



Online Ordering and Reservation System

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Abstract— This is one of the online ordering systems the attach the parking reserve to the orders. This can help to fulfil the satisfaction of the customers. Now a days, heavy traffic and congestion is one of the main problems that a family refuse to take dinner outside. And also, everyone is busy with their own tasks and daily routine and has no sufficient time to prepare even a simple meal. Therefore, fast-food chain such as McDonald's, Dominos, Pizza Hut and more has become rather popular. However, heavy congestion still occurs within such fast food chain during peak hours as lunch hours which makes up the differences between fast food restaurants and normal restaurants. Most of the time when rushed, errors are more likely to happen. During rush hour, it is not uncommon to see confused waiter and restaurant serving the wrong order. Some people might be rushing and does not have enough time to finish their meal during rush hour. The Online Ordering and Reservation System allows the customers to make an order reservation in advanced before approaching the restaurant to collect the food. Moreover, the customers can also make payment in advanced. Furthermore, the restaurant can make an estimation of customer arrival time based on real live traffic updates and the distance of the customer from the restaurant.

Index Terms—QR Code, Online Payment, Online Tracking, Online Ordering System, Automated Parking Reservation

1.0 Introduction

Nowadays, ordering food and beverages has become a very common practice among everyone. This is due to the fact that, everyone is busy with their own tasks and daily routine and has no sufficient time to prepare even a simple meal. Therefore, fast-food chain such as McDonald's, Dominos, Pizza Hut and more has become rather popular. However, heavy congestion still occurs within such fast food chain during peak hours as lunch hours which makes up the differences between fast food restaurants and normal restaurants. Most of the time when rushed, errors are more likely to happen. During rush hour, it is not uncommon to see confused waiter and restaurant serving the wrong order. Some people might be rushing and does not have enough time to finish their meal during rush hour. Cases where is impatient customer disregarding the queue to order food also frequently happens. This may result in customers dissatisfaction and may cause the sales of the fast food restaurant to reduce drastically as customers are unable to wait for the queue to purchase their food. Therefore, to solve the problems a newly enhanced system called the Online Ordering and Reservation System is introduced. The Online Ordering and Reservation System allows the customers to make an order reservation in advanced before approaching the restaurant to collect the food. Moreover, the customers can also make payment in advanced. Furthermore, the restaurant can make an

estimation of customer arrival time based on real live traffic updates and the distance of the customer from the restaurant.

2.0 Literature Review

In this modern era, there has been very little time for anyone to cook a complete set of meals at home as everyone is busy with their daily routines and chores. Therefore, there has been an increasing demand of ordering food either via online or telephone. Thus, these days not only fast food restaurants have an ordering and delivery system, even other cuisine restaurants have these ordering systems. However, most of the restaurants are unable to satisfy the demands of the customers immediately as there will be too much orders to take in at a time. Hence, an online reservation and ordering system is developed.

This online ordering system allow the customers to make an order online before arriving at the restaurants to collect their order. The system grants the customers with the menu of the restaurant and the customers make the payment online. On the other hand, the automated part of the system is where the customers can make an order by navigating the online menu in the restaurants and selecting what to order. This does not require the service of a restaurant waiter. Compared to the current system in most restaurants, the waiters have to take the customer's order manually and this eats up a lot of time.

Furthermore, the online reservation and ordering system has been identified as a cost saving invention as the restaurants do not have to spend money on paper and pencils. Moreover, the restaurant can also hire less staffs as the restaurants is basically running on a semi-automated system. Besides that, the implementation of an online reservation and ordering system ensures that the restaurants' environment is kept comfortable. This is due to the fact that, there will less queues in the restaurants as customers can collect their food as soon as they arrive at the restaurant.

2.1 Domain research

The development of Android gadgets and devices, invention of wireless technology and the immediate growth and improvement in the technology of communication has impact the business transactions. Furthermore, most of the restaurants is facing a problem of implementing an ordering system which is completely automated in the form of touch screen system instead of using the paper-pencil system. Despite the paper-pencil system being a very simple system to use, however, it consists of many drawbacks that includes purchasing and storing a huge amount of papers and requires a lot of manpower. Moreover, mistakes such as human error are more likely to happen in paper-pencil systems and this leads to a higher time consumption (Sarkar, 2014). These problems are considered to be serious and will costs the restaurants a huge amount of

money and time especially if the restaurants continue to use the paper-pencil system instead of upgrading to an automated or online ordering system.

Another problem in the ordering system is the customer dissatisfaction. A leading factor to this problem is the customers are constantly lately entertained in the restaurants. They are forced to wait for the waiters to approach them to take their order and serve their food. This leads to the customers complaining to the restaurants regarding their poor services (Prof.MR.S.R.Lahane, 2013). If this problem continues further, this will greatly impact the overall business of the restaurants which will gradually lead to a decrease in the number of customers and will potentially cause the restaurant to run out of business and eventually shut down.

