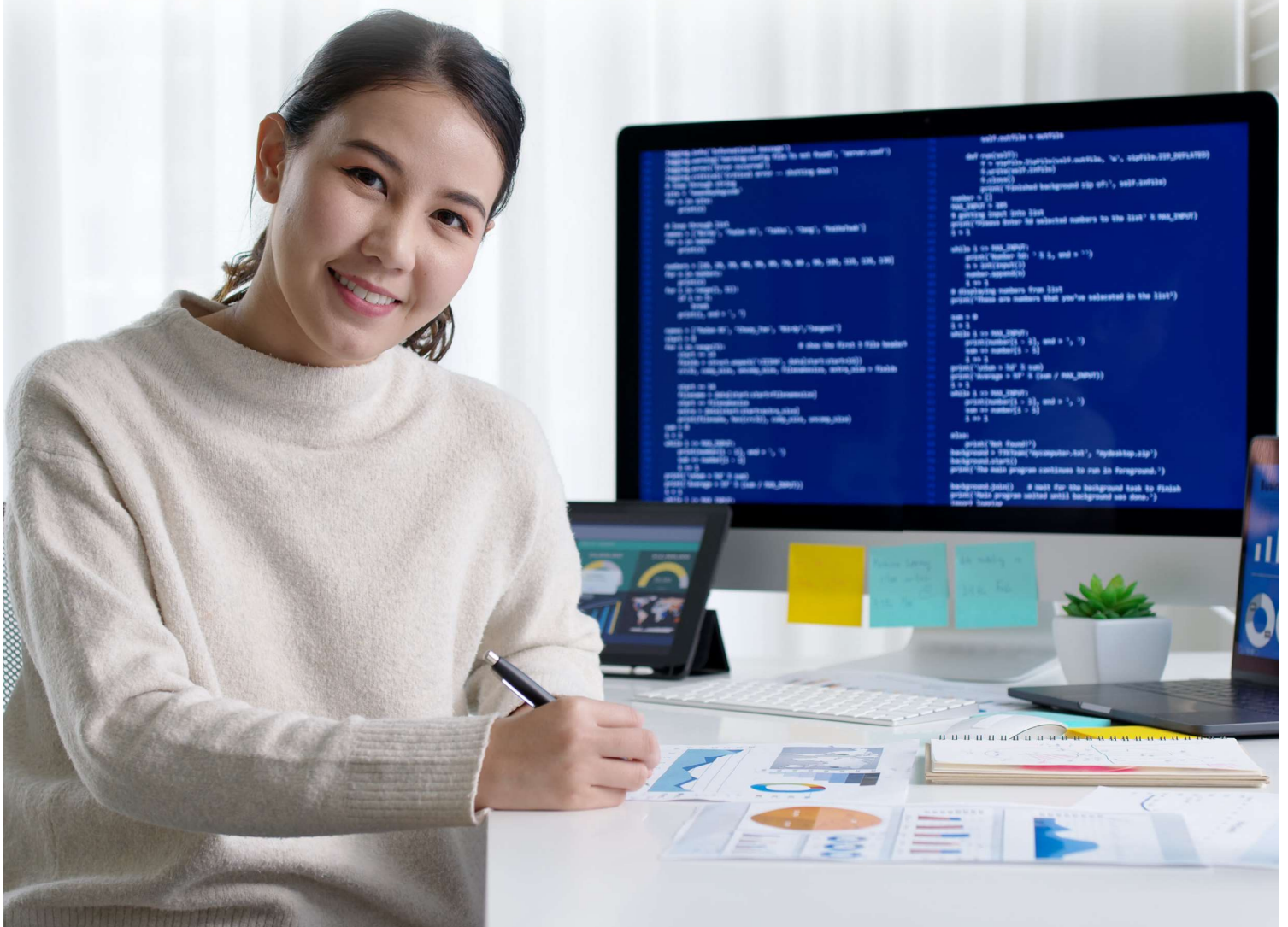




Designing and Implementing Final Year Project - *with Success*

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Editors

Kasthuri Subaramaniam & Alan Keoy Kay Hooi

Contributing writers:

ICSDI staff and students

Graphic Designer:

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 Subramaniam, 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.

