Faculty of Electrical and Electronic Engineering Technology

IoT BASED RESTAURANT MENU ORDERING SYSTEM

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in partial fulfillment of the requirements for the degree of
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DECLARATION

I declare that this project report entitled “IoT Based Restaurant Menu Ordering System ” is the result of my own research except as cited in the references. The project report has not been accepted for any degree and is not concurrently submitted in candidature of any other degree.

Signature : 

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APPROVAL

I hereby declare that I have checked this project report and in my opinion, this project report is adequate in terms of scope and quality for the award of the degree of Bachelor of Electrical Engineering Technology with Honours.

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Date :

DEDICATION

To my beloved mother, Yuzaini Binti Junoh, and father, Ahmad Daud Bin Teh,

ABSTRACT

The advancement of Information Technology this day has introduce us to the use of Internet of Things in many industries. Food and Beverage industry has become one of the fastest growing industry today. Because of that, it needs a major upgrade to work more efficient and faster to cope with the demand. Traditional Food and Beverage restaurant are still using pen and paper to take order. This kind of method are known to use a lot of paper in a very short period of time. This is bad for our environment because it will introduce our environment with a lot of paper waste. Moreover, traditional method are known to consume a lot of time to take order from the customer because the waiter frequently need to ask for ingredient readiness from the cooker before he can take the customer order. Traditional method also present human error in a very critical way especially during peak hour. There is a lot of cases waiter forget to take customer order and sending wrong order to the wrong table identified from the system. Therefore, in this work a new automated restaurant ordering system that use web and IoT application is proposed to take restaurant order without any waiter interaction. The whole system performance will be monitor from the kitchen by the restaurant owner to avoid any delay and failure.

ABSTRAK

Kemajuan teknologi dan maklumat pada hari ini telah memperkenalkan penggunaan aplikasi “Internet of Things” kepada banyak industri. Pada hari ini, industri makanan dan minuman telah menjadi salah satu industri yang paling cepat membangun. Walaubagaimanapun, industri ini masih ketinggalan jauh dari segi teknologi dan sangat memerlukan penambahbaikan yang berkesan bagi memastikan industri ini terus dapat berkerja dengan lebih efisien dan memenuhi permintaan pelanggan. Restoran makanan dan minuman pada hari ini masih menggunakan pen dan kertas untuk mengambil pesanan. Kaedah mengambil pesanan makanan dan minuman menggunakan pen dan kertas ini telah menggunakan banyak kertas dalam masa yang singkat. Oleh hal yang demikian, kaedah ini adalah sangat tidak mesra alam dan mungkin mendatangkan pelbagai kesan buruk kepada alam sekitar kerana ia akan membazirkan lebih banyak kertas pada masa akan datang. Tambahan pula, kaedah ini juga membazir masa untuk mengambil pesanan kerana pelayan perlu berulang-alik ke dapur untuk kenalpasti sama ada makanan itu masih ada atau tidak sebelum membuat pesanan. Akhir sekali, kaedah ini juga menunjukkan banyak tanda-tanda kesalahan yang biasa dilakukan oleh seorang manusia terutamanya pada waktu puncak. Terdapat banyak kes kesilapan yang biasa berlaku apabila terlalu banyak pesanan seperti pelayan menghantar pesanan kepada meja yang salah, pelayan terlupa mengambil pesanan pelanggan dan sebagainya yang telah berjaya dikenalpasti daripada kaedah tradisional ini. Oleh sebab itu, kajian ini bertujuan untuk meningkatkan ketepatan pengambilan pesanan pelanggan di sesebuah restoran dengan menggunakan kaedah “Internet of Things” seperti aplikasi laman web dan telefon bimbit. Prestasi sistem ini boleh diperhatikan daripada

komputer di bahagian dapur bagi memastikan tiada kegagalan dan kelewatan dalam penghantaran makanan.

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LIST OF SYMBOLS

Hz - Hertz

LIST OF ABBREVIATIONS

IoT	-	Internet of Things
WIFI	-	Wireless Fidelity

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CHAPTER 1

INTRODUCTION

1.1 Project Background

Internet of things refer to billions of physical devices connected to the internet to collect and sharing data online. With the help of internet, it allows a device to communicate with real time data without any human interaction. Nowadays, IoT application is everywhere and it can be seen at many industries. By using IoT, human can control their lighting at house or turning on to their favourite television show from their smartphone. IoT had increase our standard of living this day, it surely makes things easier and smarter compare to the conventional way that need a lot of man power to perform a single task.

Restaurant is an open public place for everyone to eat and drink. It is the fastest growing business today. However, Food and Beverage industry are still left behind in technology. Almost every single restaurant in Malaysia today are still using traditional way to take customer order. Traditional way uses a lot of pen and paper to write customer order. Moreover, it is costing a lot of money to hire more waiter at the restaurant. During peak hour, traditional method introduces a lot of human error because there is a lot of case waiter sending order to the wrong table.

Because of that, a restaurant ordering system are being set up to help restaurant taking order faster and accurate. The system will eliminate waiter existence when taking customer order with the help of IoT. To make sure the system works accurately a simulation and statistics method will be use to collect data and preview successful order.

1.2 Problem Statement

There are several problems identified from the traditional method for instances:

1. Conventional system is very not efficient at all because it is time consuming. Before taking order, waiter have to check for ingredient in the kitchen and ask the chef if the menu is still available or not.
2. Conventional system introduced a lot of paper waste product to our environment because it used a lot of paper and pen to take customer order. Waste product is a serious issue this day because human make tons of waste product each day which is bad for our environment.

1.3 Project Objective

The objectives of this project are:

1. To design a system that is providing much quicker in managing order requested by the customer without any interaction from the waiter to come over and ask for customer order.

2. To develop an automated restaurant ordering system that will use Internet of Things application to reduce the usage of paper in the restaurant.

1.4 Scope of Project

This project will cover on several scopes such as the followings :

1. The project is based on Web Application that will be using Html,Css and Php programming language to design the interface of the website.
2. The project will be using MySQL to handle the database and perform as a server for the website application.
3. QR code generator will be use to generate QR code for customer to enter the website and start their order.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

Technology improvement has gone far beyond expectations and is still being upgraded for a better future. Considering issues related to restaurant and food industry a lot of work has to be done in order to make sure all restaurant adapt with IoT technology. The technology is chasing its way to improve traditional method related to how restaurant manage their ordering system to make sure it works faster and reliable.