The most common factor to all restaurant is the human error such as mistaken a customer order or forget to list down the specific item ordered by customer and doesn't order to the kitchen. Some of the customer are impatient that may call the waiter or waitress frequently all the time. This may cause the restaurant lack of human power to serve customer or clean up the table for other customer (Dhomne, 2014). This problem will totally affect the overall business of the restaurant which may cause the number of customer decrease by dissatisfaction customer.

Barcodes technology are becoming one of the foremost tools used in business industry precisely, in marketing strategies and business promotions, particularly using the quick response code (QR-Codes). The structures of a QR codes is a matrix type symbol with a cell structure arranged in a square. The characteristics of QR codes has resistance to distorted symbols, efficient encoding of Kanji and Kana characters and it also has the ability to be read from all direction in high speed (Aliyu & Sunday, 2014).

There are many sector and areas such as marketing, cafes and restaurants, advertising automotive, social media and health are using QR code due to the fast and easy to use of QR code. The widespread use of smart phones has increased the use of QR codes in lot of sector such as signboard. The QR code is easy to be decode and it has the ability to carry bunch of information. With this ability QR code can be implemented in various sectors which to improve the performance of the business. In the research of Determining the Use of QR (Quick Response) Codes in Hotels, one of the hotels used the QR code as a promotion code which whoever scan the QR in certain hour will get an 10% to 25% offer on the dinner or drink in the restaurant. Besides that, due to the ability of the QR code, it also can be used to store the information of museums, airlines, hotels, restaurants and train stations. This can refer the usage of QR code can help to improve most of the business in the world (Hasan, 2019).

In the research of food hub, A Model for Ordering in Restaurant Based on QR Code Without Presence of a Waiter at The Table, the main challenges in many businesses that are based on customer orders, product preparation and delivery to the customer is the time of order registry to delivery. The business can win the satisfaction by reducing the time of deliver and it also help to improve the profit of the business. The

traditional way of the restaurant took few minutes for a waiter to get the order from the customer and this may cause human error in the communication between this customer and waiter or between the waiter and the catering staff. With the QR code implement, it can help to eliminating some stages of traditional ordering such as reduces the times in the communication between the customer and the waiter or waiter to the catering staff. Besides that, it also helps to low down the cost of the restaurant. Most importantly QR code is not a new concept and it was a stable feature and it perform very efficiently on most of the business (Dr. Shadaksharappa, et al., 2018).

2.2 Similar System

Numbering	Author	Purposed System Name	Description, Advantage, Disadvantage
1	(TH & Khan, 2016)	Food Court Ordering System	Food Court Ordering System is a system using an application or gadget to order without any interference compare to traditional paper-pen system. <ul style="list-style-type: none"> Order food without any interference Provide more choice and convenience to customer Automated Order and bill
			<ul style="list-style-type: none"> Limited order monitor screen for customer System Crash
2	(ECE, Global College of Technology, 2018)	Digital Dining in Restaurant using Android	Automated ordering food using Android application to make order to the restaurant and which have a dynamic database. <ul style="list-style-type: none"> Customer can use own android gadget to make order through the application Minimize human error in ordering Get a real-time feedback from customers
			<ul style="list-style-type: none"> The menu information will expose to competitor System Crash
3	(Information Technology, AISSMS IOIT, 2015)	Customer's Order Management Application in Restaurants using	This system is using Salesforce1 Platform to provide menu information, food ordering, customer information management

		Salesforce1 Platform	and waiter or waitress information management
			<ul style="list-style-type: none"> The kitchen can get the order instantly Generate monthly sale report Users can track their order System Crash
4	(Abdul, 2014)	Improve the Performance of the Work of the Restaurant Using PC Touch Screen	This system is to enhance the restaurant which can use wireless gadget and wired gadget to let the customer order food.
			<ul style="list-style-type: none"> Multiple method to order food The kitchen can get the order instantly with the printer
			<ul style="list-style-type: none"> High expense for the printing receipt