Online Cafeteria Transaction System in UCSI

Chen Swee Lin, Shayla Islam, Javid Iqbal Thirupattur

Introduction

The Online Cafeteria Transaction System is a platform designed to streamline the ordering and picking up process for cafeteria customers. The online cafeteria transaction system is designed to allow students or teachers to go to the cafeteria's website to pre-order and purchase food during their free time, and then choose a free time to pick up the food from the cafeteria, thus saving the students or teachers time and eliminating the hassle of standing in long lines to purchase food. The website function of the food ordering system is to allow customers to make pre-order choices from the menu items on the website. Then, when it's time to pick up the food, they can pay and pick up the food at the restaurant. In addition, the system provides a way for customers to provide feedback on their experience, allowing the cafeteria to make improvements and adjustments based on their suggestions. Overall, the online cafeteria transaction system is a user-friendly and effective way to streamline the cafeteria ordering process and provide a better experience for customers.

Objectives

1. To investigate the strengths and weakness in online cafeteria system.
2. To design the online cafeteria system.
3. To develop the online cafeteria system.
4. To evaluate the online cafeteria system through user experience and compare it with existing systems.

Methods

The methodology used to develop this system is throwaway prototyping. The throwaway prototyping pattern is quick and inexpensive to design. When using this methodology, users can get feedback from end users and continue to work feedback from the end user and continue to work on developing a system that meets the end user's requirements. The survey questionnaire form will be sent to my friends to collect the data for website function and design.

Results

Food ordering systems are only becoming more popular in this day and age, especially among young people. According to the data obtained from the survey questions, most people like food ordering systems because of the convenience,

and many young people choose to pre-order food and then pick it up at a specific time, which is both less time consuming and more convenient.

Conclusion

Finally, the use of technology has brought convenience to people and many businesses use technology to improve their management. However, there are limitations to the food ordering system, such as technical problems, cost, and payment security issues. Future enhancements can include QR code for pre-ordering, adding more payment methods, and introducing an evaluation form for customer feedback. The major contributions to society include convenience, increased revenue for restaurants, and improved efficiency. In conclusion, the implementation of this system can bring huge benefits to the restaurant industry and a well-designed system can increase customer usage and revenue.

Developing a Pharmacy Management Software

Nafiu Uddin Khan, Ismail Ahmed Al-Qasem Al-Hadi, Shabana Anjum Shaik

Introduction

The majority of pharmacies now employ a time-consuming, manual procedure. By optimising the process, cutting errors, and utilising an automated pharmacy system, patient safety can be raised. A pharmacy has traditionally done more than merely fill prescriptions. People saw pharmacists as consultants, someone to help them choose an over-the-counter medication or comprehend the dosage and instructions for a prescription. Despite their constant want to assist, they rarely had enough information about a person's medical history, allergies, or treatment plans to offer more specific advice. The way that pharmacies operate is evolving along with the rest of the healthcare industry.

Objectives

1. To minimise errors and streamline the dispensing procedure.
2. To improve the efficiency of the dispensing process.
3. To design the system architecture and user interface.

Methods

The methodology for developing a pharmacy management system can vary depending on the specific needs of the organization and the resources available.

Requirements gathering: The first step is to gather requirements from stakeholders, such as pharmacists, pharmacy technicians, and administrators.

System design: Based on the requirements gathered in the first step, the next step is to design the system. This includes creating a detailed plan of the system's functionalities, data structures, and user interfaces.

Implementation: Once the system design is finalized, the implementation phase can begin.

Testing: After the implementation phase, the system must be thoroughly tested to ensure that it meets the requirements and is functioning correctly.

Deployment: Once the system has been tested and any issues have been resolved, it can be deployed to the production environment.

Maintenance and support: After the system has been deployed, it will require ongoing maintenance and support to ensure that it continues to function correctly and meets the needs of the pharmacy.

