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The Development of an Online Food Ordering System for JomMakan Restaurant

Muhammad Haiqal Azahari, Firkhan Ali Hamid Ali,

[1]Faculty of Computer Science and Information Technology,
University Tun Hussein Onn, 86400 Parit Raja, Johor, MALAYSIA

*Corresponding Author Designation

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Abstract: This Food Ordering Online System was created to address the issue of those who do not have access to a vehicle or do not have the time to go out and buy their own food. It is a website that will assist people in purchasing halal cuisine from JomMakan restaurants in Setiawangsa, Kuala Lumpur. The web-based was created using a prototyping-based technique that resulted in a two-phase prototype that was then turned into a complete web-based. HTML, CSS, and PHP that be used to create this website. This project employs a technique known as prototype approach. Initial plan, create prototype, customer validation, iterate prototype, repeat stages until no more iterations are needed, and ultimately launch the website are the phases. Overall, it be an efficient alternative to a restaurant by lowering time consumption, decreasing human mistakes, and offering high-quality customer service.

Keywords: Food, Prototype, Web-Based

1.0 Introduction

This project intends to develop a meal ordering system that can be utilized in the food and beverage (F&B) business to assist restaurants accomplish daily operations more quickly and effectively while also improving the eating experience of its customers. The traditional approach is prone to human mistake, and because the JomMakan restaurant's staff deals with many customers, this problem would have a significant financial effect on the market.

As a result, to resolve the problem, this project will provide an efficient food ordering mechanism for the JomMakan Restaurant. By implementing a computerized system to coordinate every meal order transaction instead of the traditional approach.

**Corresponding author: noraini@uthm.edu.my*

In addition, by lowering time usage, eliminating human mistakes, and delivering high quality customer service, it will also provide efficiency for the restaurant [1]. This paper will provide an overview of the development of Food Ordering Online System a web based. Section 2 reviews three related work that have a similarity function and objective to the user. While section 3 describes the methodology that were used to develop the web based. Section 4 is the analysis and design and lastly section 5 were the conclusions for this book chapter.

1.1 Problem Statement

This is a problem that cannot be avoided with JomMakan restaurants that use the traditional method of ordering meals. Since waiters, pens and paper are included in the entire manual process. On a sheet of paper, each food order exchange is recorded, and the waiters transfer the food order ticket for further processing to the kitchen. Since the food order tickets went to the kitchen, another ticket may have substituted for the series of food order tickets.

The specifics written on the menu card are quite relevant because based on the information given by the menu card, it will lead the consumer to make different orders to the restaurant. If the details of food and beverage have modified, but the employer can not alter the records of the menu card, some possible conflicts can arise, such as consumer disappointment with the restaurant, when consumers make an order, consumers do not make their preferred choices and conflicts.

Table 1: Scope module of the system

Module	Function	User
View menu	Customer shall be able to view the menu and select the menu item to be ordered. It shall then be added into the cart	Customer
Place delivery order	Customer shall be able to place their delivery order directly using this system. Staff will receive the confirmed delivery orders of the customer.	Customer
View delivery order status	Customer shall be able to view their delivery orders' status	Customer, Staff
Manage profile	Customer shall be able to edit their profile for the purpose of ordering details.	Customer, Staff
Manage delivery order	Staff can view and manage the delivery orders received. Staff can update each delivery orders' status	Staff
Manage menu items	Staff can insert new menu items. Staff can also update and delete menu items of the menu.	Staff
Login	Enables user to login into the system using email and password	Admin, staff

2.0 Related Work

In this related work there is three related systems that were reviewed.

2.1 Online Ordering System

A technology known as the Online Ordering System is employed by some fast-food companies to assist their market operations and take use of the Internet. The Online Ordering System is a technology that allows customers to order their favourite foods online using a web

browser on their computer or smartphone that is connected to the internet. Implementing this strategy will assist the fast-food industry in overcoming the challenges they have when using traditional food ordering procedures. [2] This makes it easier for restaurant employees to handle orders in a logical order, provide the relevant product with little delay, and reduce human error. [3]

2.2 Wireless Food Ordering System

The Wireless Food Ordering System (WFOS) is a messaging system that combines intranet and wireless technology features. Users may monitor distant server papers, information, and tools using this technology, which makes it easier to explore central databases across the restaurant network. Most portable devices have adopted and enabled wireless infrastructure, and mobile devices are now the ideal hardware interface for enabling this technology, allowing users to remotely access the database for data recovery.