2.2 Other Available Ordering System

2.2.1 Traditional Paper Based System

Recently, a conventional paper-based system is widely used in most restaurant because of its simplicity. However, there are several limitations that had been identified from the traditional paper-based system. According to Mahedra Chouchan, traditional paper based system do not provide dynamicity[1]. This is because, one single change in the order menu will requires all menu card to be reprinted again. Moreover, the use of paper to stored record is not secure at all as paper can easily get lost or damaged. Another highlighted issue on paper-based ordering system is that it required a lot of manpower, system is error-prone and time consuming based on the customer point of view.

Another paper written by Rachat Auli has suggested that the traditional paper based system take a long time to serve order during peak hour [2]. The system is known to take a lot of time as the chef is confuse which order to be prepared first. All of this evidence shows

that the paper-based system is not efficient because it is prone to error, waste a lot of paper and in need of a lot of manpower.

2.2.2 Self-Serving Restaurant

Self-serving ordering system refer to a technique use by a restaurant to take customer order with the help of technology such as the internet. According to Shreya Umap, most of the customer prefer to use a self-service method because of it speed and convenience in making order and transaction while minimizing the miscommunication[3]. Self-service method also very efficient as there is no money related issue because it uses online transaction. The only downside of the system is that it is very costly to install and the development of software is pretty challenging.

2.3 Method To Design Restaurant Ordering System

2.3.1 Type of Hardware

Raspberry Pi was used in online food ordering system for college canteen by Rupali B. Kale because it support a lot of OS such as LINUX,ANDROID,Arch Linux ARM and Unix[4]. According to C. Visvesvaran, Raspberry Pi 3 model B is suitable for E-grub ordering system compare to Raspberry Pi 2 because it can run at 1.2 GHz better than Raspberry Pi 2 that can only run on 900MHz[5]. The board is also lightweight and has better performance at high speed with greater memory space compare to the other microcontroller.

Yamin Nyein suggested using Arduino ATmega3 for the food ordering system project the board has a lot of pins and available at every market this day[6]. Moreover, the board is very simple because it contains almost everything needed to support the microcontroller, just simply plug the board to a USB cable or a battery to turn it on.

S. Haroon Rasheed has suggested to use ARM LPC2148 for the automated E-Menu ordering system because it is intended for high end application involving complex computations[7]. Moreover, it is high performance and very low power consumption.

According to Nimesh Tembhekar, he suggest to use smartphone or tablet to design the restaurant ordering system because smartphone and tablet is available almost everywhere today[8]. Smartphone and tablet had already implanted with touchscreen module, WIFI module and it can be used as a mobile computer.

According to Nishant Kumar Hind, he has suggested to use PICAT89C52 microcontroller for the restaurant ordering system project with Bluetooth technology because, PICAT89C52 is insusceptible to noise compare to other microcontroller board[9]. He also suggests using Bluetooth it is suitable to send data at nearby areas such as a restaurant.

Overall the hardware that will be used in this project is QR code technology and smartphone. This is because smartphone had already equipped with camera to scan the QR code and WIFI receiver to connect with the internet. Because of that it is a very functional tools to help customer order their food directly from their hand with ease.

2.3.2 Type of software

Yamin Nyein has suggested to use Visual Basic 6.0 to design the general user interface for the restaurant ordering system because it is easy to design[6]. The software is also based on Arduino IDE which is familiar to the C and C++ programming language.

S. Haroon Rasheed suggest to use Android operating system for the restaurant ordering system because it boost a healthy array of connectivity option including WIFI, Bluetooth and wireless data over cellular connection[7]. Moreover, Android OS is customizable because it contains a wide range of useful libraries and tools that can be used

to build rich application. Android also can be programmed using various tools such as Android studio and Java Programming.

Rupali B. Kale has proposed to use Android to design their Online Food Ordering System for College Canteen because the system has the fastest processing speed compare to the other queuing-based system[4]. It is also the cheapest solution to the ordering system and the interface is also very attractive compare to the other software and it also can run on most smartphone user.

The software that will be use in this project is Sublime text that is familiar to the Visual Basic 6.0. The software will allow the user to code the program in HTML, CSS and PHP programming in order to build a website for the restaurant. In order to test the program, XAMPP software will be used together with Apache and MYSQL server in order to send the data into the localhost before the program will be release into the website. In order to create the QR code Microsoft excel has been chosen because it has a feature that allow the user to make the QR code.

2.3.3 Type of Wireless Technology

Recently there are many wireless technologies available at the market. It comes from different specification and various capability according to what the user wanted to. For the restaurant ordering system most inventor use Zigbee technology, NRF module and others.

According to Yamin Nyein, he has choosen to use Zigbee technology in Menu Ordering System because it is specially built for control and sensor networks on IEEE 802.15.4 standard for wireless personal area networks (WPANs)[6]. It is also a low cost and low powered mesh network widely used for controlling and monitoring application where it

covers 10 – 100 meters within range. Zigbee is also a low data rate application that require long battery life and secure networking.

Shreya Umap has suggested to use NRF module to allow the connection between the transmitter section and receiver section because it features high data rate and longer transmission distance[3]. The transmission is self-controlled and it is completely transparent to the user interface. The module is also easy to be embedded to the project so that the wireless communication can run easily.

WIFI technology has been used in digital food ordering system for restaurant by Nimesh Tembhekar because it allows local area networks to operate without cable and wiring[8]. It also allows user to transfer data around 100 -150 feet range from the router which is suitable to be use inside a restaurant. WIFI technology is completely safe because it will not interfere with others network.

2.4 Method To Control Order Accuracy And Efficiency

Efficiency is very important for restaurant owner to make sure the food delivery service is fast and satisfy the customer needs. In order to control the order accuracy and efficiency most of developer begin to use statistics and mathematical approach to calculate the time taken to take order, deliver order and customer waiting time. However, some researchers have a better approach to test the accuracy and efficiency of the system with the help of simulation software.

According to Allysa Mae M. Castillo, Data collection for restaurant ordering system is being collected from time study method[10]. In this method, it will use a stopwatch to calculate the time taken for each customer to take and receive their order. 10 sample size will be taken and the data will be simulated in the ProModel Software. Based on the

simulation, a table that consist of customer waiting time from the traditional method and proposed system will be taken out to be discuss.

