UCSI University

ICSDI
INSTITUTE OF COMPUTER SCIENCE AND DIGITAL INNOVATION

Designing and Implementing Final Year Project

- with Success

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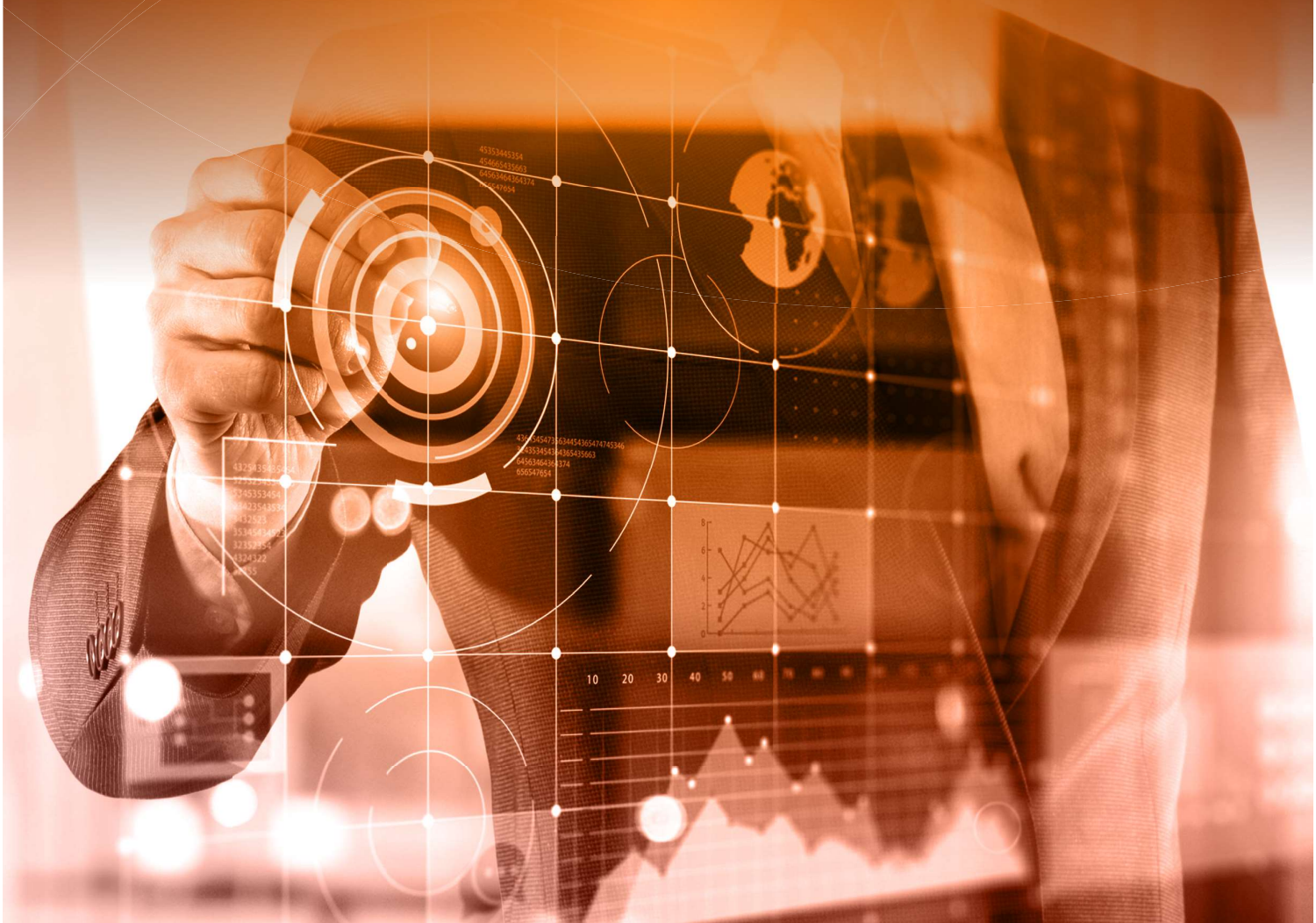