The framework assists the customer in creating an intranet network within the restaurant, which will have a central database server, and the client will undertake data recovery PDA by connecting to the wireless access point using mobile devices such as a Personal Digital Assistant (PDA). This will alert the mobile waiter system, which will validate that the waiter is ready to serve the meal to the consumers. [4-5]

2.3 The Restaurants Electronic Menu Card

This technique of ordering gets beyond the drawbacks of the traditional paper-based ordering system by transforming everything to computerised paper. First and foremost, the machine would be programmed with food from the separate restaurants and shown on a touch screen computer at each table that had been prepared at the restaurant. Furthermore, the touch screen system would include a visually appealing Graphical User Interface (GUI) that shows consumers the meal menu and allows them to place an order by clicking on a picture of a certain meal shown on the device's screen.

Furthermore, if a client places an order, the catering order will be transported to the kitchen, where the cook will be able to make the meal. Unlike traditional paper-based systems, this technology eliminates the need for waiters to hand bring orders to the kitchen. The gadget also has sub-modules that allow restaurant operators to change meal details, pricing, and other information. When contrasted to typical paper-based systems, paper-based systems allow restaurant owners to discard all old food menu cards and reprint fresh food menu cards to delight their customers. [6]

3.0 Methodology

The prototyping model is a system development process in which a prototype is built, tested, and changed as needed until an acceptable result is attained from which the whole system or product may be manufactured. This strategy works well when not all project specifications are fully understood ahead of time. Developers go through an iterative, trial-and-error process. It is an iterative, trial-and error process that takes place between developers and users.

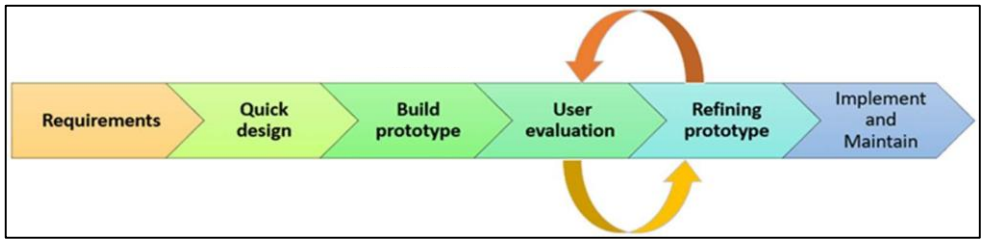

Diagram 1: Prototype Methodology Phase Diagram

The Prototyping Model is one of the most extensively used Software Development Life Cycle Models (SDLC models). In this approach, a prototype of the eventual product is initially created, tested, and modified based on consumer input until a final satisfactory prototype is obtained, which serves as the foundation for the final product development.

The approach is added before or after the review step in this process model, allowing clients to examine the product early in the life cycle. The prototype is fine-tuned to remove them until the customer notices the flaws. The procedure continues until the customer approves the prototype and deems the functional model suitable. [7]

The steps of the prototyping model in most instances are as follows:

1. Requirement
2. Quick Design
3. Build Prototype
4. User Evaluation
5. Refining Prototype
6. Implementation

Table 3: summary of activities & result for every phase in OOM

Phases	Activities	Result
Requirement	- Identify appropriate problems - Identify objectives and scope - Prepare a proposal paper - Provides Gantt Chart - Identify and analyse the needs of users and systems Collect information	- Gantt chart Construction - Proposal Paper - Papers of information group and user needs
Design	- Create interface and database design for Food Ordering Online System	- Interface module developed - Database
Build Prototyping	- Develop a system prototype - Develop a database system - Improve programming code	- Programming code Prototypes of the first and second versions.
User Evaluation	- Users test the prototype	- Feedback from users
Implementation	- Develop a prototype system - Develop a database - Improve programming code	- Completed system

4.0 Design and Analysis

4.1 Introduction

The design and analysis of the system that will be utilized to construct the Food Ordering Online System are discussed in this part. The system requirements analysis will be discussed in greater detail and clarity in this chapter. Various sorts of diagrams will be created based on the analysis of system needs so that system needs may be more rationally, clearly, and structurally understood. The diagram that was created will be utilized as a reference throughout the development of the Food Ordering Online System. In addition, the design of the database (database) and the design of the system's interface (interfaces) will be generated and discussed in depth in this chapter. Finally, at the end of this section, there be a summary of the section.