2.5 Summary

Year	Title	Author	Description
2017	Mechanism of food ordering in a restaurant using android technology	Rachat Auli, Ahmad Zakir, Haida Dafitri, Dodi Siregar and Hasdiana	This system is based on Android. It is set up on tablet or smartphone places on the customer table. The customer order data will be sent to the kitchen computer via a wireless network such as WIFI. The kitchen workers then can view the order data on the LCD screen and start to prepare the order.
2017	Automated Table Ordering System	Mahendra Chouhan, Ankit	This system is based on Android

		Tiwari, Neha Agarwal, Priyanka Patkar, Namrata Kumbhar, Prof.P.S. Kulkarni	OS and wireless technology. With the help of tablet and IOT, the status of ordered food can be checked anytime by the customer and waiter. There is also an online version that is available for home delivery of food.
2017	An automated E-Menu ordering system using IOT	S. Haroon Rasheed, Padma Priya	The system consists of a smartphone or tablet at the customer table that run on Android OS with all the menu details. The system will use WIFI technology to allow connection between the customer tablet and kitchen screen.

2018	Smart menu ordering system in restaurant.	Shreya Umap, Shiwani Surode, Prajakta Kahiraagar, Manjuaba Binekar, Prof. Nakul Nagpal.	The system use Matrix keypad based menu card connected with PIC microcontroller which has an input and output module. The LCD is use to show the menu choose by the customer from the keypad. For the connection of the system it will use NRF module. The order will then send to customer table by using a conveyer belt.
2018	eGrub ordering system	C.Visvesvaran, S. Vijitha, S. Preethi,	The system uses Touch screen-based menu card and Raspberry Pi. To send order data, the system will use

			Zigbee Module to connect the system at customer table and receiving section. The selected items will be display on LCD and receiving section. All order will be send using conveyer belt to the customer table.
2019	Advanced ordering system for restaurant	Nishant Kumar Hind, Aditee Mattoo.	The system is based on Zigbee wireless technology. The system will use touchscreen module to show the menu. The arrangement of menu card is easily understandable with a touch screen, IR sensor and a basic route method utilizing.

2019	My Restaurant: A smart restaurant with a recommendation system.	Nesrine Koubai and Faycal M'hamed Bouyakoub	This paper discusses on the internet of things environment on context management in the area of food services. The paper also suggested similarity measure to keep track of the client order history in order to suggest or recommend to the customer similar dishes for the next order.
2019	Implementation of menu ordering system using Zigbee Technology	Yamin Nyein and Than Htike Aung.	The project focus on the use of Zigbee module as a wireless communication link between the device on the customer

			table and kitchen scree.
2019	Designing food ordering application based on android.	B Kurniawan and M F Abdul	This paper measures the effectiveness of ordering food and drink using android-based application and manually. The method used in the study is descriptive approach through observation and design of android application. Customer will be given an option either to use the app or manually. Result will be taken from customer feedback and experience.

2020	Digital food ordering system for restaurant	Nimesh Tembhekar, Pragati Singh, Ayush Mate, Kunjal Gurve, Prof Mrunmayee Rahate.	The system is based on android. The data is stored in MySQL database. Agile methodology is used throughout the project.
2020	Efficient automatic food ordering system using FPGA and Zigbee	Anshul Kothari, Priyanka Sharma	This system used FPGA board. At transition section, menu is being display on the touch screen module located on customer table. To choose the menu a keypad is being setup and Zigbee module is used to allow connection between the board at transition and receiving section.

2020	Online food ordering system for college canteen	Rupali B. Kale, Ruchika K. Balwade, Vipin B. Gawai	The system is based on android application and Raspberry Pi microcontroller. The system also generates QR code once the order is placed.
2020	Improving fast-food restaurant method of operation automated drive-through ordering system	Allysa Mae M. Castillo, Louie John L. Salonga, John Allen L. Sia and Michael N. Young	This paper focus on the study on how to improve automated drive-through ordering system by using ProModel Software. This paper also highlights all related issue exist in drive-through section.

Table 2-1 Project Summary

CHAPTER 3

METHODOLOGY

3.1 Hardware Component

3.1.1 Smartphone

Smartphone generally is a portable computer that was made of thousands integrated circuit that will act as personal computer. There are a lot of function in smartphone for example to make call, browse internet, pay bills online, send an email and many more. Most smartphone today are running on Android or IOS operating system. Smartphone also has a build in camera, WIFI, Bluetooth, GPS and speaker. With the help of camera, it will help the user to scan the QR code easily and directly take the user to the food order website.

Figure 3-1 Example of smartphone

3.1.2 WIFI Modem

WIFI modem is a device that combine both functionality of modem and router that make it a centre for the internet connectivity. The device will allow internet data packet to be translated before it is sends through wirelessly to devices such as smartphone or personal computer via the router. It is also design to send data back out to the internet in order to allow device to communicate with each other on the internet. Most WIFI modem this day operates on 802.11n standard that can transfer data at 600Mbps with two option of frequency which is 2.4 GHz and 5GHz. In theory, these two options of frequency will help the WIFI modem to operate with a range of 46 meters and 92 meters respectively.

Figure 3-2 Wifi Modem

3.2 System working principle

3.2.1 Method to design website interface

For this project HTML and CSS programming language has been chosen to design the website interface. This is because, HTML is a markup language that is use to format and displaying web document and pages on the website. It is mostly use language on website

today because it allows the user to make table, sizing a picture and writing a content in the website.

CSS programming on the other hand responsible to style the HTML document. CSS programming language will describe to the user how the HTML elements should be displayed on the website for example the color of the website background and style of the fonts selected for the website.

