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Cawangan Melaka

V-MIIEX

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VIRTUAL–MELAKA INTERNATIONAL INTELLECTUAL EXPOSITION

ROAD TO COMMERCIALISATION

V-MIIEX BOOK

V - MIIEX BOOK
'ROAD TO COMMERCIALISATION'

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FOREWORD

ASSOC. PROF TS. DR MOHD RASDI ZAINI
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Welcome to Virtual-Melaka International Intellectual Exposition 2022 (V-MIIEX 2022). It is an honour for me on behalf of UiTM Melaka Branch to thank all of you for joining the programme and we are proud to inform you that this is the 12th year consecutively, UiTM Melaka Branch is organizing this exposition.

V-MIIEX 2022 is a platform to improve the commercialization collaboration among industries and communities and at the same time, we also give the opportunity to academicians and students to share ideas and increase their potential innovation products with the industries and communities through their projects. This exposition also serves as a platform to cultivate and upload the nation's innovation culture by presenting new ideas and research by young people, especially from academia, universities, college, high schools, and primary school students.

The economy and development of the country faced a challenging phase in 2021 due to the Covid-19 pandemic. We faced changes in business, education, society, and lifestyle. However, the pandemic proved to be a blessing in disguise as it somehow gave people ideas which would be beneficial to improve their lifestyle and solve problems that might occur in the future. Besides, the new digital landscape also inspires more innovation and new ideas that contribute to various activities such as business and industries. As a university that encourages the "Research, Innovation and Commercialization", this exhibition is organized to encourage more commercialization of products that are beneficial to scholars, industries, and communities to tackle such issues to improve our present and future life.

Since 2009, UiTM Melaka Branch has successfully become the organizer for this innovation exposition. We are not only successful in organizing the exposition, but I would proudly say that we have also successfully embarked on commercialized products. With the number of participants for this year's exhibition, we believe that more commercialized products will be produced in line with the theme for this year, "Road to Commercialisation".

This exposition would never happen without dedication, teamwork, and commitment. A round of applause should be given to the committee teams as the backbone of this exposition. Their hard work, effort, and time made this exposition possible.

Finally, I would like to conclude this brief remark by thanking all the participants and stakeholders for joining the exposition, we hope that this collaboration never ends here.

Thank you.

FOREWORD

DR. NUR HAYATI BINTI ABD RAHMAN
Deputy Rector Research & Industrial Linkages
Universiti Teknologi MARA (UiTM) Cawangan Melaka

It is a great pleasure to welcome all the participants and presenters to the Virtual Melaka International Intellectual Exposition (VMIIEX 22). I am delighted that through this periodic event, we managed to bring together scholars and professionals from various fields to engage through this virtual platform where ideas and breakthrough are discovered and leveraged for commercialization potential.

Since 2009 UiTM Cawangan Melaka has held twelve Invention and Innovation Design competitions and this year we are very honoured to have the second year of VMIIEX organized in digital platform. This has proven that despite the global challenges due to the recent pandemic, it is never an issue for UiTM Melaka to continuously organize this yearly prestigious event and to support the ministry's aspiration in leveraging creativity and innovation in the new norm.

VMIIEX 22 is organized with no sole objectives of accomplishing the University's KPI but instead we are determined to make this programme as the place to help heighten commercialization collaboration in research and innovation with the industry and community through joint exhibitions from various external organizations.

Our aspiration is to also provide exposure and opportunities to academic staff as well as students from public and private universities to engage in direct excellent scholarly activities with the industry and community through activities that can be measured and assessed. As for the Research and Industrial Linkages Office of UiTM Melaka, this exhibition is seen as the platform that can encourage active collaboration and knowledge transfer with industries; objectively to support various activities that will benefit all stakeholders from the various government agencies, local and international universities, industries and communities.

Through the theme of "Road to Commercialization" this year, V-MIIEX 22 is committed to have this event as a boulevard to inspire and cultivate creativity and innovation to the numerous levels of inventors through exposure on latest technologies, astonishing ideas and creative designs with great potential to be commercialized. For this year, we proudly introduce a special category which is the "Endemic Challenge" as the provision to the government of Malaysia's goal of moving towards the endemic.

To ensure that the competing products in this exhibition is not exclusively for the purpose of competition, V-MIIEX 22 is dedicated for the commercialization of highly potential innovation products, which is attained through its active collaboration with tailored needs industries. The commercialization effort was not for income generation purpose only but it aimed to spearhead the development of quality products in line with industrial needs and community benefit.

Therefore, it is a great honour for me on behalf of the Research and Industrial Linkages Office as well as the organizing committee to have all participants in this competition and I would like to express my highest gratitude especially to the Rector of UiTM Melaka and all strategic partners and sponsors for supporting the event.

