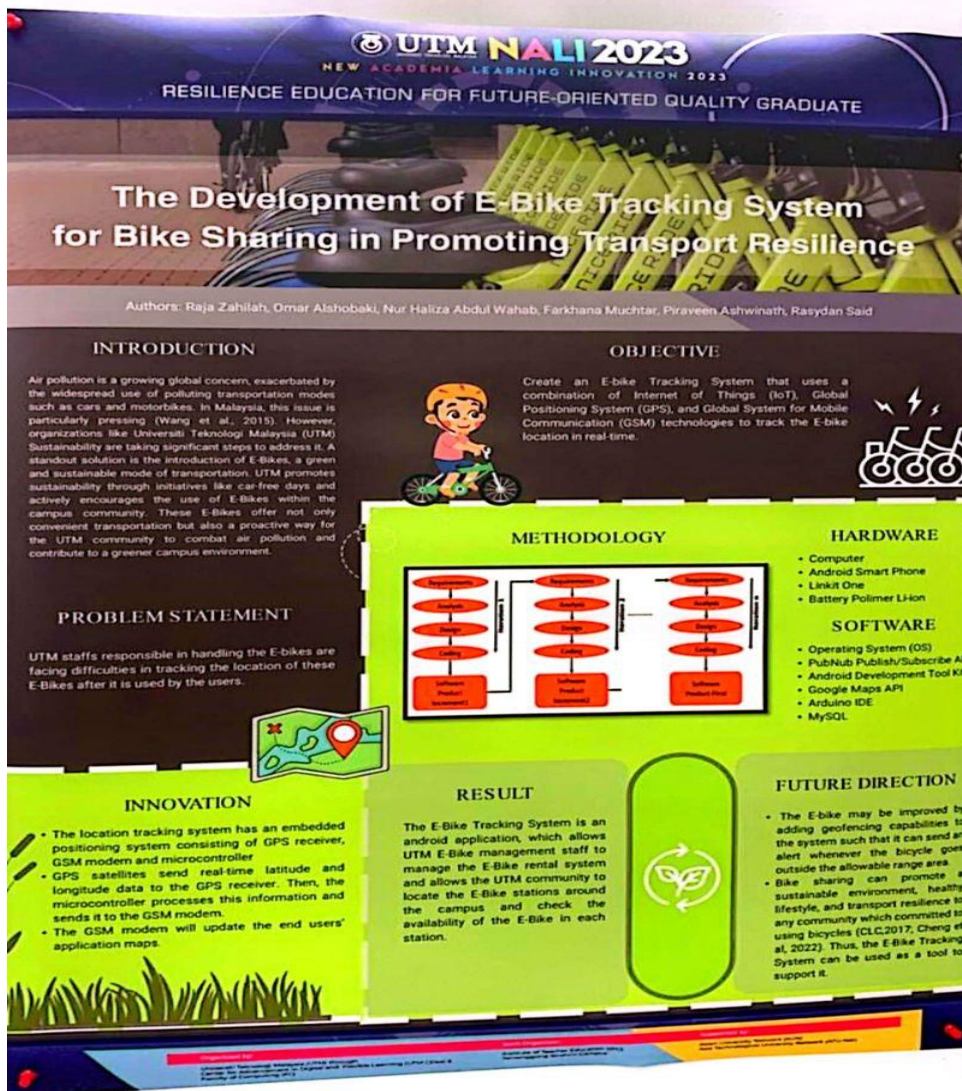
This booth give benefit to the student in many ways.It encourage the student to adapt to the programming technique. The student needs to have some programming skill to program the robot and let the robot moves on the tracks for competition. The student needs to learn the programming language to compete with the other student. On the other hand, the student will become more and more skilful in programming.

I am attracted by Robocar, I want to know how the program makes the robots move along the tracks with the aids of red line sensor. The presenter also talk about the robot with obstacle sensors is for the higher programming level students, this encourages me and make me interested to learn faster to adapt to the obstacle sensors Robocar.

Besides,this booth have the competitive element that spark the excitement in the students and feel that the visiting this booth and the interview sessions help me learn the course material better. Through the interview session, I know that there much more thing we can do with programming language not only for software. We can use programming language to make a robot move . Other than that, I understand that I have a lot of things need to learn in the course to make me a professional programmer.