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Foreword by
DIRECTOR

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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 a Veterinary Clinic Management System – VetCMS

Ng Jing Ru, Chloe Thong Chee Ling, Raenu Kolandaisamy

Introduction

A management system is a set of rules, processes, and procedures which can help an organization or company to manage its business in order to achieve its missions or objectives. Hence, most of the companies have implemented their own management system. Veterinary Clinic Management System is designed to help the customer to register details, make the appointment easily, and keep the medical history of pets. The veterinary management system able to keep and manage the data and information of the pets and customers. This can reduce the workload of staff when finding the documents of the customers. With the veterinary clinic management system, it can also prevent the loss and damage of the documents and produce a paperless working environment.

Objectives

The objectives of this study are as follows:

- To study the existing pet clinic management system.
- To identify the strengths and weaknesses of the existing system.
- To develop a Veterinary Clinic Management System - VetCMS.
- To evaluate the performance of Veterinary Clinic Management System – VetCMS.

Methods

The system methodology used in this project is modified waterfall model. It is an approach of system development life cycle (SDLC). SDLC refers to the process of determining how an information system can support business needs, designing, building, and delivering it to users. The reason that waterfall model was chosen is because its advantages are suitable with the development of this project. Waterfall model that implemented in this project consists of a few phrases which are planning, design, testing and implementation, and deployment and maintenance. Each of the steps must be conducted in order which each process must be complete before starting the next process.

Results

Based on the questionnaire survey that carried out to collect and gather the requirements for developing this project, 86% of the 50 respondents or their family members have owning pets. Thus, 86% of the respondents think that it is necessary for a veterinary clinic to have a veterinary clinic management system. Hence, this project will definitely bring the users like pet owners and staff of veterinary clinic a great convenience in doing their works. By this project, the users will not only can do registration for the pet, do appointment for pets, the users can also view the pets' medical report and generate it in PDF files. Hence, the pet owners can always have a medical reports history belong them, and it will be useful during the emergencies time.

Conclusion

In conclusion, the Veterinarian Clinic Management System – VetCMS has been developed and can be functioned well. This proposed system able to ease the work of the users of this system. There are 3 main users that had been aimed which are Admin, Pet owner which is also known as Customer, and Veterinarian. This system allow users to do appointment for pets, affirm for the appointment, edit the users' information, do registration for pet, generate pet's medical report in PDF file and so on. VetCMS is developed by Microsoft Visual Studio with the

VB.net programming and SQLite is used as the database engine of the system. Star UML also been used as a tool for develop the use case diagram, class diagram, and activity diagram. The objectives which are stated in this project have been achieved by writer.

Developing a Library Management System

Joseph Wan Jing Sheng, Abdul Samad Bin Shibghatullah, Heshalini Rajagopal @ Ramasamy

Introduction

The appearance of library had changed the world of the century because it makes a big contribution. A library is a huge collection of books and resources are available for people or students to access and view. It is a place with tons of books and research captivating people to gain knowledge, improve oneself, improve cognitive and a place for studying. It gives a chance for those people who have no opportunity to read or gaining knowledge. So that it can give them a lot of prospects in the future. Hence, library had bring a lot of convenience and benefit, it could satisfies those people who desire to read and learn. The knowledge provided from the library could optimizes people to achieve a better result in their academic and personal skill development. The advanced of technology causes the demand of developing traditional set up to a digital set up. What is Library management system(LMS)? According to the research, it is an automatic system that reduces the work burden of the staff through a single click. It will manage, organize and oriented the library task .The LMS provide librarian convenience to

add, delete, manage, view and update the details from the library stock .The library data will be combine together and store into the SQL sever. It has some features such as librarian can maintain library records, user's history of penalties, books rental record and so on. It will always track the amount of the books and issued book details.

Objectives

- Help customer to rent a book via online
- Easy to check the available quantities of the books via online.
- Better-Customer Service
- To study the current e-wallet systems

Methods

The methodology will be used to develop the system is Waterfall Development Methodology. The reason of choosing this method because it allows departmentalization and control. Most of the eliminate project risks by conducting detailed research and adequate research on product features up front. Because most of the research is done ahead of time, estimates of the time required for each requirement are more accurate, providing a more predictable release

date. Besides, the chart statistic is an information gathering which is collect from 15 users by using survey form. It is a best way to help developer study user needs and wants more efficiently.