3.2.2 Method to send food data to the website.

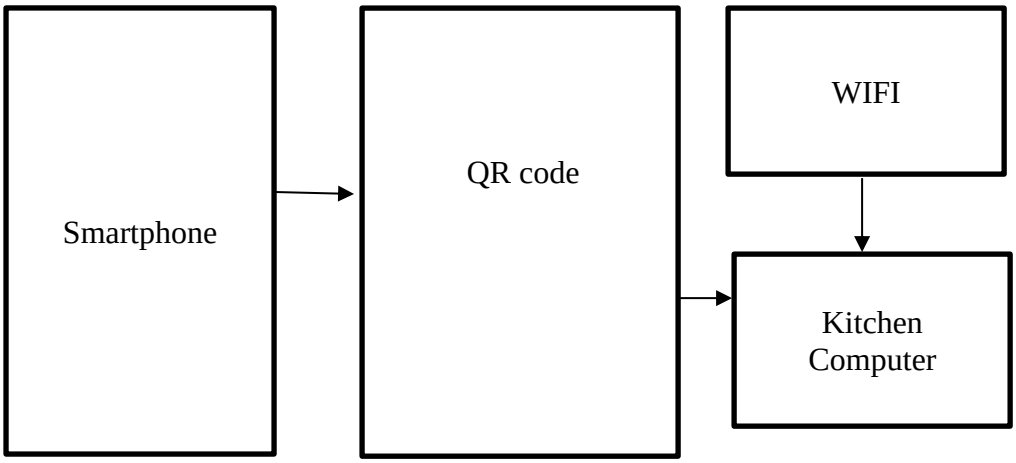
In order to send food data to the website, MYSQL and PHP programming will be use. This is because, MYSQL is an open source relational database management system that is commonly use for web application data storage. Moreover, MYSQL is also a quick and easy to use database management system that is suitable for many small and large organization.

PHP programming on the other hand is a type of scripting language that is suited for web development and can be embedded with HTML. It is a programming language that solely function is to execute task at the back-end website such as calculating, calling and display data.

For this project, a server will be set up using MYSQL in order to store the data of food name, price and image of food. With the help of PHP programming, a command such as GET, UPDATE and SELECT will be used to call the data into the website.

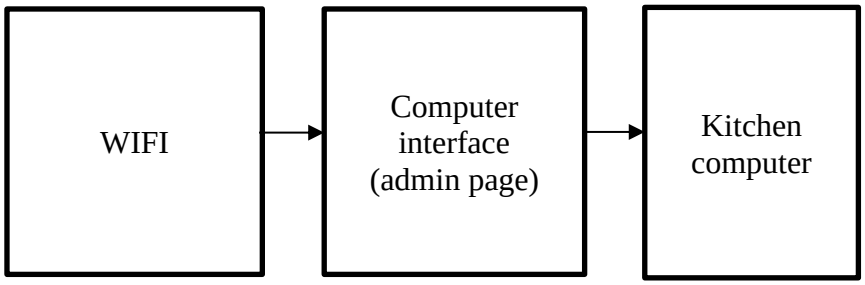
3.3 Project flow

3.3.1 Block Diagram for Customer Section



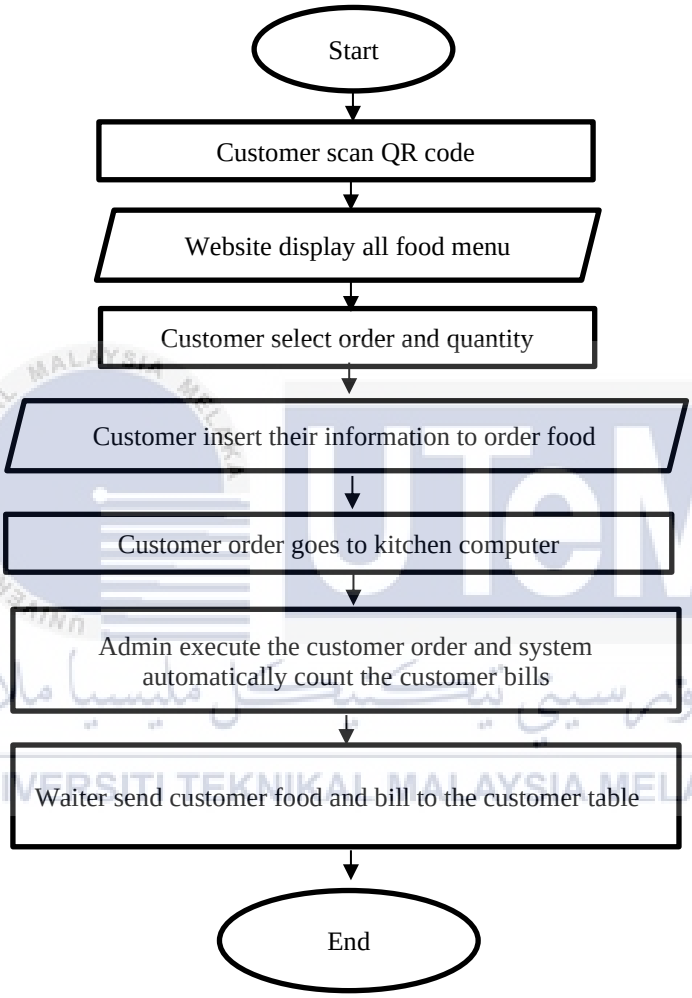
The customer section will contain a QR code set up on the table for the customer to scan. As soon as the customer scan the QR code it will take the customer directly to the restaurant website. The website will contain all menu inside the restaurant. Customer will then choose the food and drink that he wanted. Before the customer proceed to order food, the website will need to record the customer information for restaurant use. The order data will then transfer to the kitchen computer that was connected to the WIFI for waiter to take a look at the customer order.

3.3.2 Block Diagram for Receiver Section



At the receiver section a personal computer will be set up for the admin to look at the customer order. A login page for admin will be set up at the computer. Admin will have the power to add order, customize order and delete order.