Booth 4:

On the 7th of November, I arrived at DSI right after breakfast (which was around 11 AM). I met some of my friends so we wandered around the room looking at the different booths. When I saw a poster about the development of E-bike Tracking system, I got interested and started asking to the person who created this invention. The creator of this innovation wanted to create a software or an app that enables people, primarily students, to find the nearest E-bike using their app tracker. This way, students does not have to bother going out to order grab or go around places for the E-bikes. The company or the government will also be able to track where the E-bikes are so they won't be taken away or get stolen. As of now, the app is still in development, so the innovator still hasn't got any feedbacks from customers since it has not gone public yet but from what he hopes, there will be no bugs or issues once the app is out. The app also includes the rental payment system as well as the nearby E-bike stations where the E-bikes will be returned. His target from this creation is to reduce as many air pollution considering it is one of the major problems Earth are facing right now. Thus, this is one effective way to slowly help our planet to go green.



CS 扫描全能王 创建

Video link: <https://youtu.be/OPWMJ9SxOiY>

Script:

Fadhil: What is the product about?

Presenter: its an IT-based solution that let mobile application to track e-bikes

Fadhil: what is the purpose of the product?

Presenter: it's to ensure that students does not have to travel to certain location and use their time to search around for the E-bikes, and the students would have to bring back the E-bikes back to the station (without the app). Students (who used the E-bikes) can put the E-bikes anywhere and the other student can see if there is any nearby e-bikes close to them

Fadhil: Oh! Alright, I understand, is there any benefits to the user and does it give any disadvantages in user's daily life?

interviewer: like what I said, the users can track a nearby E-bikes and the utm management can track all the location of the e-bikes so that they know if the e-bikes are stolen or not. I don't think there is

any disadvantages, maybe you have to charge the intern because this is an external system, not integrated.

Fadhil: How can you improve your product in future so the user have a better experience?

interviewer: Firstly, we want to know the cooperation of the students. the utm management want to find out if the E-bikes are outside the permitted location. If someone takes the E-bike outside UTM, the UTM management can track down the E-bikes so they can be returned.

Fadhil: What is the comment or feedback that given by user after using your product?

Interviewer: This is actually still in development so there isn't any feedbacks so far.

Fadhil: so from what I know, in general, it can track every e-bikes belong to UTM. Alright, Thank you so much!

Reflection:

E-bike tracking system is a fascinating combination of environmental consciousness and technological innovation . It's also impressive to see how student in Universiti Teknologi Malaysia is trying to solve the critical issue of air pollution by implementing a user-friendly E-Bike Tracking System.

The combination of IoT, GPS, and GSM technologies to create a real-time tracking system is a good choice for solving the problems of tracking E-Bike locations. The hardware and software components, from the GPS receiver to the Android application and Google Maps API, demonstrate a comprehensive and thoughtful approach to the technological aspects of the project.

Furthermore, it show that this system brings benefits to UTM students for managing E-Bikes and the broader UTM community. The management of the E-Bike rental system is efficient and the location of bikes around the campus in real-time also provide convenience for users. It not only makes the E-Bike usage more accessible but also contributes to a greener campus environment, aligning with the sustainability initiatives of UTM.

In my opinion, the excitement comes from witnessing how technology can be a powerful tools for positive change. The E-Bike Tracking System not only tackling a specific problem but also lay the solid foundation for future improvements. The potential for this system to enhance the experience of e-bike sharing and promote a sustainable lifestyle also deserve attention.

Moreover, this project show us the ideal application of various technologies, from hardware to software tools . It's a great example to know how different knowledge in areas like hardware design, software development, and environmental sustainability can come together to create innovative solutions.

In a nutshell,I think the E-Bike Tracking System is a powerful tool which make a meaningful impact on campus life and the environment.This project associate with honorable purpose would become an inspiration for younger generation to create a better and harmony environment in future.

Booth 5:

On 7th November 2023, I went to DSI to visit NALI 2023 with my group members. After visited and interviewed a few booth, I feel that the 5th booth is the one that attract me the most. The 5th booth is called Physical Education Augmented Reality, abbreviated as P.E.A.R. This booth was organized by multiple graduated student and they sell their product on Shopee with RM20 to let teacher in different area get access to this exclusive course material.

P.E.A.R is an app designed to aid students with disabilities and offer additional resources to mainstream students, for examples visualizes 3D movement models to give student immersive experience without actually moving physically. This product was developed with Unity software and images employed tracking Vuforia and 3D models from Mixamo Adobe. The creativity of this product is the integration of AR technology to bridge the gap between students with disabilities and mainstream students.

Overall, this product not only help to increase teachers' effectiveness on delivering information in anywhere, but also improved engagement, particularly among students with disabilities.

