UCSI University

ICSDI
INSTITUTE OF COMPUTER SCIENCE AND DIGITAL INNOVATION

Designing and Implementing Final Year Project

- with Success

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Contents

Foreword by
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Welcome to the Institute of Computer Science and Digital Innovation (ICSDI), UCSI University.

The Final Year Project (FYP) is compulsory for the diploma and undergraduate programmes at ICSDI. This Final Year Project Handbook is designed to provide students with a comprehensive guide for planning, implementing, and documenting project work in accordance with the requirements of the relevant academic programme accreditation bodies.

The goal of FYP is to provide students with the opportunity and exposure to apply and integrate the theoretical knowledge and principles taught in the programme, as well as to solve problems creatively in their final year project.

To maintain the high quality of education at UCSI, we have continuously provided our students with advanced skills, cutting-edge software systems, and industry-relevant teachings by ICT professionals. FYP allows students to demonstrate independence and originality while also planning and organising a project over a set period of time.

I wish to congratulate Assistant Professor Ts. Dr. Kasthuri Subaramaniam, FYP coordinator, and all ICSDI supervisors for their effort, dedication, and hard work in supervising the students and producing high quality projects. I hope that this FYP handbook will be set as an example and standard for many more FYP handbooks to be produced and will contribute towards producing quality research work by the students and excellent supervisory skills by the academic staff of the Institute.

Developing UCSI Course Registration System

Darrshana Murthy, Javid Iqbal Thirupattur, Abdul Samad Bin Shibghatullah

Introduction

UCSI Course System is about a system which relates to course registration system that is employed throughout the semester for all students at UCSI. The UCSI IIS course system does not present both course materials which are notes and tutorials at the same site instead needs the student to log in to CourseNetworking for it. However, this may for the most part be an issue as some students and lecturers find it a nuisance to not have the same site showing course materials in the same site that they log in to access course details. In the idea of to overcome this difficulty, the UCSI Course System is built. A database will be constructed to keep all the information of the students from UCSI about their individual courses and also the subject course materials once they have enrolled to a specific course. This function is to assist the students and lecturers daily in accessing a single university portal to do regular tasks such as accessing notes and add and drop courses.

Objectives

1. To design a system for UCSI students to register subjects for semester.
2. To develop a system where both students and lecturers can use as IIS+CN hybrid functionality.
3. To implement the feature to access notes and tutorial in the same platform as adding and dropping course for students.

Methods

After several investigations on the right approach, we chose to apply the Agile Development from Incremental & Iterative Development. The rationale for picking this technique is because of the nature of the system that is going to be constructed. The system concentrates on the width rather than the depth. It will not be concentrated on the depth of a function owing to the need of having few functional functions which the user can utilize after the first version of the system has been constructed. This indicates that the functionality of the system is being constructed first so that the user is able to utilize it. The user will then be able to submit the feedback to the developer and changes may be implemented in the future version. Since the needs of the user is continually changing, it would be

prudent to do incremental on the system so that new features may be added or updated later.

Results

Based on the survey question that have been distributed it can concluded that most of the respondents prefer to use a course registration system with built-in capable notes function along with add drop function. According to the responses, most of the respondents find it hassle to need to log in to two different sites every day for their university needs. This project will be a huge winner for both students and lecturers to use this system which will save their time and effort. Since the biggest concern revealed from the poll is reliability, the system is made to redirect notes at cloud storage sites like Google Drive and OneDrive always keeping the system lightweight and fast.

Conclusion

The main objective was to design a system which can be used to register subjects or so called add and drop courses for each and every semester for the need of UCSI University students. The system was developed after getting to know the students needs through survey questionnaire. The poll became a huge turning

point for the system to be developed with participants' feedback. It was possible to understand their priority list among features they expect to have in a course registration system. The second objective is to develop a system where both students and lecturers can use as IIS+CN hybrid functionality. Lecturers could take attendance and upload notes for the course they educate on. Final objective is to implement the feature to access notes and tutorial in the same platform as adding and dropping course for students. This means to say the ability to add and drop courses and also view notes for each course for students. Students access notes on daily basis so this way they could save a huge amount of time. All 3 objectives have been fulfilled along with building a good lightweight system ready to constantly be improved suiting for the need of future students.