Results

During the pandemic, it shows that technologies have magnified and it brings a lot of convenience efficiency for users. Certainly , library management system will also help users more efficiently borrows books and query the number of books. By using this system, Although there is a lot of room for improvement, the system will continue to improve and advance. Compared with the manual library management system, the librarian will be no more confusion for the complex operation and waste time on it.

Conclusion

There are a few achievements of objective which are help customer to rent a book via online, easy to check the available quantities of the books via online , better customer service and study about library management system. Our target is not developed an online website. In the past few years, Mobile phones have been developing at an unexpected speed, and now everyone has a mobile phone. Of course, using mobile apps will be people’s first choice while doing any

systematic procedures. So we hope to develop a mobile application in next few years. The second target of our company is to expand our library and the system to whole Malaysia. We hope all the residents of Malaysia can easily to find and rent a book no matter you are in which state.

Development of a Hospital Management System - HMS

Suraiya Kawsar, Javid Iqbal Thirupattur, Shayla Islam

Introduction

With the rapid development of computer networks today, the Internet has become an important channel for people to quickly obtain, publish and transmit information. It plays an important role in the politics, economy, and life of the whole society. Today, just relying on the original manual management and verbal information, people have been unable to effectively demand a large amount of information the people's daily life and makes the corresponding judgment and processing, management decisions can only according to the report data, wasting a lot of manpower and unable to achieve effective monitoring, it is difficult to ensure the accuracy and timeliness of information, Hospital Management System (HMS) is a system that combines all the necessary functionalities of managing a hospital by providing quick and efficient services to the community and workers. There is a team of workers who needs to collaborate to treat each patient, for which an integrated automated system is necessary to attain all the activities and responsibilities on time.

Objectives

- To study the strengths and weaknesses of the current hospital management system.
- To develop a prototype of a hospital management system.
- To design a platform that allows physicians to check up on a patient's medical history to conduct a more complete assessment.
- To make it easier to arrange a doctor's appointment.

Methods

Analysing the current survey data and specific successful case studies of HMS would yield a better result in finding the requirements to the research topic framed, allowing researchers to reach a definitive understanding of the overall situation regarding E-Hospital Management and Hospital information systems. Because it makes it simpler for the researcher to assess the responses, the questionnaire was chosen for this study approach. Motives for using this evaluation approach include it being more effective, less expensive to perform, timesaving and it can reach a wider audience.

Results

The results of the questionnaire were trying to target the responses as to what the requirements would be for the project at hand. Most of the respondents had an issue with booking an appointment before and their main complaint was that it took too long for the process to be completed or it took longer than desired. When prompted to answer as to what could have been better about the process, majority of them answered they want the system to be more efficient and faster and they wanted direct contact to the doctor or department. There was mention of how they would like the system to be universally used on phone and desktops. It confirmed the requirements set out for the system which was to streamline the communication between doctors and patients and people seemed to want that.

Conclusion

The system's effective establishment and attainment of the project's main goals may be attributed to its continued use throughout the project's various phases of development. The major goal was to research existing HMS systems before creating a hybrid system for public use. The system was created after survey questions were used to learn about the needs of the public. The researcher downloaded many applications, evaluated them to identify their defects, and had others try them as well to identify their advantages and disadvantages. When it

comes to creating an HMS for people, examining current systems and literature is a minimal start toward resolving a problem that has been identified. The creation of an HMS prototype was the second objective. The primary functionality of the HMS prototype, scheduling appointments, was implemented successfully. It is responsive and looks better on mobile devices. It may be installed as an application on a mobile device. The third objective was to establish a platform that enables doctors to review a patient's medical history to provide a more thorough evaluation. Time restrictions prevented completing this goal. The fourth and last objective was to simplify scheduling a doctor's visit. This was tested by some participants to know if the process was smooth or not.

