

**FAST FOOD ORDERING SYSTEM USING
MOBILE APPLICATION**

**BY
LIM JOO WEI**

**A REPORT
SUBMITTED TO
Universiti Tunku Abdul Rahman
in partial fulfillment of the requirements
for the degree of
BACHELOR OF INFORMATION SYSTEM (HONS)
BUSINESS INFORMATION SYSTEMS
Faculty of Information and Communication Technology
(Kampar Campus)**

MAY 2018

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DECLARATION OF ORIGINALITY

I declare that this report entitled “Fast Food Ordering System Using Mobile Application” is my own work except as cited in the references. The report has not been accepted for any degree and is not being submitted concurrently in candidature for my degree or other award.

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I would like to take this opportunity to express my sincere thanks to my supervisor, Mr. Ku Chin Soon who had been guided me patiently throughout this project. He also gave me the motivation and encouragement to overcome the issues that I have encountered in this project.

Lastly, I would like to thanks my friends who were supporting me throughout this time.

ABSTRACT

This project is for developing a fast food ordering system using mobile application that will help to improve the existing traditional method. One of the major problems faced by the current fast food ordering system is lack of notification system whereby customer can receive notification whenever their order is updated. Besides, the existing fast food ordering system did not have a feature which is the push notification that can send message such as special offer to their customer. Customer will then immediately receive the notification of message. Therefore, this fast food ordering system using mobile application is created in order to assist the fast food restaurant's management system as well as decrease the work carried out by the employees in the restaurant.

Prototyping method is selected as the methodology for this project which the mobile application is developed through few version of prototype until a complete application is develop. This mobile application will be developed in Android platform with the help of this few software such as Android Studio and Firebase which is used to store the database.

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LIST OF ABBREVIATIONS

SDK	Software Development Kit
AVD	Android Virtual Device
RAM	Random Access Memory

1.1 Project Inspiration

Convenience, fast and easy are the demands which customers nowadays wish to have when they are ordering their foods. For example, university students in Kampar are always busy with their school work and therefore they hope to have their meal order without the need to queue up. First of all, the current fast food ordering system did not have the features which enable the user to receive a notification to notify the user whether their food is in process or completed. This feature will help to reduce the need to queue up in the restaurant as customers can just come to take their food once they receive the notification. Furthermore, there is no real time customer feedback where customers will be able to give feedback and also view the other customer's feedback. There is also no rating feature whereby customer can give rating based on the quality of the food. Many of the current fast food ordering system did not provide a feature where customer can share their favorite food to their social media channel. If there is a social sharing feature, it will attract more customers to come to the particular restaurant. There is no message notification feature in the current fast food ordering system whereby the owner can send any type of message to inform their customers instantly such as food promotion.

In conclusion, this report is written to develop a fast food ordering system using mobile application which will improve the existing fast food ordering management system. "In the food industry, it is important for an organization to leverage their customer's satisfaction and this can be achieved through superior customer service." (AgnesKanyan, 2016) So, this fast food ordering system using mobile application that developed here will significantly improve the ordering process for both the customer and the restaurant owner/staff. This system will show a user friendly interface for the customers which contain menu and other simple features for users no matter young citizen or senior citizen to navigate. This system also allows customers to call for delivery which the staff will able to receive the notification order after customer placed their order. The staff then can update the order status and the customers will be able to receive the notification. Besides, this system allows customer to rate the food as well as give real time feedback so that the owner can improve their weaknesses. This system is also able to let the customer to share the food to their social media. All the customer data will also be saved in the database. According to Beltis (2018), gathering customer data

Chapter 1 Project Inspiration

and information is important to create a more customized guest experience. In the end of this project, this system will offer a better customer service and also will make a big contribution to the fast food restaurant in Kampar.

1.2 Motivation and Problem Statement

There are several improvements and problems that need to be solve in order to give user a better experience and also better customer service. These problems are:

Lack of real time customer feedback about the food and food rating feature.

This feedback feature is important so that every customer can know how good and how bad the specific food is since every customer are able to give feedback about the food or service and also able to view the feedback given by the other customer immediately. The owner of the restaurant can also improve their food quality after review the feedback. Even though McDonald's has a provide feature that allow their customer to fill in the feedback survey however customer has to recall back the name of the food and which food taste good or which food taste bad and fill into the survey. Current fast food ordering system did not have any food rating feature where customer can give rating to the food. Customer can give rating when they order the food again.

Lack of Message Notification System (Instant Push Notification)

Current fast food ordering system did not have this feature which allows the owner of the restaurant to send new message to the customers to inform them about any new food or food promotion. Customers will then receive the notification of message instantly. One of the benefits of implementing this feature is it allows instant communication with the customers. Even though McDonald's and Pizza Hut send their food promotion and discount to their customers through email, however this method might take time and customers had to go to their email and check for any promotion.

Lack of social media plug-in where customer can share food post

Current fast food ordering system did not provide this feature that allows the customers to share their favourite food to their social media such as Facebook. This method will eventually help to attract more customers to visit the fast food restaurant.

Difficulty in placing extra request/Customization

Current fast food ordering system did not have this feature which customer can request for special order such as no tomato, no vegetable and request for additional sauce. This feature is important so that customer has the flexibility to customize their burger.

Difficulty in notifying customer about the status of the food

Current fast food ordering system is unable to update the status of the food progress and notify their customer. Customer is not able to know whether their food is placed, in progress or completed.

1.3 Project Objectives

- To develop a fast food ordering system that allows the customer to give real time feedback about the food and service and also rating feature. Customer can give comments and view other customers' comment about the food and service.
- To develop a fast food ordering system that allows customer to place extra and special request on the food. For example, no tomato, no vegetable and other requests.
- To develop a fast food ordering system that provides convenience for both employees and customers. In the cash payment process, this system will help to save time since payment can be done in the system.
- To develop a fast food ordering system that allows the owner of the restaurant to send any types of message notification to their customer and they will be able to immediately receive the message. For example, food promotion and new food.
- To develop a fast food ordering system that will notify the customer about their status of the food in which customer can check their food status in the order status user interface.

1.4 Project Scope

In the end of this project, a fast food ordering system using mobile application will be done in order to assist any fast food restaurants in Kampar. Customers are able to use their mobile device to place their food order in a convenient manner and the staffs of the restaurant are also able to use the mobile device to update the food menu. This system consists of client side and server side. For the client side, customers will be able to view the menu, place order, give rating and real time feedback and checkout from the system. The customer can choose to enable or disable message notification sent by the server. For the server side, the system will be able to let the staff to insert, delete and update the menu. The system also allows staff or owner to send messages instantly to the customers about any food promotion and also update the food order status. Besides, this system also allows the owner to update the status of each of every food order. Below are some of the modules of proposed system.

Customer Registration and Login Module

This module contains customer's information such as customer phone number, name and other information related to that customer. All of this information will be stored in the Firebase.

User Authentication Module

This module only allows valid user to enter the application. It provides a security which to ensure that only valid user can use the application.

Mobile Ordering System Module

This module requires restaurant customers to use their mobile device to register for an account in order to login to the system. Customers will be then redirect to the menu page where they can navigate the food menu. Customers can then select their food, place into the food cart, review their order and place their order.

Menu Information Module

This module allows customers to choose a wide variety of fast food through a user friendly menu interface.

Food Cart Module

This module allows customer to view the item that they order. All the food price will be sum up and display to the customer in a graphical user interface. Customer is also able to delete the order in this module.

Order Retrieval System Module

This module is to be used by the restaurant's staff where staffs are able to retrieve order from the database which the orders will be displayed in the graphical interface.

Menu Management System Module

This module is to be used by the user which is the restaurant owner. The owner can update the newest food menu details such as price, name, details of the food and photo with a graphical user interface and display to the customer.

Search Food Functionality Module

This module allows the users which are the customers to use the search engine plug-in provided in our system to search for their food. This feature is important as it saves the customer time and also convenient for them.

Real Time Customer Feedback and Food Rating System Module

This module allows the customers to give comment and feedback about the food and services of the restaurant. Besides, this module also allow customer to give rating of the food.

Message Notification System Module

This module allows the staff/owner of the restaurant to send message for the customers such as new food or food promotion. Customer can choose whether to receive or not to receive news from the server.

Order Management System Module

This module allows the staff of the restaurant to manage and update the order status so that customers will able to know whether their food is placed or still in process.

Social Sharing Feature System Module

This module allows the customer to share their favourite food to their social media channel such as Facebook.

Payment Gateway Module

This module allows the customer to make their food order payment by using Paypal.

1.4.1 Hardware and Software Usage

Hardware

- Intel(R) Core(TM) i5-4500U CPU @ 1.80GHz 2.40 GHz or above
- 8GB RAM or above
- 1000GB Hard Disk Drive(HDD)
- USB port 3.0
- Internet Connection

To develop this project, a laptop or a computer with enough and sufficient processing power is required for a developer to code. In order to develop this system, Android Studio Development Kit is required. However, it takes a lot of processing power and RAM. Thus, a good laptop or computer with sufficient processing power and RAM is required. Besides, it requires an android based mobile device in order to use the application. Internet connection is also required to send request and respond processes that access to the Firebase.

Software

- Front End : Android Studio Development Kit, Android SDK & Android Virtual Device Manager (AVD)
- Back End : Firebase
- Operating System : Window 8 / Window 10 and Android 7.0 or above
- Tool: Microsoft Visual Paradigm

Java programming language is used to develop the fast food ordering system using mobile application with the help of Android Studio Development Kit. Android SDK is a tool that enables developers to create a mobile application for Android Operating System while Android Virtual Device Manager provides a user interface for developer to test app. For the backend, Firebase will be used to store the database and all the data is stored in JSON format. Firebase also support real-time database. Furthermore, all the documents diagram such as Activity Diagrams and Use case Diagram are created by using the Visual Paradigm Community Edition.

1.5 Project Impact and Contribution

By developing this project, the system will help to bring a lot of convenience for the customer and also the owner. With this system, customer will only have to go to the counter to get their food once they receive the notification of order. Therefore, they do not have to queue up for a long period in order to get their food when there are many customers. This system also helps to improve the customer service by letting the customers to give real time customer feedback and also rate the food. The reason to give them the opportunity to leave a comment is to show that the restaurant is always looking for ways to improve the food and the service. Customer's comments can help to learn about areas that need improvement. By providing better customer service, customer will be more likely to visit the particular fast food restaurant again. Furthermore, this system also provides a feature whereby customer can share food post to their social media. This system also enables the customer to make payment straight after they place their order by using their own mobile device. Customers do not have to pay at the counter. It helps to save the customer time and also improve the business performance. Any message regarding food promotion, hot sale food and etc will send to the customer's phone immediately after the owner of the restaurant send the message. Customers have the flexibility to choose whether they want to enable or disable the message notification.

1.6 Chapter Summary

This chapter introduced the process of developing this project and also the difficulties faced by the consumer. Besides, the project background, problem statement, project objectives, project scope, contribution and project structure were discussed in this chapter.

2.1 Pizza Hut Malaysia Mobile Ordering App

Pizza Hut is one of the famous fast food restaurants in Malaysia. Pizza Hut currently has many corporate franchised stores in Malaysia. Pizza Hut Malaysia is hoping to provide their customers a new experience from the moment they go to the store, place order and enjoy their food. Therefore, Pizza Hut took one step further by launching its mobile app into the market. The purpose of Pizza Hut developed their app is to make the ordering of pizza become easier and convenient for their customers. Customers are able to use this app by installing the app into their mobile device. Customers will then be able to choose their desired pizza from the menu and place their order. Customer can choose whether they want to take away or delivery.

Strengths

One of the strength of Pizza Hut mobile ordering app is the app remembers the customer's last order and preferences which include previous delivery address, so that customers do not need to fill up the information again. This app provides a "Quick Reorder" feature which customers can quickly start to buy their most recent items. This app provides a feature for their customer where they can track the status or the progress of their food. Moreover, this app is also able to detect the customer's location with the help of GPS and location data which is available on many mobile devices nowadays. Besides, Pizza Hut's mobile app makes it better for their customers by rewarding them after they order the pizzas. Customers will be rewarded points that can be redeemed for rewards such as free drinks or pizza. Furthermore, Pizza Hut's app also will help to locate the nearest restaurant for their customers.

Weaknesses

The weakness of Pizza Hut mobile ordering app is this app does not have the real time customer feedback which customers can give feedback about the food or service and also able to view the feedback given by the other customers immediately. The owner of the restaurant will then be able to improve their food and service quality based on the feedback received. Even though this app allows customers to give feedback, however the process required time by which they need to compile the results and sent to the person in

charge for review. Therefore, this delay will actually makes the customers feel that they don't value their feedback. This app also does not provide a function where customer can rate the quality of the food. Besides, this app does not have the message notification system where owner or staff can send message to their customers to inform them about any food promotion or hot sale food and the customers will instantly receive the notification of message. This app also does not provide the social sharing feature where customer can share their favourite food to their social media.

2.2 McDonald's Mobile Ordering App

Recently, McDonald's made a drastic change to work its way into the digital competition in the fast food industry. McDonald's released this app for a faster and more convenient way for their customers to place order. The purpose of McDonald's introduced this app is to increase and boost their revenue since everything can be done by just using the mobile device. Besides, the young people nowadays would rather use an app to order their meal rather than to talk to people. This McDonald's app is free and available to download on the app store. This app allows customers to browse for menu and place their order. Customers need to sign up for an account first in order to place their orders.

Strength

One of the strength of McDonald's mobile ordering app is it support multiple languages and also multiple payment method. Customers can change the language according to their need. Moreover, this app also allows the customers to place order and track the status of his delivery. This app also allows the customers to save their favourite food into the favourite list after checkout. Besides, McDonald's app also will help to locate the nearest McDonald's restaurant for their customers. It's also offer advanced ordering for their customers. This app allows their customers to give feedback which is in survey form. Any information regarding McDonald's product and service will be sent to the customer email if customers enable the notification of email during the registration process.

Weaknesses

One of the weakness of McDonald's mobile ordering app is this app does not have rating feature. Therefore, customers will not be able to know which type of food has the highest rating and which type of food served the best. Moreover, there is no real time customer feedback which customers can give feedback about the food or service and also able to view the feedback given by the other customers immediately. McDonald's allows their customer to give feedback, however the feedback is in survey form where customer has to recall back which food is good or which food is bad and fill into the survey form.

Besides, this app does not have the message notification system where owner or staff can send message to their customers to inform them about any food promotion or hot sale food and the message will immediately appear on the customer phone. This app also does not provide the social sharing feature where customer can share their favourite food to their social media account.

2.3 dahmakan Mobile Ordering App

dahmakan is one of the famous growing food tech startup in Malaysia. dahmakan is a mobile ordering app which allow customers to order healthy dishes and provide delivery service to their office or home. dahmakan's goal is to create an app experience that would allow users to order a healthy meal in few taps. Most importantly, this app helps to bring healthy meals to the doorsteps of busy people quickly and easily in Kuala Lumpur. dahmakan app covered with a wide variety of healthy lunch and dinner options which will change daily for their customers. The delivery is free and there is no minimum order. This mobile ordering app is same with the others food ordering app where customer has to sign up for an account in order to browse into the app.

