UNIVERSITI TEKNOLOGI MARA
Cawangan Melaka

i-JaMCSIIX 2021

Exploring ideas

International Jasin Multimedia & Computer Science Invention and Innovation Exhibition

INTERNATIONAL JASIN MULTIMEDIA & COMPUTER SCIENCE INVENTION AND INNOVATION EXHIBITION (I-JAMCSIIX) 2021

ABSTRACT

BOOK

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Dynamic Web-Based Calendar for Event Management System

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JM006 – Innovation – Local – Category C: Students - UiTM Melaka

***Abstract*—A calendar is a very important element for every event management system to organize and schedule the event information in an organized manner. The use of electronic calendars is widely used by many people and organization to organize most of the activity in our daily life as it can help to improve the management of the event. Every organization must have a good management system to manage event activity to achieve their organizational goals. Most of the current business process used by the many companies used traditional way to manage their event information and it is difficult for them to notify and published some of the recorded information to their target attendee. To solve this problem, this project has established some objectives to achieve the goals of the project, which is to gather, analysed, design and implement a Dynamic Web-Based Calendar for Event Management System that meets the stakeholder requirements. The first three-phase of Waterfall Model SDLC is used to achieve the objectives of this project. Upon the completion of each phase of the Software Development Life Cycle (SDLC), a Software Requirements Specifications, Software Design Document and a working system are created as deliverables and findings for this project. Dynamic Web-Based Calendar for Event Management System has successfully implemented according to these SRS and SDD. Finally, this project also provides several recommendations to enable this project to maintain and keep up with the latest improvements of the stakeholder needs.**

***Keywords*—Dynamic Web-Based Calendar, Event Management**

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Automation in Pneumonia Detection

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JM008 – Innovation – Local – Category C: Students - UiTM Melaka

***Abstract*—Pneumonia is a commonly known disease that is possible to have both high illness and fatality. The infections happen between the respiratory system; where it causes inflammation in one or both lungs that possibly causes oedema. In such disease happened in a restricted area are difficult to diagnose simply without any assisted vision. Thus, 'Automation in Pneumonia Detection' is developed and it is a model system using a Machine Learning model trained for pneumonia radiographic images classification from the collected chest X-ray image data. Unlike other researchers method, this system has relied solely on the Shallow Learning approach with simple texture analysis feature obtained an accurate classification performance and results. The traditional technique is constructed with extracted features of the chest X-ray image and to classify its types and classes determining if a person is normal or infected with pneumonia viral or bacterial. The system proposed implied due to pandemic outbreaks on how to classify and differentiate the radiographic images between normal with Pneumonia infection since diagnosis the images for any symptoms and abnormalities could be cumbersome in a short time. The model aims to alleviate the challenges that occur and to get its reliability and easy to interpreted images for medical descriptive visual.**

Keywords—Pneumonia; diagnosis; chest X-ray; Machine Learning; Shallow Learning;

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Food Viral Recommendation Mobile Application using Geolocation with Auto Recommendation Places (EatNow!)

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JM012 – Innovation – Local – Category A: Professional (UiTM Melaka) -

***Abstract*—Along the 21st Century, mobile applications become more rampant among the people. Nowadays, they keep depending on mobile apps to perform daily life. It includes when tourist unfamiliar to choose popular food in a particular area. EatNow! Mobile application will help ease the user find popular food based on user preferences. EatNow! Application is a viral food recommendation using geolocation with auto-recommendation places. With the implementation of geolocation, the application can suggest places based on the user 's current location. The recommendation based on the 3 APIs, the Foursquare API, Google Places API, and OpenWeather API. EatNow! Apps recommend the places based on user preferences by using a rule-based system and user's current location. The application's effectiveness has evaluated by conducted functionality, usability, and accuracy testing. Findings show that EatNow! Application can help user find restaurants based on their preferences and the nearest user's current location. In conclusion, EatNow! is useful for any users to find nearby food areas and save the time consumption to find food viral.**

***Keywords*—Food Viral, Rule-Based, User Preference, Recommendation**

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Melaka Home-Based Food Business Application

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JM013 – Innovation – Local – Category C: Students - UiTM Melaka

***Abstract*—Melaka Home-Based Food Business Application is a developed project for the reason to help sellers in Melaka share and promote their home-based for products to other potential customers. The user can use the application to search for any available home-based food in the location they choose. Several problems have been identified, and one of the issues is home-based food sellers currently do not have a focused platform to share their product. Next, customers having difficulties finding home-based foods at their location. Thirdly, it is difficult for the customer to know the quality of the product before buying it. Developing the Melaka Home-Based Food Business Application can help both the seller and customer to tackle their problems. For this project, three objectives have been identified: gathering and analysing requirements through surveys and user stories from seller and customer, designing an application based on the collected and analysed requirements, and finally developing the Melaka Home-Based Food Business Application on the android platform. The methodology used for this project is the Waterfall Methodology, which includes the requirement gathering and analysis phase, design phase, and implementation phase. Based on the results and findings, 12 use cases are created, with two actors for the application. All the objectives of this project have been successfully achieved throughout the development of the project. Nevertheless, the Melaka Home-Based Food Business Application still has several limitations that can be improved in the future.**

***Keywords*—Mobile application**

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VOIR Brand Product Reviews using a Semantic Analysis

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JM014 – Innovation – Local – Category C: Students - UiTM Melaka

***Abstract*—Online customers could have difficulties in making decision to buy a product due to a massive number of product reviews. Therefore, this project focuses on the implementation of an approach to analyse the VOIR brand product reviews using a semantic analysis. The main goal of this project is to develop a web-based system that will provide a data visualization of VOIR product reviews from an online store, Shopee. The methodology of this project is using waterfall model. There are four phases involved in this project (i) problem assessment, (ii) design, (iii) development and (iv) results. MySQL database and Python programming language will be used to develop the system. The analysis of the VOIR product review was done using sentiment analysis technique. The system will perform a sentiment analysis of the VOIR product reviews and further categorize the positive, negative, and neutral reviews via data visualization methods such as word cloud, line graph, and pie chart. This web-based system can help customer in making decision when buying a product. At the same time, sellers can use the analysis output to improve their services and products. In the future, the system could be developed for mobile application to ease their users to keep track the highest quality of VOIR products based on customers' reviews.**

Keywords—online, reviews, sentiment, VIOR, visualization

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Mobile Booking Application for Freelance Photographer : FreeGrapher

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JM015 – Innovation – Local – Category C: Students - UiTM Melaka

***Abstract*—Mobile Booking Application for Freelance Photographer is a mobile application that was developed to allow potential clients to find and make online booking of freelance photographers within the client selected area. Currently, most clients are using a traditional booking process where the client needs to find and contact the photographer through social media such as Facebook or Instagram which can be time consuming and sometimes booking issues such as a client booking a date that already has been booked by another client. Therefore, by having a platform where clients find and book photographers, the finding and booking process will be more efficient. This application will help the client to easily find and book the available photographer near their area easily. Besides, the photographer can use this application as a platform for marketing their services to potential clients. In addition, this application also recorded all the booking data of the client for the photographer. Thus, there will be no data redundancy or booking related issues. This application was implemented using three phases of the waterfall methodology -the requirements gathering and analysis, design and implementation. During the first phase the requirements for the project were gathered using interviews with the stakeholders and analyzed to specify the requirements. Next, the requirements specification was used to design the system architecture, database and interface. Lastly, the application was developed by using Android Studio with Firebase Realtime database. In conclusion, this application will help the freelance photographers to advertise their services to match with the booking needs of clients within the location coverage.**

***Keywords*—Mobile Booking Application, Freelance photographer,**

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Automating FYP Health Check in Managing Final Year Project: FYPCompanion

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JM016 – Innovation – Local – Category C: Students - UiTM Melaka

***Abstract*—Final Year Project (FYP) is a requirement for bachelor's degree qualification. It is a tool to measure the student's understanding, skills, and expertise gained throughout their studies. Currently, most students of Bachelor in Information Technology (Hons.) Information Systems Engineering have problems in managing their FYP. Based on a study titled "Implementation of Health Checking Tools using Lean Method for Managing Final Year Project" by Siti Izniwafaa Binti Azizan, shows students having difficulty in monitoring and controlling the process of their FYP which results in ineffective FYP deliverables. Thus, this study aims to develop a web-based application that provides a platform for FYP students to manage and track their project progress. There are two main deliveries in the FYP which are the report and the system itself. This study used a dashboard interface as a technique of reminding the project progress, delivery due dates, and traffic light approach in representing the status of each task and delivery. As a flexibility feature, the project is designed as a responsive web to provide mobility to enable users to access by using mobile web. The system empowers control to students in monitoring the progress of their FYP by allowing them to create their schedule and providing visualization of project health. A notification system was used to remind students when the due dates are around the corner. Besides, the supervisor can monitor the project health and progress of their supervisees during the project execution. Waterfall methodology was implemented to assist the development of this project. With the system implemented Bachelor in Information Technology (Hons.) Information Systems Engineering students can have a systematic tool to assist in monitoring the 'health' of their final year project progress.**

***Keywords*—Final Year Project, Project Health, Track, Dashboard, Web-Based Application**

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Terengganu Cultural Trail : Using videography in a participant-observer study to enhance cultural heritage appreciation among children.