Hotel Management System

Lee Tse Wei, Neesha Jothi, Kurunathan Ratnavelu

Introduction

A management system is a tool that allows organizations to manage their interrelated parts of their firm to achieve their goals. These can be related to various part of their firm, including product services, efficiency of work, health, and safety [1]. With the development of new era, our advancement in technology, inventions, and revolution of the software. Many things have changed how it will work from previous times, the reality has been transformed into virtual reality of data and information, the records which was initially a hardcopy has transferred into a softcopy for easy access. We could bring a lot of benefits by using software that provides management of various topic in a business. With the increase in business and leisure travellers, the demand for hotels is in the rise. It is a great idea to pay attention to the competition of the international market, the way to do it is by hotel management.

Objectives

- To study the existing Hotel Management System in the market
- To identify strength and weakness of the existing HMS
- To design and develop a hotel management system
- To test and evaluate a hotel management system

Methods

The development of this app, it is important for having the knowledge and information of about the Visual Studio coding since we will have to use the programming languages to develop the management system. Other than that, managing the system development life cycle (SDLC) is crucial throughout the project of developing, this helps in a clear and helpful path to development of the management system.

Results

Throughout the project, the user will find it easy to access the website or app as it is designed to be user friendly. Every design is considered as the website and app was made and every detail is taken from the successful and most used user

interface. The management system will consist of showing the detailed information of the customers, including mobile, email, gender, and nationality. Other than that, it will also function as a calculator that calculates the total of days the customers will be staying and the total cost of stay.

Conclusion

In conclusion, the hotel management system is a useful tool that can helps in the gathering and recording of information. This can improve the efficiency of the working environment of the employees of a business and the convenience of the customers booking for a room to stay and to protect their privacy and safety. Furthermore, the hotel can manage the data and information in the cloud to arrange the rooms to the customer and will get to know the number of empty rooms that are available by registering the status of the customer on whether the customer is checked in or checked out. However, this system can always be improved and adding new functions to enhance the efficiency.

A Development of a Travelling Mobile Application in Malaysia

Wong Wei Cong, Shayla Islam, Ghassan Saleh Hussein Al-Dharhani

Introduction

ThREE FOOT is a mobile app which provides information regarding hidden natural spots that are hard to find. The apps provide information regarding these spots and encourage both experienced and first timer to visit the local business and site to relax. The main attraction will be camping site, hiking site, beaches, island, lakes, waterfalls and much more. This study's objective is to create a prototype mobile application that visitors to Malaysia can use to gather information about natural attractions worldwide. The objective is to pique people's interest in nature and offer a tranquil setting where they may unwind after a hectic workday. In addition, it enables them to interact, try out new activities, and meet new people.

Objectives

- To study the existing travel app to find out what the system lacks
- To develop a user-friendly and free apps for the community
- To evaluate the performance of the developed travelling mobile application by conducting survey on the user experiences after it is completed and compare it with the existing application.

Methods

Prototype technique is effective for creating mobile applications, it is used instead of other methodologies like SDLC or RAD. This approach has significantly reduced the chance of failure by using client feedback and prototypes to refine the project. Errors may be simpler to find with this technique. There will be 2 surveys with 14 questions altogether for a precise feedback and accurate study from test users.

Results

This project intends to inform users about natural attractions including hiking and camping spots. At debut, the app is accessible on both iOS and Android. The goal

of this project is to give as many people as possible the information they need to carry out their tasks. The application is easy-to-use, and results can be searched by categories.

Conclusion

The project's purpose has been verified, established, and achieved using various development stages and trial-and-error methods. The system's primary objective was to inform both locals and visitors about travel destinations in Malaysia. It is a strategy to reduce neighbourhood conflict and offer tourists a fresh, enjoyable holiday place. This study has demonstrated that even locals generally have no idea where to travel. The application offers a variety of holiday destination categories that are suitable for various types of people. Early planning, research, and studies were conducted to make sure the application's purpose and functionality. As a community cannot benefit from an application that has no objectives or purposes. Out of all the tasks, conducting the research for the information needed for the application turns out to be the most difficult. The goal of compiling all the data and developing this application was to make life easier for the community. This system has demonstrated its capacity to benefit the community.

