Designing and Implementing Final Year Project
- with Success

Editors

Kasthuri Subaramaniam & Alan Keoy Kay Hooi

Contributing writers:

ICSDI staff and students

Graphic Designer:

Nandini Sundran & Melissa Chua Tze Een
(Group Corporate Affairs, UCSI University)

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Foreword by
DIRECTOR

Associate Professor Dr Keoy Kay Hooi (Alan)
Director
Institute of Computer Science and Digital Innovation
(ICSDI)

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.

Development of Indoor Navigation System using Augmented Reality

Chia Mae Lyn, Kasthuri Subaramaniam, Raenu Kolandaisamy

Introduction

Navigational systems, such as maps, are essential in almost everyone's daily lives. It directs us to our destination with no further delays. Outdoor navigation apps, such as Google Maps and Waze, are very common. But what about those for indoor navigation? The Global Positioning System (GPS) is generally ineffective for indoor navigation. Because GPS is less effective in pinpointing a device's location within a building with the required accuracy, indoor navigation needs navigation and detection of things using techniques other than conventional GPS. To assist users with this issue, 2D navigation with routing features has recently been developed. It shows a 2D map of the building's floor plan as well as directions to the user's destination. However, according to a study, using AR has more instinctive aspects than using a 2D map; the AR system displays a real-time scene image flow that is quickly recognizable, making navigational decisions easier and reducing mental strain.

Objectives

1. To investigate existing indoor AR navigation systems.

2. To identify the existing indoor AR navigation system's strengths and weaknesses.

3. To design and develop a prototype indoor AR navigation system.

Methods

An online survey was used because it is easily distributable, and a QR code was created for participants to access the survey mainly through their phones. The purpose of this survey was to better define the system's requirements by understanding the respondents' familiarity with augmented reality and responses towards AR navigation. The survey is divided into four sections: demography, familiarity, efficiency, and functionality. It was only distributed to UCSI students from various backgrounds.

Results

The survey received 81 responses. The results show that most participants were supportive of using an AR navigation app and that it would help them become more familiar with the area. This is highly related to the fact that the majority of them agreed that finding offices, classrooms, or shops in UCSI Block G is

difficult. Even though some respondents believe that navigating without the app is faster, it may be useful if they are looking for a new or relocated area. Furthermore, due to the high concern that an AR app will be difficult to use, a user-friendly interface will be implemented; interface design was also rated as the most important by respondents.

Conclusion

The paper introduced a few existing systems to learn about the development process, including the use of various software such as IndoorAtlas, Metaio SDK, Cloud Anchors, and ARCore SLAM with NavMesh. After the survey, the system was designed in Figma. The design included simple and intuitive elements to help users focus on their tasks. The theme color shade of red was chosen to represent the university's logo color; the default Android font, Roboto, was also used in the design. The design includes an arrow pointing in the direction of the destination and a path for users to follow. When the destination is in view, a pin icon with the destination's name will appear. There were various approaches to developing an AR indoor navigation app. However, the proposed AR indoor navigation application was not a success, but the failure is something to learn from. This is due to the compatibility issues, which took the most time to resolve. As a result, I concluded that the system would need to be redeveloped using ARFoundation

to be compatible with the ARCamera's component. Before development, more research into the compatibility of editor versions and components should be conducted. In addition, if the application is successful, a QR code should be used to detect the user's precise starting position and improve the accuracy of pathfinding calculation.