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JM017 – Innovation – Local – Category A: Professional (UiTM Melaka) -

***Abstract*—With the new technological improvements, video-based observation research is becoming a promising method in many areas. Video recording has been under-utilized as a data collection tool because of confidentiality and privacy issues. However, it has many benefits as opposed to traditional observations, and recent studies using video recording methods have introduced new research areas and approaches. This paper aimed to describe the videography project in a participant-observer study to enhance cultural heritage appreciation among children. This project attempted to record children's experiences in Terengganu culture showcase which was in conjunction with the Terengganu Cultural Village which took place at various events in Kuala Terengganu in September 2020. It is also hoped to give some insights about children's appreciation of Terengganu cultural heritage when videography was incorporated as its observation tool. The researchers hoped to nurture active learning in an early age, and this includes a cultural appreciation for the participants. Participants embarked on a three-day journey to experience the cultural heritage of the mystical Terengganu, where silat, gasing and wayang kulit were popular but unknown to the participants. It hopes to nurture cultural appreciation where participants seek to understand and learn about Terengganu cultural heritage in an effort to broaden their perspective and connect with others.**

***Keywords*—Active learning, Cultural appreciation, Cultural heritage, Observation, Videography**

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Car Rental Maintenance System for AZ Easy Travel & Tours

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JM018 – Innovation – Local – Category C: Students - UiTM Melaka

***Abstract*—In this project, the maintenance considered are the internal and external maintenance services, road tax and the insurance. With manual process, the staff often overlooked the active maintenance status information of each car. In car rental services, maintenance plays an important role to ensure the quality of the business. When providing a service to a customer, quality of the car must be maintained before delivering it to the customer. In addition, the maintenance expenses are recorded on paper. To assist, a web-based system is developed for AZ Easy Travel & Tours Sdn Bhd to track maintenance and maintenance expenses. The system will record and produce a visual representation on the maintenance expenses of each car and use the information as a base for any strategic decisions especially for budget estimation on maintenance expenses. This project uses a Waterfall model to develop with four phases of requirements gathering, requirements analysis, design and implementation. The Waterfall Model is suitable for beginner developers since it is easy to understand and Implement. The web-based system focused on managing the maintenance and maintenance expenses by the staff. With the web system, AZ Easy Travel & Tours Sdn Bhd is now able to minimize the effort for the staff in terms of managing the maintenance and maintenance expenses information.**

***Keywords*—Car Rental, Maintenance, Car Maintenance**

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Cassava Leaf Disease Detection System using Support Vector Machine

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JM019 – Innovation – Local – Category C: Students - UiTM Melaka

***Abstract*—Cassava (Manihot esculenta Crantz) has been used as a staple food of many nations. It is also known as manioc, and tapioca. In Malaysia also cassava is used as daily food source. Its tuber is the most popular form of consumption, although the leaves are also consumed at times for medicinal purposes. Even though cassava is the popular form of consumption, it is vulnerable to disease. The type of disease that can be found on cassava is bacterial blight and mosaic disease. Problem arises when farmers have to detect the disease using the expert's naked eyes which is takes a lot of time and difficult process to be carried out on a large farm and it may lead to inaccurate result. This study is therefore proposed in order to solve this problem, which is to develop a prototype for the detection of cassava leaf disease by applying of image processing technique. In this project, a set of data is collected from Kaggel website, with a total of 200 images (100 images of bacterial blight disease and 100 images of mosaic disease) being successfully collected in order to take further steps in processing of the image. Image processing phases that involved in this project is image acquisition, image pre-processing, segmentation, feature extraction and classification. All this phases are done to train the data before the prototype is ready to be tested. Support Vector Machine (SVM) are used to classify the disease either it is bacterial blight of mosaic disease. The accuracy of this prototype is 87.5%.**

***Keywords*—Cassava, disease detection, SVM, image processing, classification**

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Sabah Tourist Attraction using Web Scraping and Geolocation (MansauAnsau) Web Application

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JM020 – Innovation – Local – Category C: Students - UiTM Melaka

***Abstract*—Nowadays, people tend to choose to travel independently rather than using tour guides as they can decide on their own pace, change their plans anytime, modify their itinerary upon inspiration or valuable recommendations by other travelers. The freedom and spontaneity are invaluable since traveling should be a pleasure, there would be no point in doing something that makes they feel uncomfortable. This will bring them to search or lookup for places they want to go whether from their acquaintances, family, or friends, and as a result, their information will be limited to what they gain from other people. People also love to get their destination information from many platforms such as social media and search engines. As a result, this will cost them a lot of time and they will receive an overload of information. The main contribution required is to suggest a destination to the tourist by considering the user's location by utilizing the Geolocation method. This project will use an iterative model as the project methodology framework as it is more flexible which means less costly to change scope and requirements. The recommendation place is provided based on the user's current location that is located within eight kilometers. The aim of this project is to build an alternative platform for the user to search for tourist attraction in Sabah area.**

Keywords*—Recommender system, web application, location-based, Sabah tourist attraction

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Learning Mathematics using Fun-math Application for Pre-school

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JM021 – Innovation – Local – Category B: Professional (Other Institutions) -

***Abstract*—Education in the 21st century is characterized by: user-centeredness, on-demand provision and delivery, engagement of learners, and technology-mediated teaching and learning. Nowadays, the increasing of the game application is uncontrollable. Kids tend not to study and just want to play games. Most of them like to play games because the games are more interesting compared to books. Kids not attracted with traditional studies (books) and easily lose focus during the study. Mathematics syllabus at the primary school is formally and theoretically, and very book-based learning. Mathematics subject is not interesting for children, because it is a serious topic that cannot be learned in a relaxed situation like playing games. Primary school students at the age of seven to nine years old learn addition, subtraction, multiplication, division and fractions will hardly understand mathematics, and they assume that mathematics is very difficult to learn if the teacher does not know on how to attract and promote fun learning to students. With the aid of instructional technology, digital devices and advancement of educational mathematics games, teachers can use it in the learning process in the classroom. Since educational mathematics game has gained considerable interest in education circles due to its capability of enhancing the learning process among students, the teachers need to have their criteria and set goals in order to achieve the desired learning outcomes.**

***Keywords*—Teaching and learning; Mathematics Challenges; Educational mathematics games; Mobile application Entertainment.**

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House Rental Advertisement for Uitm Jasin Student using the Filtering Technique

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JM022 – Innovation – Local – Category C: Students - UiTM Melaka

***Abstract*—Student affordance on choosing the right house rental for them during their study had been less concerned due to not many factors effecting the choice of choosing the house. Some students prefer to live in a campus while some of them prefer to live outside of the campus. Jasin is one district in Melaka that have high population of students. Searching for the house rental might be a problem for them due to awareness about the available of the house rental from the home owner. During the whole study of this project, some problem arises for the students regarding the search for the house rental. Some students want to rent house based on their preferences, and some of them did not have any specific criteria for house rental. These factors could lead to implementing one solution for them in order to ease them on searching for the house rental. Developing of the system required many works such as information gathering, requirement analysis and developing design. All this process is crucial in order for the system to be developed. The House Rental Advertisement for UiTM JASIN Students Using Filtering Technique was being developed in order to give them a solution regarding the problem that arise.**

Keywords*—*Filtering Techniques, House Rental Advertisement, Student House Rental, Advertisement Using Filtering Techniques

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Sarawak Baitulmal Management System using SMS Notification (SBMS)

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JM023 – Innovation – Local – Category C: Students - UiTM Melaka

***Abstract*—Previously, the application submitted by the candidate in hardcopy form. Then, the form will then manually process one by one by the staffs and they will insert every information in the application form into an Excel database. Then after confirming whether the application failed or qualified, the form will be sends out to HQ in Kuching, Sarawak using 'Poslaju' service. Lastly, for data keeping, the forms will be copied and stored in files according to the reference number. After the online system has been implemented, the candidates are still submitting their application like before and the staff will fill in their information into the database. But the current system has flaws which delays the time of each applications to be processed. The current system does not store the candidate's data from their last application which made the staffs had to fill in the same info repeatedly. The system also does not have an automated SMS notification that will inform the candidates regarding their application status. Therefore, the main objective for this project is to develop a web application Sarawak Baitulmal management system with SMS notification. The output of the system can be seen by the SMS notification that is sent to candidate's phone number to inform about their application status.**

***Keywords*—Tabung Baitulmal Sarawak, Management System, SMS Notification, Laravel, TBS**

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Occupational Safety And Health – Digital Board Game (OSH-DBG), A Way Forward For Digital Teaching and Learning

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JM024 – Innovation – Local – Category B: Professional (Other Institutions) -

***Abstract*—Nowadays, it is challenging among the students on the importance of safety at the construction site. Students are demanding, and they grew up with higher requirements for learning. Therefore modern pedagogical paradigms that emphasize creative thinking are required. Gamification in teaching and learning is an innovative approach to motivate students to learn by using game elements to make more exciting and fun. Game-based learning has introduced to improve teaching activities by stimulating learning engagement and motivation among players new skills and concepts voluntarily. Gamification also an effective approach to make positive changes in students behaviour and attitudes towards learning. OSH-DBG is one of a digital board game. Its promote the development of knowledge and information, especially to the built environment students in safety awareness. The experience in the form of games in this product is more likely to influence good attitude in safety awareness, especially to students of Built Environment. This digital and online gamification concept was built to make this game more interactive. The objectives of this project are to increase the development of knowledge and information about construction safety and health and to improve essential skill on safety for construction requirements.**

***Keywords*—e-learning, gamification, interactive, learner engagement, digital direct learning.**

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Car Sinking Simulator

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JM025 – Innovation – Local – Category C: Students - UiTM Melaka

***Abstract*—A sinking car accident is one of the types of car accidents in which the car crashes into an area of deep water such as a river or ditch. In Malaysia, this type of incident mainly occurs during major flooding where the water level spiked unexpectedly and dangerously, causing death rates relating to this incident to increase reported by public media. The aim of this project is to develop a mobile application that uses virtual reality (VR)technology where it creates a VR simulation on spreading the awareness on how to escape sinking car accidents. This project implements the ADDIE Methodology as the framework. The project evaluates the usability of this application's project by using System Usability Scale (SUS). The result obtained was positive as the project managed to get a SUS score of 74, representing a good rating for this project. Future work for this project would be to add other variety of sinking car accidents simulations.**

Keywords—Virtual reality, Sinking car, car accident, escape sinking car

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"What to Cook?" Mobile Application

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JM026 – Innovation – Local – Category C: Students - UiTM Melaka

***Abstract*—Home-cooked food provide many benefits. However, due to current lifestyle, people tend to takeout food or order fast food. This project address the problems where people have trouble on what to cook based on the limited ingredients, they have to spent some time in order to search for the recipes which do not contain ingredients that they are allergic for them to cook and also they need to know the allocation time to prepare the food which is suitable to them. In order to solve the problem, modified waterfall methodology was applied. It consists of three phases which are requirements gathering and analysis phase, design phase and implementation phase. Three objectives have been achieved after the project have been completed, which are gathering and analyzing the requirements needed for developing the mobile application, designing the mobile application according to the requirements that has been analyzed and developing a mobile application that can recommend a variety of recipes for people to cook based on the available ingredients and to exclude recipes that contains the allergy ingredient. Last but not least, an Android mobile application with three features is the result of this project. The features of the application are people can search for recipes either by entering the ingredient, allergy ingredient or time for food preparation.**

***Keywords*—mobile application, food recipes**

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Human Health Status IoT Device Using Data Optimization Algorithm

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JM027 – Innovation – Local – Category A: Professional (UiTM Melaka) -

Abstract—

In this day and age, health issues have become one of the hottest topics that are discussed, as the world is facing the ongoing pandemic. Therefore, in order to mitigate the situation, few approaches in Mobile Application Technologies have been explored such as the "MySejahtera" app and the "MyTrace" app. This project aims to produce a device that can be used to identify the current health status of a person using sensor and a data optimization algorithm. Furthermore, this project uses CT-UNO (Arduino Uno) microcontroller as its base together with the LM-35 Body Temperature sensor and the Pulse Sensor for reading heart rate, and a web system to manage the data collected. The web system will also act as the interface for patients and medical officers where a health survey for the patients is conducted through the system. The data that will be collected are the body temperature, heart rate and the health survey, all the data will run through a data optimization algorithm to produce a more accurate result. The data optimization algorithm uses the current data provided by the health department and then compare them with the patient's data, after which the system will produce the current health status of the patient. The project result shows that the usage of smart devices combine with a data optimization algorithm produces accurate outputs that can later be employed to lessen the work that are carried out by the medical officer.