Designing Effective Network Model to Prevent DDoS attack in IoT

Soon See Xiang, Raenu Kolandaisamy, Ghassan Saleh Hussein Al-Dharhani

Introduction

Internet of Things (IoT) had become more popular in these years as it able to make our life easier by using different types of IoT device in our daily life. The IoT device and technology had been widely used in the industry of smart homes, agriculture, transportation, and others. Since there are a lot of IoT devices used by us, and most of the IoT devices are used to collect and transfer the date that related to our daily life, the security issues of the IoT are one of important area that we should put effort on it. One most common attack that happen towards IoT device is called Distributed Denial of Service (DDoS). DDoS occurs when a large number of unnecessary requests are sent to the host server by geographically scattered zombie devices. This research paper discuss on the type of DDoS attack might occur and proposed some algorithms to be use to detect and mitigate the DDoS attack in the IoT architecture.

Objectives

1. To study on the background of IoT and its architecture
2. To design an effective network model to prevent DDoS attack on IoT
3. To evaluate and benchmark of existing model and current model

Methods

This study will use qualitative methodology to get the results to perform data collection regarding the topic of the research. Qualitative methodology is a method of performing simulation to obtain the result from the simulation. All of the data from the stimulation will be collected and recorded in report to perform comparison. By doing this, it able to help the developers to obtain all the data that they need to perform analysis. The network model will go through simulation by using Network Simulator 3 in order to collect the required data for network model development. Tables and charts will be used to assess qualitative data.

Results

As according to the report, the main purpose of the simulation is to check whether the proposed algorithm able to detect the DDoS attack and able to perform mitigation on the DDoS attack. For mitigation, as according to our result, by using the proposed algorithm, the simulation result show there is no False Negative attacks because of the accuracy and precision of our proposed algorithm's rules, that we focused on the cooperation between the end nodes (sensors) and the monitor agent (on the edge router), which helping us to define specifically about detecting the volumetric flooding attack on the network layer. Throughout the testing, the victim node was able to identify every assault and generate five True Positives (true attacks) out of five for each of the five attacks. Hence, as for the detection, by calculating the PDR, we are able to proof that the result that we get after simulation are correct. PDR is the packet delivery ratio measures how many packets were successfully delivered to the destination relative to how many packets were received overall by the monitor agent from all sources.

Conclusion

This thesis proposes a method for identifying and reducing DDoS attacks. The suggested strategy incorporates two algorithms: one to identify attacks scattered

throughout Internet of things network endpoints, and the other to minimize the effects of DDoS attacks targeted at the border router or gateway of the IoT network. Our method relies on the IoT end device threshold to boost the detection sensitivity and accuracy of DDoS attacks. The two algorithms were created to use extremely little time and memory in order to fulfil IoT criteria. The suggested algorithms are also capable of properly differentiating between DDoS assaults with Low-Rate and High-Rate. The findings show that the suggested method might successfully aid the IoT network environment in identifying DDoS assaults and providing security against them. We are able to state that the method that we proposed useable in many IoT domains, particularly when there are fewer users, like in smart homes, buildings, and hospitals, where it can quickly identify and defend the Internet of things network from those DDoS attackers.

Developing a Travel/Food Advice Application with Recommender System based on Personality

Wong Yeow Ming, Kurunathan Ratnavelu, Javid Iqbal Thirupattur

Introduction

In this modern era, technologies are upgrading and updating rapidly. These technologies also enable travellers to search travel information such as famous places, views, shops etc. Most travellers can use travel advice application with recommender system to get those place's information. Before that, we need to know that recommender systems now are widely used by a lot of companies, for example some social media application or ordering system. This system is highly suitable for people who likes to plan the itineraries, also for those who likes to travel. The recommender system main task is to make a prediction of user's possible or future interests based on user's activity and data. It can be based on the user clicks or user watch time, but there's still a lot of methods to analysis and make prediction by the system.

Objectives

1. To study and improving current existing system. Make research on existing system problems.
2. To design a mobile recommender system.
3. To evaluate the functionality and effectiveness of proposed system and application. The system will collect the travel personality at the registration stage.

Methods

This research is to study the recommender system which they have some filtering method and creating a new application which have independent interface and features. The recommender system can deliver what user wants, also understanding what user's need and preferences, then make suggestion and recommendation.