Strength

One of the strengths of dahmakan app is it support multiple payment method for customers to choose which is cash on delivery, credit card and online banking. Customer has the flexibility to choose from any payment method. Besides, this app provides their customers with multiple login option such as via Facebook and Google. Customers past order and upcoming order will also be updated in the app and view by the customer. Besides, this app also provides the 'Order Reminder' feature where customer can enable or disable the lunch reminder and dinner reminder. This feature will remind the customer once a day to order their meals. Furthermore, customer can send their feedback by writing suggestion in the Feedback interface so that the owner of the restaurant can improve their food and service.

Weaknesses

One of the weakness of dahmakan app is this app does not have rating feature. This app does not have the feature which allows their customer to give rating. Most importantly, there is no real time customer feedback which customers can give feedback about the food or service and also able to view the feedback given by the other customers immediately. dahmakan app allows their customer to give feedback, however it's need time for the dahmakan's team to review the feedback. Besides, this app does not have the

message notification system where owner or staff can send message to their customers to inform them about any food promotion or hot sale food and the message will immediately appear on the customer phone. This app also does not provide a feature where customers can perform extra request such as no vegetable or less sugar and etc.

Features	McDonald's Mobile Ordering App	Pizza Hut Mobile Ordering App	dahmakan Mobile Ordering App
Real-time Customer Feedback	✗	✗	✗
Track Order History	✓	✓	✓
Rating Feature for Customer	✗	✗	✗
Able to add into Favorites List	✓	✗	✗
Able to let customer perform extra/special request (Extra sauce, etc)	✓	✗	✗
Message Notification System	✗	✗	✗
Able to share to social media channel	✗	✗	✓
Able to notify customer about the status of the food	✗	✗	✗

Table 2-3-1 Comparisons between McDonald's, Pizza Hut and dahmakan Mobile Ordering App

2.4 Chapter Summary

As a conclusion, after reviewed these three existing system, there are no real-time customer feedback, rating feature for customer, message notification system new order push notification to restaurant owner and notification of food status to customers. Therefore, the proposed system is developed in order to solve the weaknesses of the system.

3.1 Project Development

In order to develop this project, the methodology use is prototyping. In the planning phase, this project is going to take 3 semester time in order to develop a full complete fast food ordering system. In the analysis phase, some of the existing system will has to be review in order to compare their weaknesses and strengths. After analysis phase, the design of the interface of the fast food ordering system using mobile application has to be complete. In the implementation phase, implementation of the 1st version by testing with few mobile devices was carried out. The analysis, design and implementation phase are repeated in order to develop 2nd prototype and so on until getting the final result. Figure 3-1 shows the prototyping process.

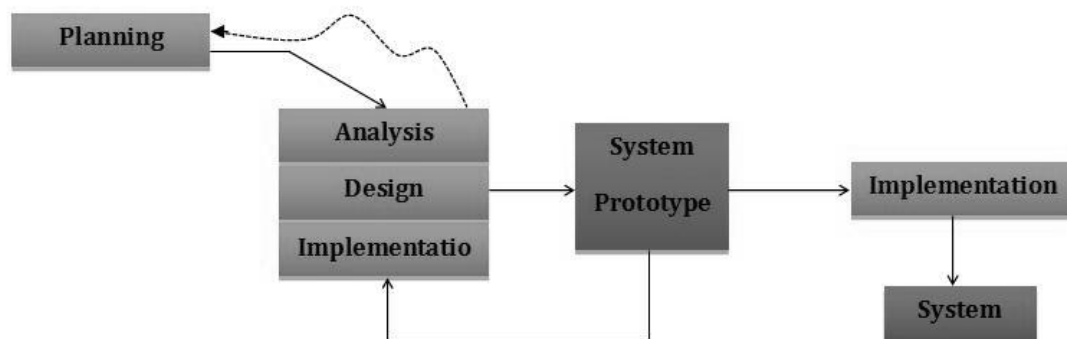


Figure 3-1 Diagram of Prototyping processes

Planning Phase

In the Planning phase, this project will be going to take 2 semesters to develop a complete project. During this phase, CASE tool (Computer-aided software engineering) such as Microsoft Visual Paradigm is used to generate diagrams which are Use Case Diagram and Activity Diagram for users to verify the requirement. Besides, network diagram of this project is also created in order to use as a guideline to develop this project.

Analysis Phase

In the Analysis phase, problem statement, objective and project scope are identified in order to develop this project. Besides, a few existing systems that related to food ordering

system using mobile application were reviewed to compare their strengths and weaknesses.

Design Phase

In the Design phase, the design of the user interface of the fast food ordering system using mobile application must be complete. Moreover, the database for the customer information was created during this phase.

Implementation Phase

In the last phase which is the Implementation phase, all the modules that been proposed will be developed to produce a final version of system for the end user.

System Prototype

In this phase, first version of prototype will be introduced to user who will try and test the system. The analysis, design and implementation phase will be repeated and the comment given by the user will be used to develop second version of prototype and so on until getting the best result.

3.2 Project Verification Plans

System requirements such as functional and non-functional requirements, software and hardware requirement will be created in this session.

3.2.1 Functional Requirements

Customer Registration Module

- The system shall not allow duplicate account.
- The system shall only allow successful registration after all the required information is completely filled.
- The system shall store the information into the Firebase after successfully registered.

Customer Login Module

- The system shall allow registered user with correct phone number and password to login to the application.
- The system shall be able to show an error message when phone number is invalid.
- The system shall be able to show an error message when the password is incorrect.

Owner Login Module

- The system shall allow only registered owner with correct phone number and password to login to the application.
- The system shall be able to show an error message when phone number is invalid.
- The system shall be able to show an error message when the password is incorrect.

Mobile Ordering System Module

- The system shall allow customers to place order via their mobile device by installing the app under internet connection.

Menu Information Module

- The system shall display all the food information such as price, name, and description to the customer.

Food Cart Module

- The system shall allow customer to view all the food item that they selected.
- The system shall display the food placed by customer in term of food name, quantity, price of each item and the total price.
- The system shall calculate the total price of the food ordered by customer.

Search Food Functionality Module

- The system shall allow customer to use the search engine plug-in to search for their desired food.
- The system shall only display the specific food entered by the customer via the search engine plug-in.

Payment Gateway Module

- The system shall allow customer to make payment via Paypal payment method.

Real Time Customer Feedback and Food Rating System Module

- The system shall allow customer to give feedback in real time.
- The system shall allow customer to view other customer feedback.

- The system shall allow the customer to give rating by selecting amount of star.

Social Sharing Feature Module

- The system shall allow the customer to share their favourite food to their social media channel such as Facebook.
- The system shall allow the customer to post the food content to their social media channel.

Message Notification System Module

- The system shall allow the owner to send any type of message notification to their customer.
- The system shall allow the customer to receive the message instantly after the owner sent the message.
- The system shall allow the customer to enable or disable the message notification.

Order Retrieval System Module

- The system shall allow the owner able to retrieve order from the database which the orders will be displayed in the graphical interface.
- The system shall display all the order information such as order date/time and order details in the order status interface.

Order Management System Module

- The system shall allow the owner of the restaurant to manage and update the order status so that customers will able to know whether their food is placed or still in process.
- The system shall be able to notify the customer whether their order is in progress or completed.

3.2.2 Non-Functional Requirements

Operational Requirements

- This system shall perform well on all the android phones.
- This system shall perform under the internet connection.

Performance Requirements

- This system shall let customers to place an order in a fast manner.
- This system shall be available 24/7 for every day.

Usability Requirements

- This system shall provide a simple and easy to use graphic user interface for customer.

Security Requirements

- This system shall authenticate the phone number and password in order to login to the application.
- This system shall request the existing password of user so that to let them to change into a new password.

3.2.3 Hardware and Software requirements

Hardware

Descriptions	Requirements
Operating System	Android 7.0 or above
Processor	1.69GHz or above
RAM	2GB or above
Storage	4GB free or above
Wireless Connection	Yes

Table 3-2-3-1 Hardware Requirements for Owner smartphone and Customer smartphone

Software

- Front End : Android Studio Development Kit, Android SDK & Android Virtual Device Manager
- Back End : Firebase
- Operating System : Window 8 / Window 10 and Android 7.0 or above
- Programming Language : JAVA Programming Language

Description	Minimum Requirement
Mobile Operating System	Android 7.0 or above
Windows Operating System	Windows 8 or above
Development Kit	Android Studio Development Kit, Android SDK & Android Virtual Device Manager, Paypal SDK, Facebook SDK

Table 3-2-3-2 Software requirement for development

3.3 Design of fast food ordering system using mobile application.

3.3.1 Use Case Diagram

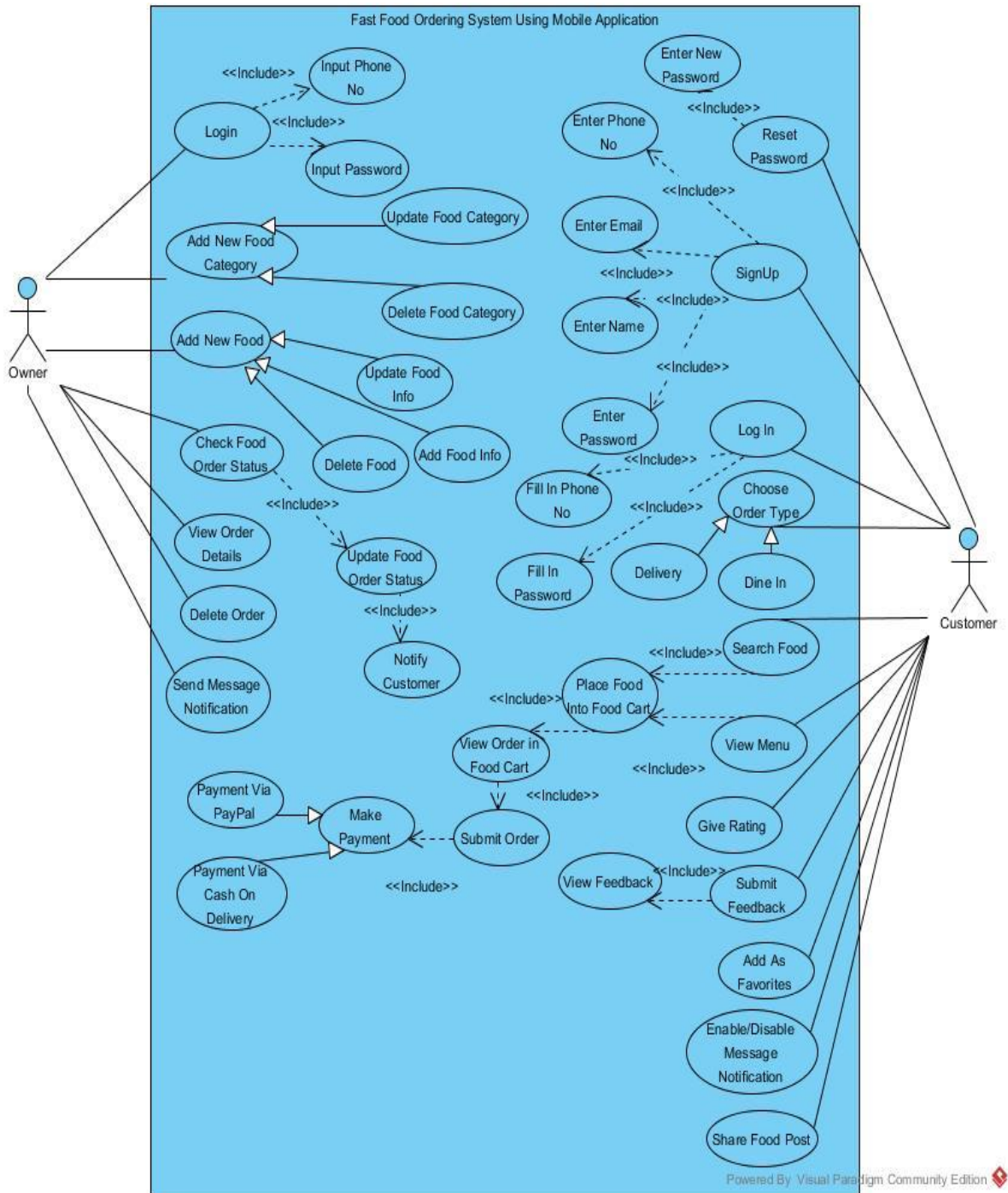


Figure 3-3-1 Use Case Diagram

In Figure 3-3-1 above, owner of the fast food restaurant required to login as a user to perform any tasks. All the menu management will be handled by the owner such as add new food category, delete food category or update food category. Besides, owner is also responsible to add new food, add food info, update food info or delete food info. Checking Order and update order status is also done by the owner. For customers, they have to sign up as a user if they are not an existing user. After that, they will be redirect to the menu page where they are able to select their fast food, place them into the food cart and checkout. Customers are encouraged to use the search engine option which is convenient. Moreover, customers are also encouraged to give rating and feedback so that the restaurant owner can improve their weaknesses. Customers are able to view other people feedback too since it is in real time. Customers are also able to add their favourite food into the favourite list which they can straight placing their order when they visit the Favourite List interface. Customers can click on the sharing icon to share their food post to their social media channel. Lastly, chef is also able to view the order placed by customers.

3.3.2 System Flowchart (Customer)

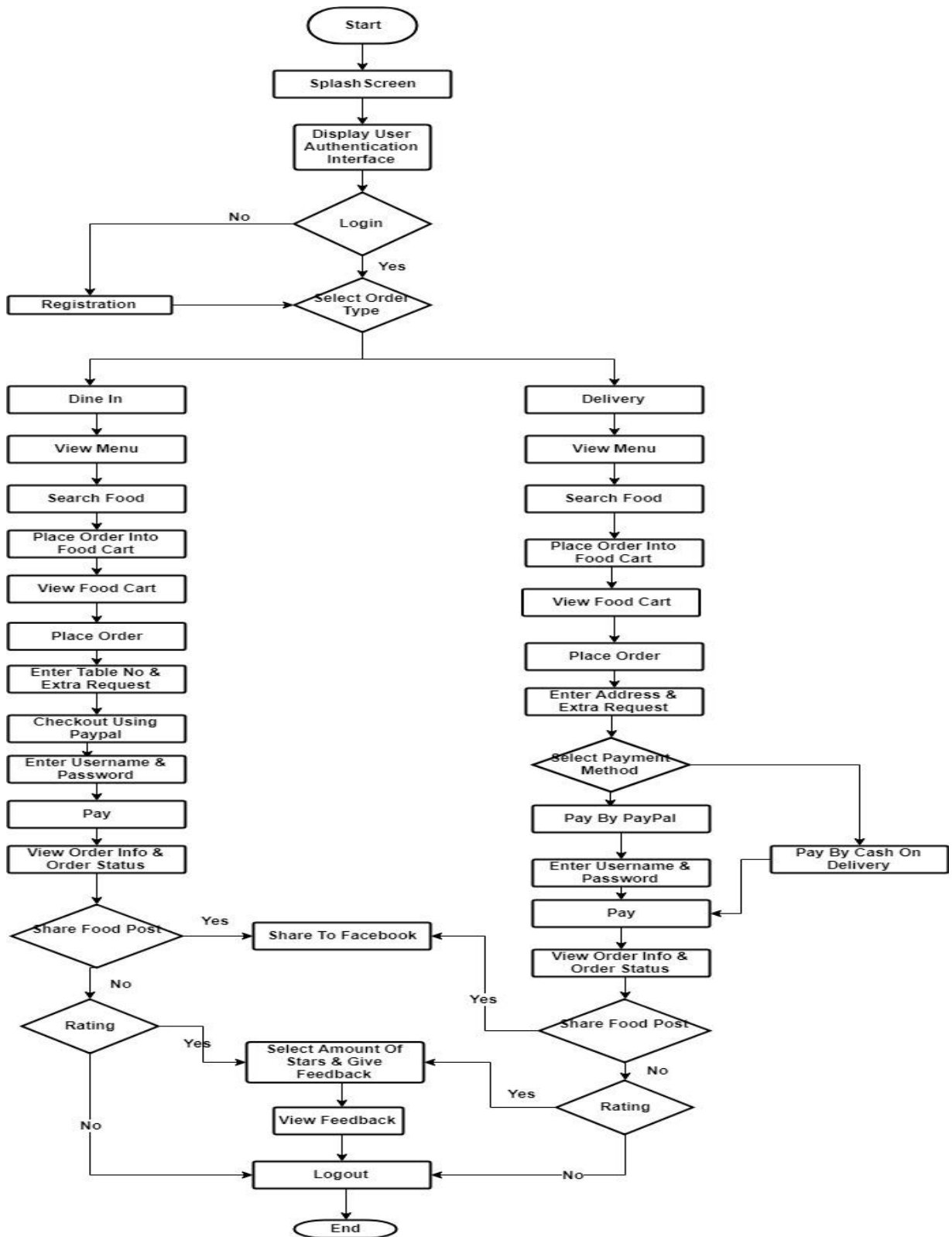


Figure 3-3-2 System Flowchart (Customer)

In Figure 3-3-2 above, this mobile application start with a splashscreen. Customer are then redirect to a user authentication interface. Customers are required to sign up as user if they are not a member. After filling up personal information in the registration page, menu interface will be displayed to the customer. Customers have to choose which their order type is. There are two options which are dine in or delivery. Customers can either use the search engine option to search for their favourite food or navigate through the menu. After finish selecting desired fast food, customers can choose either to give rating and feedback to the restaurant or just placing their order to the food cart. Customers are able to view and check their order in the food cart interface. Before submitting their order, customers are able to leave any extra request or message before proceeding to the payment. After payment, customers are required to choose whether they want to have their fast food in the restaurant or take away. Customers have to enter the table number if they want to have their meals in the restaurant.