Keywords—Mobile Application , optimization algorithm, internet of things (IoT), body health sensor

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Learning Arabic Communication Skill Through Mobile Application

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JM028 – Innovation – Local – Category C: Students - UiTM Melaka

***Abstract*—Arabic language is listed as one of the third language courses in Universiti Teknologi MARA (UiTM). This course aims to equip students with the ability to communicate using Arabic. It is found that most of the students are facing difficulties to converse in the Arabic language because they have less vocabulary and lacking in practice. Therefore, this mobile learning application is developed to help students to improve their communication skill in Arab. Agile model is used as the project development methodology as it encourages a continuous improvement during the development. This application is using FRAME approach which implements accessibility, interactivity, immediateness, awareness context, permanence and functionality to construct an effective mobile learning application. The effectiveness on improving students' performance after using this mobile application is evaluated using dependent t-test. The test is conducted at 5% significance level and analysed using Minitab 19. The result shows that this application is effective in improving students' performance in Arabic. However, there are few improvements that can be implemented such as add more topics: grammar topics, past, present and future tense to provide a better learning tool for the students.**

***Keywords*—Arabic, Multimedia Leaning, Mobile Learning**

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Learning Algebra through Game-Based Learning

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JM030 – Innovation – Local – Category C: Students - UiTM Melaka

***Abstract*—Algebra is one of the topics of mathematics that every student must learn. It is the basic mathematics that involves using unknown or variable in the equation to solve the question in a simple way. One of the requirements for students to achieve excellence in mathematics education is succeeding in algebra education. But many students have found that learning algebra in school is not enjoy, textbooks lack visualization, and there are few educational games for algebra. For this reason, Learning Algebra through Game-Based Learning by implementing 3D modeling games into the mobile platform, making it easier for students to play and enjoy the environment of the game. There are three objectives implemented in this project, namely (1) to design a 3D modeling game-based learning application for algebra, (2) to develop a game-based learning application for algebra, and (3) to evaluate the enjoyment of algebra learning through game-based learning. The Game Development Life Cycle is used as a methodology in this project. 33 students participated in this study that examined the enjoyment and game mechanics of learning algebra. The evaluation used in this development was the EGameFlow model. The findings showed that 86.06% of the respondents agreed that they felt enjoyment from this game.**

Keywords—learning, algebra, 3d modelling, game, mathematics

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Empowering The Online Distance Learning using Gamification

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JM032 – Innovation – Local – Category B: Professional (Other Institutions) -

***Abstract*—Online distance learning began to be fully practiced when the Covid-19 pandemic hits the rest of the world. The education sector, including higher education was also affected by this unfortunate event. However, to ensure teaching can be delivered to the students as effective as possible, changes are required to be done. There are numerous modern teaching methods and techniques are used to fit the needs of teaching and learning. Gamification is one of the popular approaches that can be used to improve teachings, and with the aid of several available tools, it can promote engaging learning experience to the students. This study utilises 3 gamification tools that are used in one of mathematical course, namely Quizziz, Oodlu and Socrative. The exposure of gamification to the students is vital to develop sense of responsibility towards learning and facilitate the learning process in an engaging digital environment.**

***Keywords*—Gamification, Business Mathematics, Game Based Learning**

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Enhanced Gamification in Study Skills

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JM034 – Innovation – Local – Category B: Professional (Other Institutions) -

***Abstract*—Educators are facing challenges when teaching through face to face cannot be implemented due to the unforeseen circumstances of the current pandemic outbreak. In order to ensure learning delivery is achieved, they have to shift to online distance learning method to teach the students. This raises concerns in regards to students' performance and engagement, hence gamification is introduced in Study Skills to allow them to engage with the learning materials in a new and dynamic way and essentially improve their performance. Gamification can be considered as one of the technologies used to support the traditional ways of teaching and learning. This study aims to apply the gamification techniques in Study Skills course. Kahoot, Quizizz and QuizWhizzer are the tools used in creating the gamified learning activities. A questionnaire was conducted to gather responses from the students after the completion of the course**

Keywords—Study Skills, Gamification, Online Distance Learning

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An Empirical Study of Slow Http AttackiIn Web Server : APACHE VS NGINX VS LIGHTTPD VS IIS

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JM036 – Innovation – Local – Category C: Students - Higher Institution (Diploma/Bachelor)

***Abstract*—Web server is the storage for web site files and to broadcast the files over the internet for anyone who try to visit the web site. The web server will store and transfer web site data upon the request of a client's browser. However, as many as web server available, the potential of cyberattack to them is also increased (Suroto,2017). DDoS attack is one of a way to prevent legitimate user accessing the website. If the DDoS are still ongoing it will cause troublesome such as the bandwidth spike to an incredible amount that causes the decreasing of a system performance (Zebari et al.,2018). Thus, slow HTTP attack in web server need to be concern. The objective of this project is to analyze different types of Web Server on handling multiple Slow HTTP Attack . Another objective in this project is to evaluate the effect and performance or response time, CPU utilization and network traffic of the Web server before and during attack based on Apache , Nginx , Lighttpd and IIS.In this project we have measured the web server performance that include response time, CPU utilization and network traffic. To complete the requirement, two devices are going to be used to perform Slow HTTP attack thus make it as DDoS attack. According to the result, the best web server that can minimize the effect of slow http DDOS attack in windows 10 environment is Nginx webserver.**

***Keywords*—DDOS, Webserver**

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Bankruptcy Prediction System

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JM037 – Innovation – Local – Category C: Students - UiTM Melaka

***Abstract*—A company often takes bankruptcy prevention measures. This action is critical to ensure the viability of their business. Preventive activity refers to the activity of predicting and analysing the probability of bankruptcy. This process is challenging because it requires expert, specialized techniques, takes a long time, and high cost. Here is introduced a novel product called Bankruptcy Prediction System (BPS). It is built using Artificial Intelligence technology with Random Forest techniques. It is more practical than the existing way to predict and measure the probability of bankruptcy for a company quickly, without using experts, and producing reports automatically without engaging in tedious and complicated statistical calculation work. BPS has been registered under MyIPO under the copyright domain. BPS has a high commercial value to be marketed to all companies that want to prevent bankruptcy and all finance companies that want to predict a company's ability to repay its loans. BPS has been tested using a set of data collected from the Emerging Markets Information Service (EMIS), a database containing information on emerging markets worldwide to build a classification model. According to the tests' findings, BPS ensures the accuracy of the bankruptcy predictions up to 90% and beyond. BPS is flexible and able to customizable with different data and users. BPS is beyond the prototype as it provides a better technique to predict the company's status toward bankruptcy and ready to penetrate the market.**

***Keywords*—Prediction, Bankruptcy, Random Forest, Artificial Intelligence, Classification**

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ANATEKS Flexi

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JM039 – E-content – Local – Category A: Professional (UiTM Melaka) -

***Abstract*—Learning the Technical Analysis subject for the Flexible Learning (FL) students during the Covid-19 pandemic era is definitely challenging. The online learning method quickly outpaced the conventional physical face to face learning drastically. The Flexible Learning student attended a much less lecture session per semester for the same course coverage and course assessments as opposed to their full-time (FT) counterpart. Apart from their hard work and intelligence, additional flexible learning medium must also be in place to complement their study process so that at the end, the learning outcome is achieved. Guided by SCANMIC methodology in producing a successful eContent learning method by Hassan & Li (2001), we propose an e-content educational learning platform named Anateks Flexi (AF) which is developed to complement the existing learning method for the FL students. Using the common and user-friendly technology, students have access to the recorded FL Google Meet class sessions for easy and repeatable viewing. Apart from that, additional e-content learning materials via Anateks platform namely website, Youtube and Google accounts is also made available to complement the scheduled class sessions. The e-content material covers eLecture video collection, introductory educational videos, eSlides eSeminars and eCharting. Anateks Flexi e-content platform suits the FL students well as student is able to organize their busy time with the learning part at their convenience. At the end, Anateks Flexi tries to make the FL students at par with the FT students in terms of learning experience within the constraints of FL online learning course.**

***Keywords*—e-content, flexible learners, ANATEKS, technical analysis, charting**

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Mobile Application for Blood Donation using Geolocation and Rule-Based Algorithm

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JM040 – Innovation – Local – Category C: Students - UiTM Melaka

***Abstract*—Blood is a very important resource for humans because it acts as a medium for carrying the oxygen and nutrients to all other parts of human bodies. Blood demand continuously rising due to a lot of factors such as accident, disease, and research purpose. The issue is that the blood donation process will take time and is it hard to know whether the individual can donate their blood or not. To make sure that the supply of blood is enough to cover the demand, the Easy Blood application will be developed to make the blood donation process more efficient and faster. The geolocation technology was chosen to help the blood donor or people who need the blood to know the location of people who need the blood and blood donor. Besides, the rule-based algorithm is estimated to make the blood donation process goes efficiently by filtering the characteristic so that only suitable donor can donate the blood. Iterative Waterfall model that consisting of requirement analysis, design, system development, testing, and documentation helped the process of developing the application effectively because it consists of step by step process. If there are flaws found in any phase, the process can be reversed so that the problem can be solved. The application was tested using functional testing by three lecturers and everything are working. Last but not least, the application can be improved by implementing the machine learning that can help to predict the blood donor behavior and also the timing of the blood shortage.**

Keywords*—Blood Donation, Geolocation, Donation Process, Rule-Based

i-JaMCSIIX Exploring ideas 2021
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Handling Depression, Stress Or Anxiety through Game-based Cognitive Behavioural Therapy

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JM041 – Innovation – Local – Category C: Students - UiTM Melaka

***Abstract*—Mental health as described by the World Health Organization, is a state of well-being where the person knows his own ability to function efficiently and productively to bring significant contributions to his community. Unfortunately, some people have poor mental health compared to others. The three main mental health issues are depression, stress and anxiety. Previous study found that adolescents refuse to seek therapy for their mental health issues because of a number of reasons. These include traditional therapy is time consuming, embarrassment of going to traditional therapy and lack of motivation to do daily tasks including social activities. Therefore, these reasons are good enough for this project to be developed. The objectives for this project are, to design a storyboard on Cognitive Behavioural Therapy (CBT) game, to develop a 2D CBT computer-based game and to evaluate the game's effectiveness in helping or reducing the teenagers' depression, stress or anxiety after playing the game. As the project methodology, Rapid Application Development (RAD) was used. The evaluation that was used to measure the effectiveness of the game is the DASS-21 pre-test and post-test questionnaires followed by the Therapeutic Game Design Model questionnaire. According to the project's findings, adolescents agree that this game is effective in helping mild to moderate depression, stress or anxiety. As for the game's future work, other features can be implemented into the game to make the game better such as developing the game in other language which is Malay and implementing other beneficial features that can help improve the game.**