Results

The system will be using the recommender, but there are two methods for recommender system. Those are the content-based filtering method and the

collaborative filtering method. For content-based filtering, this method will link similar items to the user based on the characteristics user had seen or choose or even click. For example, the system will learn that what user have click, then based on that data and make recommendation to the user with the similar characteristics items. After that, the collaborative filtering way are made recommendation after determined those interaction between users and the items. For an example, item X and item Y are having similar characteristics or preferences, then this method will make suggestion to user with those similar characteristics or preferences. This proposed system will also be designed to allow user to select a location, which those location will be as the range. Then, the system will suggest the nearby places according to that preferences user had set. Also, user will be allowed to upload photos for the locations, so other users will be able to check the locations' view before they go.

Conclusion

In conclusion, the research objectives are achieved. Those objectives are study and improve current existing system, design a recommendation application, evaluate the function and effectiveness of the applications. What I experienced in this project can learn how importance of the planning time for the project, also the programming language knowledge. Python is a strong programming language

and the API services provided by google is very helpful. One of the problems faced is the Firebase setup and the Google API Service connection between the application and Google Cloud. The google API service connect to the application had taken a lot of time to solve. Also, Android Studio IDE require a lot of RAMS which very bad user experience for low-end pc user. A lot of time wasted on the startup and processing. What I really gained from this project is a new programming language Python usage which never be taught and learn too. The self-learning processing and exploring to new programming languages is fun and exciting. And most importantly is the time management. Without managing time wisely, the project could be very tough to do within a limit time.

License Plate Detection and E-payment System for UCSI Car Park

Basil Ting Ek Ong, Chit Su Mon, Kasthuri Subaramaniam

Introduction

Most of the area in the current world is going programmed and to rise the comfort and security at the entrance gate. It was widely used to force a car to stop to take a parking ticket and pay for the parking fees. A smart car plate recognition system is proposed as a prototype to install in schooling area. Besides, e-payment is a system that gives facilities for making online payments for services or items. The convenience of transaction processing in e-commerce between customers and sellers is provided by the e-payment system. E-payments are widely used in every field in Malaysia whereby it has made the transaction between seller and buyer more easier. Due to the pandemic of COVID-19, Malaysians are practicing contactless environment. Thus, in order to make UCSI University's students, staff and visitors to feel more convenient while entering and exiting the car park, combination of both the system may create a huge impact on the efficiency.

Objectives

1. To study the weakness of existing system and improve it.
2. To gather the requirement and experience of the user to the existing system.
3. To investigate and develop an image processing method for an ANPR system that takes number plates into account
4. To develop a e-payment system application for the students so they can pay the parking fees online.

Methods

The method used to collect the data from the respondents in UCSI University is by distributing online Google form. The purpose of using this method it is because it is the easiest and most efficient way to reach a huge number of respondents. The data can be collected and stored to be used in seconds. The collected data provides the developer that what is the users' needs and wants. The survey questionnaire is distributed randomly to the people in UCSI University area. The objective data is collected for the further development of the system. Chart is used to assess quantitative data.

Results

Based on the survey questionnaires that had distributed to the students or staff randomly, most of the respondents provide a positive opinion on the license palate recognition system and the r-payment for the parking ticket fee. According to the charts from the survey, most of students are not satisfied with the current system and payment type as it is not so convenient. The proposed systems are able to ease the parking system for the UCSI University.

Conclusion

Overall, the all the objectives have been fulfilled by getting know the parking system issues faced among the users in UCSI University. The first objective is to fulfil by study how the existing systems work. The second objective is fulfilled by providing survey questions to the people in UCSI University and collecting the data results. The third and fourth objectives are fulfilled by studying the collected data and applying them into the system development process. The proposed systems provide the parking users a contactless environment to decrease the chances of spreading the virus. Besides, the parking users are able to save the time in and out the university area. All the features are fuctional. In future, more fuctions can be added into the system to make it better.