This may include bug fixes, updates, and user training.

Results

Increased efficiency: A pharmacy management system can automate many routine tasks such as inventory management, prescription processing, and billing.

This can save time and reduce the risk of errors, allowing pharmacists and technicians to focus on more complex tasks. Improved accuracy: By reducing the reliance on manual processes, a pharmacy management system can reduce the risk of errors such as dispensing the wrong medication or dose. This can improve patient safety and reduce the risk of liability for the pharmacy. Better patient outcomes: A pharmacy management system can help pharmacists monitor patient medication history, identify potential drug interactions or allergies, and provide tailored medication counseling. This can help to improve patient outcomes and reduce the risk of adverse drug events. Cost savings: A pharmacy management system can help to optimize inventory levels, reduce waste, and improve billing accuracy. This can lead to significant cost savings for the pharmacy. Enhanced reporting and analytics: A pharmacy management system can generate reports on various aspects of pharmacy operations, such as inventory levels, dispensing patterns, and billing data. This can help pharmacy managers make data-driven decisions and optimize operations. Overall, implementing a pharmacy management system can provide many benefits to the pharmacy, its staff, and its patients, including increased efficiency, improved accuracy, better patient outcomes, cost savings, and enhanced reporting and analytics.

Conclusion

This chapter presents the conclusions of the project, including a summary of the key findings, the implications of the project for pharmacy management, and recommendations for future research. In order to ensure effective and precise management of its operations, pharmacies must use a Pharmacy Management System (PMS). The system is capable of managing duties like customer management, sales monitoring, inventory management, and prescription management. A PMS can increase productivity, decrease errors, enhance patient safety, and boost profitability for pharmacies. It is crucial for pharmacy owners and managers to properly assess their organisational demands and select a PMS that meets those objectives.

The Development of a Music Recommendation Application by Using Facial Emotion Recognition

Shengke Xie, Raenu Kolandaisamy, Ghassan Saleh Hussein Al-Dharhani

Introduction

Music is an important part of human life and culture, and it can affect people's emotions and moods. However, choosing music from a large library of thousands of songs can be a challenging and time-consuming task, especially when people are not sure what kind of music they want to listen to. At the same time, traditional music recommendation functions often have a mismatch between the recommended music and the user's current mood, such as recommending sad songs when the user is happy or upbeat songs when the user needs to calm down. For this problem, we will use a camera to capture the user's image, use python deep learning based facial expression recognition technology to identify the user's current mood, and select the music that matches the user's current mood from the music categories in the database that apply to different moods to recommend music to the user, thus trying to reduce the user's anxiety in choosing music and improve the user's experience.

Objectives

1. To study the facial emotion recognition technology.
2. To study the strengths and weakness of different facial emotion recognition approach.
3. To design a music recommendation application based on user's facial emotion.
4. To develop a prototype music recommendation application using facial emotion recognition technology

Methods

This system will use convolutional neural networks as the basis for facial expression recognition, by capturing the user's image using a local camera, using the trained convolutional neural network to recognise the user's current mood and recommend music that matches the user's current mood from the downloaded music that has been categorised into different mood folders, thus attempting to reduce the user's anxiety in choosing music and improve the user's experience. According to the need, the design of this system is mainly divided into seven modules which are Image pre-processing, Face detection, Emotion recognition, Music download, Music classification, Music recommendation and Music playing. The Image pre-processing, Face detection, Emotion recognition module

are used for the recognition of facial emotion, and the remain four modules are used to classify the music crawled by the crawler according to the emotion of the subject represented by the music and to implement the music loading, play and pause function.

Results

In this study, we have successfully designed and implemented a face recognition-based music recommendation system using the python programming language in the PyCharm development environment. Based on the test comparison, we found that the face expression recognition model is not greatly affected by the light brightness and can accurately recognise faces within a distance of two metres from the camera, with the highest recognition accuracy for "happy" and "surprised" expressions, both exceeding 90%, and higher recognition accuracy for "neutral", "sad" and "angry" expressions, all exceeding 60%, while "fear" and "disgust" expressions were less accurate and were often incorrectly identified as other expressions.