***Keywords*—Depression, Stress, Anxiety, Cognitive Behavioural Therapy,**

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E-Grocery Application with Geolocation and YOLO Algorithm

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JM042 – Innovation – Local – Category C: Students - UiTM Melaka

***Abstract*—Online grocery becomes more popular nowadays because people can purchase groceries without going to the physical store. There are several online grocery applications such as BungkusIt and HappyFresh. However, most of these applications only deliver groceries to some areas, especially in the city. At the same time, people in rural areas do not have access to use their applications. Other than that, the delivery of groceries is still a challenge for this business. Sometimes, the grocery delivery does not arrive on time, or the customer is absent while delivering the groceries. Furthermore, people become busier with work that they do not have much time to think about the cuisine they want to cook. It is essential to provide new platforms that benefit the user and are more convenient to use. The objective of this project is to develop an E-Grocery application using geolocation and YOLO algorithm. The users can store their groceries' stock in the system using the YOLO algorithm. The implementation of geolocation in this project is to solve the delivery issue; hence, the user will be aware of the courier's location during grocery delivery. E-Grocery application will provide a wide selection of ingredients and allow the customer to plan and manage their own groceries as a checklist. Waterfall model consists of requirement analysis, design, implementation, testing and documentation that helped the application to develop effectively. The application was tested based on the user interface, system effectiveness and overall usability for both the customer and owner of the store.**

***Keywords*—E-Grocery, Geolocation, YOLO Algorithm**

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Web-Application for Securing Message using Steganography with LSB Algorithm and Hybrid Encryption

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JM043 – Innovation – Local – Category C: Students - UiTM Melaka

***Abstract*—Web-Application for Securing Message using Steganography with LSB Algorithm and Hybrid Encryption is a web application that encrypt the messages user input and hide it in an image file to give an utmost security for the messages to be delivered and received. This web application was developed for any users especially for the company who wished to send a confidential message without worrying of being compromised by man-in-the-middle attack or internal attack. The output of the image file that embedded with the messages were sent to the drive or cloud so, that anyone can access it but only can be accessed by those who have the password. The application also features decryption. The benefits of using this system are that messages hidden will be unbeknown and unsusceptible to be stolen since the it was hide in an ordinary looking file which is an image. Even if managed to be decrypt the steganalysis, the hybrid features of encryption will surely hinder or slowing it greatly to be decrypted. In term of security, it can be said to be impenetrable.**

***Keywords*—Encryption, Steganography, LSB Algorithm, Data Security**

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Web-Based Science Lab Inventory System for Faculty of Pharmacy in UiTM Bertam

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JM045 – Innovation – Local – Category C: Students - UiTM Melaka

***Abstract*—Inventory can be either raw materials, in-process goods, or finished product. Business inventory is always in large numbers therefore to manage and keep track of every inventory; a systematic system is needed to avoid from any shortage or surplus problems. However, university laboratory also such as Faculty of Pharmacy in UiTM Bertam owns an inventory that keeps all apparatus and chemical substances for students' experiments usage. The process of keeping inventory is still being managed manually. Assistant science officer adds and updates the inventory manually. This can lead to problems like data inaccuracy when adding and updating inventories. Moreover, to use the inventory, lab assistant must fill a form and submit it to assistant science officer, which takes long time to wait for approval. Moreover, there is no notification to notify assistant science officer about expired and low quantity inventory. With these problems, objectives are made that is to gather and analyze requirements from stakeholder, to design and develop Science Lab Inventory System for Faculty of Pharmacy in UiTM Bertam. The system was developed based on the waterfall model that only involved three phases: requirement gathering and analysis, design, and implementation. Each phase has their activities and deliverables done to accomplish the objectives. Interview are conducted with the stakeholder to identify the problems, collect requirements, and documented in Software Requirements Specification (SRS). Diagrams are constructed and documented in Software Design Document (SDD). Subsequently, a web-based system named Science Lab Inventory System for Faculty of Pharmacy in UiTM Bertam is developed.**

Keywords*—*Inventory system, waterfall model, web-based system

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Dental Treatment Orientation for Children using Role Playing Game

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JM046 – Innovation – Local – Category C: Students - UiTM Melaka

***Abstract*—Dentistry is the act of practicing the diagnosis, prevention, and treatment of diseases, injuries and disorders of the teeth and surrounding structures of the oral cavity. Some children get too anxious at the mention of dental treatment as well as lack awareness about the importance of dental health making dental visits hard work. The goal of the developed game is to help the children reduce their fear of going to the dentist by demonstrating the procedures via enjoyable orientation using the Role Playing Game. Modified Waterfall Model has been chosen as the methodology for this project thus the project development was flexible as few tasks were conducted concurrently. Game elements such as challenge, rule, reward, theme, and progress are employed in the game. The genre of the game is Role Playing Game where the player controls a character to accomplish a few missions during their trip to the dentist. Usability testing for the developed game involves six participants. The result of the test shows a positive result as most of the participants enjoys the game and satisfied with the content of the game stating that this game managed to reduce their anxiety about going to the dentist. However, the majority of the respondents requested more missions and mentioned that the instruction in this game can be quite unclear. Further enhancements can be added to the game like adding multiplayer function and character customization features. To conclude, the game has been successfully designed, developed and tested therefore achieving all the objectives of this project.**

Keywords*—*role playing game, game mechanism, dental treatment, anxiety, children

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EZ Forecast 2.0: A System of Univariate Models

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JM047 – Innovation – Local – Category B: Professional (Other Institutions) -

***Abstract*—The process of analysis that is performed using past and present data is known as forecasting. It involves the analysis of trends for future predictions. Forecasting helps an organization to cope with future uncertainties. However, forecasting techniques involve complex tasks. In EZ FORECAST 2.0, data forecasting is made easy as the system is developed to be user friendly where the user only needs to key in the data set and the analysis will be done automatically by the system. An upgraded version of EZ FORECAST 1.0, a system of univariate modelling techniques is introduced to forecast and evaluate the best techniques identified by the time series model. This new system is proposed to recommend the best model of the data. This system assists the decision-maker in forecasting the time series data accurately and systematically. The objectives of this system are: (1) to monitor the performance of the time series data set using a univariate model, (2) to forecast the time series data set one step ahead, and (3) to propose the best model based on minimum error measures. There are five methods used in this system which are Naïve Forecast, Naïve with Trend Forecast, Single Exponential Smoothing, Double Exponential Smoothing, and Holt's Method. Real-life data from a Food and Beverages (F&B) company is used to demonstrate the effectiveness of the system. The findings show that the system is able to recommend the best model with forecasting values which has minimum error measures. This system benefits an organization by providing valuable information that helps the top management to make decisions on the future direction of the company.**

***Keywords*—forecasting, time series, univariate model**

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Farm Feeder Helper

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JM048 – Innovation – Local – Category C: Students - Higher Institution (Diploma/Bachelor)

***Abstract*—Farmed domestic animals usually lives in cramped and filthy conditions with insufficient food, and drinks in enclosed areas. Instead of treating them as living beings, the modern industrial way in which this industry produces dairy and other animal products has turned them into mere production units. In this project, the animal will get its food based on the preset time in the programming. Other than that, it will ensure that animals in the farm will kept hydrated by providing enough water all the time inside the farm. Additionally, this project also ensures that the air inside the farm will remain fresh and clean from any unpleasant smell that have been produced by the animals inside the farm. As the result, animals in the farm will live a good life and act as the base in generating quality product in the future, as well as helping farm owners to control feeding time. This project utilizes the use of Arduino microcontroller to control the conditions in the farm by controlling proper ventilation system, feeding water level and appropriate feeding time. Both motor servo and exhaust fan are used to supply water and expel smelly odors respectively to achieve the optimal condition in the farm. Necessary informations are displayed on the Liquid Crystal Display (LCD) unit.**

***Keywords*—Farm animals, Arduino, gas sensor, feeder**

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PictoEZodit

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JM050 – Innovation – Local – Category A: Professional (UiTM Melaka) -

***Abstract*—Learning auditing as a theory subject for accounting students can be very dull and mundane. The audit theory is commonly memorized by students from textbooks which is textual and challenging for the students to apply into real case scenarios. However the students have not yet been exposed to the audit working environment, hence lack knowledge of how to apply audit theory in practice. As a result, PictoEZodit was created as an interactive educational tool to address this issue. This "comic strip" makes use of visual images mostly pictorial as a learning tool and designed to be used in both offline and online classrooms. As such, PictoEZodit intended to create harmony between theoretical learning and the real working environment of auditing practices.**

***Keywords*—audit education, e-comic, interactive**

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Water Quality Assessment – River Trail Project of Pusat Asasi, UiTM Dengkil

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JM052 – Innovation – Local – Category B: Professional (Other Institutions) -

***Abstract*—Environmental sustainability is one of the important agendas in the development of the community and the country. In supporting the Sustainable Development Goals initiatives, the pilot project consists of environmental appreciation development activities involving the students and academician has been organized in the river tributary beside Pusat Asasi, UiTM Dengkil that flows to the Langat River. This preliminary project consists of water quality assessment for the river trail project which has been conducted on-site. The parameters of biochemical oxygen demand (BOD), chemical oxygen demand (COD), pH, temperature, and ammonia-nitrogen have been determined to evaluate the water quality index (WQI) of the wastewater treatment plant and the river beside Pusat Asasi, UiTM Dengkil. From the results obtained, the river classification has been studied as polluted. Moreover, rehabilitation is considered to improve the water quality in the river. Additionally, extensive wastewater treatment is needed to enhance the quality of the effluent discharge into the river. This proposed work on the river trail project will later be exposed to the surrounding community. At this stage, living lab concept can educated the students of Science, Technology, Engineering and Mathematics - STEM on the sustainable management in comprised with environmental engineering education. Thus, in introducing the student on the SDGs 6 that is clean water and sanitation for all.**

***Keywords*—Sustainable development goals; river trail project; water quality index**

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Social ThisCanSync

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JM053 – Innovation – Local – Category C: Students - Secondary School

***Abstract*—The problem is related to the obstacle of controlling students who are so active in the classroom during projects or discussions where the teacher is unable to control the movement of students who are feared to be able to intrude on other students' social work. Social distancing is a worrisome for the great risks of infection and transmission of COVID-19 outbreaks. Thus, this innovation is to resolve the challenges a teacher faces in keeping active students engaged in the classroom. The innovation called SOCIAL ThisCanSync was installed in one class using Ardunio kit and also tools that combined NOD MCU, buzzer, LDR and LED to complete the functionality of the system. The idea of this innovation is taken from the thief trap tool that is often used to detect thieves who violate laser light. Since social distancing plays an important role, more user-friendly applications of the innovation will be built in the future. The production of this innovation can be mass-produced and be used throughout Malaysia to maintain social distancing especially during the Pandemic COVID-19 which is increasingly worrying and we are still battling it.**