3.3.3 Activity Diagram

3.3.3.1 Activity Diagram for customer to login.

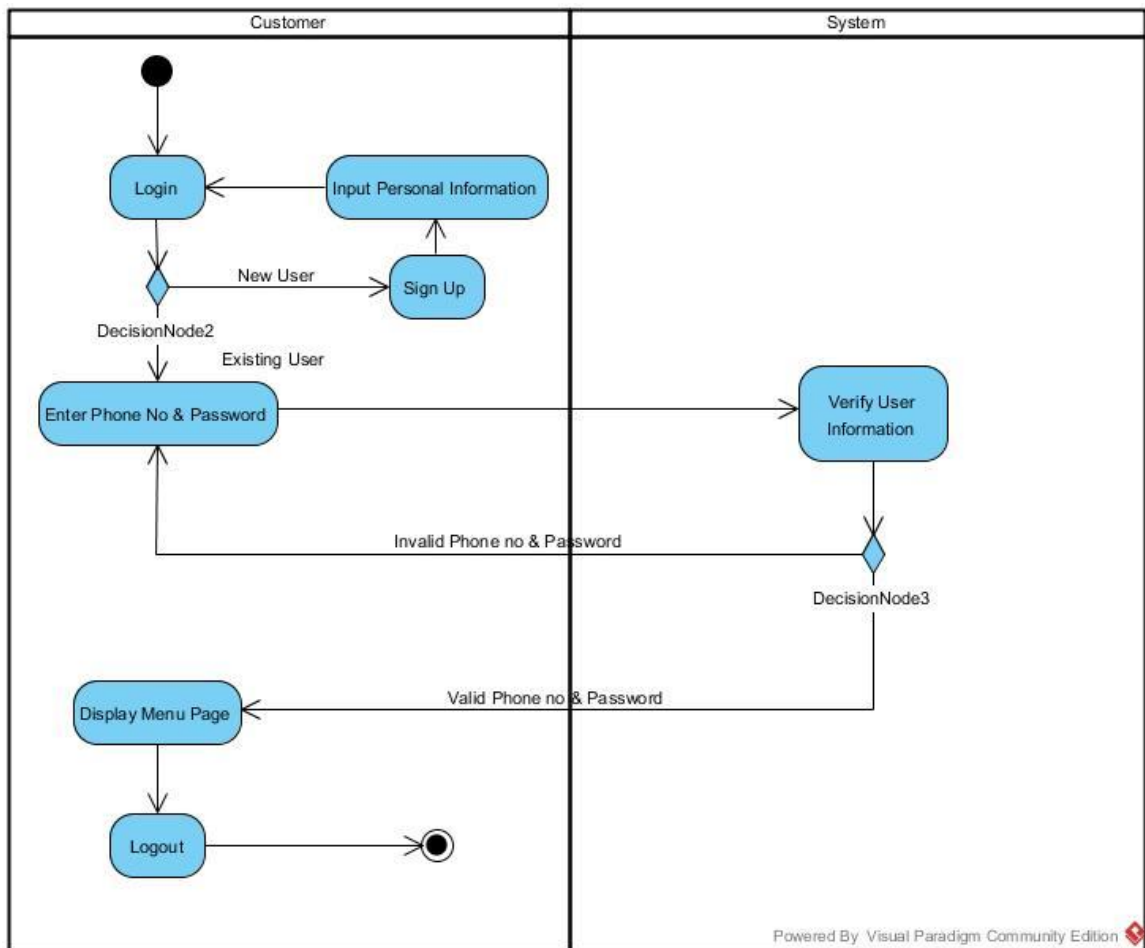


Figure 3-3-3-1 Activity Diagram for customer to login

3.3.3.2 Activity Diagram for customer to place order.

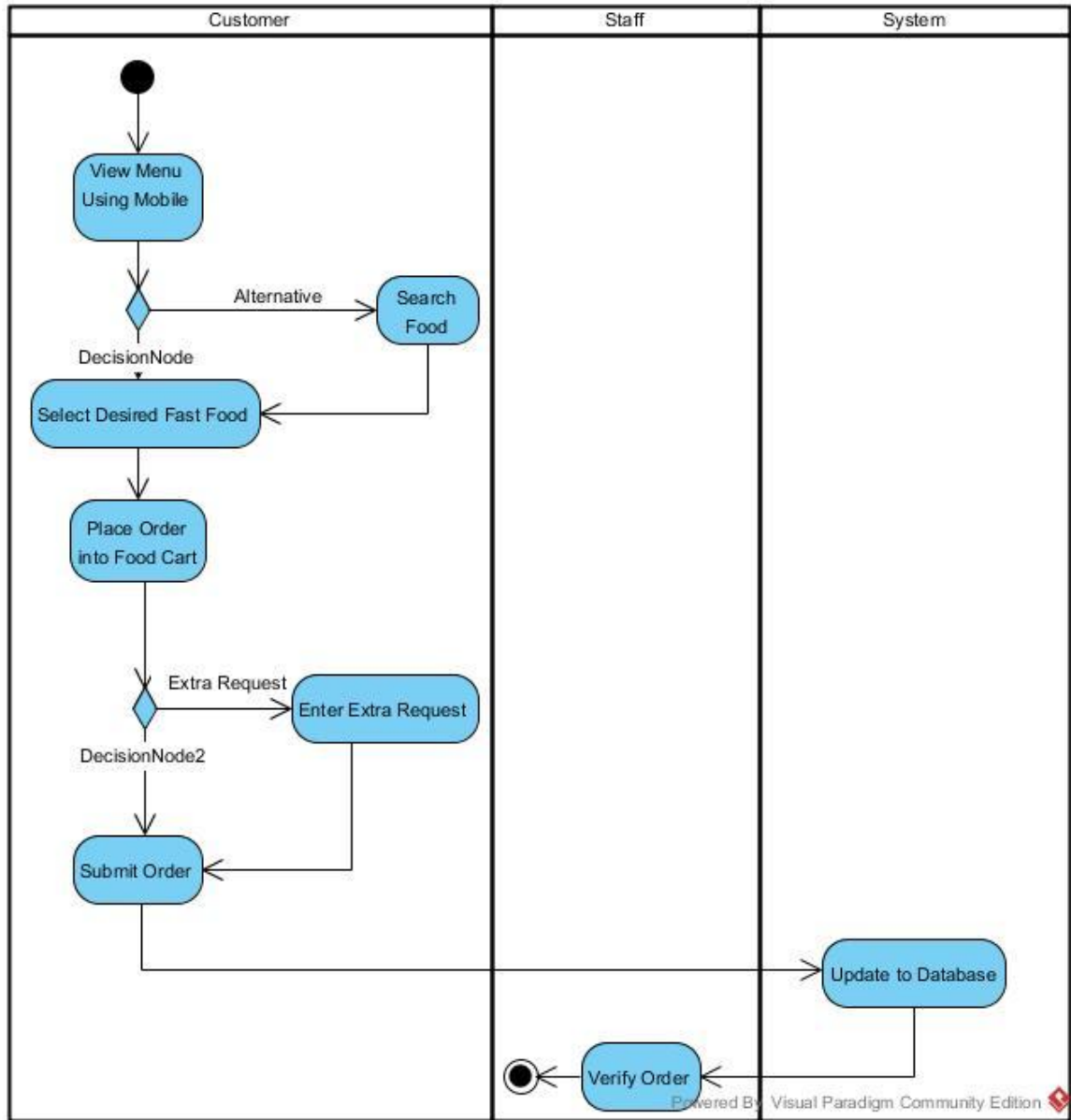


Figure 3-3-3-2 Activity Diagram for customer to place order.

3.3.3.3 Activity Diagram for customer to give rating and feedback.

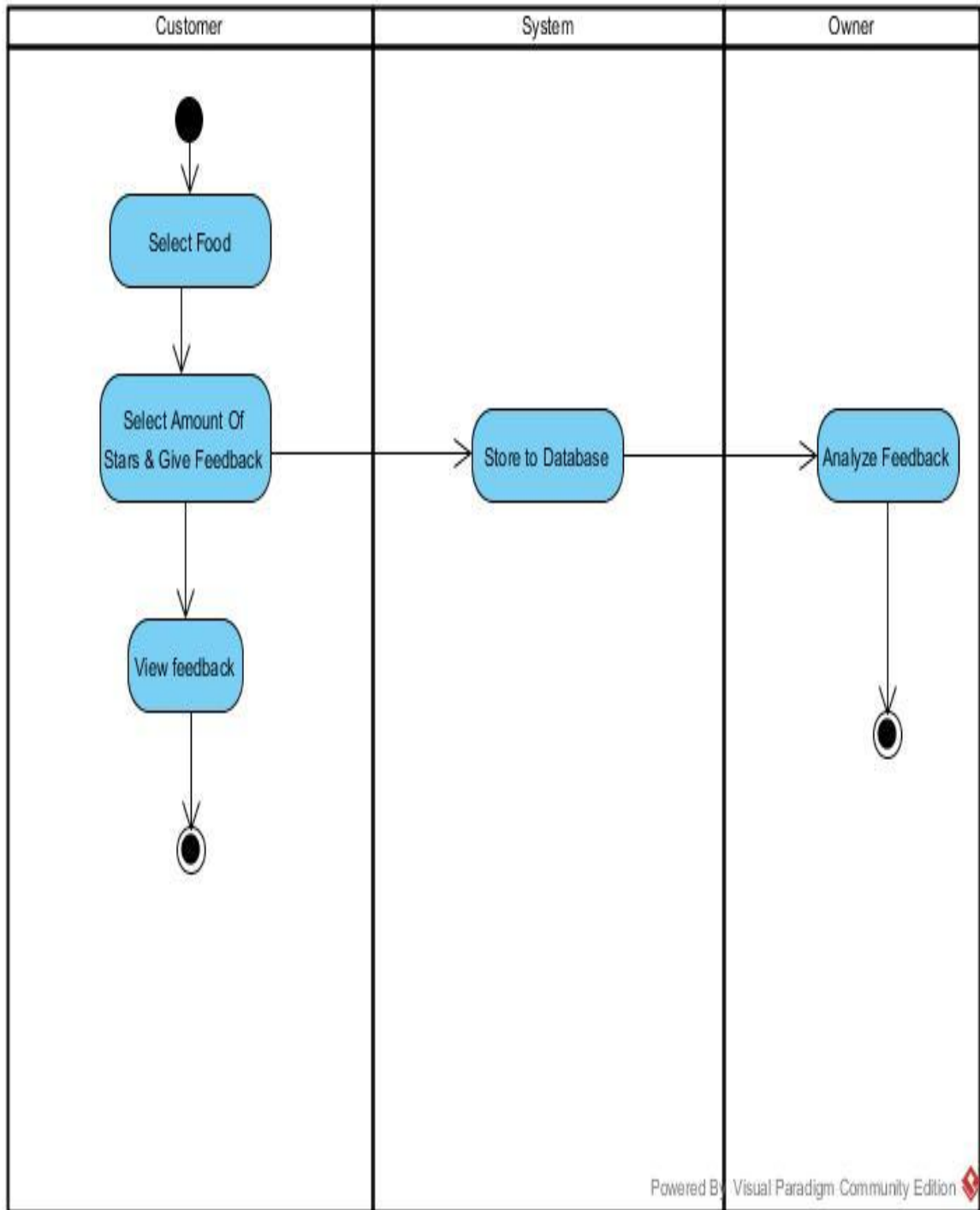


Figure 3-3-3-3 Activity Diagram for customer to give rating and feedback.

3.3.3.4 Activity Diagram for customer to make payment.

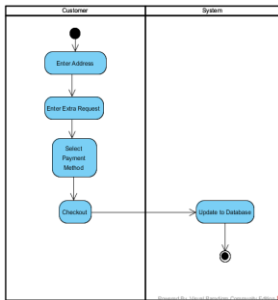


Figure 3-3-3-4 Activity Diagram for customer to make payment.