Warehouse Management System

Liong Wei Kian, Kasthuri Subaramaniam, Neesha Jothi

Introduction

It is a challenge for every warehouse staff member to get the goods in the right place, to determine the quantity of goods, to confirm the exact condition of the goods and to get them to the shelf or to the consumer. This is especially true for small and medium-sized warehouses that do not have a well-managed system. These small and medium-sized warehouses may not have a lot of storage space but may have a large number and variety of goods to store. When the variety of goods starts to increase, the warehouse starts to become cluttered, making it impossible for shopkeepers or warehouse workers to get goods from the warehouse efficiently.

Objectives

- To study and learn about warehouse management.
- To identify the advantages and disadvantages of the current approach.

- To design warehouse management systems for small and medium enterprises.
- To develop warehouse management systems for small and medium enterprises.

Methods

The developer aims to collect the information and materials needed by the system developed this time from users. The purpose of the main research is to understand which main functions can be provided to users and solve their problems. In this development, the use of the choice questionnaire was chosen. Because the selection questionnaire can be faster, and more people are willing to fill in the feedback for it. Questionnaires are distributed to users with basic concepts of warehouse management to collect data for system development.

Results

The usefulness of warehouse management systems is increasingly being relied upon by businesses, especially large businesses with multiple warehouses. Therefore, according to the survey, most of the participants believe that it is necessary to develop a warehouse management system for small and medium enterprises. Most of the participants also believed that the warehouse

management system could solve some warehouse problems for the enterprise. For example, it allows warehouse employees to find the location of goods, the quantity of goods, information and solve customer information problems more quickly.

Conclusion

As a conclusion, the project has progressed through multiple development stages and has achieved the main objectives of the project within a limited time frame. The main purpose is to study the existing warehouse management system, and then develop a warehouse management system that can solve some problems for small and medium-sized enterprises. The system is developed after collecting user needs through a questionnaire. While developing the system, a study of existing systems and literature is a step-in filling in the identified gaps. The needs of warehouse management system users may change all the time, so developers will ensure that the developed system can meet the needs of warehouse management system users.

A Novel and Improvised Ambulance Booking Service System

Tee Wen Jun, Shabana Anjum Shaik, Kasthuri Subaramaniam

Introduction

In Covid pandemic period, the demand of private ambulance service has almost quadrupled since June of 2021, as they complement the government's health services to deal with the high number of Covid-19 cases. According to the Malaysian Red Crescent, demand for its private ambulance service has increased by 80% since June 2021 compared to prior months 2021, in accordance with the current increase in cases in Kuala Lumpur and Selangor. The factor leading to the need for effective ambulance services is current ambulance response time was delayed. One study in Hospital University Sains stated that of the 300 ambulance calls received throughout the research period, 254 cases (84.7%) had a delayed ambulance response time. Traditionally, Malaysians may use phone calls when in an emergency by calling the number 999 to ask for rescue. Also, the person in an emergency needs to provide information about any kind of mischief. There might be some problems that exist in a traditional phone call in an emergency. Ambulance Booking Service System prototype is an android application

developed using Android Studio (Java). It is aimed to improve the efficiency and service quality of Ambulance Booking Service System as well as taking the critical patient to hospital in less time.

Objectives

- To study the existing ambulance booking service systems.
- To design a prototype of ambulance booking service system.
- To develop a prototype based on novel ABSS technique.
- To evaluate the novel ABSS technique using comparative analysis.

Methods

The system development methodology used in this project is System Development Life Cycle (SDLC). The reason is that SDLC is suitable for systems that will require changes and future requirement. Questionnaires are the method used in this project to analyse the existing systems on a comparative basis. The reason is that it enables quicker data collecting from bigger data sets. The survey questionnaire will be issued to the inside and outside of UCSI from various backgrounds in order to obtain data for application development. As a result, the requirements for the proposed prototype were determined. After the development

of the prototype is finished, the system testing will be tested by the end users. Survey is the method used in this project to evaluate the prototype.