4.2 System Requirements Analysis

Several diagrams were created in the system requirements analysis to translate the system requirements collected in the previous chapter into more readily understandable and clear forms. When designing the Food Ordering Online System, this graphic serve as a guide and reference. Context Diagram, Data Flow Diagram, Activity Diagram, and Sequence Diagram are some of the diagrams that be created.

4.3 Process Modelling

Process modelling is a technique used to organize and document the structure and flow of data between logical processes. The modelling process involved is Context diagram, data flow diagram, Activity Diagram, flow chart.

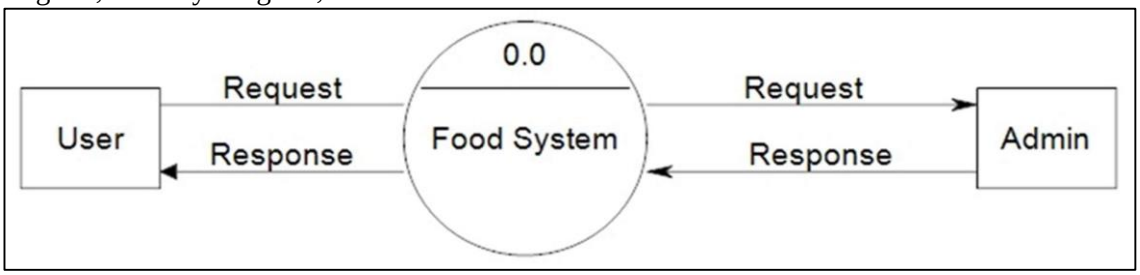

Figure 1: Context Diagram of Web-based

Figure 1 show the context diagrams for Food Ordering Online System that be develop.

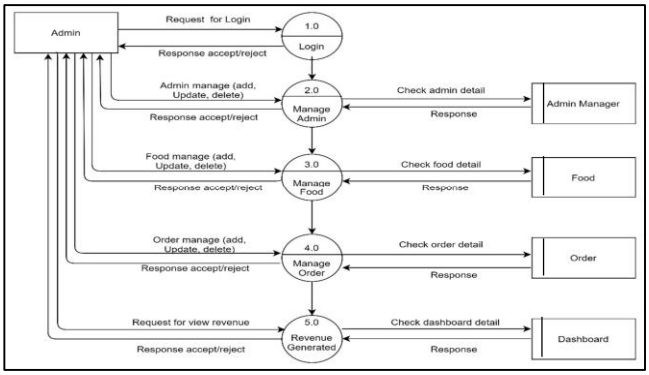

Figure 2: Admin side DFD for online food system

Figure 2 show an Admin side DFD for online food system. In this process the admin will interact and give the username and the password that the admin has registered before. The login data next will be search in the database whether it has registered or not. If the user registers, the user login data will remain the same. The login was successful after finding comparable data.

4.3.1 Flow Chart Diagram

A flow chart is a model of a diagram that represents a process shown in different types of boxes and their arrangement is connected by arrows. This flow chart shows the process that takes place in the web-based step by step.

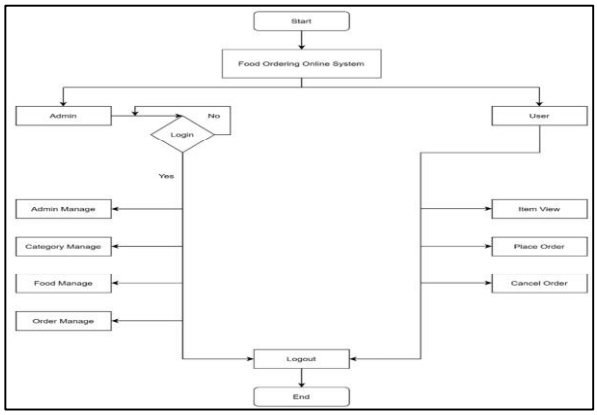

Figure 3: Flow chart for Food Ordering Online System

Figure 3 shows that the flow chart for the system for all process for the user in this application. The flow starts with user registration. After the registration, the use has to login to enter to the main page of the system.