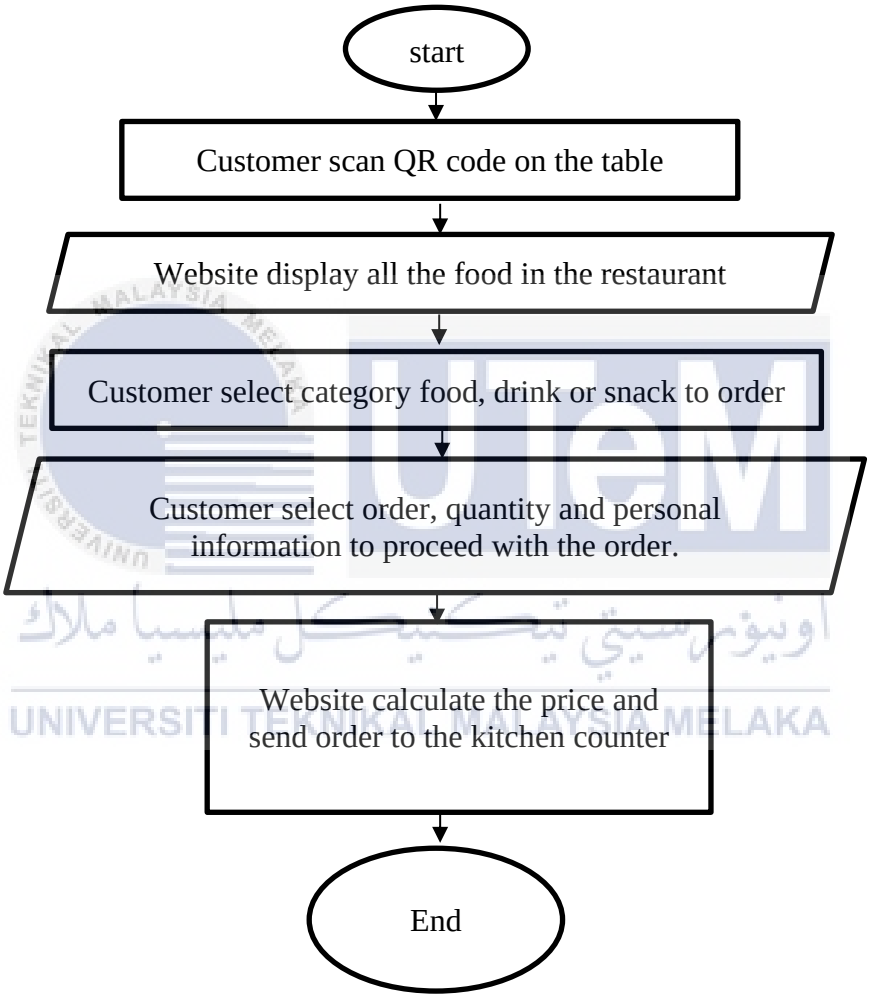
3.4 Project Flowchart



This flowchart illustrates the whole system process. Based on the flowchart, customer just need to scan the QR code that has been set up on the table. The QR code will be directed to the restaurant website. Customer will then can take his order and complete the customer information which consist of customer phone number, table number and customer name.

The order will then be directed to the kitchen computer for admin to approve the order. Admin will have the power to delete, add and custom the order from the kitchen computer.

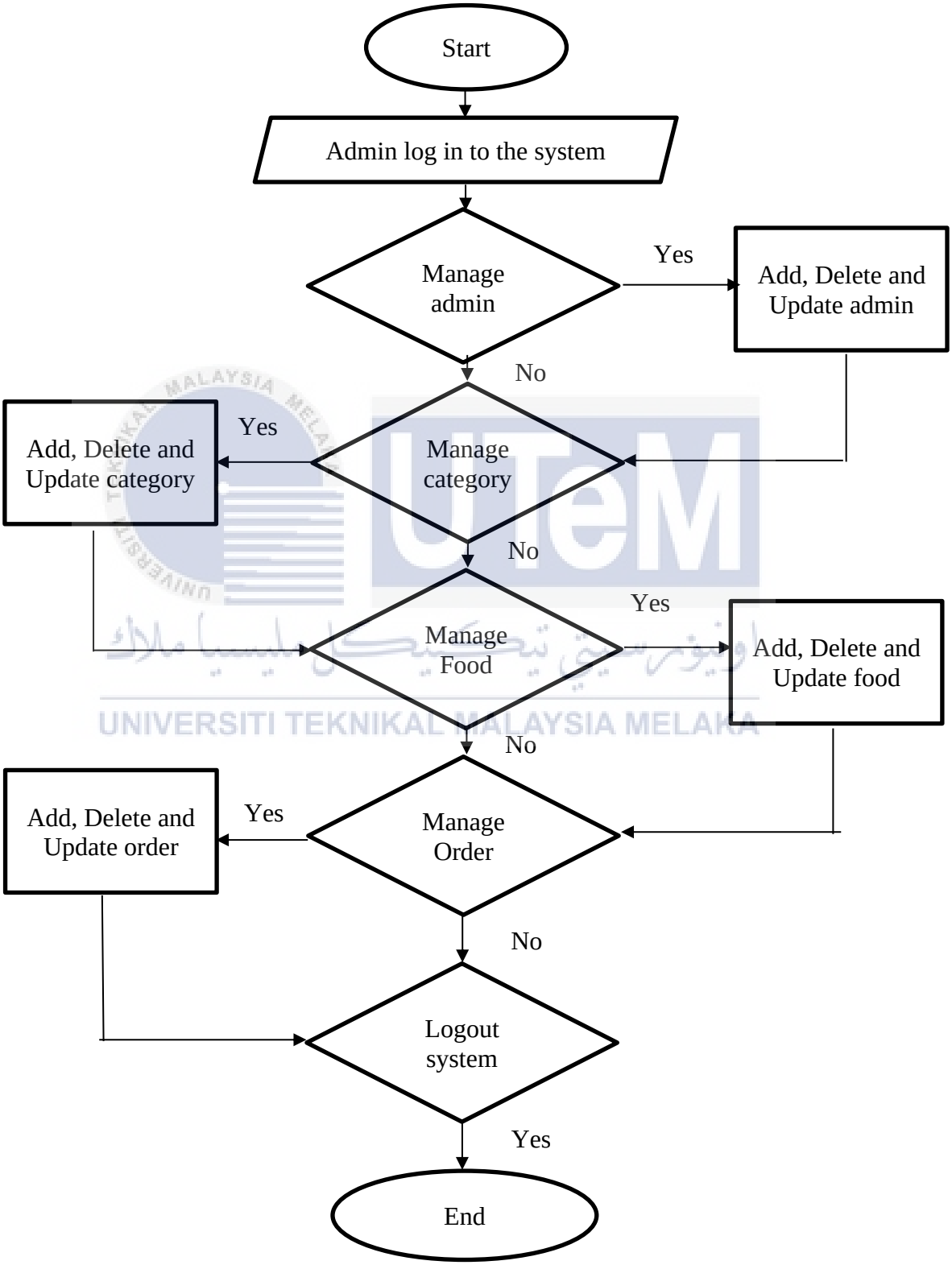
3.4.1 Flowchart for customer interface.