Results

Based on the survey questionnaire, the developer has obtained data such as 82% users more prefer book an ambulance with phone call whereas 18% users more prefer book ambulance with system. In addition, 74% users do not face problems whereas 26% users have face problems when booking an ambulance with system or phone call before. As a result, the user acceptance testing is almost satisfactory for the users. The outcome of this survey is to ensure the users are satisfied with the features and functions of ABSS. The developer has obtained some opinions from users to require changes in the future.

Conclusion

In conclusion, the prototype in this project has been developed successfully. Ambulance Booking Service System prototype is an android application developed using Android Studio (Java). Ambulance Booking Service System prototype allows users to perform some functions such as book ambulance, view First Aid information, and others. It is aimed to improve efficiency and service quality of Ambulance Booking Service System as well as taking the critical

patient to hospital in the less time. This prototype also has been tested by many end users in the evaluation part. By way of this study, all objectives have been achieved. The most important takeaways in this study are excellent time management which is the finding obtained from the testing results of the prototype and tool readiness achieved through the user perception survey results of the study.

Day-to-Day Expense Tracking Application – Envisage

Kaung Zin Ye, Ghassan Saleh Hussein Al-Dharhani, Javid Iqbal Thirupattur

Introduction

Envisage Expense Tracker is a tool for managing everyday expenses that makes it simple and effective to keep track of spending. It assists the user in tracking daily spending for paid and unpaid transactions, which removes the need for hardcopy output. Android application was created in a way that the user would not have to exert much effort to use it. Envisage Expense Tracker is a mobile application that runs on Android. The user can keep a computerised journal with this application. This app will keep track of your costs and provide you with a category-by-category breakdown. This software will also include a feature that will assist users in staying on budget because they will be aware of their spending. For the sake of user's convenience, this project will be developed on a mobile platform. People enter their expenses in the register both then and now to determine whether they made a profit or not. Some of the traditional methods used to deal with this problem in normal circumstances include common users using sticky notes and proficient people dealing with this type of problem by using spreadsheets to record expenses.

Objectives

- To help users manage their expenses daily
- To help users visualize their spending habits with transaction history
- Remind users to add income/expenses into Envisage daily with a notification
- Users can update or delete transactions

Methods

Prototype technique will be used instead of other methodologies like SDLC or RAD. This is because, via the use of prototypes and client feedback, this methodology manages to lower the chance of failure. It also makes it simple to spot mistakes in the early stages of development. A requirement analysis is the first step in a prototyping model. Users of the system are interviewed to learn what they anticipate from it. Online surveys will be handed out to users randomly so real requirements are set straight. A preliminary design, sometimes known as a fast design, is the second phase. The information acquired during rapid design is used to create an actual prototype in the third phase. Surveys will be sent out showing the application screenshots and describing every feature of the app. A prototype is developed based on a user's feedback and suggestions. A final system

is produced based on the approved final prototype once the user is pleased with the developed prototype. Routine maintenance is performed on the system to save downtime and prevent large-scale failures. The final product is thoroughly tested and deployed to production when it is developed from the final prototype.

Results

Envisage Expense Tracker can fulfil the needs to ones that need to track their finance daily. The application is easy-to-use and lightly built. It has features that was stated in the objectives above such as adding, deleting, and updating transactions with ease. It will definitely be a better application after adding features that was recommended by users such as linking with bank accounts and giving users monthly summary of their expenses.

Conclusion

In the end, the system was created through all of the project's different phases, which resulted in its successful implementation and achievement of the project's primary objectives. This research and development's main goals are to understand how individuals spend their money and to encourage consumers to be thrifty. The results were as expected because, as the polls indicate, users found the programme to be useful. The first three objectives involve researching,

investigating, and planning how, why, and for what the system or software is intended. Because building a system or app without a purpose is meaningless, this is essential for the app to have one. The fourth objective is to move from theory to practise, which entails creating an ideal spending tracker. Everyone can use the application, which has been shown to be beneficial by a sizable number of test users. On a bigger scale, the programme will give each user a complete picture of their purchasing patterns, and having more responsible consumers will improve society overall by fostering greater wealth and economic progress.

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