Developing a Grade Prediction Model Using First Year GPA Performance

Koh Boon Suan, Kasthuri Subaramaniam, Chit Su Mon

Introduction

Universities have often presented student dropout as one of the primary challenges to be tackled upon. The consequences of a high dropout rate not only deter an educational institution from achieving its purpose but also indirectly contribute to social poverty as it lowers the potential employment rates of the students, thus affecting the national economic gains. With the development of Educational Data Mining (EDM), techniques can be applied to forecast students' academic status by predicting grades, extracting analytics from their behavior, and much more. EDM is the automated process of obtaining data originating from the educational sector to solve educational issues. Having the ability to collect these behavioral data enables the institution to refine its curriculum for a better learning experience. Students who are at risk in their academic progress can also be identified and provided with necessary assistance. Universities that are equipped with EDM tech can: detect undesirable behavior in students, provide recommendations by personalizing activities, and predict and model students.

Objectives

1. To study from literature and identify useful feature variables for prediction
2. To create datasets with attributes of students' academic performance.
3. To develop predictive models with said attributes for predicting CGPA classification using Naïve Bayes and Decision Tree algorithm.
4. To develop an evaluation matrix to assess the results from stated predictive models and select the one with the highest accuracy measurement in predicting CGPA classification.

Methods

This proposed project will pursue in collecting a dataset with influential factors deemed crucial for analysis. The predictive model to be developed would adopt the algorithms that showed a good overall performance in works of literature, so it can obtain the highest percentage of accuracy possible. To aid the development through following guidelines, CRISP-DM is being. The primary benefit is that it is flexible enough to be modified to fit a project criterion, with the user being able to cycle through steps already taken to gain better insights into the project at hand. It is also relatively easy to understand and adopt as well. CRISP-DM has 6 general steps called phases. The project is carried out through a flow of the 6

phases: Business Understanding, Data Understanding, Data Preparation, Modelling, Evaluation and finally Deployment. Two predictive models have been developed and assessed in its accuracy performance.

Results

Since synthetic data are used instead of a real one, the results measured are only for demonstrating the evaluation process. Using the same set of features, Naïve Bayes model obtains an accuracy of 56% while Decision Tree C4.5 obtains an accuracy 46% for a sample size of 120. While factoring all features collected, C4.5 obtains a low accuracy 35%. In both cases, Naïve Bayes outperforms the Decision Tree model.

Conclusion

Machine Learning is dependent on making optimal use of data and models. Therefore, it is important to select the correct predictive models to ensure the best result is obtained. The project has provided an overview of the development of the grade predictive modeling process. The objectives of the research project are given to suggest a machine learning solution for assisting universities in enhancing EDM utilization, with the aim being to provide universities with more

academic information so that educational experiences can be improved. To support the process of development, an endeavor to research similar existing solutions had been conducted and their methods have been studied for implementation purposes. A questionnaire had been distributed to collect data and be converted into the project's dataset. The result of the modeling process is the development of the Naïve Bayes and Decision Tree C4.5 classifier model which could be used in a sense for predicting grade category.

GPS Bus Schedule Application System in UCSI University

Chan Jing Hao, Raenu Kolandaisamy, Javid Iqbal Thirupattur

Introduction

Nowadays, public transportation, such as the UCSI University shuttle bus service, is an important service that allows students and employees who do not have access to their own transportation to go about their daily activities. The types of bus services, the quality of service in the bus operation that impacts passenger decisions, and the role of the bus provider and bus driver will all be discussed in this article. For a well-managed bus service, a better application will be designed for comprehension of the bus operation. More features, such as predicted bus arrival time and bus reservation, will be added to this application in the future to maintain a high level of quality in service and performance, encouraging people to choose public transportation as their preferred mode of transportation.

Objectives

1. To study existing bus schedule system
2. To identify the weakness of the current systems.
3. To gather requirements from users.
4. To develop a shuttle bus service application with the gathered requirements.

Methods

The purpose is to collect data and information from the public, and the system grants them more convenience than the system currently in use. It is feasible to add mobile applications to the system. The most important thing is whether they are willing to give the system. The questionnaire will contain 10 questions, with the goal of collecting a minimum of 150 submissions, which will be from the young to the elderly. The survey will be multiple choices and open survey questions. The first section will be to collect some simple interviewee information to understand their gender, age, and ethnicity to get more specific results. After that, will collect the frequency of respondent's current needs and the problems they face when they need them. The end of the question will be a meeting of respondents to reflect whether their comments need to improve the system or add any new features.