***Keywords*—Distancing, Social, Active, Control, Sited**

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i-CHEMTORIALS
(Interactive Chemistry Tutorials)

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JM054 – E-content – Local – Category B: Professional (Other Institutions) -

***Abstract*—For decades, the traditional teaching and learning using textbooks and Power Point point slides is very popular in universities and colleges. However, this approach is not the best teaching method, especially for subjects that require critical concepts thinking. Due to the outbreak of the COVID-19 pandemic, many schools, colleges, and other educational institutions have embraced online education platforms for lecture but the students' lacking in performing the tutorials after the online class due to not enough time and not effectively to guide the students during online lecture. Therefore i-CHEMTORIALS is an educational approach to motivate students to learn by using video tutorial design and game elements in learning environments. In this project, the development of gamification-incorporated learning is introduced in the General Chemistry course. It allows students to perform interactive activities like attending a test, answering the tutorials, working on a chemistry calculation, and more in a virtually connected classroom. A treasure hunt game was implemented using Kahoot, Prezi and Quizizz application. This approach is capable of involving students directly in immersive learning experience such as group discussion. Perceptions and feedback from the students were obtained through questionnaires and reflective assessment. It can be concluded that at the end of the project, the content development in i-CHEMTORIALS has been successfully developed to increase the students' participation and engagement in this limitless and dimensionless new norm era. However, it can be further improved by adding more features for more enjoyable game and learning experience for students.**

***Keywords*—i-Chemtorials, gamification-incorporated learning, Kahoot, Prezi**

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Stray Animal Complaint System Using Geolocation Technique with Rule-Based Algorithm

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JM055 – Innovation – Local – Category A: Professional (UiTM Melaka) -

***Abstract*—In this current age, the world has become modernize with the advancement of technology, and with it, more countries are adapting to the ever-increasing technology trend. Subsequently, local council are also keen to veer towards this adaptation by introducing more technologically based type of services such as parking system using mobile application. Hence, this project is aimed to deal with issues in a more focus environment namely the stray animal issues in local community. Stray animal has become a nuisance to local community and in some cases, the result was fatal. Moreover, the increasing number of stray animals made the issue even harder to be kept under control. Therefore, this project intended to provide a better platform for local neighbourhood to file their complaint and the local council to address the filed complaint. Mobile application is chosen to be the main platform for the project, as it is much faster for the community to file a complaint as soon as a stray animal issue is noticed. In addition to that, geolocation technique is implemented to provide a better information in terms of the complainant's location, and together with the utilization of a rule-based algorithms based on priority to provide the local council a better insight on the issue. Although more development is still needed for the project, initial testing shows that local council are able to provide a more efficient service to its local neighbourhoods by using the Stray Animal Complaint System mobile application.**

Keywords*—mobile application, stray animal, geolocation, rule-based algorithm

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Chemical Composition and Biological Activity of Momordica Charantia (Bitter Melon)

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JM056 – Innovation – Local – Category C: Students - Higher Institution (Diploma/Bachelor)

***Abstract*—Phytochemical analysis and biological activities of Momordica charantia have been studied. Two parts of plant were used in this study such as fruit and seed. Plant sample has been extracted by using three different polarity of solvents such as n-hexane, chloroform and methanol through the cool extraction method. The result has shown that the highest percentage yield was methanol fruit extract with 15.29%. The phytochemical analysis has revealed there are many secondary metabolites in M. charantia fruit and seed such as alkaloid, flavonoid, saponin, phenol, tannin, terpenoid, steroid and glycoside while for seed part saponin was absence. Antibacterial study has been conducted by using disc diffusion method on Bacillus subtilis, Staphylococcus aureus, Salmonella typhimurium and Escherichia coli. In addition, the result has shown that the highest inhibition zone for fruit and seed was on Staphylococcus aureus in the range of 16 to 17 mm. Meanwhile, the antioxidant study revealed that the fruit and seed of M. charantia do not have antioxidant activity with percentage inhibition less than 50%. The results of this study conclude that M. charantia extract contains medicinally important bioactive compounds with efficient biological activities.**

***Keywords*—KEYWORDS: Momordica charantia, Chemical composition, Antibacterial, Antioxidant**

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DanauMas Apartment Complaint Management System with Email Notification

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JM058 – Innovation – Local – Category C: Students - UiTM Melaka

***Abstract*—Danaumas Apartment is a high-density medium rise building located in Shah Alam, Selangor. This apartment is managed by Joint Body Management (JMB). DanauMas Complaint Management System with Email Notification is a project that is develop for the resident to submit the complaint and help the employee of JMB DanauMas to manage the complaints. The problems that face by the JMB DanauMas which are the complaint received by the resident are not properly recorded and well managed by the JMB DanauMas, the process taken a lot of time and difficulties to notify the complaint status. In order to help the JMB DanauMas in managing the summitted complaint and for resident to have an online complaint system, a web-based system named DanauMas Apartment Complaint Management System with Email Notification to be developed in order to minimize the current problems. From that, the objectives are to gather and analyze the requirements need for DanauMas Apartment Complaint Management System with Email Notification, to design a web-based complaint management system with email notification for DanauMas Apartment using the data gathered, to implement and develop DanauMas Apartment Complaint Management System with Email Notification. The methodology used in order to complete this project is Waterfall model which consist of requirement gathering and analysis phase, design phase and implementation phase. Based on the findings, 14 use cases are created with 2 actors for the system. Each of the phase have their deliverables that are finished, the problems are being solved as well as objective are achieved.**

Keywords—complaint management, generate report, web-based system, email notification

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LIMA SEKAWAN: An Entrepreneurial App Based Introductory Tools For Kids

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JM059 – Innovation – Local – Category A: Professional (UiTM Melaka) -

***Abstract*—Entrepreneurship is an essential element in the modern economy. It has become a buzzword, especially in education development at the elementary level. Understanding the needs to equip children with the basic knowledge on the concept of risk, economy and entrepreneurship, we developed an application-based tool to enhance children's' perspective of entrepreneurship as a whole. Some of the skill that needs to be emphasised is problem-solving, desire to make money, customer service, tenacity, creativity, leadership, and networking. Teachers and parents should play an important role in children's development. Based on interviews with kindergarten teachers, they acknowledged that the lack of teaching aid and resources was why kids could not explore the art of entrepreneurship. This project aims to create and introduce entrepreneurship skills to the children in kindergarten and instil interest. This applications-based method will help the children understand entrepreneurship's essential skill, such as the value of money and the concept of economy and risk. Children can also explore the idea in their own time by watching videos in the applications. The applications will also be used to attract children's attention and provide parents with alternative learning content.**

***Keywords*—Application, Entrepreneurship, Children, Risk and Economy**

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Adapting a Concept Map Model in Teaching and Learning History Subject

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JM062 – Innovation – Local – Category B: Professional (Other Institutions) -

***Abstract*—People learn much better from words and pictures. An effective way to introduce new scientific terms and to explain process flow is very important. Concept mapping allows students to understand the relationships between concepts and the domain. Multimedia offers great advantages to enhance learning environment and good knowledge representation technique to represent history facts in a visual and graphical form. Therefore, this research proposes a multimedia teaching and learning prototype that applies concept maps for history subject. It helps to facilitate history learning process subject as this subject requires students to imagine and memorize facts, concepts and process in order to understand the subject. The objectives of this research are: (i) to design a multimedia prototype application for teaching and learning history subject for secondary school, (ii) to apply concept map design in the teaching and learning module for multimedia prototype application and (iii) to evaluate the effectiveness and the usability of the prototype application. This research used ADDIE, a standard methodology in multimedia application development. A testing has been conducted to evaluate the effectiveness and the usability of Multimedia Teaching and Learning History subject. The finding shows an increment in the average test score of the experimental group which is 85.5% as compared to the control group. The novelty of this research are: (i) a subject concept can be demonstrated through the linkages connection between subtopics and (ii) new knowledge of few animated concept map design can be described.**

Keywords*—*teaching and learning, multimedia application, concept map, hierarchy, history

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A Study on Factors Toward Household Willingness on E-Waste Recycling in Seremban

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JM064 – Innovation – Local – Category C: Students - Higher Institution (Diploma/Bachelor)

***Abstract*—E-waste recycling is a method of recycling electrical and electronic equipment as e-waste may harm the environment and human health if it is not discarded properly. The amount of e-waste generated in Malaysia has increased over the years due to rapid increases in technology and economic development. Many households have irresponsible attitude and are not committed to e-waste recycling even though they have knowledge and awareness of e-waste. This study focuses on psychological models, econometric models and demographic variables to measure e-waste recycling behaviour based on the Theory of Planned Behaviour (TPB) theoretical framework of previous studies to explore factors related to household willingness on e-waste recycling through an online questionnaire survey distributed to Seremban households. Based on the empirical analysis of 226 valid online survey responses from Seremban households, the results show there is a significant positive correlation of attitude, subject norms and perceived behavioural control over the willingness of Seremban households to participate on e-waste recycling. Next, researchers further analyse the moderating effect of income on economic motivation and also moderating effect of education level on subject norms. The findings of this study show that only attitudes have an impact on households' willingness to recycle e-waste and, in contrast, the moderating effect of income on economic motivation and education levels on subject norms is not significant, indicating that they have no impact on households' willingness to participate in e-waste recycling. Finally, it is recommended to promote and enhance e-waste recycling in order to support households in the recycling of e-waste.**

Keywords*—*E-waste recycling, moderating effect, household willingness, regression analysis

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i-HADIR

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JM066 – Innovation – Local – Category C: Students - Secondary School

***Abstract*—I- hadir system was built using an id and a password to record students' presence to school, performing congregation prayer, the use of computer laboratory and library. The system assists the data collection process and could produce various types of statistics and report based on the information that have been recorded or saved in the system. Before the system, teachers took longer time to record students' presence, participation in prayer and the use of special rooms as it was done manually. Besides,the system helps teachers to handle students' disciplinary problems because it is placed in the school entrance way. Students need to pass this way to log in. The most obvious result is it helps to overcome the absence problems at school. It could also help teachers to fill in students' presence report in APDM system on time. The problem where students do not perform prayer could also be easily identified. In conclusion, i-hadir system that will be built will be a big assistant in reducing teachers' work loads and making their jobs easier.**

***Keywords*—iHADIR**

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iMAJALAH

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JM067 – Innovation – Local – Category C: Students - Secondary School

***Abstract*—i - majalah is the latest school inovation.It is combined with conventional magazine and e - majalah, which is corresponds to the 21st century where everything is at your fingertips. i - majalah is a cooperation between ict unit and school pss unit . Either students or others can browse i - majalah easily because it is available on the school website. i - majalah is also available in the form of an apps and will be updated once a year by ict team on our school website . For students whom do not have telephone , our school lobby provides computers for students to browse i - majalah or they can browse them in the school computer lab . It can save costs because it does not use software and save the environment . The difference in i - majalah compared to conventional magazine is that it has tv pss semarak which is our school youtube channel . In conclusion , i - majalah is very useful not only to students and teachers but also to others as well, because it can be used anytime and anywhere**