3.3.3.5 Activity Diagram for customer to select order type.

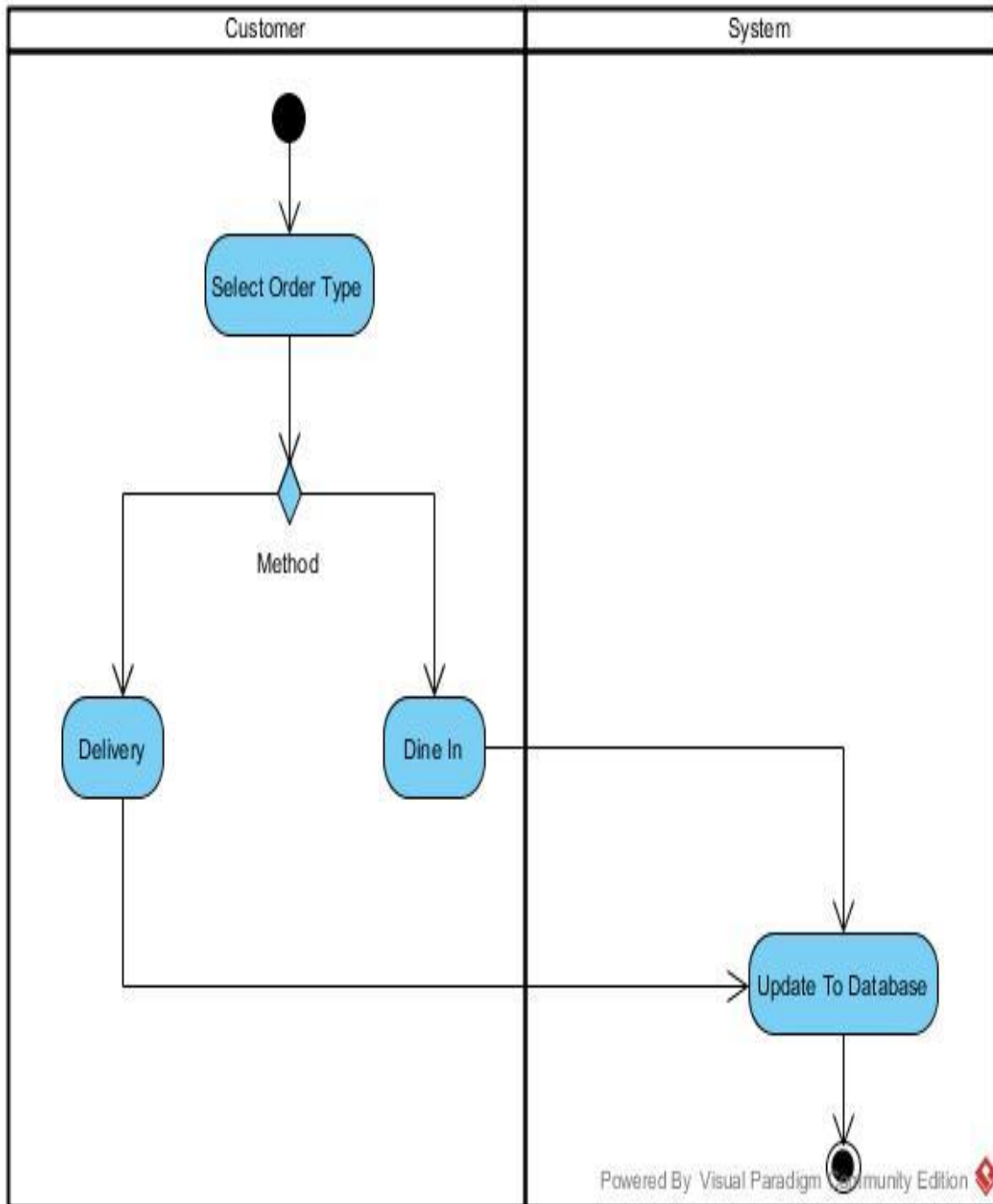


Figure 3-3-3-5 Activity Diagram for customer to select order type.

3.3.3.6 Activity Diagram for customer to add food item into favorites.

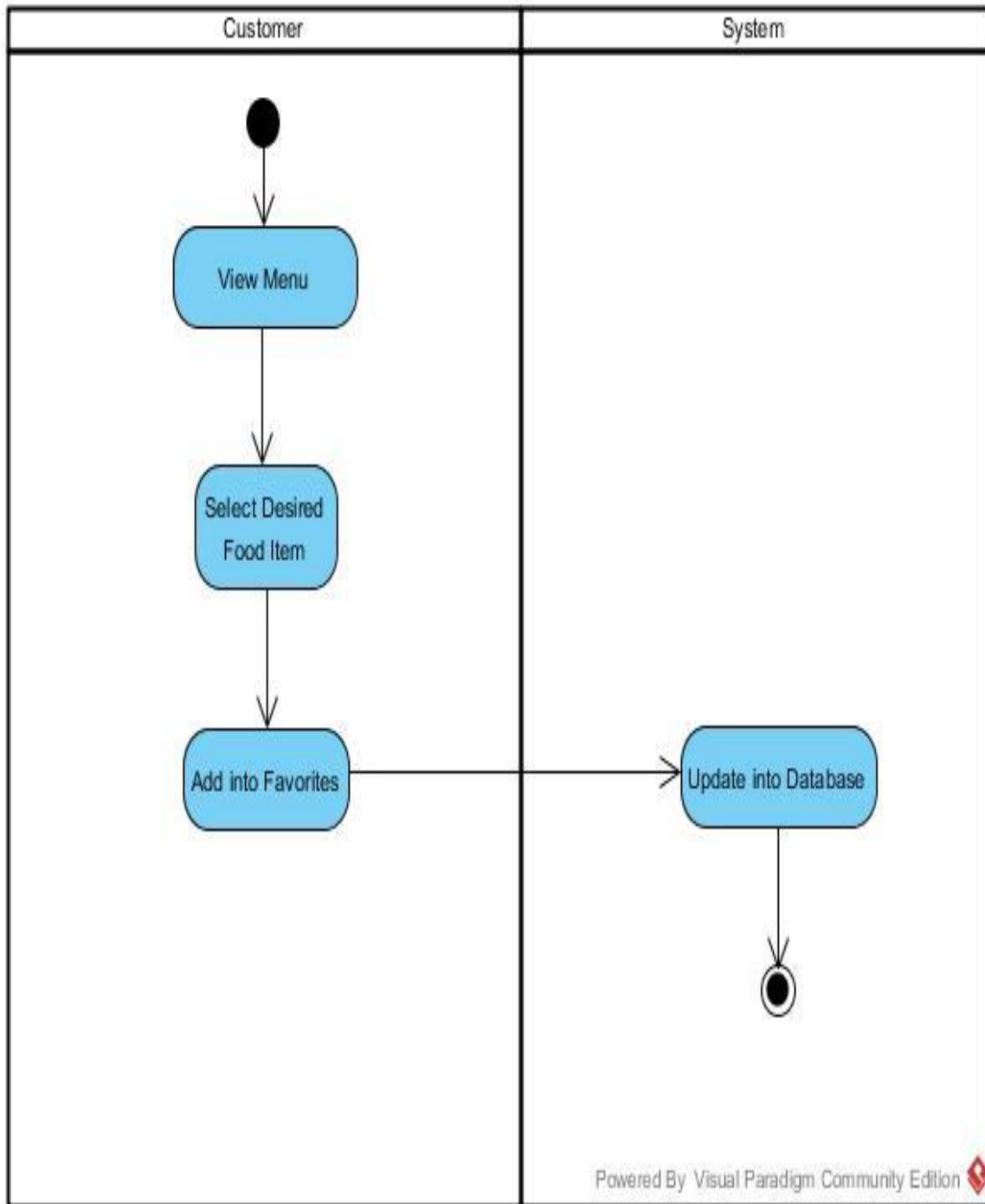


Figure 3-3-3-6 Activity Diagram for customer to add food item into favorites.

3.3.3.7 Activity Diagram for customer to reset their password.

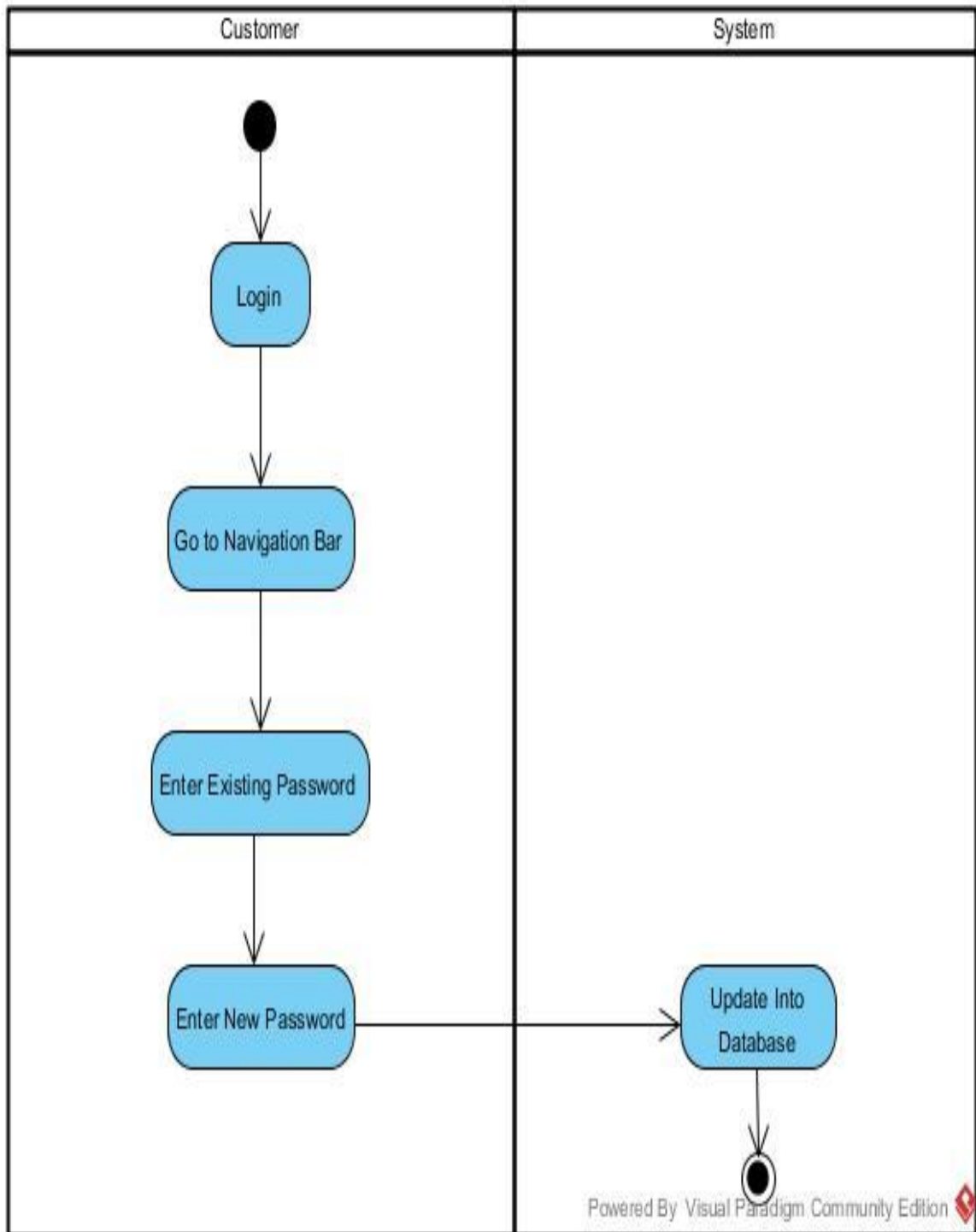


Figure 3-3-3-7 Activity Diagram for customer to reset their password.

3.3.3.8 Activity Diagram for Staff to send news.

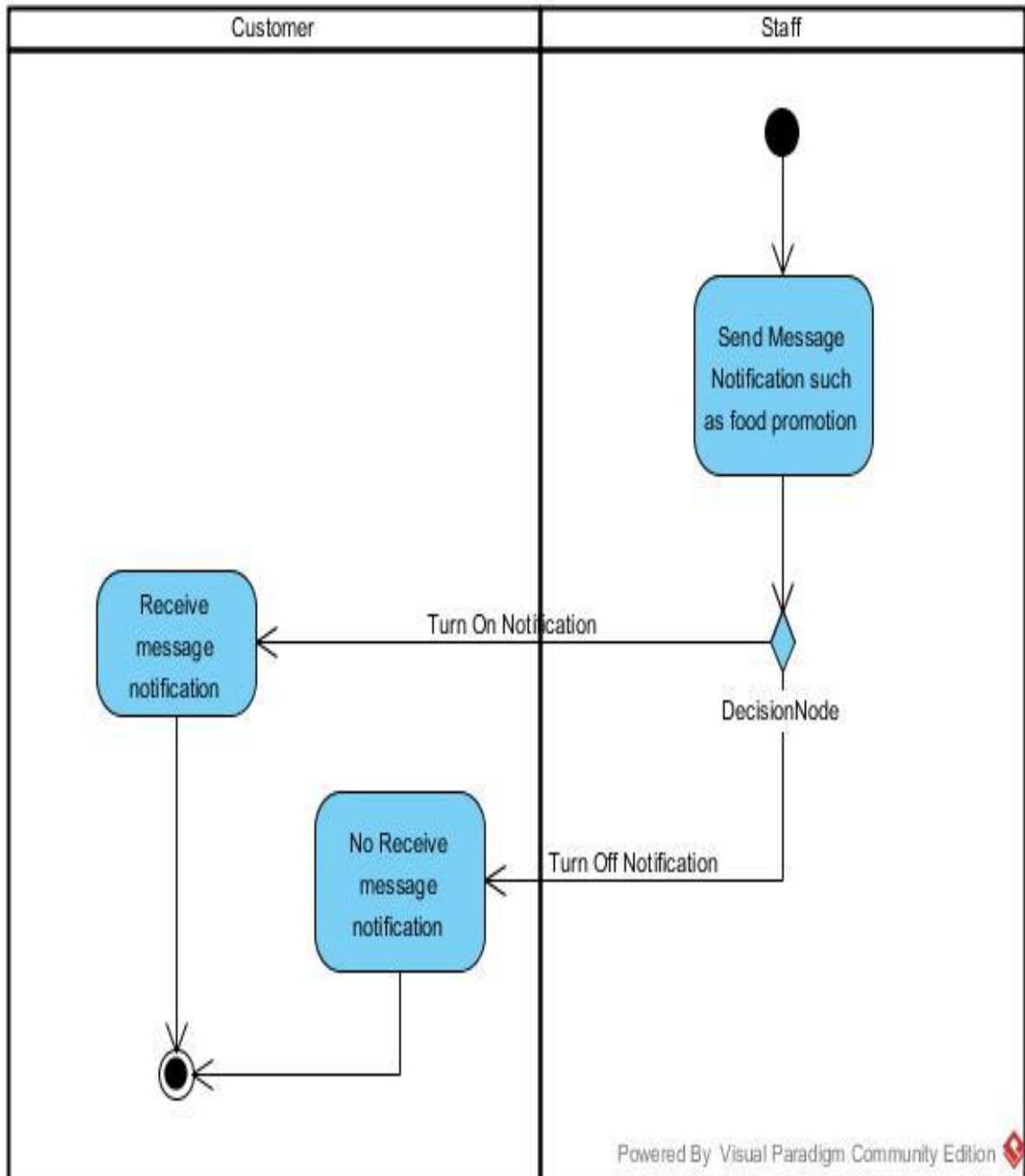


Figure 3-3-3-8 Activity Diagram for Staff to send news.