Table 1 Similar System

Figure 1 Activity Diagram of Adding Cupboard Number

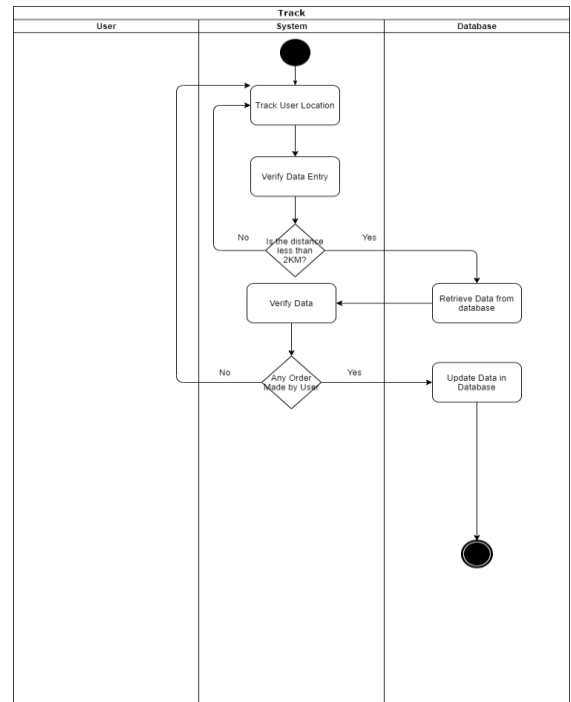
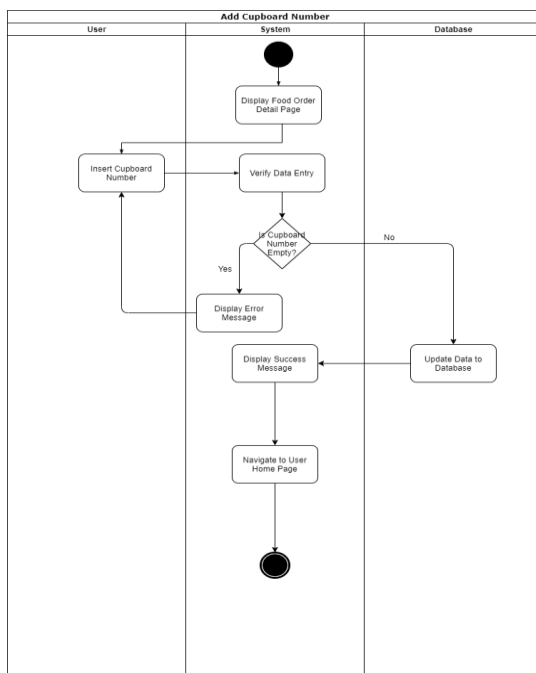


Figure 2 Activity Diagram of track

3.0 Research Method

The research method that the developer used is the questionnaire research method. The questionnaire method is to collect data in a survey research. The data that is collected in the survey can help improve the system as it can help in finding out the strengths and limitation of the system.

4.0 Diagram



5.0 Implementation & Output

```

AsyncStorage.getItem('UserId').then(value =>
//AsyncStorage returns a promise so adding a callback to get the value
this.setState({ UserId: value })

//Setting the value in Text
);

return fetch('http://192.168.5.95/FYP_Project/List.php')
.then((response) => response.json())
.then((responseJson) => {
let jsonFormattedResponse = responseJson;
let ds = new ListView.DataSource({ rowHasChanged: (r1, r2) => r1 !== r2 });
this.setState({
isLoading: false,
abcd: jsonFormattedResponse,
}, function () {

});
});
.catch((error) => {
console.error(error);
});
});
    
```

Figure 3 Sample Implementation

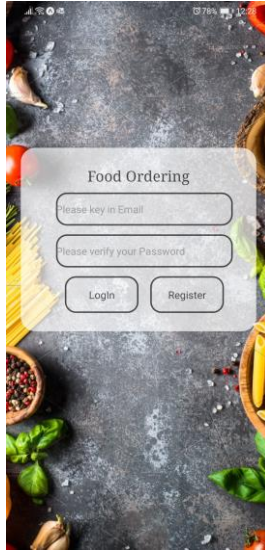


Figure 4 Sample Output

6.0 Testing

6.1 User Acceptance Testing

Tester Name:	Manager					
Job Position:	29-2-2020					
Date:	12.20p.m					
Start Time:	End Time:	1.00.p.m				
	0	1	2	3	4	5
User Interface				X		
Meeting Objectives			X			
Security			X			
Bug-free					X	
Input Validation				X		
Easy to use					X	
Feedback from the Tester:	The product page can be improved by adding type of product such as main meal, drinks, and others.					
Comments:	The Credit and Redemption point doesn't show in any page of the system.					
Action Taken by the Developer:	The Credit and Redemption point of the user has implemented on the profile page of the user.					

7.0 Conclusion

In conclusion, the system helped to solve the problem of the end-user who got short of time on taking a lunch and family can get the parking without worrying. Besides this, it also helps the store owner to highly increase the performance such as improving efficiency, decrease man power needed, reduce mistaken a serving wrong food. These few benefits can help the owner to increase profit and lower down the cost.

Due to the research on end-user and implementation, the limitation and error are found in the developed system such as

the detail of searching product is not detail enough, UI can be improved, and also the instruction is not clear. Due to the detail of searching product can be solved by adding type of product to the database or adding a searching bar on the page which allow user to search what they want. The UI can improve to better UI such as adding background color to the button or the list can change to 2 column per row which the user can see more product at once. Due to the instruction issue, the system can add more alert or notification to the user like adding cupboard number in the product order history which can let user know the place to collect the food they ordered. These are the limitation and it is possible to enhance in the future.

If there are given time to redo the project, the UI will be enhanced and taking more time on planning. During the implementation of the project, there are a lot of challenging part such as documentation, code implementation and the bigger problem is the react native libraries. Due to the version of react native, the libraries are getting much and much problem such as they moving out some of the element to other libraries which cause a lot problem on implementation.

Besides that, the learning experience on this project can be ensure it was a greatly help for my future career which I can getting up faster on my career.

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