Keywords—iMAJALAH

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iREPORT

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JM068 – Innovation – Local – Category C: Students - Secondary School

***Abstract*—i-report System is a system for the school prefects to send daily duty reports to the school managements, discipline teacher and school discipline secretary virtually. This system will facilitate the school managements to keep track of disciplinary problems at school effectively and instantly. This system also enables the school prefects to share their reports among each other individually or as a whole group. The use of this system enables the school prefects to remain anonymous when making reports of any disciplinary problems. The reports filed by the school prefects will be saved in a database. Consequently, i-report will help in reducing disciplinary problems at school.**

Keywords—ireport

i-JaMCSIIX Exploring ideas 2021
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An Intelligent low cost IOT-monitoring system for solar energy application

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JM069 – Innovation – Local – Category C: Students - Higher Institution (Diploma/Bachelor)

***Abstract*—An Intelligent low cost IOT-monitoring system for solar energy application is a more sophisticated monitoring solution that allows users to access logged and real-time data for daily measurements of solar panel parameters and battery system such as voltage, current, power, light intensity, and temperature. These data provide greater insight into energy use and development, which is useful for troubleshooting faults and triggering alarms when a fault occurs. Traditionally, data monitoring requires personnel to manually evaluate the system conditions in order to obtain data during the inspection process. Furthermore, existing systems suffer from a lack of automated data collection and transitioning to an internet-based monitoring system becomes burdensome due to the high cost of system upgrading and maintenance. As a result, it is critical to be able to remotely monitor the solar photovoltaic and battery parameters to reduce the time and costs associated with site visits. This project presents the development of an internet-connected monitoring system for solar panel and battery system using Arduino as the microcontroller and an open source Grafana dashboard programme to pull all collected data into a private webpage and database system for ease of visualization. The proposed project's usefulness is to provide a continuous monitoring system that can be tracked remotely and evaluated on a regular basis to ensure smooth, reliable, enhanced performance, and timely maintenance. The proposed innovation has commercialization potential not only in the energy sector, but also in the manufacturing industry, where remote monitoring of equipment is often regarded as part of the maintenance plan.**

***Keywords*—solar photovoltaic, internet of things, visualization, energy monitoring**

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PEFE (Plant Eco Friendly Energizer)

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JM070 – Innovation – Local – Category C: Students - Secondary School

***Abstract*—PEFE also known as Plant Eco Friendly Energizer is a great innovation that is beneficial. The primary aim of PEFE is to produce electricity naturally. This product inspires many to use eco-friendly products to help save the planet's resources. PEFE is a great product to aid the country's economy and at the same time it leads Malaysians to live in a more sustainable environment as well as preserves the environment and lives of living things. How does PEFE works? Living plants in microbial fuel cells can generate energy. How does that work? Plants photosynthesize organic matter using solar energy. A significant part of this organic matter is released into the soil. There electrochemically active micro-organisms break down the organic matter producing electrons which are transported to the anode of the fuel cell. The energy rich electrons flow through a load to the cathode to generate 24 hours per day electricity. PEFE is designed in such a way that it has many advantages to the users as well as the environment. The advantages of PEFE is it produces and saves electricity as it benefits everyone in the saving of energy. It is also an eco-friendly product which does not pollute the environment and prevents global warming and greenhouse effect. PEFE also improves indoor air quality and has a longer life span to electrical appliance.**

Keywords—Today's wastage is tomorrow's shortage

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An Intelligent of ANN towards Agarwood Oil compounds pre-processing based on stepwise regression method to improve the oil quality

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JM071 – Innovation – Local – Category B: Professional (Other Institutions) -

***Abstract*—This paper presents the performance of Artificial Neural Network (ANN) application towards the agarwood oil quality classification. The works involved the selected of agarwood oil compounds based on a feature selection technique. The compounds are selected based on using Stepwise Regression technique. The compounds identified by stepwise regression are β-agarofuran, ϒ-Eudesmol, Longifolol, and Eudesmol. These compounds are fed into ANN as input feature and the output is the quality of the oil either high and low. Three classifier algorithms; Scaled Conjugate Gradient (SCG), Levenberg Marquardt (LM) and Resilient Backpropagation (RBP) and ten hidden neurons in the hidden layer are implemented. The performance of ANN is measured using confusion matrix, mean square error (mse) value and number of epoch. The finding showed that the ANN using four compounds of agarwood oil as input features obtained good performance with a good accuracy, lower mse value and lower number of epoch in one hidden neuron.**

***Keywords*—artificial neural network, stepwise regression, confusion matrix, mse, epoch**

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Intelligent Teacher Bot

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JM072 – Innovation – Local – Category C: Students - Secondary School

***Abstract*—Nowadays the world's famous companies are using chatbots to improve communication and deliver information to customers. They proved to be very successful and increased their productivity up to 50%. Can we achieve same effects in education? Education bots can communicate with students about a wide range of topics and deliver information's at anytime when needed by students. Although this tech won't replace teacher's role in education just yet, it serves as an alternative to traditional education. With the emerging of digitalization of education, chat bots will play a vital role in education in the near future. With this in mind we create a chatbot mobile apps named "Intelligent Teacher Bot" to help teachers and students to deliver and receive information effectively. It can be downloaded by our students from Google play store. Our bots are very flexible and easy to use. Teachers can easily update the content of bots online and able to learn the need of students from the questions asked to chatbot by students. The chatbot are build based on our school background and needs, but they can be customized to suit any institution. From our survey , it is found that students able to remember better and felt more comfortable learning from chatbots. From the students feedback too, it is found that students are able to ask these bots questions about the topics they study in school and get instant answers. They felt that the chatbot functions as their personal tutors who can inspire and guided them.**

Keywords*—*Intelligent Teacher Bot

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AVORANGE Facial Mask

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JM073 – Invention – Local – Category C: Students - Primary School

***Abstract*—Nowdays due to environmental pollution,healthy skin has become a big challenge for both women and men. Sometimes it may seem like our skin is impossible to manage.Most of them are affected by dry skin, oily skin and acne. If we these are unavoidable, we have to repair our skin with nontoxic and organic products. Natural, organic facial mask and products with antioxidants can help lessen the damage to our skin. In our invention, we have produced a facial mask named 'Avorange Facial Mask'. Basically, this mask is made from avocado, orange peel powder and tapioca powder. Avocado has nourishing oils which help to smooth wrinkles and improve the elasticity of skin. Avocados also are rich in potassium and fiber .In addition, they contain several plant-based nutrients.On the other hand, orange peel has high content of citric acid which aids in skin exfoliation and helps to dry out acne. In fact, in the case of oranges, just the peel has way more Vitamin C than the orange itself. It also works as a skin lightening agent and can do wonders for marks on the face and pigmentationThe combination of trio can help skin to glow and blemish it. This product comes in the form of dried mask where one only needs to add a little water on the face beforehand. Later the mask need to applied on face and let it dry for 15 minutes, then peel it off. This mask should be used twice in a week for better results.**

***Keywords*—Avacado, orange, hydrating**

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NEEMON Air Purifier and Cooler

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JM074 – Innovation – Local – Category C: Students - Primary School

***Abstract*—It is a well-known fact that the world is getting hotter. Temperatures around the globe have been ascending ever since the start of Industrial Revolution. The increase in temperature has been impacted our day to day routine very much. Since the invention of the air conditioner, we have been able to control the weather inside our home. Air conditioners can truthfully be a life saver in helping to battle hot weathers. There's nothing like controlling our climate control system following a difficult day at work, and feeling the cool air at the same time. However, regardless of whether you're a devoted client of your forced air system, or simply divert it on occasionally, it's acceptable to be aware of everything about what your forced air system might be doing to your wellbeing not to mention the amount of money needed to invest to own one. Hence the aim of this experiment is to make a homemade air purifier and cooler so that we would feel comfortable at the same time to opt for healthier and cheaper version of air purifier. By conducting this experiment, we were able to invent a portable homemade air purifier and cooler using neem ice cubes to emit cool and healthy air. This self made air purifier also does not get clogged or dirty like a conventional air conditioner because it only uses neem ice cubes. One does not need least amount of electric source to battle hot weathers. It comes in handy anywhere anytime. It also recyclable. In an ordinary air purifier there is consistently a coolant and an apparatus which gives us cool air, so the function of the coolant is played by the neem ice cube which emits anti- bacterial and cool air while the hardware is played by the fan. This homemade air purifier and cooler does not only saves the nature from pollution but also can be utilised everywhere with a low cost budget.**

***Keywords*—NEEM, ANTI BACTERIA, COOLING**

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SUCANE BAGASSE

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JM075 – Innovation – Local – Category C: Students - Primary School

***Abstract*—Global warming is a huge concern right now, this has prompted the interest in increasing the usage of natural fiber in composite materials, with the progression of the time the source of natural fiber can be renewed unlike synthetic fiber. While there are a few drawback of natural fibers such as low impact strength, poor moisture resistance and degradation by microorganisms and sunlight could be overcome with the addition of glass fiber. Natural fibers are rich in cellulose, hydrophilic in nature due to this natural fiber are vulnerable towards water absorption properties. Water absorption causes swelling in the fiber which reduces the dimensional and mechanical properties of the composites due to microcracks at fiber-matrix space. Besides that, due to hydrophilic nature of the natural fiber and poor fiber matrix, the interaction between the bagasse and this might cause cracking or debonding at the interference. Moreover, due to inhomogeneous fiber architecture, air entrapment is formed between the composite which contributes to the formation of voids. The significance of this study is to promote the usage of natural fiber instead of synthetic by creating a hybrid bagasse/glass fiber composite. Moreover, this new hybrid material can be used for outdoor purpose and can be used to fabricate materials with complex shapes. The fabrication of corrugated shape plate made out of hybrid bagasse/glass fiber composite using vacuum infusion. Besides that, we want to fabricate hybrid composite consist of natural fiber with lower absorption properties, high formability capabilities and high impact resistance.**

***Keywords*—hydrophilic,microcracks**

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B'NANA PLATE

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JM076 – Innovation – Local – Category C: Students - Primary School