Conclusion

Facial expression recognition has application needs in many scenarios, and today more and more fields have introduced expression recognition technology, such as the education field and the medical field. In order to meet the requirements of a music recommendation system based on facial expression recognition, this project uses the python programming language to successfully design and implement a music recommendation system based on a convolutional neural network model for facial expression recognition. After the design was completed, the system was also tested in actual use. The results show that the system has a high accuracy rate of expression recognition and is highly practical. However, the expression recognition function in the system is still inadequate for situations such as occlusion, side faces and distance, and the system's music classification function is limited to the classification of non-pure music. Future improvements will be made by adding more expression categories to the training and improving the music classification algorithm.

QR Code Based Smart Class Attendance Record System

Albert Wesly, Ghassan Saleh Hussein Al-Dharhani, Shabana Anjum Shaik

Introduction

Smart attendance system is removing the manual process of attendance records and automates the whole attendance record process from data collection to reporting, as well as displaying the result. The function of smart attendance system is to track students' attendance record, to reduce time consumption, and to create effectiveness for data collection. The inside component of the system is mobile phone, QR code reader, laptop, and application. In this project will be creating smart class attendance system that will be implemented on university in the future. there are 6 types of smart attendance system which are barcode, fingerprint, QR code, Bluetooth, RFID, and face recognition. The project itself is purpose to track students' attendance performance and use in effective and efficient way. The university that will be implemented which is UCSI University Kuala Lumpur. The reason why this project choosing UCSI University because that the attendance record system still using signed method and it is ineffective and time consuming for the students and lecturer.

Objectives

1. To study the existing attendance system, its effectiveness, and identify their strength and weaknesses.
2. To survey students regarding the current attendance system.
3. To design an automatic student attendance system.

Methods

To research problems that developers aim to solve by collecting data from users' data such as giving a questionnaire. Since using Agile Development Cycle, it is flexible, fast, and responsive, it can help achieve completely. There will be 17 survey and contain in 2 section which is 4 questions about demographic (age, gender, nationality, and where student studied at) and the rest is about attendance system. This project is asked to random student in university and total 50 responses must be completed.

Results

Based on the survey question that have been distribute to random student in university. It can be concluded that most of the respondents agreed that attendance system in the university changed into QR attendance system. This

project will help students to track their performance, attendance and academic as well.

Conclusion

It concluded the objective stated has been fulfilled by identifying the problem faced by student such as the student can't concentrate or got distracted by paper attendance during lecture classes. The second objective is to design an automatic student attendance system. This is to help the student to create an app to help the student not get distracted by paper attendance and to make it less time consuming.

Home Line for Doctor Consultation and Booking

Komarina Dinesh, Abdul Samad Bin Shibghatullah, Javid Iqbal Thirupattur

Introduction

The technology has revolutionized the quality of life for people, with web and mobile computing applications becoming a necessity. Telehealth has been introduced in the early 2000s, providing healthcare remotely. Good health care facilities and good hospitals and experienced doctors are important to get good medical assistance for the people, but Remote areas and Rural areas are having difficulty getting good medical assistance and better engagement with healthcare providers. Additionally, elderly people and people who can't travel to hospitals and who do not have flexible time to visit doctor physically are facing challenges. The shortage of blood is a major problem in the healthcare industry, with only 57% of blood being acquired via blood donation programs in 2020. To address this, a web application is proposed that offers online doctor consultation through audio/video/chat with General practitioners and specialist. And Blood bank(connecting doners and receivers and hospitals). Users can also book appointments for hospital visiting and doctor home visiting and find upcoming medical campaigns or blood donation campaigns. Patients can get free advice

about their problems by consulting GP in the proposed web application, which can reduce above discussed problems up to some extinction.

Objectives

1. To study the current systems.
2. To create a web application which provide online doctor consultation through audio, video, chat, blood bank, booking appointments for clinic visits and home visits.
3. To create a user interface that is easy to use and friendly to all users.