This is the flowchart for the customer section. Once customer scan the QR code they will be directed to restaurant order website. In the website customer will choose the category order that consist of food, drink and snacks. After customer has completed key in

their orders the website will need to collect the customer information to proceed with the order before it is send to the kitchen computer.

3.4.2 Flowchart of admin interface



This is the flowchart for admin interface. At admin page, admin will be given the authority to manage admin, category, food and order. In manage admin menu, admin can add another admin to authorize the website. If the admin needs to add more category for the restaurant website, admin can head to the manage category menu and if admin needs to add food under a category, admin need to go to manage food menu. Admin will see all customer order in manage order menu. In manage order menu admin can view the status of the order whether it is being prepare, delivered and completed. Admin can also delete order in the manage order menu. The restaurant sales for the day will be shown if admin click on home menu inside the admin page.

CHAPTER 4

RESULTS AND DISCUSSIONS

4.1 Introduction

This chapter shows the results and findings of the project. This shows clearly the output of the project based on the previously mentioned objective. All result and discussion will be explained briefly in order to understand the project flow.

4.2 Results and Analysis

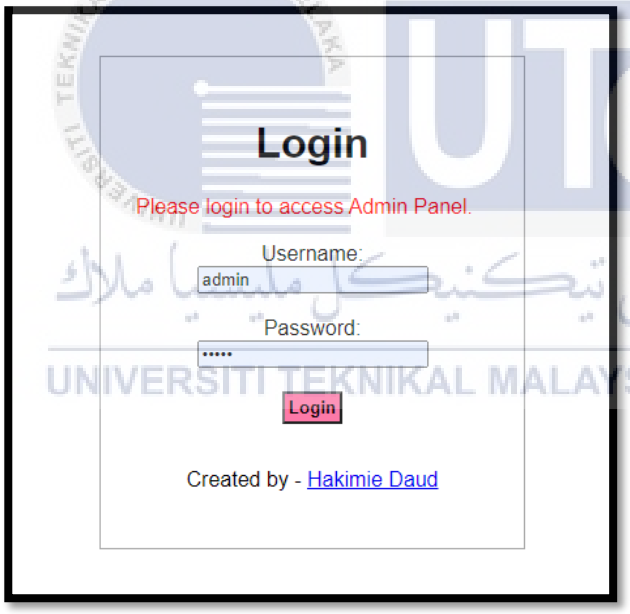


Figure 4-1 Admin login Page

Admin need to login into the system to view all customer order. Admin page will allow admin to control the category of food, number of food available in the restaurant and manage customer order.

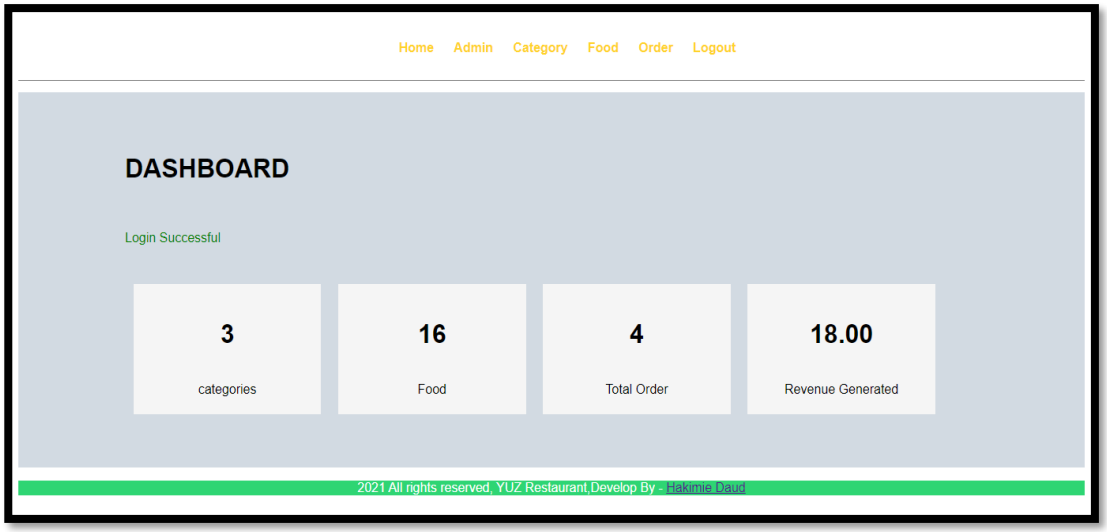


Figure 4-2 Admin Dashboard

Admin dashboard will show how many categories of food exist inside the restaurant and how many food menus are still available inside the restaurant. Admin dashboard will also show the total order that has been completed and the total sales.

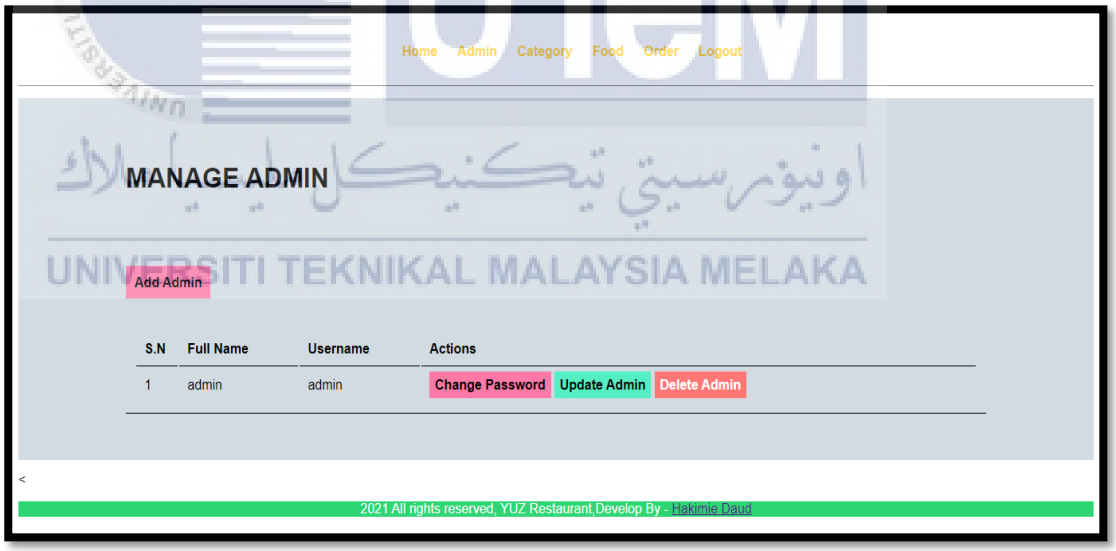


Figure 4-3 Manage Admin Page

Manage admin page will allow the admin to change admin password, update admin name and delete admin.