***Abstract*—It is a combination of banana leaf and starch powder designed as a wrap plate that is capable of sustaining the taste and heat of the food and ensure that the food wrapped lasts longer with great banana leaf fragrance.There are several alternatives available when looking for eco-friendly food containers. Banana leaf has become the "green gold" of today's world because it has many beneficial qualities when compared to harmful and wasteful materials such as plastic.It's time to wake up to the green alternative that really is a planet saver, banana leaf.Banana Leaf is a highly renewable, natural material that has antibacterial, antifungal properties and is biodegradable as opposed to plastic. This pack is precise size and light in weight and able to maintain heat the food for up to 30 minutes. Banana Leaf Pack is a very eco -friendly packaging good for ensuring the freshness and durability of food as well as affordability. This pack is fully-made up of organic materials that will never be a waste product instead will decay which could be used as a fertilizer in the future. This provides an alternative way to reduce the usage of chemical fertilizers. Organic matter is a material that people use in gardens because of its carbon-based compounds. Moreover, banana leaves contain large amounts of polyphenols which are known as natural antioxidants.These antioxidant can be mostly found in plant-based foods. Banana leaves absorb the polyphenols which are said to prevent many lifestyle diseases and kill germs in food.**

***Keywords*—antifungal, polyphenols**

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PURIFIED WATER

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JM077 – Innovation – Local – Category C: Students - Primary School

***Abstract*—The motive is to prepare and design activated carbon filter for water filtration. Thus, to analyze filtered water from activated carbon water filtration system. As known, from burning coconut shell can produce activated carbon and it can be a filtration material that can be used as a filter. Activated carbon can be produced from several source of material such as coconuts, nutshell, coal, peat, and wood. In this study, coconut shells were used to produce activated carbon. Activated carbon water filtration is mainly used for several treatment purpose. Activated carbon is used to remove chlorine from the water. This process called dichlorification and it will absorb the chlorine. Reactivated filters should only be used in waste water treatment applications. Advantages of using AC is easy to install and maintain, efficient to remove certain organics. carbon or known as AC, are a very useful group of adsorbents, with capable for selectively adsorbing thousands of organic. Such as coconut shell, wood chip, paddy husk, and palm oil fruits. Because it is easy to get, eco-friendly or environmental friendly, biodegradable, renewable source of carbon and easy to manufacture. Even coconut shell is a purer form of carbon compared to coal and wood filters. Moreover, this activated carbon from coconut shell can remove chlorine, ammonia, objectionable tastes and odors found in tap water. It also reduce hydrogen sulfide and other contaminants. The major uses of activated carbon is for, indoor air decontamination, food industry, chemical and smelting industry, and for drinking water treatment.**

Keywords*—dichlorification, chlorine

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Paddyville: Learning Paddy Cultivation through Role-Playing Game

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JM080 – Innovation – Local – Category C: Students - UiTM Melaka

***Abstract*—Paddy cultivation process is a step-by-step routine that should be followed when planting the paddy plants. Paddy is important in Malaysia as it is the staple food for most Malaysia. To cultivate this important grain of rice, it needs a lot of passion and care. There are a lot of preparations and maintenance in the cultivation process. However, as important as it is, people are prompted to forget about farming when the country is developing so much every year. Buildings are built and houses occupied most of the lands. Younger people nowadays have become ignorant to the cultivation process of the rice they eat every day. Therefore, the purpose of this project is to design an informative game on the agriculture sector mainly the process of paddy cultivation called PADDYVILLE, to develop a Role-Playing 2D game application as a learning method on paddy cultivation process and to evaluate the acceptance of users in terms of enjoyment, experience, and knowledge as a result for playing the game. This game used Extreme Programming for its methodology because of how flexible it is towards changes. This game used ARCS Motivational model to evaluate the user acceptance while playing the game. The overall findings showed that the game manages to accomplish all the objectives. However, the prototype showed that there are plenty rooms for improvement. Recommendations can be referred to improve the game, such as by adding a money system to expand the game that allows user to buy and sell items.**

***Keywords*—learning, paddy, cultivation process, role-playing game, 2D-game**

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Score A Today

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JM082 – Innovation – Local – Category C: Students - Secondary School

***Abstract*—Beginning from 21st century, education is much importance in our life. The development of science and technology has been widely used in different fields. Flexible use of technology can bring a lot of convenience to our lives. So, why not we bring in technology to education with some interesting colours and creative elements. Our system has many learning materials can be found according to personal needs. In addition, the website also provides other students to contribute their own notes and exercises. All the information will be reviewed by the administrator and then released. Therefore, this learning system is very comprehensive and positive. After applying our system: - More students are willing to learn. – Students can learn all the time. - If you encounter problems in schoolwork, you can discuss with everyone. – Students and parents can more easily know the progress and understanding of students in classes. – Save time because our system is simple to use and complete. Our system will achieve this by: - Administrator prepared notes, quiz and studies videos for the beginning of our system. – Personal account with personal information. – Complete social/chat system, like attendance and progress learning form. - Submission system. – AI system to check and mark students work. If the system can be successfully developed, this system can benefit all students, teachers and even parents. The system will be improved and strengthened at the future.**

***Keywords*—Self Learning Apps**

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SOFS APP

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JM083 – Innovation – Local – Category C: Students - Secondary School

***Abstract*—SOFS APP or Solat Focus Smart Application is an innovation of application used during the performance of "solat" or prayer by Muslims especially in form of "Jemaah" or congregation . Conventionally we will see an "Imam" or the leader of a prayer referring to a big-sized Quran of 24" x 12" let opened on a stand before him to read verses of Al-Quran. With the invention of SOFS APP , the use of "Masyhaf" (Al-Quran) is optional. The imam can instead refer to a screen of a tablet or laptop placed in front of him to recite Al Quran. The app is also equipped with a remote for the "Imam" to turn on the pages. SOFS APP is actually an alternative to the use of Masyhaf (Al-Quran) during a prayer. SOFS APP is not merely a screen of Al Quran but a complete networking that connects the Imam to the "ma'mum" (persons who follow the leader to perform Solat) during the prayer or whoever using the QR code registered for the link . We normally see a person holding Al-Quran while performing a prayer to trace long recitation of Quran by the "Imam" . Therefore , with the use of SOFS APP, a "ma'mum" can just hold a smart phone . Even a late follower can just use a smart phone to read the QR code which is pasted at the "Solat Hall " and automatically it will detect the page read by the leader or "Imam". SOFS APP has obtained approval from Terengganu Mufti Department and this innovation is highly recommended to be used in mosques.**

***Keywords*—1. SOFS App 2. A complete networking 3. Innovation**

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Smart Ergonomic Scoliosis Preventer (SESP)

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JM086 – Innovation – Local – Category C: Students - Secondary School

***Abstract*—Scoliosis, a lateral curvature of the spine, is the most frequent deformity of the spinal column. It is additionally aggravated by the inadequate environmental conditions in schools, such as unadjusted furniture, teaching aids and most of all, school bag and bad lighting. Kementerian Kesihatan Malaysia (KKM) has warned parents to pay attention to their children if they seem to be developing an early onset of scoliosis such as child have a slight uneven shoulder level, a prominent hip to side, a rib hump due to the deformed ribs, or imbalanced musculature formation. These are the common symptoms for scoliosis. Scoliosis among children has never been widely been studied in Malaysia, but with a 2017 study done by the Malaysian Orthopedic Association in school children, has estimated roughly 2-5% of school children are prone to having mild or greater scoliosis, with warning that girls of 11-14 are at higher risk of developing scoliosis. Sitting posture is one of the factors which cause the children to experience the scoliosis at early age. Finding scoliosis early is important for treatment. If left untreated it can cause a lot health issues. However, there are minimal number of equipment or tool available for use which can alert us on our wrong sitting posture. Some existing tools are very expensive and many not affordable enough to be bought. The aim of this project is to design an ergonomic chair which can minimize the health problems by alarming the person to fix his/her sitting posture.**

***Keywords*—Scoliosis, posture, ergonomic chair, school children, health**

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My Interactive Digital Book (MyID Book) v2.0

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JM087 – Innovation – Local – Category C: Students - Primary School

***Abstract*—Reading books is the best way to enrich our vocabulary but the reading materials are too rigid with paper, picture and words. Games and gamification basis are the best method to attract students in learning with when offline and online resources are nicely blend under one roof. A book full with interactive activities is the best idea to counter most of the problems listed. Because of that reason, we build an android mobile app called My Interactive Digital Book (MyID book) to attract students to learn English in a super fun way. MyID book is focusing on vocabulary of zoo animals in colourful characters, interactive online and offline games, informative contents, language arts activities, Augmented reality and many more exciting features to explore! Download the full version here:**

bit.ly/myidbook

Keywords—reading games animals myid book

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Te-RACTOR 2.0

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JM088 – Innovation – Local – Category C: Students - Secondary School

***Abstract*—Te-RACTOR 2.0 is a smart seafood drying rack designated to help small entrepreneurs in producing and maintaining the quality of dried sea food namely salted fish and fish cracker or 'keropok keping'. It could detect the changes in weather and the presence of rain. Te-RACTOR 2.0 could work independently with minimal supervision. Te-RACTOR 2.0 is a machine which combining electronic and mechanical elements, equipped with solar panel, humidity analog sensor, rain sensor and Light Dependent Resistor (LDR) that have been attached to the drying rack. The rain sensor will detect the rainfall whereas the Light Dependent Resistor (LDR) will detect the changes in weather (light intensity). Solar panel functions as an alternative energy supply besides the electricity and Humidity Analog sensor helps the entrepreneurs to observe the changes of temperature/humidity. Te-RACTOR 2.0 is aimed to protect the sea products which are dried under the hot sun from getting wet when the rain falls suddenly so that the quality of the sea products could be maintained. Other than that, the production of Te-RACTOR 2.0 could help the dried sea food entrepreneurs to save their time, cost and energy and it is also an eco-friendly product.**

***Keywords*—Te-RACTOR 2.0: EFFECTIVE SMART DRYING- QUALITY MAINTAINED**

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Agarwood Oil Quality Classification Using One Versus All Strategies in Multiclass on SVM Model

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JM089 – Innovation – Local – Category B: Professional (Other Institutions) -

***Abstract*—Agarwood oil is one of the most beneficial oil to the world community with a high demand. However, there has been a lack of research on the development of agarwood oil because there is no any standard grading model of agarwood oil was implemented. With that, it is very important to come out with a standard of quality classification model for agarwood oil grading's. By continuing developing this standard, specific algorithm function has been used to make sure the ability of this model is totally not in doubt. Support vector machine (SVM) has been chosen as a main model and for the specific function algorithm was multiclass function. Then, in the function, the one versus all (OVA) strategies has been used. The analysis work has involving the data taken from the previous researcher that consists of four classes of agarwood oil quality's samples which are low, medium low, medium high and high quality. So, the output was the classification of quality between low, medium low, medium high or high quality while the input was the abundances (%) of compounds. The desk research has been conducted by using MATLAB software version r2020a for the simulation platform. The result showed that the model has pass the performance criteria standard. Based on that, the intelligent model has shown excellent performance with 100% of accuracy by producing 0.00 of error rate. The verdict in this research for sure will be valuable for the future research works of agarwood oil areas, especially quality classification part.**

***Keywords*—Agarwood oil, multiclass, one versus all, support vector machine**

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Get Help

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JM090 – Innovation – Local – Category C: Students - Secondary School