Methods

RAD methodology is used in the proposed system. The reason of choosing this method because of its flexibility compared to the traditional waterfalls method. Because of flexibility, fast, and responsive of the method, it can help achieving a high-quality software quickly. There is total 12 survey questions asked to random student in UCSI University and my friends and total 54 responses were achieved successfully.

Results

Based on the survey question that have been distribute to random student in UCSI University and my friends. Most of the respondents are said this proposed system will be benefitable for them. According to the responses, some of the respondents have experiencing the issues travelling long distance for good hospitals and doctors. This project will bring a great help to the people as 90.6% of the respondents said this proposed system will be benefitable for them.

Conclusion

Finally concluding this proposed system can solve the people's problems discussed in the problem statement up to some extent. The proposed system has the features of online video consultation, online clinic booking, online doctor home coming appointment, blood bank and showing upcoming campaigns. people can use this system conveniently and can save their time and reduce difficulty.

Develop a QR Code Application for Cashier-less System at the Supermarket in Malaysia

Yap Zi Yu, Heshalini Rajagopal @ Ramasamy, Ghassan Saleh Hussein Al-Dharhani

Introduction

With the development of technology, the term “cashless” can be referred to as a state approach where all monetary activity will take place through the movement of automated intelligence instead of physical banknotes or coins. Consumers can avoid carrying cash by using a credit or debit card, e-wallet applications, cashless payment, QR Codes, and many more. The advantages of having cashless in society are the convenience of not carrying physical banknotes or coins around, reduction of price while using cashless payment, controlling one’s transaction by keeping track on their monetary activity, and many more. As a result, self-service kiosks and cashier-less technology are currently developing in supermarkets and convenience stores. For instance, shops can offer cashier-less checkout to give customers the quick, secure, and convenient alternatives they want today. The existence of cashier-less technology benefits consumers as well as retail, where they can place employees in key locations throughout the shop to aid where it is

most required. The objective of this report is to create an application with the use of QR code in the supermarket for the nation to adopt cashier-less technology, improve the payment transaction, and also to keep track of the track of the consumer's transaction and loyalty's point.

Objectives

1. Analyse the existing supermarket application to find the gaps.
2. Develop a cashier-less supermarket application based on QR Code for contact-less groceries shopping experience.
3. Perform user acceptance test for developed application to examine the functionality of the application.

Methods

The methodology of this proposed application is the use of Software Developing Lifecycle (SDLC) to develop it, each phrase of SDLC was listed out to deliver a specific outcome to aid in the development of this app. By creating this application, Figure 1, will be the flow-chart diagram on the customer's viewpoint.

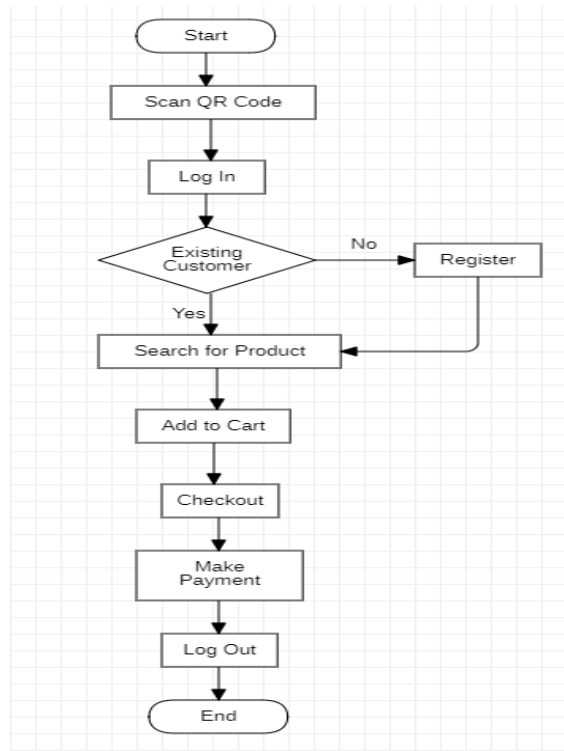


Figure 1: Customer's Viewpoint of Flowchart Diagram

Results

As a result, most businesses nowadays are using cashless payment to conduct their business and most of the consumers would rather use their mobile phone to pay for the expenses than cash. With the current pandemic, many would also do their shopping online rather than in physical stores as they cannot guess whether the person around them are safe from the virus or not. By having everything online, users can purchase their daily necessities online at a cheaper price, keep