Results

The security system will be improved in this application because the login system will be implemented in this application. Each of the user included student and staff are required to register an account to login this application. Each user's information will be store in a database, the admin will be able to check their information in the database. Therefore, it can effectively prevent criminals from abusing this application. Besides, the application will provide the timetable for user, compare with the traditional way, it will be more user friendly. Additionally, the app will countdown the anticipated time of bus arrival. Apart from that, the app is also very convenient for drivers. The driver only needs a smartphone to download the program and then log into the app, which allows the user to see the current location of the driver.

Conclusion

Finally, it can be said that the system has been carried throughout the project's many stages of development, resulting in its effective establishment and achievement of the project's primary objectives. The main objective was to study current Bus schedule systems in Malaysia and then to develop a mobile e-wallet system for the usage of UCSI University students, staff, and driver. The system was developed after getting to know the students need through survey

questionnaire. The studying of existing systems and literatures is a small step towards filling a discovered gap when it comes to developing a Bus schedule application system for university students. The prototype GPS Bus schedule application system was successful built runs perfectly fine on mobile device. As a result, a more complete literature analysis would better represent the current situation on social media platforms when it comes to GPS Bus schedule application systems and would provide a better knowledge of what is needed, as well as the areas that need additional study. In addition, a more comprehensive study of the criteria would result in a superior product. Knowing GPS Bus schedule application system user's needs might change time-to-time, guarantee that the system being developed can meet the demands of students at UCSI University.

Web based Accounting Information Management System for Small-Medium Enterprises

Christopher Jesus Samson, Abdul Samad Bin Shibghatullah, Shayla Islam

Introduction

Almost everything in the twenty-first century has been digitalized to keep up the standard for modern times and fast-evolving technologies. Some many more companies and businesses are founded and will be founded every year. As a result of this, they will be considered start-ups or eventually Small-Medium Enterprises (SMEs). Therefore, these newer companies will need and desire a modern system that can maintain and uphold all their financial data. Accounting Management Systems vastly improve the ability to track incomes and expenses. They also improve the company's performance with the financial decision because they can see where all the money is coming from and going to. This proposal will focus on simplifying a complex system, integrating billing, and invoicing for inventory management, and building a more modern system because most look outdated for modern times. The goal is to provide a modern, efficient enough system that SMEs can afford while still maintaining an industry standard of requirements from it.

Objectives

1. To develop an accounting management system that contains billing and invoicing for inventory management. Record and manage inventory without the need for another system.
2. To evaluate the effectiveness and ease of use of the enhanced Accounting Management System through conducting users' acceptance by testing the system.
3. To achieve a fully functional Accounting Management system that is cost-effective, modern, and has new and improved features compared to others that are in the market.
4. To develop and provide a system that is safe and secure for the users and their data. There will be measures in place to ensure everything properly secured.

Methods

The questionnaire is prepared in a questionnaire format and is split into two sections, Section A and Section B. The demographic questions in Section A will be used to gather respondents' fundamental data. A multiple-choice question in Section B asks respondents to indicate how well they understand the Accounting Management System and whether they have prior experience with any kind of

Accounting Management System. This section's objective is to collect user feedback on a based-on AIS systems. In a summary, the purpose of the survey questionnaire was to assess the utility of the system after it is designed for customer usage.

Results

Accounting Management systems are becoming increasingly popular among companies, especially due to its ease. Invoicing, credit notes, reports, and accounting are crucial to manage data according to the survey taken. Accounting management systems allow companies to easily track, manage, and control their financial data. Companies usually struggle to control and manage their financial data because their company does not possess a system for it. Security is another benefit of utilizing an accounting management system that protects data from outside access. In order to ensure more companies will use accounting management systems, a more modern and cheaper system was developed for this reason.

Conclusion

In conclusion, the goal of this study is to create an application for an accounting management system that is less expensive and more convenient for small- to medium-sized businesses. In this study, the suggested system was put into practice, deployed, and made available for user testing. The suggested solution is a straightforward program that will improve business performance while emphasizing the importance of accounting software for small- to medium-sized businesses.