Integrated AI Voice Assistant News Website for Enhancing User Experience – AI-ReadSmart

Mohammed Mohi Uddin, Ghassan Saleh Hussein Al-Dharhani, Keoy Kay Hooi

Introduction

In today's world internet has become one of the basic needs for everyone. Internet has transformed people's life in a positive way. An innovative approach to print media was influenced and created by the development of the internet. This encouraged the publication of online content by newspapers and other media. The news industry viewed this as an opportunity to increase revenue since it was the internet era, but there was a percentage of people that preferred to read on paper and did not switch to the online format until COVID-19 came into existence. The use of newspapers was already on the verge of declining, and with the added impact of the COVID-19 outbreak, almost one-fourth of newspaper companies have faded. Machine learning, which has been ingrained in our daily lives without our knowledge, must rank among the greatest technological advancements in recent years. supporting us in doing daily tasks and more. People utilize machine learning and other artificial intelligence technology in one form or another, e.g.,

image recognition, speech recognition, advancements in healthcare, banking, and more. Although machine learning has been around since the 1950s, its actual potential has just recently become known due to the tremendous growth in the amount of information that is currently available. Applications and services that are available today in the market are trying to improve their services through artificial intelligence and machine learning. The goal of this project is to support the digital news industry by incorporating a voice assistant into news websites to simplify navigation and improve the user experience as more people switch from traditional paper to digital media.

Objectives

1. To conduct a study on the existing system and find the disadvantages of the current system for improving the proposed solution.

2. To develop a prototype of a newspaper application including AI voice technology for target users.

3. To enhance usability testing of voice assistant website that can assist inexperienced users to use the website conveniently and helping them multitask.

Methods

To gather information regarding consumers' perceptions of the present websites, this project used a quantitative survey approach. The primary research question that the researchers hope to solve by collecting customer feedback through questionnaires both before and after developing a prototype is determining whether the users are currently experiencing the problems mentioned in the report's research and whether the problems are solved after the prototype is made. A user acceptance test and questionnaire were also conducted to see whether the prototype was meeting a usable standard. Charts will also be used to evaluate statistical data.

Results

Since the development of e-reading, online reading has grown in popularity. All generations find reading articles, novels, or journals to be highly interesting. Even though people used to read before the rise of the internet, the findings indicate that most users preferred the new navigation system(prototype) over the previous one. The complexity was decreased, and the user interface was friendlier in the new proposed solution. When compared to current models on the market, it had proper functionalities and a cleaner appearance. Due to the substantial

number of voice assistants on the market, firms ensure to offer adequate security, which itself is maintained for this project.

Conclusion

Finally, it can be said that the system was maintained throughout the project's developmental phases, which led to its effective development and execution of the project's main goals. The major goal was to research existing online news websites on the market before developing an AI-based news website to address issues with the current system. Studying current systems and literatures is a minor step toward overcoming a gap in the development of AI-based news websites. Both on the website and the phone, the prototype was successfully constructed and functions flawlessly. A superior outcome would also come from a more thorough analysis of the variables. The assistant can be into a wide range of additional applications in diverse types of fields. This study provides a framework for future academics to consider in the event of a comparable pandemic scenario affecting not only the news sector but also other industries.

Development of Medical Management System

Beh Ong Moon, Ghassan Saleh Hussein Al-Dharhani, Abdul Samad Bin Shibghatullah

Introduction

In this era of technological advancement, technology has been widely used in various kind of field such as medical system. This kind of usage bring performance, efficiency and ease of use to those field. However, in Malaysia most of medical system only can be found use by large organizations such as government hospital.

Objectives

1. To study the weakness of existing medical system in the market for identifying problem statement

2. To enhance the existing medical systems for increasing the performance of current systems

3. To develop medical appointment and notification system for the hospital management system

Methods

In this research the Software Development Life Cycle Waterfall Model is used as the software development methodology. This is because, among other methodologies I am more familiar with Waterfall Model as it is one of the learning outcomes while I'm studying in this university for my degree.

Results

As for result, a medical management system is proposed and developed in the end of project.

Conclusion

Finally, it can conclude the objective stated has been fulfilled by study existing system in the market. The second objective is fulfilled by studying the system desire to enhance. The third objective is fulfilled by develop medical appointment and notification system. The fourth objective is fulfilled by develop record information hospital system.