3.3.3.9 Activity Diagram for Customer to cancel their order

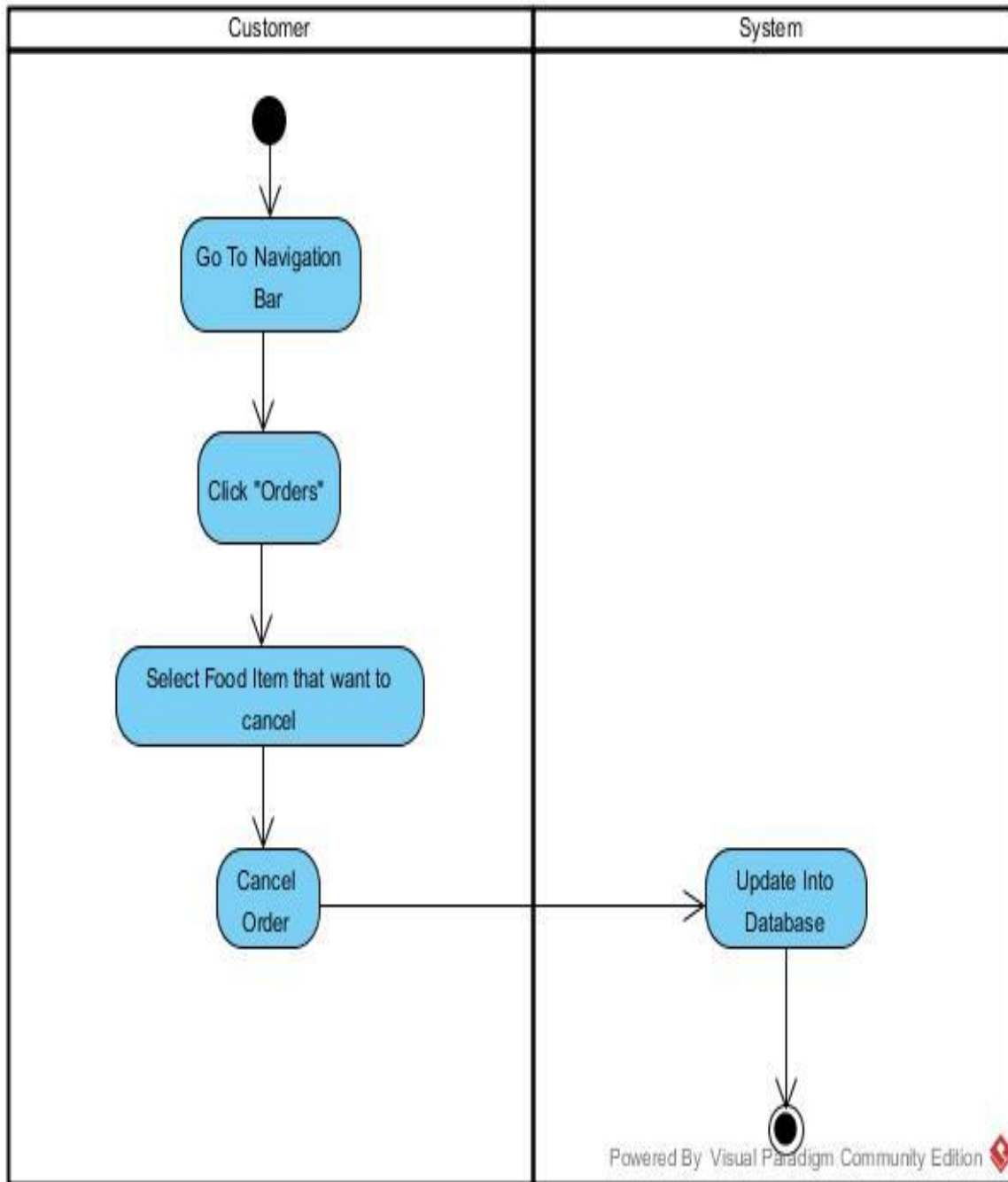


Figure 3-3-3-9 Activity Diagram for Staff to cancel their order.

3.3.3.10 Activity Diagram for Staff to manage order status.

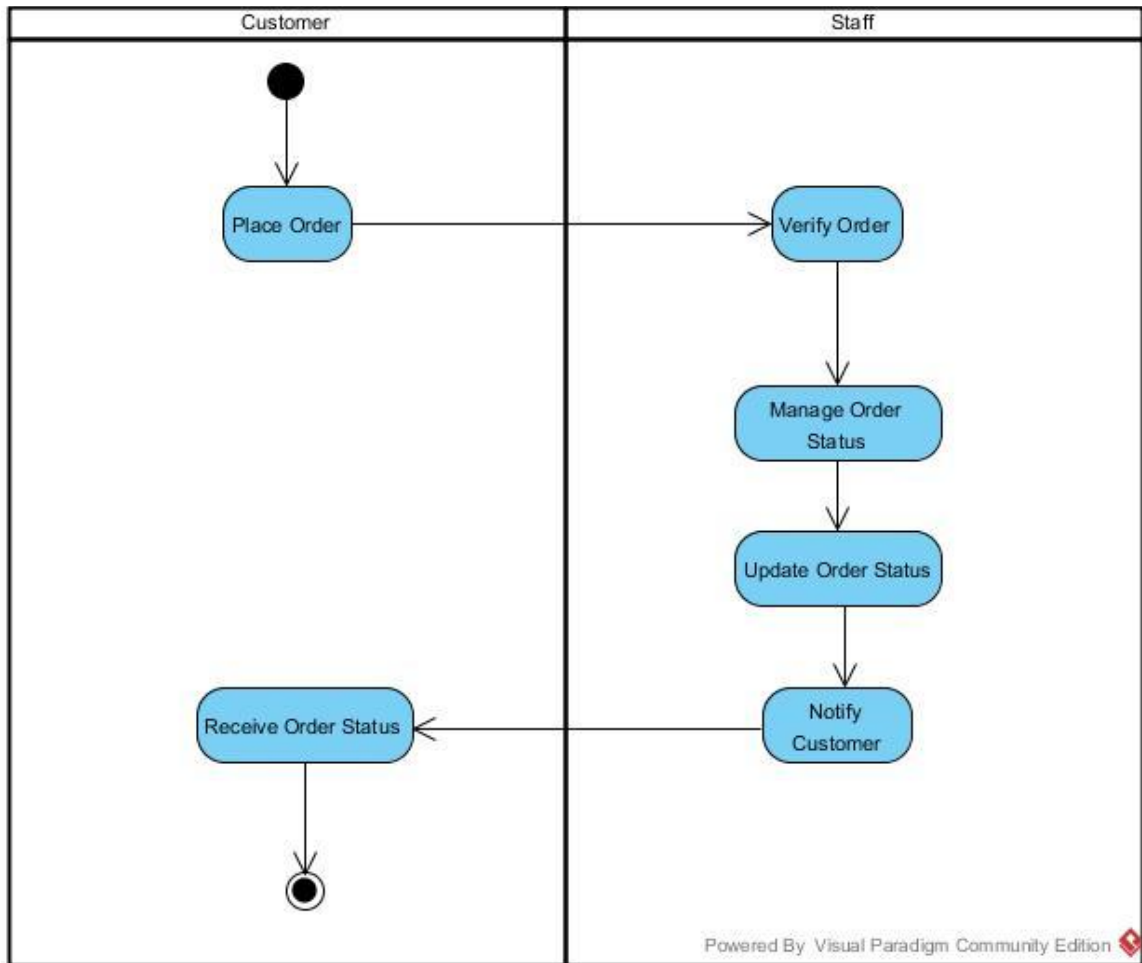


Figure 3-3-3-10 Activity Diagram for Staff to manage order status.

3.3.3.11 Activity Diagram for Staff to login.

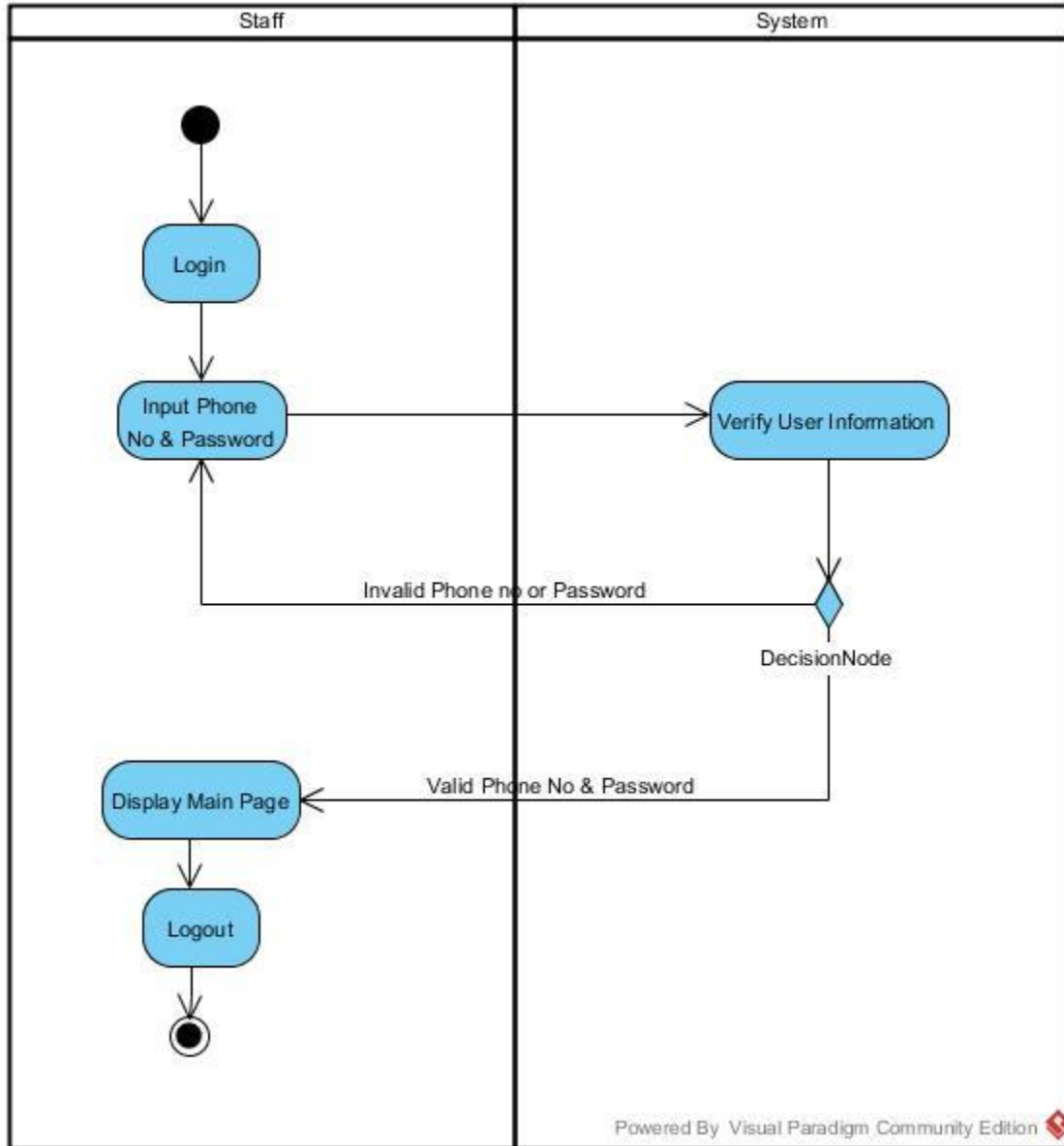


Figure 3-3-3-11 Activity Diagram for Staff to login.

3.3.3.12 Activity Diagram for Staff to enter new food.

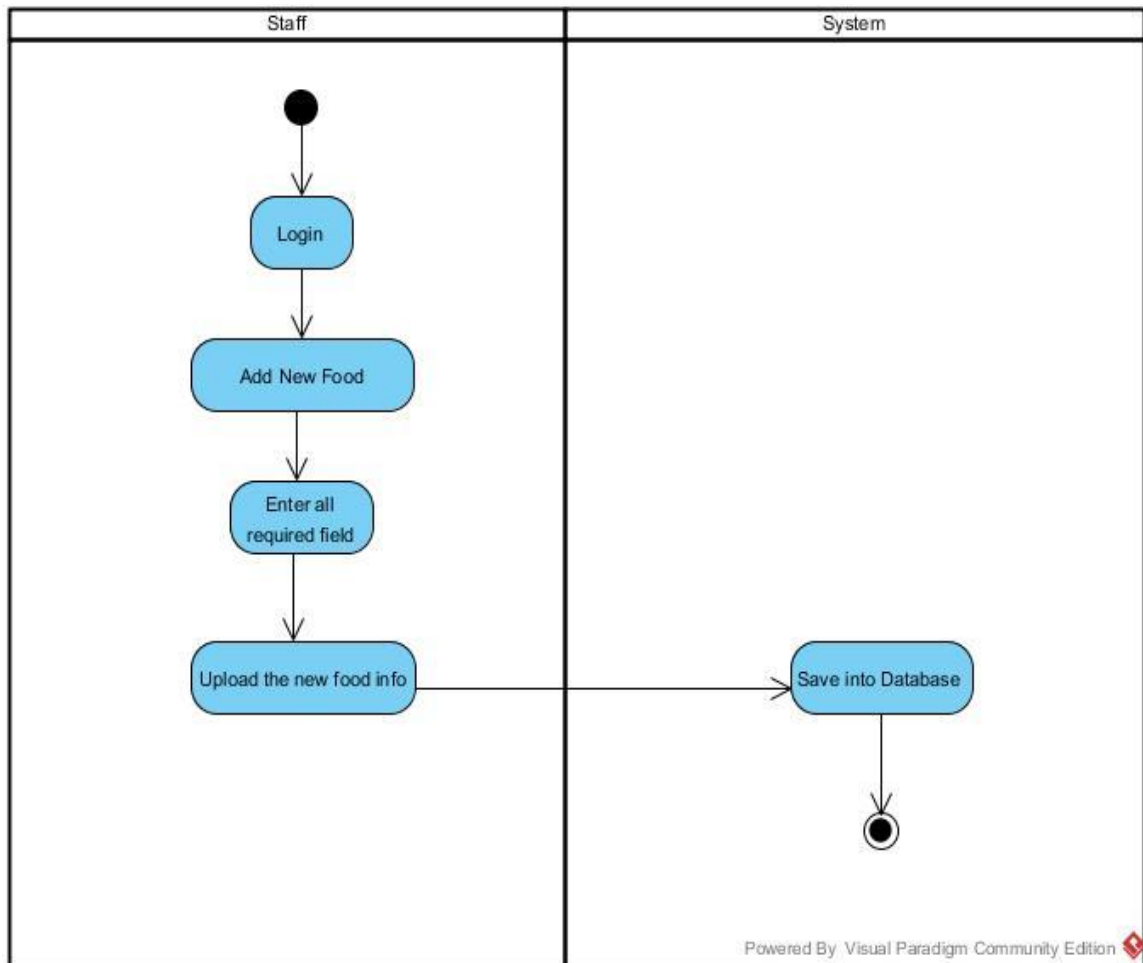


Figure 3-3-3-12 Activity Diagram for Staff to add new food.