track of their points, have a history on what they have previously purchased, and so on. Lastly, creating this application will bring comfort to the customer as they don't have to wait in the queue at the supermarket, they can check their history transaction, and other.

Conclusion

In conclusion, a cashier-less supermarket system purposed was to solve the problem statement and meet the objective with the methodology that in a short period of time to develop an application for cashier-less system and save the user data in the database. From this report, this system is able to solve the current issues and also to move forward with the advancement of technology.

Facial Emotion Recognition System for Mental Stress Detection

Foo Jia Ming, Shabana Anjum Shaik, Shayla Islam

Introduction

In today's highly competitive world, mental stress has become a serious concern, particularly among youngsters and university students. The age previously considered the most relaxed is now surrounded by a lot of stress. Stress can be defined as a term that is frequently utilized synonymously with negative life and causes physical, emotional, or psychological strain. Increased stress among university students causes several difficulties in their academics, including depression, lack of interest in attending class, struggle to comprehend the topic, and suicide ideation as a result of poor self-esteem. The emotional signs of a high-stress level include being angry, impatient, frustrated, or moody. Therefore, a Facial Emotion Recognition system for Mental Stress Detection will be developed and used to detect the indications of stress in university students based on their facial expressions in this project.

Objectives

1. To design a user-friendly Facial Emotion Recognition system that is easy to understand and implement for Mental Stress Detection.
2. To detect face in the presence of blocks like face masks.
3. To detect indications of mental stress among university students using a Facial Emotion Recognition system.

Methods

The system will be developed with the reference to Rapid Application Development (RAD). The RAD methodology was chosen for this project because it is suitable for the system, which needs to be produced in a short amount of time, like 3 to 4 months. Besides that, it is also flexible and adaptable to changes with the advice of supervisor. With the RAD methodology, productivity can be increased in a short time with fewer people. RAD will start with requirement planning, user design, rapid construction, and transition phases. Other than that, the project also combines quantitative methods, historical research, and questionnaire methodology.

Results

The analysis result from the “Facial Emotion Recognition System for Mental Stress Detection Survey” shown that people may not always seek professional help or guidance to assess their mental well-being. Instead, they may rely on their own perceptions and understanding of their emotions. Other than that, it also proved that there are 30% of the respondents were not aware that they were experiencing symptoms of mental stress. The survey also found that students experience different emotions depending on the situation. When faced with stressful situations, they tend to display sad or fear on their facial expressions. On the other hand, engaging in relaxing activities tends to happy and surprised emotions. This information can be used to define and develop the algorithm.

Conclusion

All in all, the development of the Facial Emotion Recognition system for Stress Detection with Python has been successfully developed and achieved the aims and objectives stated at the initial planning phase. The main objective is to design a user-friendly Facial Emotion Recognition system that is easy to understand and implement for Mental Stress Detection. The objective is completed by the user is easy understand with the operation of system and had designed with simple and straight forward design to bring convenience to users on functioning and

controlling the system. After that, is to detect face in the presence of blocks like face masks. The objective is completed by able to detect the user's name and emotion with the cover of face marks and spectacles. Lastly, is to detect indications of mental stress among university students using the facial emotion recognition system. The objective is completed by the user is able to get notification sound and message when they show the indications of mental stress.