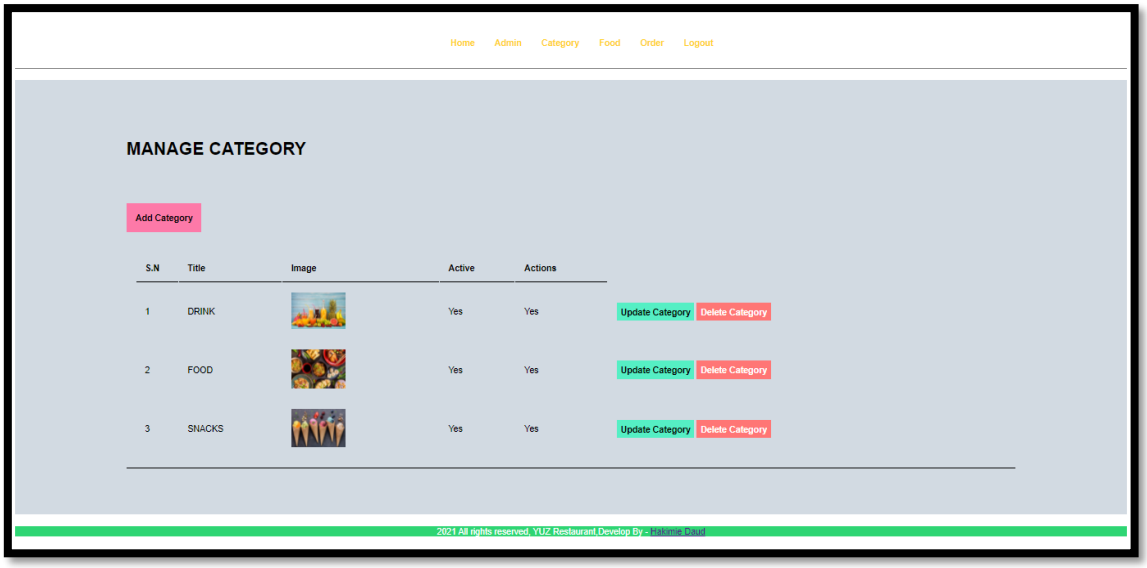


Figure 4-4 Manage Category

Manage category page will help the admin to add and delete food category. The top 3 category in the list will be featured inside the restaurant website homepage.

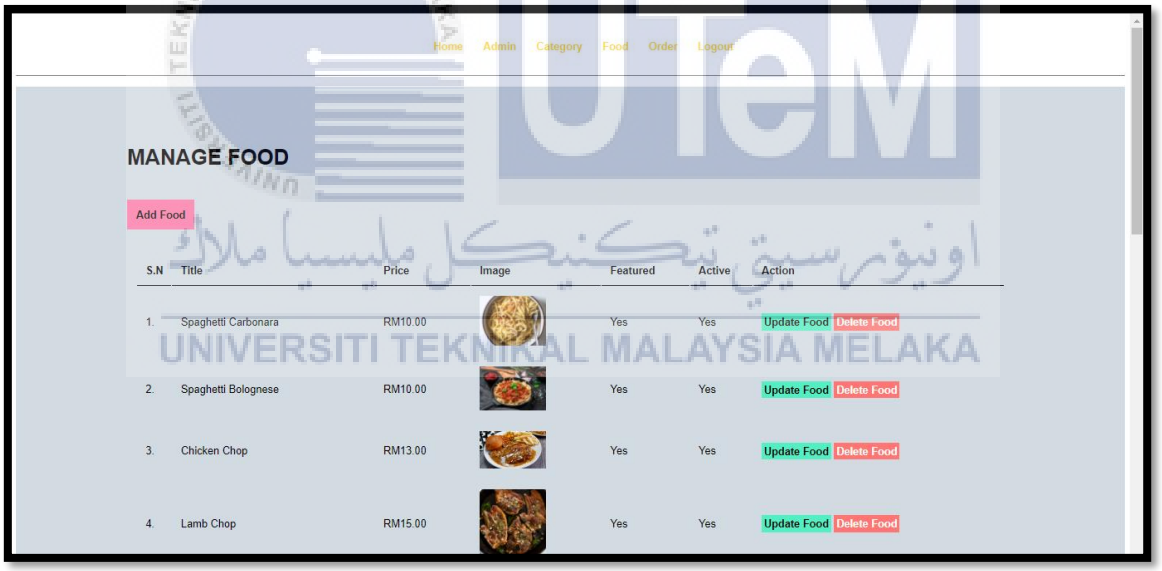


Figure 4-5 Manage food

Manage food page will show all the food available inside the restaurant. If the food are not available inside the restaurant admin just need to click on the update food menu to set whether it is available or not. If the food is not available at all admin can click on the delete food menu to delete the food from the restaurant website.