3.3.3.13 Activity Diagram for Staff to update food info.

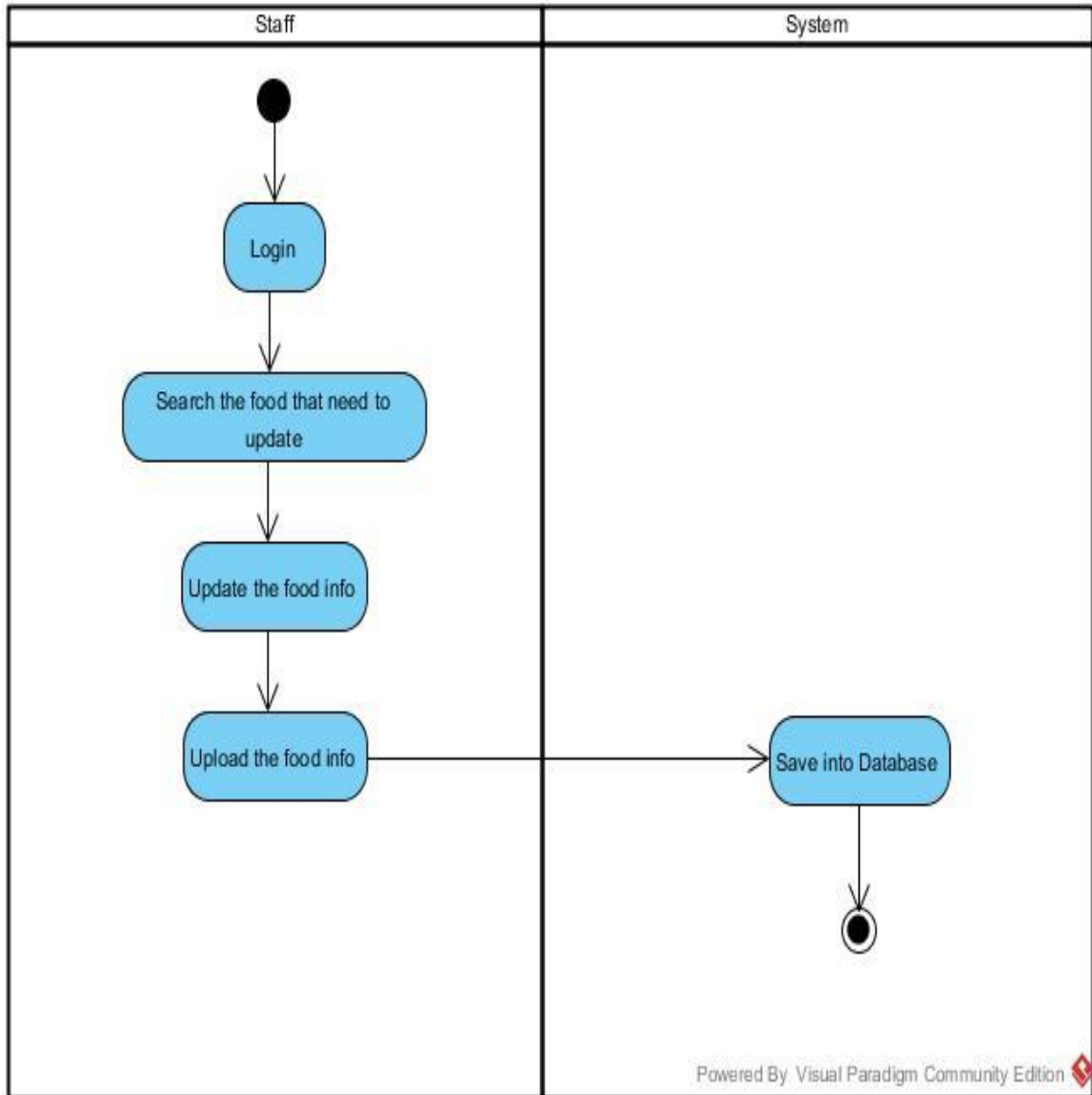


Figure 3-3-3-13 Activity Diagram for Staff to update food info.

3.3.3.14 Activity Diagram for Staff to delete food.

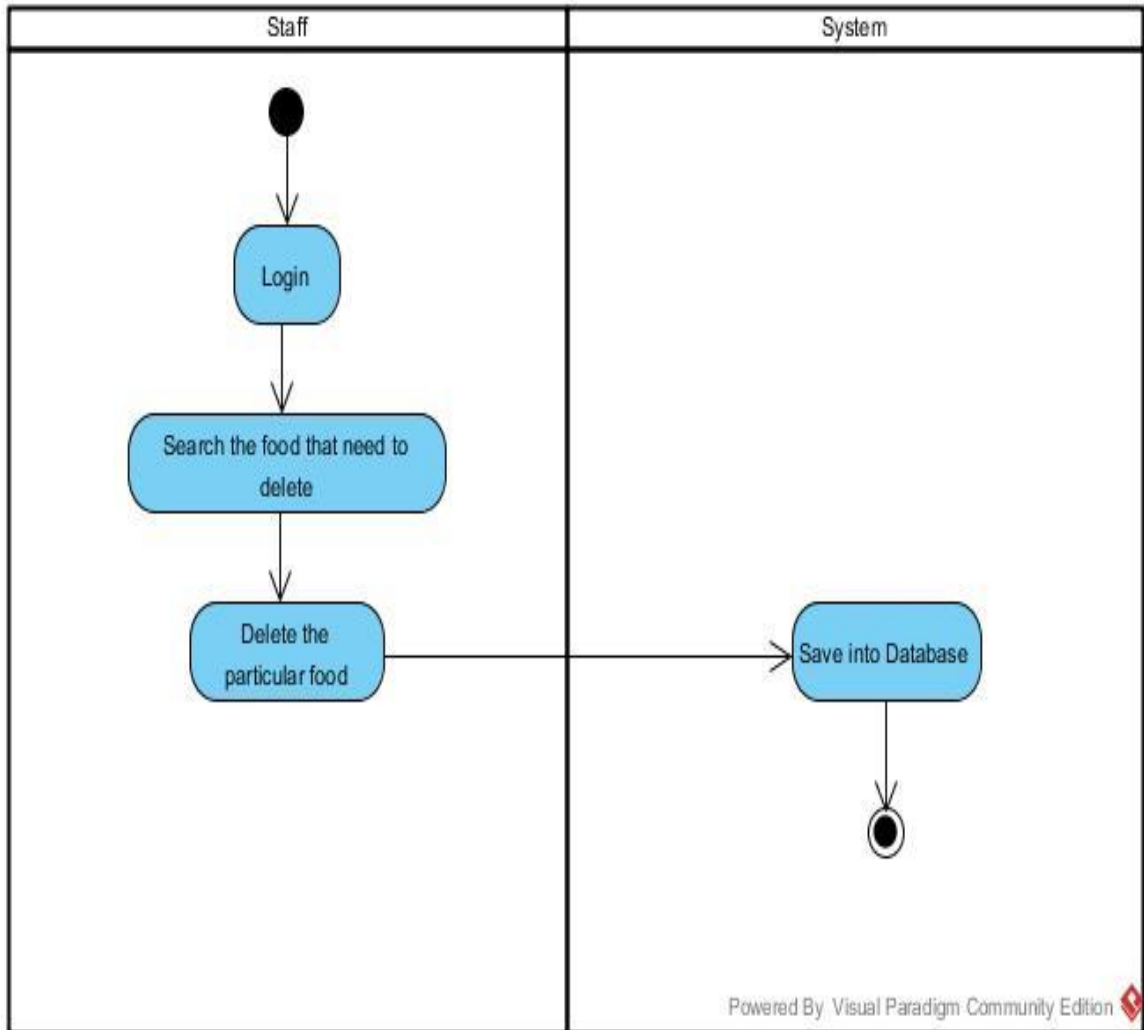


Figure 3-3-3-14 Activity Diagram for Staff to delete food.

3.3.3.15 Activity Diagram for Staff to delete food order.

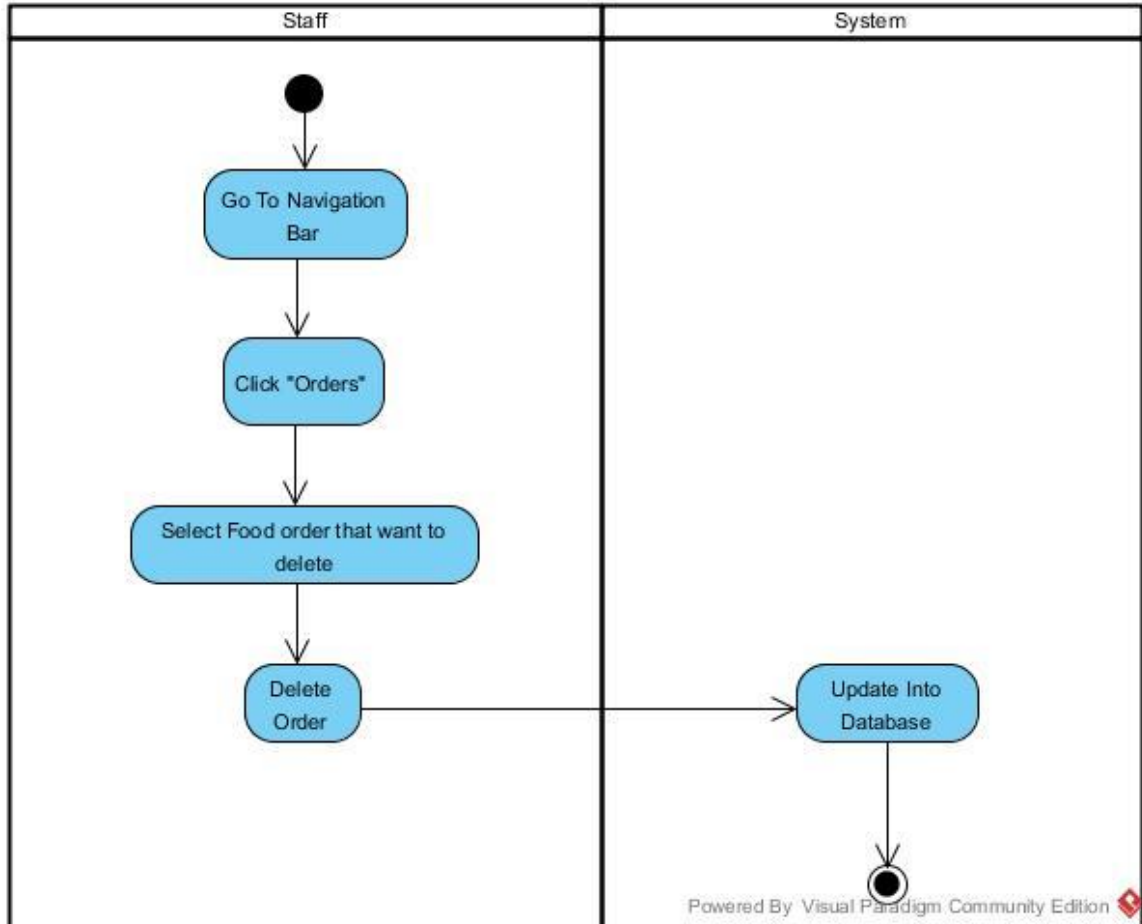


Figure 3-3-3-15 Activity Diagram for Staff to delete food order.

3.3.3.16 Activity Diagram for Staff to view customer order details.

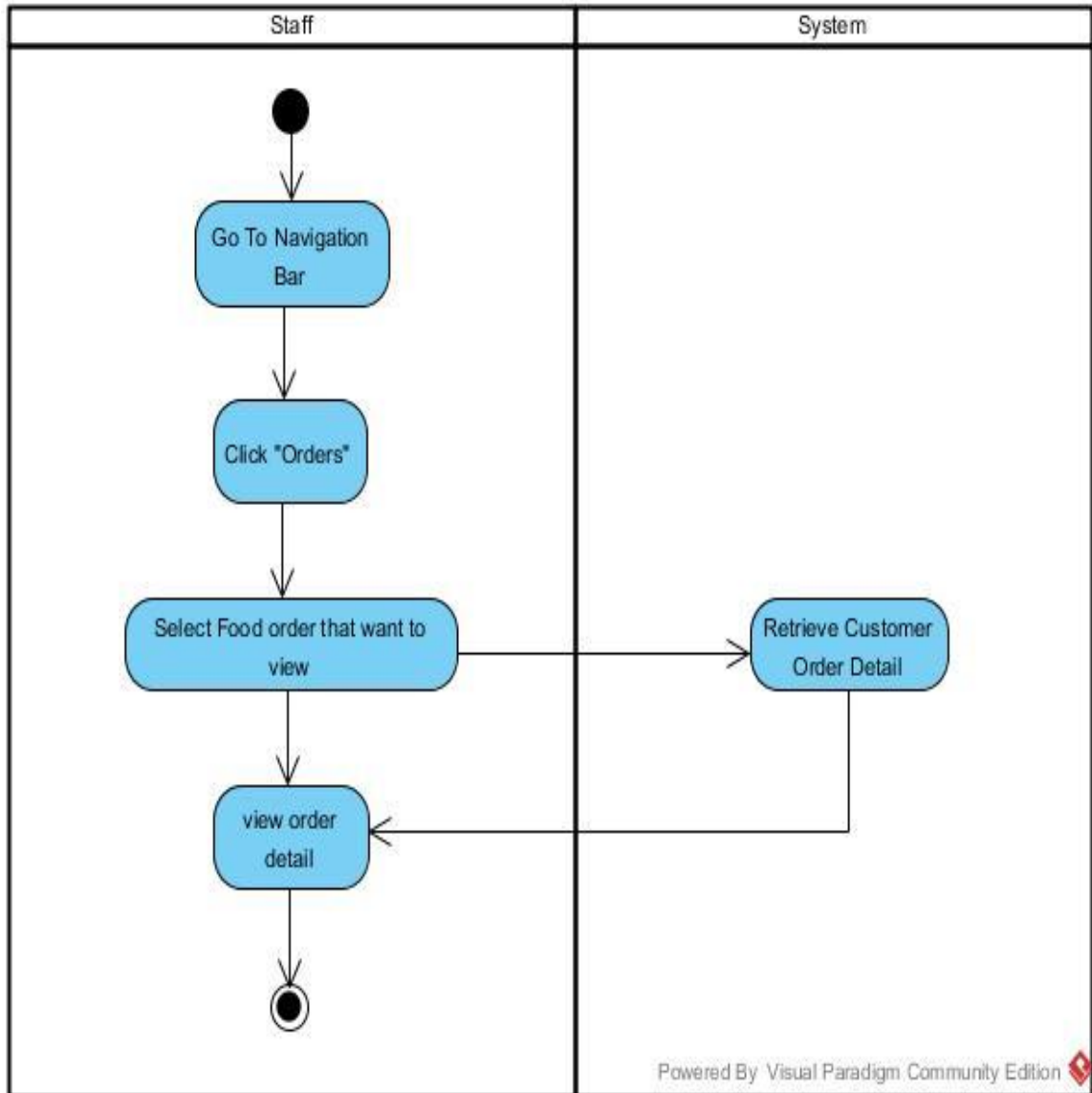


Figure 3-3-3-16 Activity Diagram for Staff to view customer order details

4.1 System Architecture Design

Figure below show the system architecture of fast food ordering system using mobile application which covers the 4 areas: serving area, staff's working area, kitchen area and remote user area. The system architecture that will be developed in this project would be client-server architecture.

- The mobile application on the Android devices for customers to place their order.
- The server on the Android device for restaurant owner to track and respond to customer order and also to update the menu.
- The database for fast food staff to store order details and updated menu.
- The wireless technology to support network communication.
- Customers are able to place order (Delivery) while they are in their home or office.