Development of an Inventory Management System for Small and Medium Stores

Diego Armando Bayeme Efua, Keoy Kay Hooi, Chit Su Mon

Introduction

Modern inventory control procedures, with the advent of information technologies, necessitate a manual inspection by the salesclerk in the warehouses from time to time. The chores of locating inaccessible objects, returning an item to its original position, and preventing an item from being stolen can leave a company with insufficient human resources to meet client demands. In the last ten years, autonomous sensors have progressed to the point where their use in inventory monitoring has become a reliable alternative in terms of cost, performance, and size. Customers expect high-quality service and product that is free of errors in today's competitive environment. Today's businesses and industries must find new methods to exceed client expectations. The tendency of mass customization, as well as ever-changing market requirements and shorter product life cycles, puts sectors to the test. A major issue with fashion stores is that they still retain their data using a manual approach. They, for example, employ a manual receipt or invoice system and keep track of customer information. The owners of these establishments have no idea how much of each

product or article they have in stock, resulting in a partial or complete lack of inventory.

Objectives

1. The objectives are of this study are as follows:
2. 1. To develop an Inventory management system for small and medium Stores in recorded data inventory.
3. 2. To investigate whether the implementation of an inventory management system will be well received by people who have medium and small stores
4. 3. To investigate customer feedback on some of the features they would like an inventory management system to have to make shopping easier.

Methods

The quantitative study was carried out to quantify the data collected from the researchers computing the ratio analysis, and the qualitative research was carried out to understand the challenges of inventory management that companies have through a structured survey with the persons. Researchers used a survey method to get answers about the inventory management system. As required in

quantitative and qualitative research, primary and secondary data were employed to complete this study. surveys were used as the primary source, with reports, papers, and journals serving as supplementary sources. The information was gathered via the survey responses, which were focused on the themes of interest, as well as information from reports that were used to calculate the ratio analysis.

Results

According to the results obtained in the survey that has been carried out in this project that has been distributed to people of different ages, countries of residence, profession and of different genders, 79% have knowledge or are familiar with inventory systems and they represent, 20.8% are satisfied at level 5, which is the highest level of satisfaction, 41.7% are satisfied at level 4, 29.2% are satisfied at level 3, 8.3% are satisfied at level 2 and 0%, that is, none of the 24 respondents in this survey are not satisfied with the inventory systems. 23 of them have answered that there are small and medium-sized stores in their places of residence and 1 of them says that there are no small or medium-sized stores in their place of residence. With these results we can conclude that there are small and medium-sized stores in all the places where the respondents reside.

Conclusion

In order to establish these inventory systems, you must consider the needs that will be met inside the organization, as well as the cost that you are prepared to spend to implement said system. The goal of these systems will always be to keep the organization from losing money. Having what is needed at the time it is needed and giving it at the right time becomes a tool every time that implies greater competitiveness for companies, it will make us grow in the level of customer service and satisfaction. We must work throughout the entire chain, having exact knowledge of the products that are available in the companies' stock, thus generating the guarantee for our clients that we will do everything they ask of us.

Design and Implementation of Campus Garbage Classification Assistant Website Based on PHP

Dong Li Wan, Thong Chee Ling, Kasthuri Subaramaniam

Introduction

The earth is the only habitable planet so far. The rapid development of mankind has caused irreversible damage to the earth's environment. Therefore, reducing the harm to the environment and improving the soil utilization rate are the top priorities. Waste sorting management can convert these wastes into new energy, and at the same time allow these wastes to be effectively treated and can also prevent the occurrence of air pollution. Today's low penetration rate, low awareness, and lack of operability may be the shortcomings of waste classification management. The purpose of this research is to design and implement a campus garbage classification query auxiliary website. The main goal is to develop a simple and easy-to-use system that users can use in waste sorting.

Objectives

1. To research the existing waste sorting query system and understand the importance of the system to the campus
2. To design and develop a campus garbage classification website query system
3. To analyze existing similar systems and identify their strengths and limitations
4. To evaluate the utility of the system in terms of usability and ease of use.

Methods

The method chosen for this study was to use a descriptive survey. Descriptive surveys involve the use of questionnaires to collect information from participants. The questionnaire used in this study is a structured questionnaire with four main parts. The survey participants were students and teachers on campus. Descriptive surveys are considered for their ease of administration and data collection. Importantly, as a structured questionnaire, participants could only choose answers from the options provided. The decision to use a descriptive survey was deliberate, as it helps to code the data collected for further analysis. The questionnaire was created by using Google Sheets and administered online. A total of 100 participants, including teachers and students, were selected to

participate in the survey. Links to the online questionnaire are shared through social media channels such as WeChat, Facebook and Whatsapp.