To finish, I sincerely wish VMIIEX 22 a remarkable success. I believe that this will not be the only collaboration between UiTM Melaka and the respective partners and linkages, but a beginning of a long and fruitful cooperation in future.

Thank you very much.

FOREWORD

WAN HASMAT WAN HASAN
Project Director V-MIIEX 2022
Universiti Teknologi MARA (UiTM) Cawangan Melaka

Assalamualaikum and Warmest Greetings.

It gives me an enormous pleasure, on behalf of the organizing committee to welcome all participants and presenters to the Virtual -Melaka International Intellectual Exposition 2022 (VMIIEX '22) with the theme "Road to Commercialisation". We are honoured and glad to welcome all participants to this biennial event.

This is the second time that we have organized this biennial event virtually. V-MIIEX 22 is an innovation competition, in which, innovation products, ideas and systems related to various science and technological fields are exhibited as a solution for the presented problems.

V-MIIEX22 expectantly will be a platform that gathers experts from academies, scientists, and researchers, locally and internationally, to contribute towards the growth of scientific and technological knowledge in each participant's specialisation and expertise.

The competition also serves as a platform to give fresh exposure to the various level of inventors, as well as to encourage the culture of innovation design focused on latest technologies and related to new norms technologies and inventions due to COVID-19.

V-MIIEX 22 is also hoped to be an avenue for gathering and disseminating the latest knowledge on ideas and acquisition of innovation among the participants. It is hoped that the competition will be able to open the mind of the participants towards latest technologies and design. It is also in line with the government's aspiration to encourage innovation activities in Malaysia.

As a final note, I would like to congratulate my fellow committee members for their tremendous effort, which have been critical to the event's success. In addition, I would like to thank our co-organizer, event sponsors and supporters. Optimistically, we wish that all new knowledge that is discovered, invented, or innovated will drive towards our future sustainability.

Thank you.

ABOUT V-MIIEX

The world after COVID-19 is unlikely to return to the world that was. Despite the challenging pace during the pandemic, the strong rebound is expecting in this exciting year 2022. Malaysia is welcoming the great prospects ahead with positive impact on the country's economy and development. Hence, the hope for greater opportunities motivates for more creative thinkers to come up with innovative ideas that can be put forward to be harnessed to overcome similar problems in the future. V-MIIEx 2022 is one of these platforms which contribute relevant ideas that could help communities of all walks of life cope with this pandemic.

UiTM has identified research, innovation, and commercialization to be among the core components and strategic effort towards becoming a well-known and prominent university. Aside from realizing this goal, with these components and efforts, fostering the development of knowledge, generating financial stability of the university, and producing knowledgeable academicians are also potentially achievable.

By having invention and innovation competition yearly, UiTM Cawangan Melaka is confident that it could further enhance creative and innovative abilities among staff and students. In support of the government notion which upholds the importance of innovation, UiTM Cawangan Melaka has taken the initiative of organising the Virtual Melaka International Intellectual Exposition (V-MIIEx).

In instigating and nurturing the continuous culture of inventing and innovating, this event is an ideal platform for lecturers, administrative staff, students, and the public to showcase and commercialize their products or prototypes as well as novel ideas. The first IID which was held nationally in UiTM Cawangan Melaka in 2009, has successfully gathered and displayed more than 37 inventions and innovations. Accordingly, to continue this strong passion towards inventing and innovating, the IID competition should be continued and celebrated.

With that, the Division of Research and Industrial Linkages will be organising its 12th IID competition, the Virtual - Melaka International Intellectual Exposition (V-MIIEx 2022) with the theme, 'Road To Commercialisation'. V-MIIEx 2022 hopes to welcome 200 competing products to be showcased and commercialized, at the same time, attract attention of related and matching industry.

Objectives

1. Encourage and instill passion towards inventing and innovating among UiTM Cawangan Melaka staff, students and academicians of local and international higher education institutions;

2. Highlight distinguished talents of skillful inventors and exhibit intellectual products, inventions and innovations among local and private tertiary institutions, government and private agencies, including international participants;

3. Become an effective Business Matching platform for participating research products, matching industries and partnering government agencies;

4. Recognise, inspire and promote invention and innovation products to be patented and commercialized;

5. Increase passion towards inventing and innovating through research and boost interests of government and non-government agencies to obtain consultancy services from a line up experts of higher education institutions and UiTM Cawangan Melaka.

DORM ATTENDANCE

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Abstract

Datuk Seri Mohd Zin Vocational College has male and female dormitories, which can accommodate about 260 students. A separate block, within the college grounds. In the dormitory rules, students must be in the room at the appointed time. The purpose is to ensure that students are in the college grounds safely.