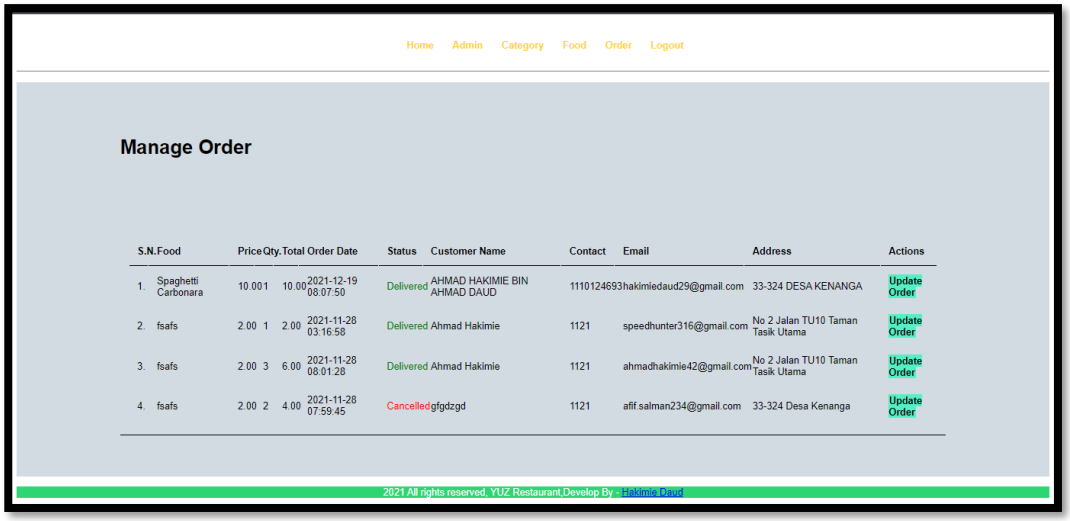


Figure 4-6 Manage Order

Manage order page is where all customer order will be sent after the customer fill in the personal detail. In this page will have the power to update order whether it is delivered, cancelled or being prepared.

Figure 4-7 Website Homepage

This is the homepage of the website. Customer will see this homepage after they scan the QR code on the table. The homepage will all have the food category and all the food that is available in the restaurant.

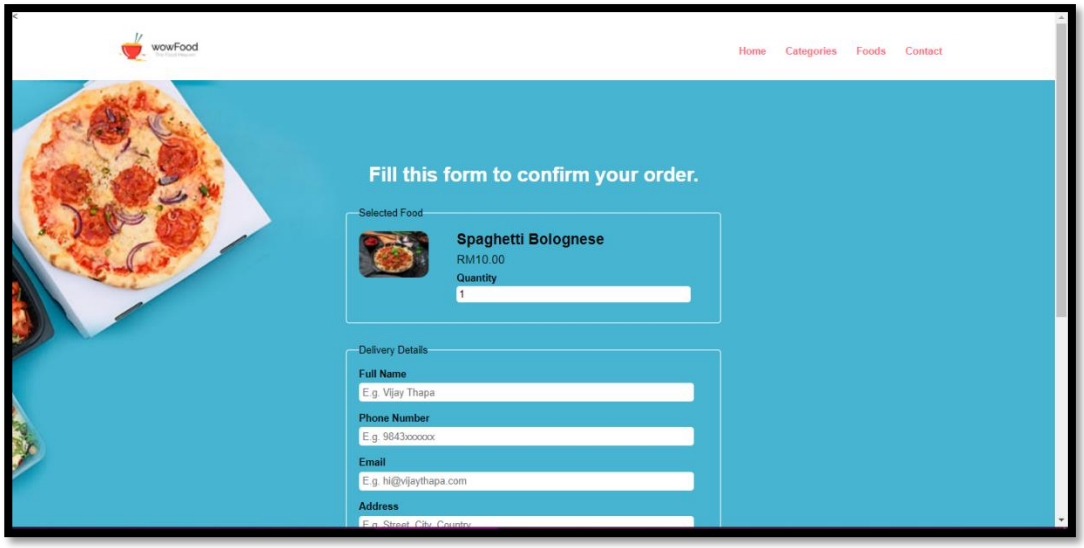


Figure 4-8 Order Form

This is the customer order form. The customer will see this form after they click order now on the food that they would like to order. The form will be used by the restaurant admin to keep track on the customer order.

4.3 Discussion

This project was developed based on PHP and MYSQL database. With the help of PHP programming the website will work faster and reliable. This method has eliminated the use of paper by storing all the food and order data in the MYSQL. The QR code technology is very helpful because it can direct the customer to the restaurant website rapidly.

The cost of project is very low because it does not need a lot of hardware to operate. The project only needs a computer with an internet connection in order for it to function. The project also helps to improve order accuracy because it is depending on the customer. Thus, to make sure the order is sent to the right place the customer must fill in the form carefully. With this system, admin will not have a problem to calculate the customer order and total sales everyday because it is recorded and store inside the website.

CHAPTER 5

CONCLUSION AND RECOMMENDATIONS

5.1 Conclusion

As a conclusion, this project has eliminated the use of paper inside the restaurant with QR code technology. The project also works faster than traditional method to take customer order. The project also reduces the number of waiters in the restaurant. With the help of IoT, it surely minimizes the time taken to take customer order. The project also helps secure the order record properly compare to using paper that is very fragile and easy to be destroy.

5.2 Future Works

For future improvements, accuracy of the order can be upgraded with the help of robot to send customer order to the table. This is because, robot operates based on logic and very precise in making decision compare to human. Human cannot beat the robot accuracy when it comes to decision making because human decision generally based on emotion and sometime confusing.

Another improvement that can be done to the project is redesign the website interface to make it simpler and more attractive for the customer. Considering that features, an attractive website interface contributes a lot to the order accuracy because it is depending on the customer. A user friendly website interface will avoid the customer making mistake when filling in the form before sending the order to the kitchen computer.

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	ACADEMIC WEEK															
	STATUS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Briefing on PSM 2 : Talk 2	PLAN								S								
	ACTUAL																
Learn PHP programming from website and YouTube.	PLAN								E								
	ACTUAL																
Find relevant journal that is connected to the project.	PLAN								M								
	ACTUAL																
Construct flowchart for the project and begin writing code for the website interface.	PLAN								E								
	ACTUAL																
Start to code on another page of website and test upload photo feature for the website.	PLAN								S								
	ACTUAL																
Begin to write code for manage order and test admin interface.	PLAN								T								
	ACTUAL																
Begin to write code for customer section and restaurant homepage.	PLAN								E								
	ACTUAL																
Add content to the website. Insert food, price and picture of food.	PLAN								R								
	ACTUAL																
Send test order to the website to test the system.	PLAN								B								
	ACTUAL																
Find relevant and cheap website domain to release the website to the public	PLAN								R								
	ACTUAL																
Insert coding and generate QR code	PLAN								E								
	ACTUAL																

Improvement and modify the Report	**PLAN**							**A**								
	ACTUAL															
PSM 2 Report submission	**PLAN**							**K**								
	ACTUAL															

APPENDICES