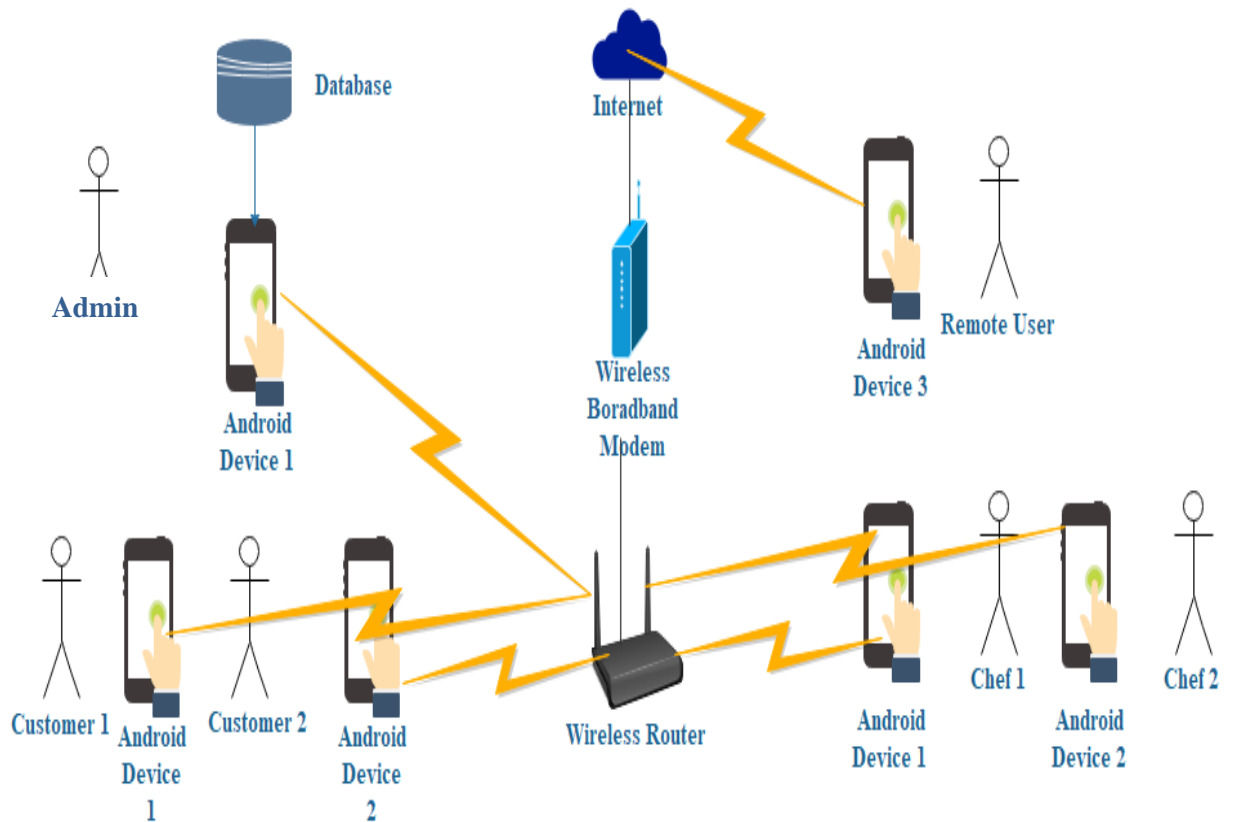


Figure 4-1 Diagram of System Architecture

4.2 Application User Interface Design (Customer)



Figure 4-2-1 Splash Screen

This is splash screen of my application.



Figure 4-2-2 User Authentication Interface

This is the interface design where customer login or register into the application.

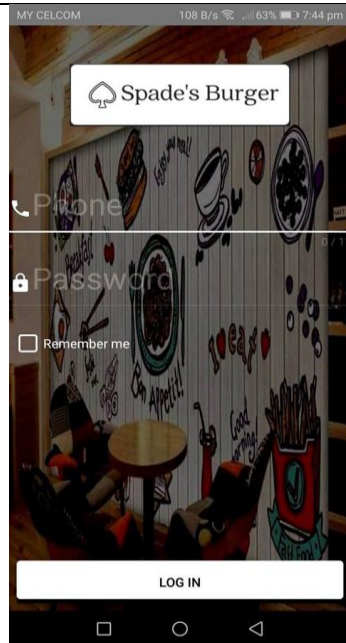


Figure 4-2-3 Login Page



Figure 4-2-4 Order Type page

<p>This is the login page where customer has to fill in all the required information.</p>	<p>This is the page where customer has to choose their order type.</p>
---	--

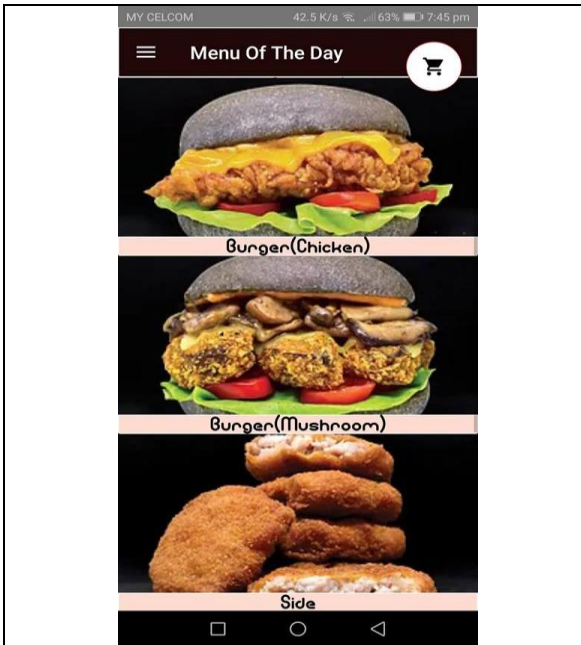


Figure 4-2-5 Food Category Page

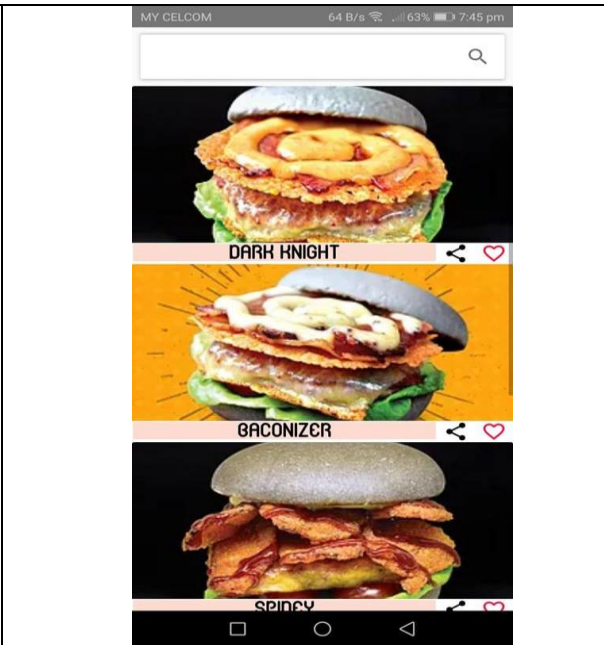


Figure 4-2-6 Food List Page

<p>This is the Food Category Page of my application.</p>	<p>This is the Food List Page where customer can click to view the food details.</p>
--	--

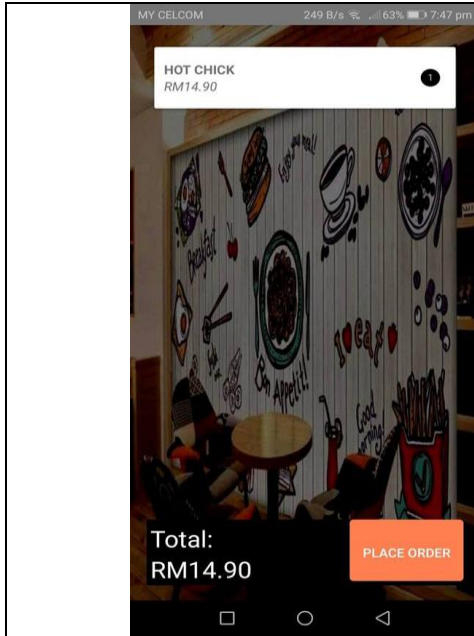


Figure 4-2-7 Food Cart Page

This is the food cart page with item placed.

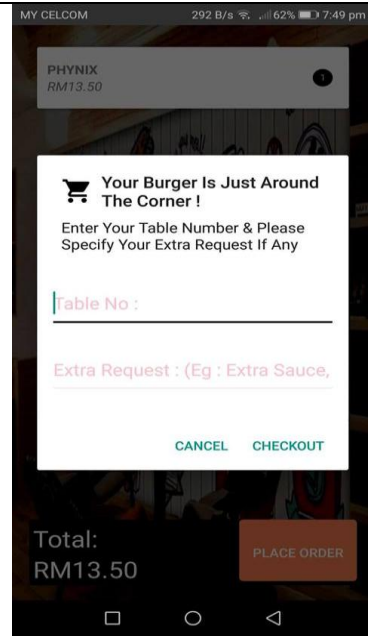


Figure 4-2-8 Checkout page (Dine In)

This is the checkout page where user has to fill in all the required information.

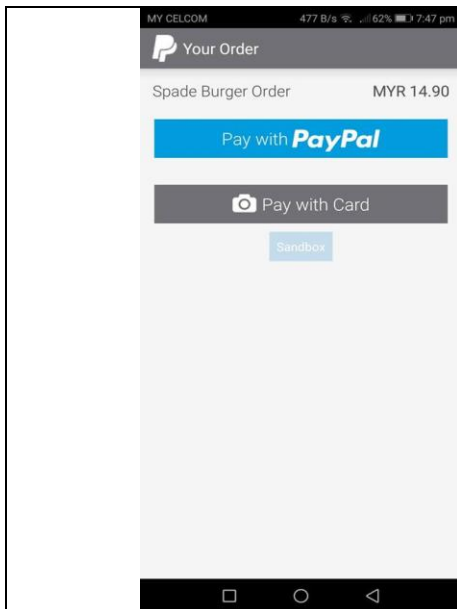


Figure 4-2-9 Make Payment

This is the payment page by using Paypal.

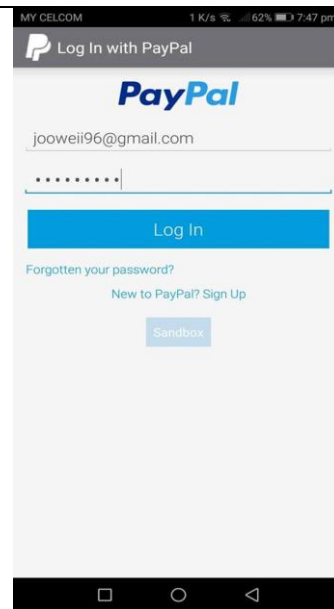

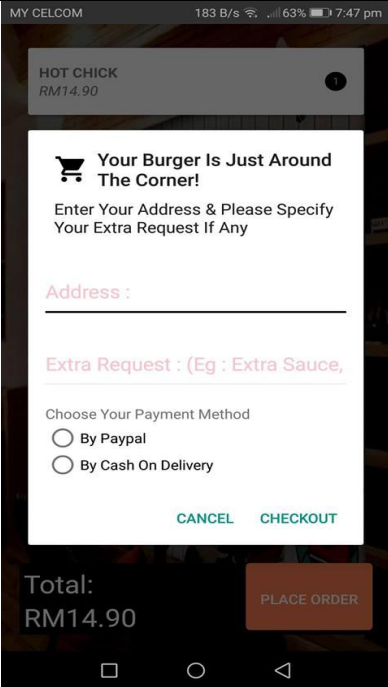


Figure 4-2-10 Paypal User Authentication Page

This is the page where user has to fill in the

 <p>Figure 4-2-11 Order Placed Successfully</p>	<p>information.</p>  <p>Figure 4-2-12 Checkout Page (Delivery)</p>
<p>This is the page showing the customer that their order has placed successfully.</p>	<p>This is the checkout page where user has to fill in all the required information. Customer can choose their method type.</p>

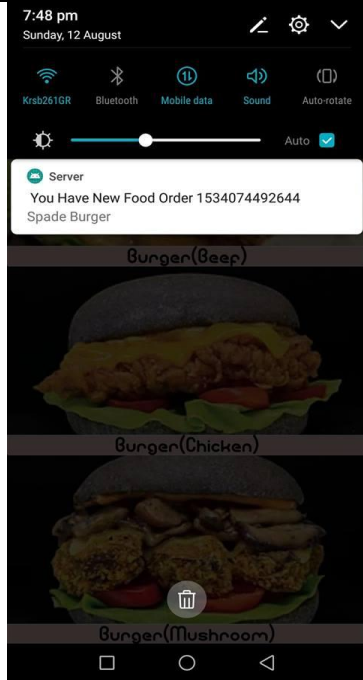


Figure 4-2-13 Notification of new order

Owner will be notified whenever there is a new order.

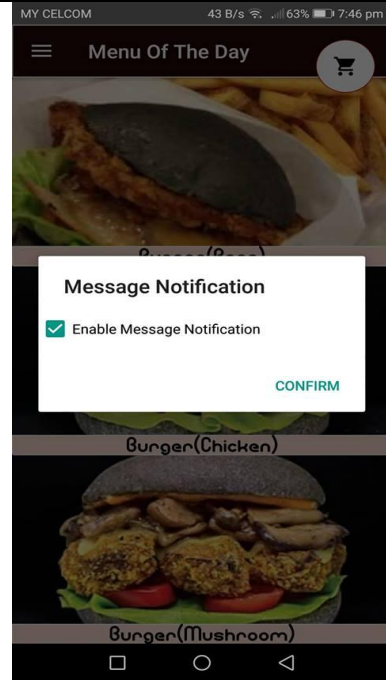


Figure 4-2-14 Message Notification

Customer can choose whether to enable/disable message notification.

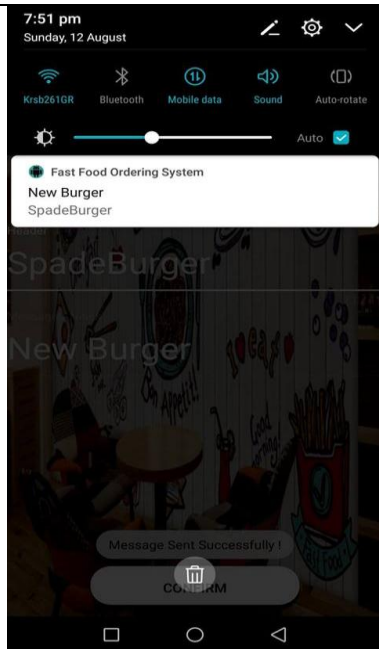


Figure 4-2-15 Message Notification

Customer will receive message notification

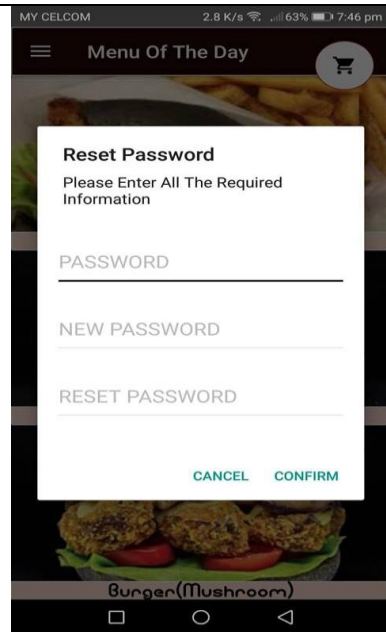


Figure 4-2-16 Reset Password

Customer can reset their password.

instantly whenever the owner send message.

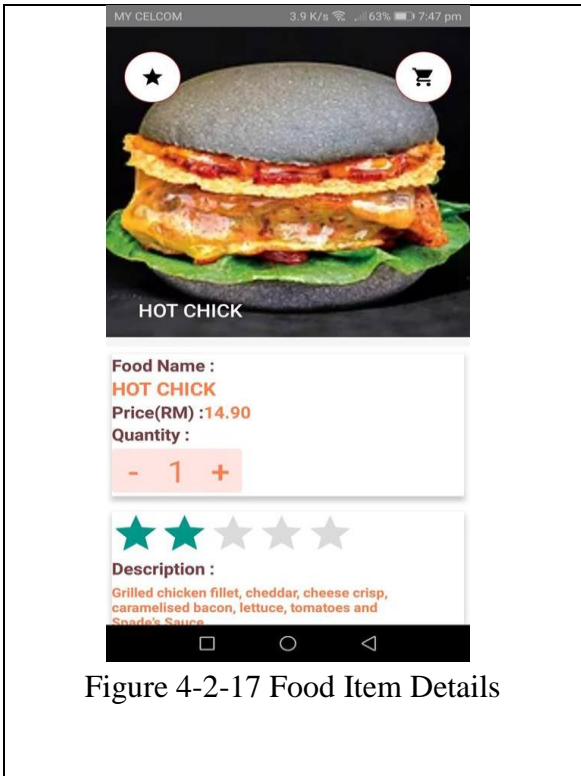


Figure 4-2-17 Food Item Details

This is interface design where all the information about the food is displayed.