***Abstract*—Our project, Get Help not only provides help and services to those who need it but also provides job vacancies especially during this pandemic. Our website provides a wide range of services from plumbing to hospitality. Our website provides benefits to everyone including those who have lost their jobs to become part of our project simply by heading to our website and filling up a registration form based on their respective fields. Through this project, citizens will be able to put their skill into use. Get Help website has multiple tabs for specific purposes such as, information about us, provided servicer and job application forms. Our website can be accessed by anyone irrespective of gender, social status and race at anytime. Most importantly, the design of the website is made user friendly and it wouldn't be a hassle to access.**

***Keywords*—Provides both services and jobs.**

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Let's Spell it Right (LeSPIR)

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JM091 – Innovation – Local – Category C: Students - Primary School

***Abstract*—Let's Spell It Right (LeSPIR) Digital Spelling Application is an innovation on enhancing year 4 pupils sight words recognition as a way of improving pupils' skill in spelling. Most pupils tend to misspell words during spelling activity. Misspelling of words occurs because pupils did not recognize the words spelling structure or also known as orthography. This innovation aimed to identify the effectiveness of LeSPIR and pupils' interest in using LeSPIR. Participants are required to use the application by spelling different words by arranging letters correctly throughout the action. The words used in the application are selected from the common words in the textbook and are listed according to different categories. Pupils also used the dictionary, audio and quiz which is built in with the application to help them complete the spelling. After four times using LeSPIR, participants were able to spell words correctly by recognizing its spelling structure and they enjoyed using the game. Overall, the impact of using LeSPIR enabled pupils to reduce errors in spelling. For further improvement, it is suggested that pictures can be used when introducing words to pupils so that the spelling structure of those words can be recognized accurately.**

***Keywords*—LeSPIR, sight words, spelling, spelling structure**

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Green Putrajaya

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JM092 – Innovation – Local – Category C: Students - Primary School

***Abstract*—Green Putrajaya is a mobile application designed to improve the quality of waste management in Putrajaya and to give awareness to the Putrajaya community on the importance of waste management. Around 16,000 tonnes of waste produced by Malaysian on a daily basis, with the number keep increasing from day to day. The same thing happened in Putrajaya where lots of waste was produced in a day which caused illegal dumping. Thus, Green Putrajaya is designed to improve the quality of waste management and to make the community aware of the importance of waste management. Green Putrajaya is built with Putrajaya as a city model as the innovation focuses on the Putrajaya community. The application introduced a Recycle Centre locator for users to easily recycle their rubbish and My Bin for users to schedule their home dustbin waste collection and cleaning with service providers. Also, there are games and videos to give awareness to users on the importance of waste management. This application can be installed in most smartphones and tablets which can give easy access to the community towards proper waste management. Green Putrajaya can be commercialized to all its community since the application can easily be accessed from Google Play. The application can be improved by collaborating the application with other main services like instant delivery and postage which would be more beneficial to the Putrajaya community.**

***Keywords*—Green Putrajaya, waste management, waste, Putrajaya, mobile application**

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Genius Steam- Plant

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JM093 – Innovation – Local – Category C: Students - Primary School

Abstract*—Facing the global challenges of the industrial revolution 4.0 (RI4.0) has impacted the educational landscape today. The Internet of things (IoT) became the gauge for RI4.0 by expanding the use of the internet as a whole. The application of Science, Technology, Engineering, Mathematics (STEM) in the curriculum is the best platform to bring students together to explore the wonders of the world without limits with teacher guidance. In the context of primary school education, I like to integrate the elements of art into STEM making the concept of Science, Technology, Engineering, Art, Mathematics (STEAM) as an approach that more animates the concept of entertainment. However, the concept of STEAM is too broad to be digested by primary school students. Limited existing knowledge makes lesson content difficult to link to STEAM effectively. Based on the issues that have been raised, the STEAM Genius innovation has been built to link learning content with STEAM in detail. As the starting point of the STEAM Genius innovation, the plant title was chosen to explore how plants are viewed from a STEAM perspective. STEAM-Plants Genius is an android app that revolves around science in plants, technology and engineering in agriculture, artistic elements as well as interesting facts about the diversity of tree species in our ecosystem. The strength of this app is its interactive learning and facilitation process (PdPc) through interactive and entertaining gamification methods. Clear display, user -friendly, universal content as well as interactive online and offline activities are very much in line with the concept of entertainment education in PdPc. The app connects learning about plants from the perspectives of science, technology, engineering, art and mathematics specifically. This android app is very effective in sparking students 'curiosity and exploration to STEAM in more depth. The small size and easy-to-spread applications through a variety of social media indeed make the STEAM-Plant Genius an innovation with high potential to be given space in supporting the STEAM approach in education. Get the full version of Genius STEAM and experience it!

Keywords*—Explore, STEM, integrate, curiosity, STEAM

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Play and Learn with DAM RIMBA

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JM094 – Innovation – Local – Category C: Students - Primary School

***Abstract*—Playing is important for normal children even when they are sitting as it is said to be important as eating, drinking and sleeping. Playing makes the children move, happy and cheerful. They can play regardless of any place, space, time and opportunity. The RIMBA DAM is produced to increase student's understanding of vertebrate animals topic besides improving the memory and interest of students in studying science. Playing can be used in the learning process. If it can be planned and carried out properly, children will not only can learn in a harmonious environment, they can also leave a satisfying and profound learning effect.**

***Keywords*—DAM RIMBA**

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The Application of ImAM PTKS Technique in Understanding The Concept of Prefix meN- in Bahasa Melayu

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JM095 – Innovation – Local – Category C: Students - Primary School

***Abstract*—ImAM PTKS is an innovation of teaching and learning method that helps students to understand the concept of writing words prefixed with meN- on base words that have the beginning letters p, t, k and s. This innovation integrates Information and Communication Technology (ICT) in teaching and learning which replaced the traditional methods. This innovation uses Scratch and Plickers applications that make the learning process more interesting and effective. At the same time, it helps students who are weak in understanding the concept of writing words with the prefix meN- on base words beginning with the letters p, t, k and s. Since students are weak in converting the beginning letters p, t, k and s of base words accurately, this innovation of ImAM PTKS method is designed to help students understand the concept of writing accurately for words prefixed with meN-. Following this, a diagnostic test was assigned to a group of year 2 students in a school. The results was found that the students had trouble writing words with the prefix meN- when combined with base words beginning with the letters p, t, k and s.**

***Keywords*—ImAM PTKS, Scratch, Plickers, innovation**

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Smart Insole to Check Pressure Distribution

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JM096 – Innovation – Local – Category B: Professional (Other Institutions) -

***Abstract*—Pressure measurement is used in a variety of situations such as providing information about human's gait mechanics and has a wide range of applications in clinical situations or in sports activities. The importance of this project is to let the user having a real-time monitoring on their own plantar pressure in wearable biosensors or insole to prevent and detect injury as well as early diagnostics of potential risk for having a bad manner of walking. The smart insole can also be used in any sport's shop that sell product related to shoes. This is because the insole will be able to predict accurately the type of foot and their pronation so the seller could recommend a more suitable shoes that suits their foot's characteristics to the buyer. By doing this, it will prevent future injury of the user when they are exercising or even carrying out intensive activities such as marathon since the shoes are more suitable and comfortable that fit their foot well throughout the usage.**

***Keywords*—Smart insole, Pressure measurement, Pressure distribution**

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Finance Smart Teaching Method (FSTM)

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JM097 – Innovation – Local – Category B: Professional (Other Institutions) -

***Abstract*—Effective design of curriculum and course content specifically pedagogical techniques to produce quality teaching and learning has been greatly emphasized by the Ministry of Education for years. Undeniably, one of the key elements that is necessary for the educators in practicing quality teaching is directly related to the quality of learning process. Hence, one of the best strategies to promote conducive and engaging learning atmosphere is to create an innovative learning tool. In order to meet the objective, Finance Smart Teaching Method is designed to simplify the learning process particularly for banking students taking the course of finance. FSTM will grant the users quick reference for any relevant terms and points that are extremely useful for each chapter without having to refer to the whole chapter. On that note, FSTM summarizes the gist of each chapter without great effort and trouble-free to refer to by the users. Thus, the preliminary investigation was conducted to study the effects of using FSTM using an online questionnaire. This is done in order to know how efficient this innovative teaching approach could be. Based on the results, it can be seen that students managed to understand the concept very well with the FSTM. The result shows how creativity and innovation teaching approach contribute to the effective of teaching and learning process.**

***Keywords*—Innovative Teaching, Quality Learning, Finance**

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Sci-Anime2021

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JM099 – E-content – Local – Category C: Students - Primary School

***Abstract*—E-Content development, especially in Science, is very important during Covid-19 era. It helps students to understand more due to the limitation of physical class during Covid-19 outbreak. This e-content name Sci-Anime has been developed to help students to understand more in science subjects. Sci-Anime is a type of E-Content that focuses on laboratory experiments which relate to science subjects for primary school students. Through this animation, the understanding of students towards science and laboratory experiments become very interesting and more interactive. Moreover, students can observe digitally how the experiments are conducted. Apart from that, this e-content will be developed with simple assessment after a few class sessions. Therefore, during PdPR (Pengajaran dan Pembelajaran Di Rumah) the learning will be more fun and teachers can apply this e-content as support content during Google Meet session.**

***Keywords*—Science; E-Content; PdPR; Covid-19; Google Meet**

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Automatic Malaysian Vehicle Plate Number Identification (Auto-MAVIN)

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JM100 – Innovation – Local – Category C: Students - UiTM Melaka

***Abstract*—A license plate number is a plate created by metal or plastic that is attached to any vehicle on the road for identification purposes. It is used by the Police Force to prevent uninsured drivers, as well as auto thefts. However, retrieving and identifying the license plate area in the whole traffic image can be quite challenging due to many intrinsic factors. Additionally, it is difficult for the authority to identify a missing car and expiry road tax on the road manually which makes their task harder. To solve these issues, an automatic system that can identify Malaysian license plate numbers is getting attention. Thus, an automatic Malaysian vehicle plate number identification (Auto-MAVIN) system that identifies a Malaysian license plate number is developed. The Deep Learning approach is used for the system design and development model. The distance limit of character recognition was also being tested where the limit distance is 4.7 meters. The reliability test conducted on plate number detection and character recognition returned 98% and 84% of accuracy respectively, which signifies the effectiveness of the system. The Auto-MAVIN is expected to facilitate in reducing any kind of different traffic violations such as tracking and identifying the unauthorized vehicles based on the automated number plate recognition technology. In the future, the system is suggested to add some extra features such as trigger the current location of plate number that has an issue using Global Positioning System (GPS) to warn other nearby Malaysia law enforcement when patrolling on the road.**

Keywords*—*Automatic Identification, Malaysian Vehicle Plate Number, Deep Learning

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