Sentiment Analysis on Cyberbullying since Covid-19

Boost

Yu Hong Hui, Neesha Jothi, Kurunathan Ratnavelu

Introduction

The COVID-19 pandemic has had a significant impact on human activities globally, resulting in the implementation of movement restrictions and closures of travel destinations and educational institutions. The widespread use of social media has contributed to concerns about mental health during the pandemic, with some users posting negative comments. Additionally, the pandemic has led to a surge in online bullying, particularly among young people, with new norms in social media use being introduced. A study was conducted to investigate the relationship between the impact of the pandemic and cyberbullying, with a sample consisting of tweets from the pandemic period (2020-2022) and tweets from before the pandemic. The findings suggest a correlation between the impact of the pandemic and cyberbullying, with increased social media use resulting in more online bullying incidents. Social media platforms have become a vital tool for communication and interaction, but they have also become a platform for cyberbullying, which can be very harmful, especially to young people.

Objectives

1. To review social media sentiment analysis regarding cyberbullying since the impetus of Covid-19.
2. To Review and collect information on the phenomenon of cyberbullying on social media since the emergence of Covid-19.
3. To Analyze the emotional impact of cyberbullying on people during the Covid-19 epidemic.o develop a prototype mobile e-wallet system for UCSI students

Methods

The method section of this project follows a simple model for system development, which involves six phases. The first phase focuses on defining and finalizing project requirements, including researching the topic, defining project requirements, getting supervisor approval, and developing a proposal. The second phase is the iterative process of building the prototype, which includes developing the crawler script for data collection and resolving any issues that arise during the process. The third phase is the data collection process, while the fourth phase involves pre-processing the collected data to remove noise. The fifth phase is the data analysis and visualization process, where conclusions are drawn

for the report. Finally, the sixth phase is the evaluation process, which involves using machine learning methods to check the accuracy of the data analysis.

Results

The result of analysis of 31,481 tweets with specific keywords from Dec 2020 to Dec 2022 showed 47.7% positive, 24.7% neutral, and 27.9% negative sentiments. Logistic regression and linear SVC models had around 85% accuracy, with good performance for each sentiment category. For 5,000 tweets with same code but different time restrictions and no #Covid-19 tag, results showed 40.3% positive, 31.3% neutral, and 28.5% negative tweets, with 71.7-72% accuracy for both models.

Conclusion

Based on the analysis of data collected before and after the pandemic outbreak and the discussion, it can be concluded that the occurrence of cyberbullying was accelerated by the pandemic. The data collected after the pandemic outbreak showed a higher percentage of negative tweets (28.5%) compared to before (27.9%), indicating a higher possible incidence of cyberbullying. The logistic regression and linear SVC models also increased the accuracy of detecting

cyberbullying from 72% to 85% when analysing data collected after the outbreak, further supporting the conclusion that the epidemic played a role in promoting cyberbullying. Furthermore, neutral tweets decreased from 31.3% to 24.7% following the outbreak, suggesting that the epidemic polarised public opinion and sentiment, leading to an increase in cyberbullying. Therefore, it can be inferred that the pandemic had a negative impact on online social interactions and contributed to the occurrence of cyberbullying. In addition, given the unprecedented rise in the use of social media, social networking technologies play a crucial role in this rapidly evolving era. Cyberbullying prevention is an important aspect of mental health protection and should be further researched and developed in this area. 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 e-wallet systems in Malaysia and then to develop a mobile e-wallet system for the usage of UCSI University students. 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 e-wallet system for university students. The prototype e-wallet 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 e-wallet 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 e-wallet system user's needs might change time-to-time, guarantee that the system being developed can meet the demands of students at UCSI University.



UCSI EDUCATION SDN BHD [198901008177 (185479-U)]

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)

Lot 8317, Bandar Springhill, Mukim Jimah, 71010 Port Dickson, Negeri Sembilan.
General Line (+606) 648 8888 Course Enquiry +(603) 9101 8882

BANGLADESH CAMPUS

Haq's Plaza, 26, Kemal Ataturk Avenue, Banani, Dhaka-1213, Bangladesh.
Tel (+880) 1844 616516

UCSI UNIVERSITY **UCSIUNI** **info.enq@ucsiuniversity.edu.my**