A Development of an Automatic Allocation Parking System

Ng Wai Lam, Neesha Jothi, Shayla Islam

Introduction

Finding a free parking spot for a car has become a mind-numbing task in the twenty-first century, especially for those who commute to work, go to class, or go about their daily lives in the morning. These people find it extremely difficult and challenging to find a parking place to them. Different parking system types have emerged as a result of infrastructure and technological advancements. This includes a parking assistance system embedded into the car, an automatic parking system, etc. The goal of this type of parking is to save time and money on searching, parking, and fuel. To address this problem and provide users more time when seeking for parking places, this study suggests a prototype Web-based automatic parking allocation system. Give the user the impression that the parking system is not only practical but also simple to use. Additionally, it enables parking lot owners to use my system to cut back on superfluous expenses like equipment, operator, and maintenance expenditures.

Objectives

1. To gather information and analyze current existing parking systems.

2. To design a web-based system where the system automatic allocation parking for users.

3. To evaluate and test the prototype and ensure that there are no problems and errors.

4. To evaluate the usefulness of the system.

Methods

The project's methodology is the spiral model. Because this approach is more adaptable than others, this kind of software development was chosen. This approach makes it possible for developers to subsequently add or modify new functions. By using this model, we may create a prototype, test the beta version with people, and receive input at various points in the project's development. The spiral model contains four distinct stages. The four stages are planning, risk analysis, testing, and evaluation. The project also contains a mix of qualitative and quantitative research. For qualitative research, the project has chosen to adopt literature review for analysing papers about parking systems and to understand the advantages and disadvantages of similar parking systems. For quantitative

research, a questionnaire was conducted to understand what people wanted in an automated parking system.

Results

Automated parking systems help to speed up the process of paying for parking tickets. This is very prominent among many shopping malls and universities across the world. People in the survey heavily rely on the system to be efficient and fast to make the process of parking much quicker than before the automated parking system. In the system that the project is developing, it has some features that will attract many users including automated allocation of parking spaces, a rewards system for user's continuous use of the system and an easy to use payment system.

Conclusion

Nowadays, most individuals travel by car. Demand for parking spots in the parking lot rises in tandem with the number of cars. People spend more time hunting for parking spots once they enter the parking lot as a result of the parking lot's lack of parking places, and they also use up a lot of automobile oil. My system can assist drivers in finding parking spaces, allowing them to know when

a lot is full and preventing them from having to drive around in circles looking for a spot. In addition, my system assists owners in lowering idling costs like upkeep on their systems. It is because the system can manage the entire parking lot with just one or two staff personnel.

Developing A Digital Website for Dietary at Home - DGTDiet

Ahmed Sakib, Abdul Samad bin Shibghatullah, Heshalini Rajagopal @ Ramasamy

Introduction

Maintaining a proper diet ensures a healthy diet. Diet is very important for each and everyone. Taking a proper diet in our daily lives allows us to avoid malnutrition in every way. As the world know the importance of diet in our lives. Many people nowadays want to research about dietary more. Today, the developer has come up with a unique website for people to know about dietary. This website is solely based on the people who   wants to learn and practice dietary at home. In the current world, social media plays a vital role in our daily lives. It is known for a fact that; technology has risen immensely and gave us the privilege to benefit from it. Communication, production and many more accurate works can be done using technology. When you combine, dietary at home and technology together, you will see it is more beneficial. Diet is very important for us as well as the use of technology in our daily lives. Till now, the best research made was that the importance of calories is immense. However, the quality of

food is as much important for avoiding gaining weight and helping in losing weight.

Objectives

1. To help the society with dietary at home
2. To develop a unique dietary website
3. To evaluate existing dietary websites with the current one

Methods

The method that has been used for this project is System Development Life Cycle (SDLC). The reason for choosing this method is it is one of the standard ways of approach when it comes to creating an IT solution. Benefit of using this methodology would ensure fewer documentation and reports, in return, allows more time to focus on the development of the website itself. Also, multiple tasks can be handled concurrently in the modified waterfall methodology. Other than that, a survey was conducted to know what people think about developing this website. A total of 101 responses were collected. For the UAT, another survey was conducted where 10 responses were received.