5.0 Result and discussion

5.1 Implementation Phase

The final system is being develop by Visual Studio Code using PHP language. The databases that are being used is phpMyAdmin and connection use to connect with database with XAMPP.

This figure 5 shows that admin must log in to the admin page to conduct a web based. That is the interface of the login module.

Figure 5: Log in page Admin

Figure 6 is the interface of homepage of admin. It will show the homepage after the admin login into the web based successfully.

Figure 6: Homepage / Dashboard Admin

Figure 7 show the interface of information management module. Admin can manage information such as edit, delete, and update the name, image, price of each food in the information management module.

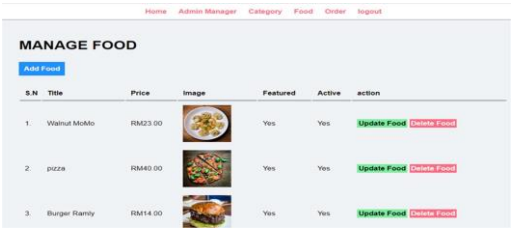

Figure 7: Information management page

Figure 8 show the manage order page that is delivery status module. Admin can change the status of the order form customer in the delivery status module. Admin can decide the order is on delivery, ordered, delivered, or cancelled.

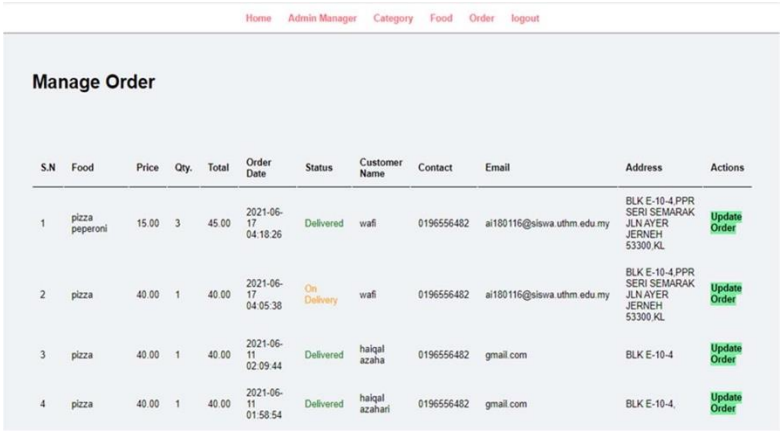

Figure 8: Manage order page

Figure 9 shows the interface of homepage and searching. Customers can know the total quantity of each product, price of each product, and the total price order food page. All the products will be displayed in this searching module. Customers can directly use the keyword to increase the speed of searching the item in the searching module.

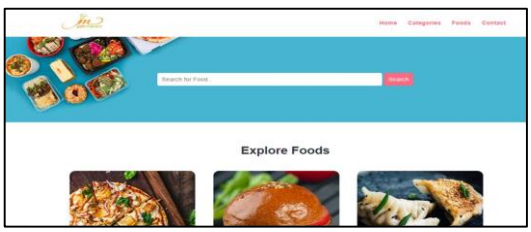

Figure 9: User Home Page

5.2 Testing Phase

Testing phase has been conducted after the completion of implementation for this application. The purpose of the testing phase helps to test this application has operated successfully regarding the needs of users. System functional tests are crucial for an application where it helps to guarantee the application operates successfully and able to find out the errors and bugs within the application for purposes to improve in future works. 5.3 User Acceptance Testing

A user acceptability test was done when the system was fully implemented. A group of users tested the development of an Online Food Ordering System for JomMakan Restaurant in this study.

To summarize, the overall graph for user acceptance testing indicates that users are pleased with the design and functionality offered by the produced system.

6.0 Conclusion

Finally, the JomMakan Food Ordering Online System in web-based has been built successfully. The future improvements that can be done are by providing a change address option in the confirm page directly to make it more convenient. Next, allowing the view sales report module to generate the reports on sales profits. Next, the system should provide staff registration and their own account. Lastly, the system should also be integrated with the Google Maps APIs to restrict areas that are not offered delivery orders by the restaurant.

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