UTM NALI 2023
NEW RESEARCH LEARNING INNOVATION 2023
RESILIENCE EDUCATION FOR FUTURE-ORIENTED QUALITY GRADUATES

PHYSICAL EDUCATION AUGMENTED REALITY

ABSTRACT

This research introduces the "P.E.A.R" Augmented Reality (AR) app, designed to aid students with disabilities and offer additional resources to mainstream students. The study's main goal is to assess the app's effectiveness in enhancing the grasp of movement concepts. Developed with Unity software, the app employs image tracking (Vuforia) and 3D models from Mixamo Adobe. The research process involved creating the P.E.A.R app, which visualizes 3D movement models. By integrating image tracking, students can engage with virtual models in real-world scenarios. Teachers from specific schools tested the app, leading to positive feedback about improved engagement and comprehension, especially among students with disabilities. Results show successful app implementation, with teachers endorsing enhanced learning experiences. While acknowledged areas for improvement exist, the app's interactive and inclusive nature aligns with Howard Gardner's Theory of Multiple Intelligences, bridging gaps between students. In conclusion, the P.E.A.R app's promising potential for inclusive education is underscored by positive feedback and alignment with educational theories. Future development holds the prospect of refining features and broadening its impact.

OBJECTIVES

- Improve the learning experience by making it more engaging and interactive. AR can bring textbook concepts to life, helping students understand anatomy, physiology, and biomechanics more effectively.
- Encourage physical activity and active participation among students. AR can guide users through exercises, routines, and sports drills while providing real-time feedback.
- Facilitate skill development in various sports and physical activities. The app can offer step-by-step guidance, correct form, and tips for improvement in a personalized manner.
- Educate users about proper techniques and safety measures in physical activities. Visualizing potential dangers or mistakes in a controlled AR environment can help prevent injuries.

IMPACT

The positive feedback received from teachers who used the app underscores its impact. Teachers reported enhanced learning experiences and improved engagement, particularly among students with disabilities. This app has the potential to make a meaningful impact on how movement concepts are taught and understood.

COMMERCIALIZATION

- Turning P.E.A.R app into a book with QR code
- Sell through shopper
- Embed QR codes strategically throughout the book
- Allow readers to scan and access specific AR
- Sponsored listings and promotions in shopee

AWARD

1

Pertandingan Inovasi Peringkat Jabatan Pendidikan Jasmani & Kesihatan IPGKTI 2022

NOVELTY The "P.E.A.R" app's applicability is evident as it directly addresses the educational needs of students with disabilities, providing them with a visual and interactive way to understand movement concepts. Moreover, its potential applicability to mainstream students highlights its versatility as a learning tool.

CREATIVITY The creativity in this project lies in the integration of AR technology to bridge the gap between students with disabilities and mainstream students. The idea to use image tracking (Vuforia) and 3D models from Mixamo Adobe demonstrates a creative solution to make learning more interactive and engaging.

INNOVATIVENESS The app's development using Unity software showcases the innovativeness of turning the creative concept into a practical tool. The integration of image tracking technology enhances the interaction between students and virtual models, making the learning experience more dynamic and hands-on.

APPLICABILITY The "P.E.A.R" app's applicability is evident as it directly addresses the educational needs of students with disabilities, providing them with a visual and interactive way to understand movement concepts. Moreover, its potential applicability to mainstream students highlights its versatility as a learning tool.

Organized by:
Universiti Teknologi Malaysia (UTM) through
Center for Advancement in Digital and Creative Learning (CDCL) &
Faculty of Computing (FC)

Co-Organized by:
Institute of Teacher Education (ITE)
Terengganu Darul Ulu

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Majlis Keselamatan Persekutuan (MAMAK)
Kementerian Pendidikan Malaysia (KEMAM)
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P.E.A.R

P.E.A.R

PHYSICAL EDUCATION AUGMENTED REALITY

JABATAN
PENDIDIKAN
JASMANI DAN
KESIHATAN IPGKTI

ABSTRACT

This research introduces the "P.E.A.R" Augmented Reality (AR) app, designed to aid students with disabilities and offer additional resources to mainstream students. The study's main goal is to access the app's effectiveness in enhancing the grasp of movement concepts.

The research process involved creating the P.E.A.R app, which visualizes 3D movement models. By integrating image tracking, students can engage with virtual models in real-world scenarios. Teachers from specific schools tested the app, leading to positive feedback about improved engagement and comprehension, especially among students with disabilities.

Results show successful app implementation, with teachers endorsing enhanced learning experiences. While acknowledged areas for improvement exist, the app's interactive and inclusive nature aligns with Howard Gardner's Theory of Multiple Intelligences, bridging gaps between students.

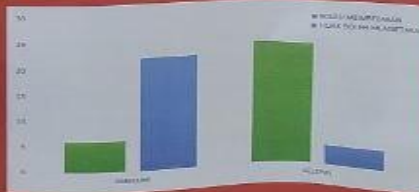
OBJECTIVES

- Improve the learning experience
- Encourage physical activity and active participation among students.
- Facilitate skill development in various sports and physical activities.
- Educate users about proper techniques and safety measures in physical activities.