Results

It is necessary to know about dietary and physical activities before using the system. The survey shows the result of people responding to if health is being increased when maintaining a diet. Yes, diet is maintained to keep your health better. In the system, there shall be several diet plans to be followed by the user so that it can help that individual in maintain a diet. In the DGTDiet System, there shall be articles to be read by the users to gain more knowledge about dietary. People do not often see Nutritionist. This is either they find it unnecessary or they are not willing to spare their time for a Nutritionist. There also shall be option to order a healthy food package. Thus, no energy has been wasted. This website presents the tutorial video for exercising for both men and women. There shall not be any waste of time and money. In the survey, it was also asked if it would be helpful to have knowledge about dietary, physical activities and finding nutritionist all in place. Ninety-nine percent people has approved that it would helpful to have these all in one. DGTDiet system gives you all of these in one site. Everyone was affirmative after using the website. The terminology and the security of the website was also given a positive outcome towards the respondents. Overall, the system is well maintained, there can be improvements however the respondents were satisfied with the content.

Conclusion

Nowadays, dietary has become an exclusive topic. Most of the individuals in the world would like to diet at home, that brings the project team to develop the DGTDiet system. By the use of DGTDiet, individuals will have the access to maintain a diet. Ordering Dietary foods to Exercising Tutorials, all are included in this website. People do not have to travel physically to buy certain foods or use other sites to order. There shall be no need to search for a Nutritionist as the project team has found a special Nutritionist to be contacted. The best diet plans are available therefore individuals can access whichever diet plan they wants to follow. Lastly, there is no need to look for different articles to read about dietary as the project team has included three best articles on the website.

A Study on the Development of E-Grocery for Mobile Platform

Yen Sin Yee, Shayla Islam, Heshalini Rajagopal @ Ramasamy

Introduction

E-grocery is a type of business-to-consumer e-commerce that focuses on selling groceries online. It concentrates on customer value, shopping convenience, quick doorstep delivery. It forms a way to purchase grocery using web-based shopping service. Basically, there's two ways to purchase item online which either order from local grocery story that joining online shopping where customer could choose to pick up their order or delivery and another way is to purchase from large platform such as Amazon, Lazada or Shopee which will ship the items to customers' address. Large company orders are normally packed in a warehouse and then transported to the customer via a commercial shipping service. For example, if both routes are made by vehicle, route optimization may make the delivery trip more efficient overall in terms of emissions and system demand. If a drive to the store is substituted by a vehicle delivery trip, on the other hand, the online order effectively increases roadway demand and vehicle emissions. Our transportation operations are also affected by online pickup options. This

shopping strategy could reduce the demand for parking at grocery stores, allowing the majority of that land to be used for something else.

Objectives

1. To study existing e-grocery platform

2. To design a e-grocery mobile application

3. To develop a prototype e-grocery mobile application.

4. To evaluate prototype

Methods

The major research problem that developers aim to solve by collecting data from literature review is to identify online grocery acceptance, also determine the key elements that consumer consider when using online grocery service. The article chosen contain the research result of the survey through the professional way towards the market. Developer study user's needs and consideration through literature review. After developing the prototype, survey questionnaire become a method to collect user's feedback and expectation. User required to fill up the form after testing on the prototype, also, user's previous online shopping

experience has been collected too in order to make a comparison between existing and prototype.

Results

Based on the result conducted, most of the users suggest on the design and add more product on the prototype. To achieve the suggestion given by respondent, design will improve by changing the designing to a theme based, such as UCSI main theme is red colour, Mr.DIY main theme is yellow. Also, in order to add more product, the problem of firebase needed to be solved and created a admin panel, so this process will be easier and effective. For the evaluation of the system, all progress such as login, registration, add to cart, switching light/ dark mode works well from development stage until system usability test, except admin activity such as add/remove product and edit product information due to Firebase unable to connect.