The problem statement for our project is, the attendance of students in their respective rooms at the allotted time, is not reaching 100%. The head of the dorm will make a call several times to ensure that students enter the room, to be taken attendance by noting on the attendance book. This attendance management period takes more than 30 minutes. Once all the students are enough, the attendance should be sent to the warden on duty. The attendance book needs to be checked by the warden on duty. Thisroutine happens every day. This will disrupt the sleep time of students and wardens. In the event of a no -entry case, the dorm head will search the college grounds.

Our Dorm Attendance project is a tool for recording student attendance and the time they enter the room. This will make it easier for wardens to monitor the attendance of hostel students using smartphones. In the smartphone there is a cloud platform app.

Things board that records the time and name of the student. Dorm Attendance is placed in each room and uses a fingerprint sensor to detect fingerprints. The student's namewill be displayed on the LCD display. The objective of this study is to design the ESP8266 module wifi circuit to send information to the Thingsboard cloud platform (lo T application.) Develop a program for the Dorm Attendance system, test the functionality of the ESP8266 circuit and fingerprint to facilitate wardens to take hostel students. The project has been tested and works well. The Arduino ATMEGA 328P kit is a chip that has been used as an electronic device control. The Proteus software program was developed to draw circuits and test the function of control circuits. The result of this product can help the warden to know the time and attendance of students in each room quickly. This product has limitations or scope of work. This product uses a supply voltage of 12v. It has an LCD display and a fingerprint sensor on the front of the model. Buzzer is used as an indicator component after the fingerprint is detected. It stores data on the Thingsboard cloud platform. The warden will receive student attendance andtime data. This product has worked well by reducing the duration of the effect of studentattendance from 30 minutes to only 3 minutes. It is hoped that this product will facilitate the warden to act if student attendance is insufficient.

KEYWORDS: Electronics system, scan id, display name and time

1. INTRODUCTION

IoT stands for Internet of Things. This topic is becoming increasingly popular in today's fast -paced technology. It is a concept where equipment, machines, sensors and devices are connected to the internet and data collection and transfer takes place over a network.

This project is done to improve the student attendance system in the room. Therefore, a changeto the existing attendance system was changed on a project called Dorm Attendance and leveraged this IoT into the attendance system. Here we will build a biometric presence system using arduino and fingerprint scanning and after successfully identifying the person, it will enter the information into a Cloud Platform such as Thingsboard using the ESP8266 Wi-Fi module.

In addition, we created and produced this Dorm Attendance is to improve the existing attendance system in the hostel today. However, there are still advantages and disadvantages to this project. However, it is hoped that the next generation can make a better change from thisproject.

Therefore, there are various facilities that have been designed to help ease the burden of wardens to know the presence of students in each room easily.

With that, we have used modern technological materials in this century, to suit the current developments in technology, where the project we have designed using Arduino Atmega328p, ESP8266 Wi-Fi Module and Fingerprint. The materials we use, are easily available in the market.

2. OBJECTIVE

There are several objectives in this project. Among the objectives of this project are:

i Design the ESP8266 circuit to send information to the Thingsboard cloud platform

ii Develop a program for the Dorm Attendence system.

iii Test the functionality of the ESP8266 circuit and fingerprint to facilitate the warden to take the attendance of hostel students in the Dorm Attendance project so that it functions properly.

3. NOVELTY AND INVENTIVENESS

This project is designed to facilitate the affairs of the hostel warden to monitor and know the presence of students in each room. Next, the project uses 5V direct current voltage as the power supply on the circuit. The ESP8266 Wi-Fi module is used to send information to the Thingsboard cloud platform. To get student attendance, students need to use only one finger that has been registered. Finally, we used the Arduino Atmega328p as the microcontroller, the Attendance Dorm has an LCD as a display.

4. PRACTICALITY AND USEFULNESS

Every study made as well as the production of new products is aimed at overcoming the problem and providing convenience to the hostel warden. It is produced to improve the attendance system to be more effective and to assist in the management of the attendance system to be of better quality.

5. CONCLUSION

The process of completing this product requires careful planning and it is quite difficult to do. Various problems are faced and eventually can be resolved in a rational and consensual manner. Hopefully this product can be used in a suitable place, especially in the hostel. This is because of the difficulty on the part of the warden who does not know the number of hostel students is enough or not.

Next, the hostel warden can save energy and time so as not to bother to get information throughthe attendance book.

Through this product as well, we can practice and master all the skills we acquired throughout our experience at the Datuk Seri Mohd Zin Vocational College (KVDSMZ).

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