PROBLEM STATEMENT

This research introduces the Augmented Reality (AR) app "P.E.A.R," designed to provide educational support for students with disabilities while also offering valuable resources to mainstream students. The primary objective of the study is to evaluate the efficacy of the app in enhancing the understanding of locomotor and non-locomotor movements. The app was developed using Unity software, incorporating image tracking software (Vuforia) and 3D objects sourced from Mixamo Adobe.

INITIAL FINDINGS OF CONSUMERISM



SCAN



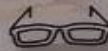
HERE

TARGET GROUP

PHYSICAL EDUCATION
TEACHER & STUDENT



SPECIAL EDUCATION
TEACHER & STUDENT



EDUCATOR

USAGE PROCEDURE



1. Download & open P.E.A.R apps in your devices.
2. Follow teacher's instruction.
3. Practice the movement shown in the apps.

ISBN



PRESENTER

FATIH

HADI

HAZIQ

HANA

EN HALIM EN FAZLI



Video link: https://youtu.be/bMq_J9v6YQc

Script:

Goh: I have a question to ask Fatil about P.E.A.R. What do you think about your product?

Fatil: Our product is Physical education Augmented Reality which actually helps teachers teach about locomotor and non-locomotor movement.

Goh: How can your product bring benefits to the user and does it give any disadvantage in user's daily life?

Fatil: The advantage that I think is demonstrated to their students, and the disadvantage is that sometimes your tablet's battery is low if teachers teach their students from morning to evening.

Goh: How can you improve your product in the future so the user has a better experience?

Fatil: As I said before, for now we have only one topic, but I think in the future we can add more topics to physical education.

Goh: What is the comment or feedback that is given by the user after using your product?

Fatil: The comment is good, and the application is quite useful for teachers to teach their students about some specific movement.

Goh: How does your product work? Can you explain it?

Fatil: First, we need to open the application, which is Pear, and the book. The first page is our explanation video, which explains the locomotor and lokomotif, and the next one will show you how the movements work. For now is run. The second one is cartwheeling. For this movement, not all the teachers can do, so the teacher can demonstrate it to their students.

Goh: Understood. Thank you!!

Reflection:

I personally believe that P.E.A.R. app is a revolution in education. It does impact in the positive feedback from teachers, because it enhanced learning experiences and improved engagement, especially for teachers or students with disabilities.

This product taught me about the transformative power of technology in education and its ability to bridge gaps between conventional education. The excitement comes from providing a future where students, regardless of abilities, can actively participate and grasp complex concepts through interactive AR experiences.

The benefit is making learning accessible and enjoyable. Students can get involved in interactive learning and receive an immersive experience from this app instead of reading a book.

The P.E.A.R. app is not just a tech tool but a step towards making education more dynamic, personalized, and meaningful. The P.E.A.R. app serves as a pioneer of powerful tools for learning, providing a dynamic and personalized educational experience. Overall, it's a source of inspiration for creating meaningful change in education through creativity and innovation. Imagine a future where every student and teacher, no matter their abilities, can actively participate and understand complex

concepts through interactive AR experiences. The project not only excites me about this potential but also reinforces the belief that innovation can truly enhance education.

Conclusion:

Overall, we think these activities give massive benefit to the student because they not only provide diverse learning ways for students in education but also facilitate the teaching and learning process in education.

These activities help students broaden their view in education and understand the impact of technology in education. Moreover, students will know that education can have many learning methods instead of just reading books and taking tests. Besides, the product in each booth actually help their students to enjoy their learning process.

From these activities, we learned that creating a convenient environment is an excellent way to help students enjoy their learning. For example, property management system provide a user-friendly interface and database to help students manage data, implement property management practices, and understand professional roles without going to any apartment. Other than that, Leap Space helps students learn the solar system with a hand-tracking device in order to create immersive learning. Besides, technology and the internet are a key to let students have opportunity to get more information.

These activities spark excitement in the student because they create interactive learning, such as developers create various software applications to let students immerse themselves in a new and vivid study environment. For example, Leap Space creates a virtual solar system environment by using Unity to present the solar system to students because most of them don't have the opportunity to see the real solar system.

We all feel that visiting NALI 2023 and the interview session helped us learn the course material better. The reasons are to gain more exclusive knowledge in communication and information technology after visiting different booths with different products. Besides, during the interview session, we will learn more about the developer's perspective on their own product and its main purpose which will give us inspiration for creating and designing our own product in the education industry.