Conclusion

Based on the objectives stated in project proposal, this project successfully achieve all objectives stated. First objective is to study existing e-grocery platform, which already met during information gathering stage for project

background. Second, which is identify strengths and weakness for existing application, where already met during studying the existing e-grocery mobile application. Next, requirement gathering was achieve through literature review on the research paper related to the survey/ research about e-grocery. The remain objectives stated including design e-grocery mobile application and develop prototype e-grocery mobile application. Prototype was successfully developed and worked in good condition in the time given. At last, which is to evaluate prototype, system usability testing has been make and result shown that the strengths of the system are convenient and security while the weakness of the system is the design and product list.

Course Rescheduling Application System

Steven Wong, Raenu Kolandaisamy, Kasthuri Subaramaniam

Introduction

Managing and organizing manpower and elements inside them together with limited facilities is challenging for a company or corporate, including a university. Class clashes are the most common problem at universities that don't only come on student schedules, but lecturers too. Commonly, students will have class clashing as the schedule is not fixed yet and are able to change early in the semester. But it does not rule out the possibility of human error when setting schedules for many classes affecting the lecturer's side. It could cause the class to be held or even dismissed due to the venue clashing. Moreover, the procedure of rescheduling takes time as needs to deal with the admin of the faculty to help to find a new venue at the requested time which is quite problematic. However, the existence of technology leads to a creative solution to reduce class clashing rates to the minimum chance as well as to enhance the effectiveness and efficiency of the rescheduling process. Therefore, the course rescheduling system is important as a tool for the lecturer to update the classes directly based on their students and their preferred time.

Objectives

1. To learn the existing process for course rescheduling,

2. To identify the requirement of the mobile course rescheduling system,

3. To design and develop the functionalities of the proposed system to encounter time and/or venue clashing either the on lecturers' side or students' side,

4. To evaluate the performance of the system with the existing as a benchmark.

Methods

The methodology that will be used to develop the system is the Rapid Application Development (RAD) approach. The flexibility provided in this approach can faster evaluate improvements as well as fix the bugs. With the currently existing systems and time constraints, it is considered one of the suitable methods to maximize the prototype development before the product is implemented. In that way, to proceed with requirement planning, the author creates a survey on the current method in UCSI and the proposed solution in order to understand the needs and requirements of the proposed system. After that, the system design will be using the storyboard to plan the design of the functionalities and features as well as the design that will be inside the system. Also, the construction phase will

be developing the application based on the collected information. Therefore, user feedback is required to understand whether or not the system is ready to implement. However, the RAD approach allows developers to repeatedly work on the phases until users are satisfied with the proposed system which is an advantage of the approach.

Results

Based on the distributed questionnaire on user acceptance and usability testing to random students and some lecturers, shows that the system is working fine. The provided features and functionalities have no bugs or errors found, which is awesome for the system to run the program. Also, the respondents are easily using the application and fast learning the steps of generating the new schedule from the application. As a result, most of the answers surely think that the system is good to be implemented at the university level.

Conclusion

The project's objectives are fulfilled by identifying the current rescheduling system in order to generate an understanding of the current issue as well as the requirements and needs of the proposed solution. In that way, the design and

development processes are done and working fine to encounter clashing issues by providing users (lecturers) to book their new schedule directly through their mobile phones without going through the admin. The last objective is the evaluation process which is done by demonstrating the developed application and letting them familiarize themselves with the system for a while. Later, through the questionnaire, the author will collect their feedback on the system. The implementation of the system is to accelerate the rescheduling process through the deployment of a mobile application that is being used by the lecturers. The system will run a checking algorithm to see the availability of new subject time and generate a new timetable when clashing is not found.