Results

The analysis section shows the feedback received from participants concerning garbage management and garbage classification system. The analysis shows that a high number of participants to the study were students. All participants have a knowledge about garbage management. Whereas some participants did not think it was necessary to have garbage classification system, all participants agreed they would prefer to use garbage classification system. On the other hand, a significant majority of participants indicated their preference on having a web-based garbage classification system. The feedback obtained shows that campus has a garbage classification system and individuals prefer to have the system in place.

Conclusion

Finally, while some waste sorting systems are already in place, they are mostly adopted by larger organizations. In a campus environment, however, potential users of the application need an easy-to-use system that allows them to quickly

check the type and classification of waste. The system was developed after understanding the needs of teachers and students through questionnaires. In addition, a more comprehensive study of the standard will result in a quality final system. Understand that the needs of users of the garbage classification query system may change from time to time, and ensure that the system being developed can meet the garbage classification needs of teachers and students on campus.

Developing a Blockchain Based Cryptocurrency Wallet that is ready for Web 3.0 - BloX

Duncan Danesh Antau A/L Narayanasamy, Abdul Samad Bin Shibghatullah, Ghassan Saleh Hussein Al-Dharhani

Introduction

The internet is one of the most revolutionary invention of modern times, allowing anyone to access a plethora of information from anywhere in the world. It all started from Web 1.0, the first stage of the internet that roughly lasted from 1991 to 2004. The future of internet or Web3 is an emerging technology that is based on the idea of a decentralized world wide web which incorporates new technologies such as blockchain and token-based authentication with the intended goal of creating a new internet where the users have power instead of being monopolized by large companies. A key concept that would be a part of Web3 is the concept of cryptography or specifically cryptocurrency. Cryptocurrency is a digital or virtual currency that was made to be a medium of exchange through a computer network without any involvement from centralized bodies such as government to issue it or banks to manage accounts and verify transactions. Cryptocurrencies are a form of token-based economics and is a huge

part of web3, thus users need a place to store their cryptocurrencies in the form of a cryptocurrency wallet.

Objectives

1. To provide a user-friendly experience when executing crypto transactions.
2. To help users get the latest price of different cryptocurrencies by implement CryptoCompare API.
3. To study Malaysian's perception on cryptocurrency wallet and web3 technologies.
4. To ensure the safety of user's cryptocurrency by using a reputable software such as MetaMask.
5. To deploy a website that is ready for Web 3.0.

Methodology

The main research question that the developer aims to answer by collecting data from respondents are their perception towards web3 technologies and the factors that affect the usability of a cryptocurrency wallet. The data collected will be implemented into the developed system. In order to collect data, questionnaires were distributed because it allows faster collection of data from a large data set.

This will help the developers to study user needs and wants. Pie charts will be used to assess quantitative data.

Results

Cryptocurrency and the usage of crypto wallets have been experiencing an exponential growth among Malaysians because of the crypto boom that happened in 2021. A vast majority of the respondents agreed that four functionalities were important to a cryptocurrency wallet which are transaction history feature, portfolio balance feature, access to a buy and sell platform and finally an aesthetically pleasing user interface. According to the data collected from the survey it seems that most respondents had inadequate knowledge on web3 but were keen on trying out or adopting web3 technologies such as a decentralized payment system even if the caveat is that they must convert their fiat money to cryptocurrencies.

Conclusion

The system was developed after analysing the data gained from the questionnaire collected from respondents that had experience with cryptocurrency. Comparing existing cryptocurrency wallets and researching literatures that was related to the

project helped to fill the gap between web3 technologies and cryptocurrency wallet among Malaysians. The prototype cryptocurrency wallet was developed successfully and runs fine on desktops/laptops although one or two bugs needs to be addressed and fixed. In addition, a more comprehensive study of the criteria would result in a superior end product as user's needs change time-to-time which guarantees that the system being developed can meet the changing demands of cryptocurrency wallet users. All of the objectives that were required in the project was successfully met.

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