Developing an NFC-Based Application for Keyless Entry at The University

Sumaiya Rahman, Chloe Thong Chee Ling Thong, Neesha Jothi

Introduction

Near Field Communication (NFC) is one of the most used technologies when it comes to doing something contactless. For example: contactless payment (Apple pay, Google pay, Touch N Go wallet and more), contactless access control system. Nowadays many institutions are developing smart access system using NFC technology as it is convenient to access any gate using this technology and it helps to record data more securely than manually. At UCSI University, usually students can easily go inside the campus without recording any information. In order to create a safer environment for the students, lecturers and staff, I am developing an NFC-based application for keyless entry system at the university. This project will be utilizing a system where the students, lecturers, staff and even visitors will record their access information using NFC. This proposed method will make recording access information easier, and it will be recorded automatically into the database. A full comparison of other connectivity like Wi-Fi, Bluetooth, NFC, and RFID is also covered, particularly in terms of their

structures, functionality features, benefits, and drawbacks. Overall, the NFC keyless entry system improves the efficiency of recording access information. Besides, this method of application is more convenient and cheaper infrastructure in both operational and setup cost, and it helps to create a safer environment in an institution.

Objectives

1. To study how the existing NFC keyless entrance works
2. To identify not only the strengths, but also the weaknesses
3. To recognize the needs of this system and work to fulfil those needs
4. To understand how to encourage students and staff to use NFC keyless entry system

Methods

The method that has been used for this project is System Development Life Cycle (SDLC). The reason for choosing this method is it is one of the standard ways of approach when it comes to creating an IT solution. Benefit of using this methodology would ensure fewer documentation and reports, in return, allows more time to focus on the development of the website itself. Also, multiple tasks

can be handled concurrently in the modified waterfall methodology. Other than that, a survey was conducted to know what people think about developing this application. A total of 117 responses were collected. For the UAT, another survey was conducted where 12 responses were received.

Results

In the present world, NFC is one of the most used, convenient, and secured technologies for doing things of any kind that is contactless. In the survey, more than half of the respondents said they do see an issue with the security system of the university as it does not keep any track or record of who is accessing the university and quite uncomfortable about it. When asked, they said they do want to see the modern advancement in the security system of the university by developing this system and they would be comfortable if this system is built. They do not mind having their access information being tracked as well.

Conclusion

To describe in short, the alternative aim of this research project is to develop and create the university toward technological advancement and lead towards a sustainable environment as the world is trying its best to overcome it by reducing

the carbon footprint. NFC being is readily available to the environment but not utilizing it is a major drawback to society. This will also help to increase the security system in the institution which is crucial in the present world. Developing this application is a pathway towards a better future in hopes that the NFC-based keyless entry system will be able to completely enclose the system not in the university sector but the secondary sector as well. In the future, with the improvements, it will be done in order to enhance the design and usability so that it will be able to contribute more towards the society.

Developing a Badminton Court Booking Mobile Application- OwnBook App

Tan Qi Sheng, Kasthuri Subaramaniam, Abdul Samad Bin Shibghatullah

Introduction

With the advancement of science and technology, online booking has become one of the most popular modes of booking. There is no doubt that it has influenced customer behaviour and changed from a physical booking model to an online booking strategy. Mobile applications are the most popular online booking model. That's because, in this day and age, everyone, including children, carries a smartphone. This implies that since the majority people are familiar with mobile applications, an increasing number of users will begin to utilise mobile apps to complete their bookings. In addition, the badminton court booking app will attempt to include QR code technology. As a result, users may utilise the technology to open their court without having to go via a staff member.

Objectives

1. To study the existing badminton court booking applications.

2. To design and develop an application that enables users to book court.

3. To evaluate the developed application.

Methods

The developers of this project will use a questionnaire survey and quantitative methodologies to get project requirements and data collection. Questionnaire surveys are employed because they may gather data more rapidly from larger data sets. Moreover, quantitative techniques are ways of gathering the number of results from the questions asked and evaluating the variables of the data to produce the findings. This can immediately assist developers in determining the demands of users. As a result, the questionnaire will be sent at random to 100 people who are be keen on badminton, and the acquired data will be qualitatively analysed to completely comprehend all of the particular data.

Results

Due to the ease of use of this badminton mobile app, a rising number of users, particularly young people with higher education, are utilising to book badminton courts. According to the findings of this survey, the majority of participants felt that making a badminton booking makes booking a badminton court easier and

faster. Additionally, the badminton reservation app would give customers the detail court information, such as time, date, cost and so on. Furthermore, the respondents respond that the typical badminton booking system only provides the standard booking method, but users must also go to the counter to inform staff of open their court, thus OwnBook's automatic badminton court unlock feature is something to look forward to.

Conclusion

Nowadays, as mobile application technology has matured, it has slowly transformed people's lifestyles. As a result, the mobile application developed in this project can be considered to have gone through multiple development phases in order to successfully identify and achieve the project's key objectives. The primary goal of this project is to research and analyse existing badminton booking system in order to create a better user-friendly and convenience badminton booking system. By comparing and studying the platform, service, organisational structure, and features utilised by other badminton reservation systems, and incorporating these features. Furthermore, after analysing user demands through a questionnaire survey, the developer will create a badminton booking application that fulfils user wants, and guarantee that the developed application can satisfy user's requirements.

Developing a Virtual Queueing System – Digital Queue Management System

Yong Tze Keong, Javid Iqbal Thirupattur, Raenu Kolandaisamy

Introduction

The world was paralyzed by COVID-19. All human societies share a common responsibility to combat a global disruption like this new pandemic that transcends racial or political lines. via a Queue Management System that can structure the existing queue, or proactively, via the System for collecting statistics on queue management These results could be utilized to enhance service to customers, improve pedestrian traffic, optimize category including specialize, and construct information technology infrastructure and call centres To improve their customer satisfaction and experience, businesses typically add more counters and workers in order to achieve higher customer satisfaction and retention rates. A digital queue system, on the other hand, can accomplish this without increasing costs.

Objectives

1. To reduce the wastage of paper ticket by replacing to digital ticket

2. To develop a function that could provide real-time information related to the store or public area.

3. To provide functionality to queue virtual without attending physically

Methods

The system will act as a consumer feedback system by replacing paper with QR codes. This system is primarily intended for open-source ticketing system, which presently operates using a standard queue management system that distributes paper tickets. Even though the method isn't ideal, it may still be used to get an e-ticket for number verification via digital queueing. Customers and providers who use the system has different base, depending on their privileges in terms of system access and capability. The digital queueing system's capability includes the ability to generate queueing tickets as well as give in and out verification.

Results

Numerous firms are currently employing queue management system services to maintain order in their line-ups. Several difficulties have been identified in the

present queue management system as a result, the growing number of users. Problems with the present queue management system include the wasting of paper when paper tickets are distributed to consumers and the absence of a fully schedule system list for clients who are waiting in a lengthy line.

Conclusion

Finally, in this project, The DQMS system has been established to assure its capacity to assist the store with queue management. By replacing their paper ticket into virtual queue. Consequently, the implementation of the system enhances the problem statement. Due to capacity constraints, the DQMS can assist small businesses in enhancing their administration by utilising virtual queues. In addition, since decide to publish this is as an open system software that would be utilised by any shop, those who are interested can register for testing after the system is live, along with tasks based on resolving a critical product management issue.

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KUALA LUMPUR CAMPUS DU020(W)
1, Jalan Menara Gading, UCSI Heights (Taman Connaught) Cheras, 56000 Kuala Lumpur, Malaysia.
General Line (+603) 9101 8880   Course Enquiry (+603) 9101 8882   Fax +(603) 9102 2614

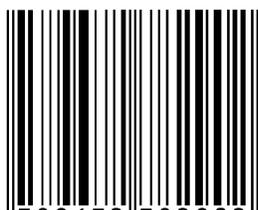**KUCHING CAMPUS** DU020-02(Q)
Lot 2976, Block 7, Muara Tebas Land District, Sejingkat, 93450 Kuching, Sarawak, Malaysia.
Tel +(6082) 596 965   Fax +(6082) 596 975

SPRINGHILL (SEREMBAN/PD) CAMPUS DU020(W)
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General Line: (+606) 648 8888   Course Enquiry: (+606) 648 8880

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