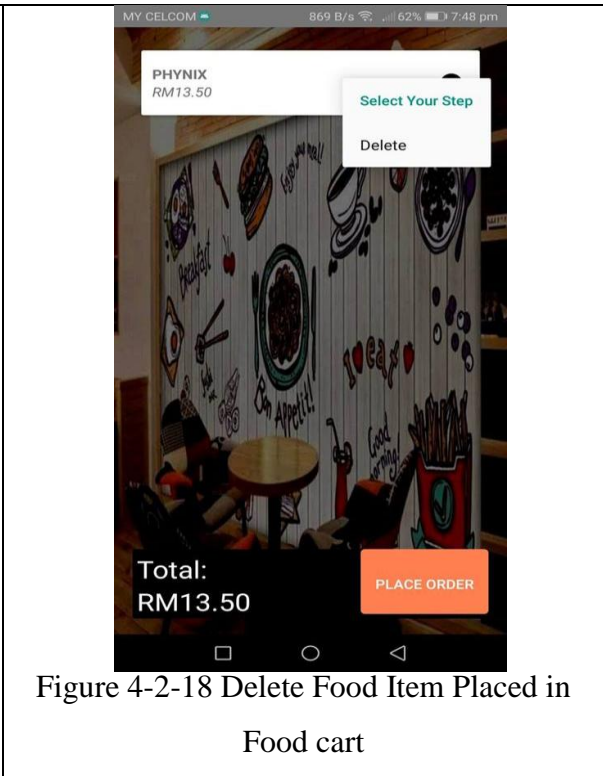


Figure 4-2-18 Delete Food Item Placed in Food cart

Customer can delete their food item after they placed into the food cart.

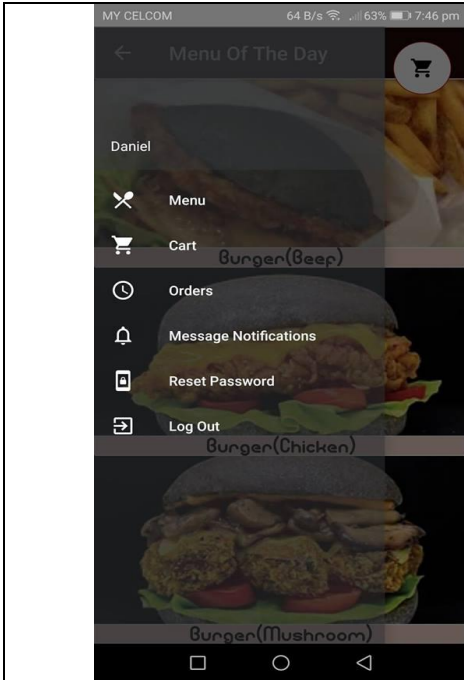


Figure 4-2-19 Navigation Drawer

This is navigation drawer of my application.

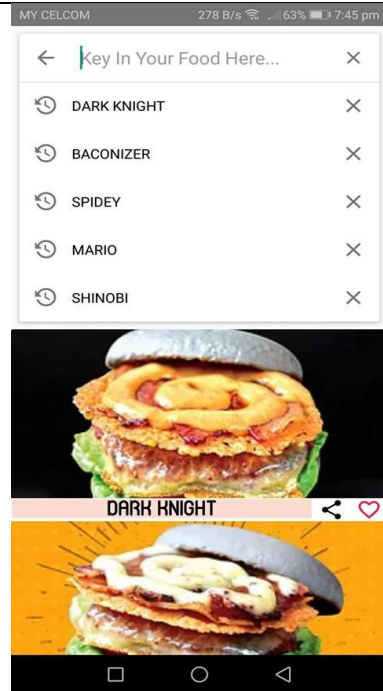


Figure 4-2-20 Search Engine

This is search engine plug-in where customer can straight type the food that they want.

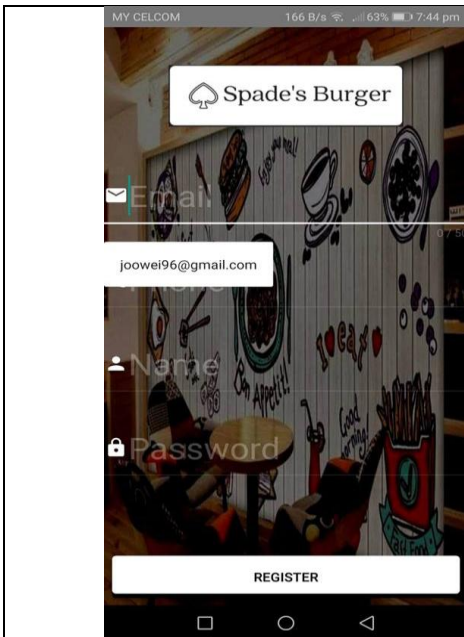
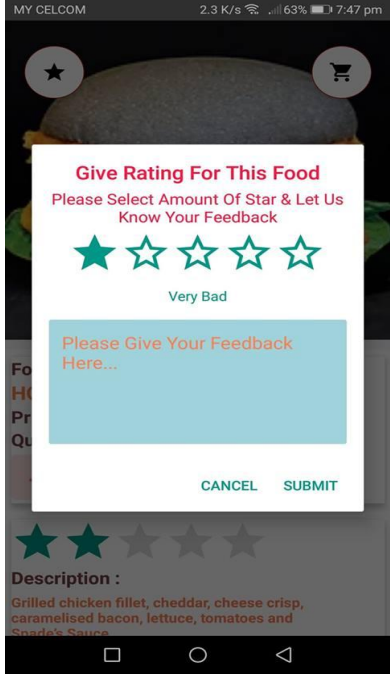
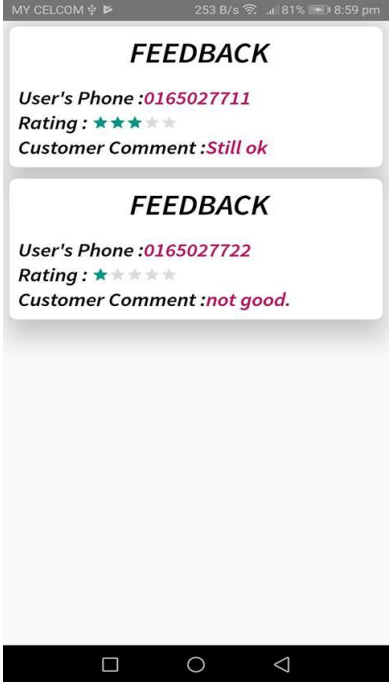


Figure 4-2-21 Customer Registration Page



Figure 4-2-22 Favorites

<p>This is the page where customer registers an account.</p>	<p>Customer can add their desired food item to Favorites.</p>
 <p>Figure 4-2-23 Rating & Submit Feedback</p>	 <p>Figure 4-2-24 View Feedback</p>
<p>Customer can give rating and submit their feedback.</p>	<p>Customer can view his own feedback and also the others.</p>

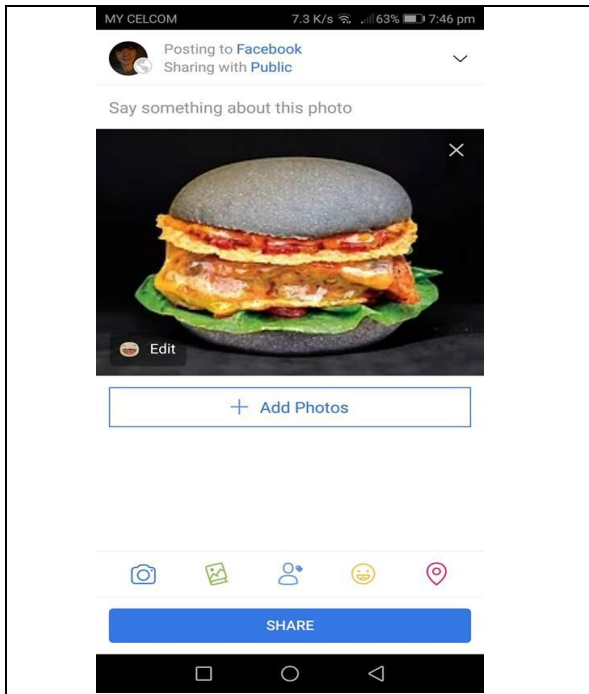


Figure 4-2-25 Share to Facebook

Customer can share their desired food to Facebook.

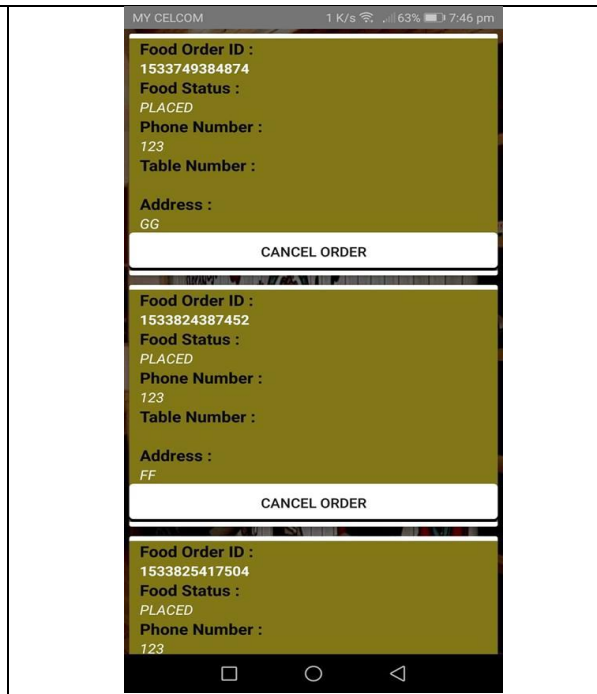


Figure 4-2-26 Cancel Order

Customer can only cancel their order before the order status is in progress or completed

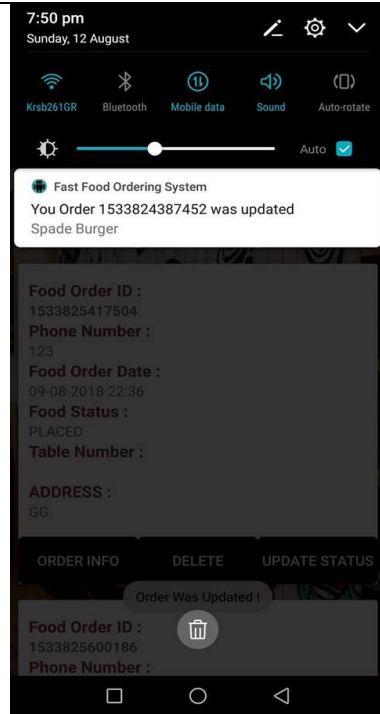


Figure 4-2-27 Notification to Customer

Customer will be notified whenever the order status is updated.

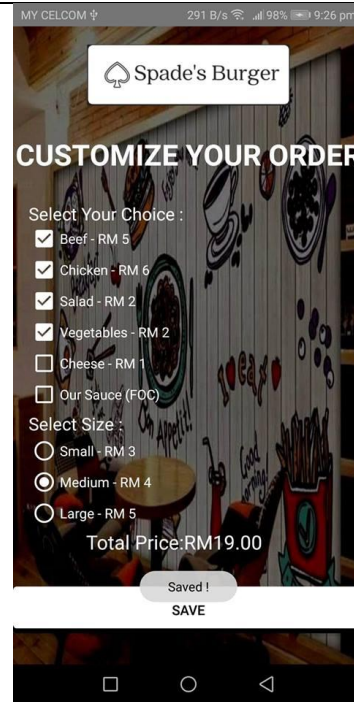


Figure 4-2-28 Customization

Customer can also customize their order and the total price will be shown.

4.2.1 Application User Interface Design (Server)

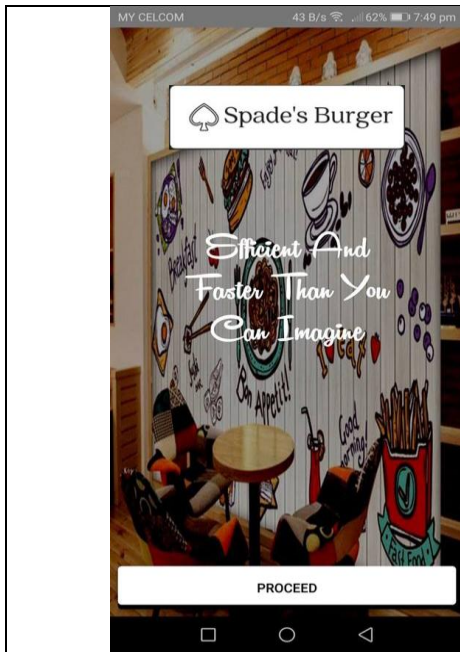


Figure 4-2-29 Home Page

This is Home Page of the server side.

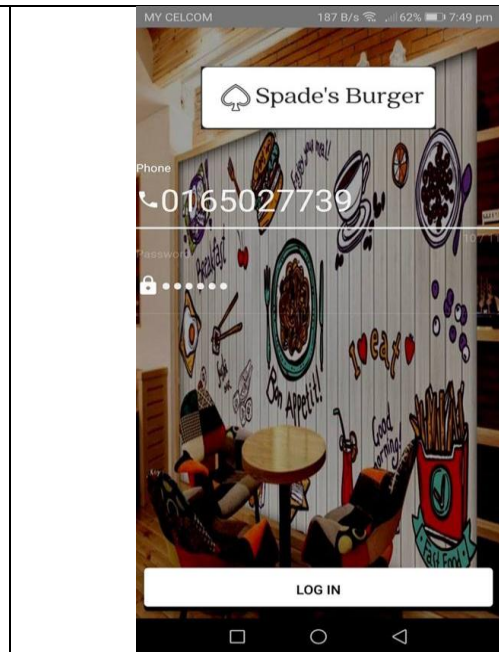


Figure 4-2-30 Login

This is the interface design for the owner/staff to login.

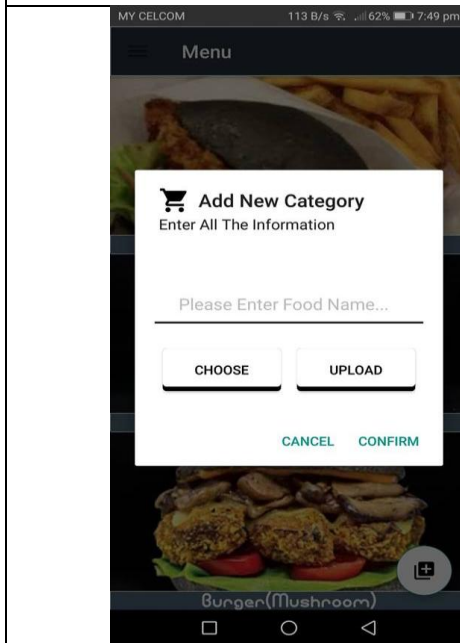


Figure 4-2-31 Add New Category

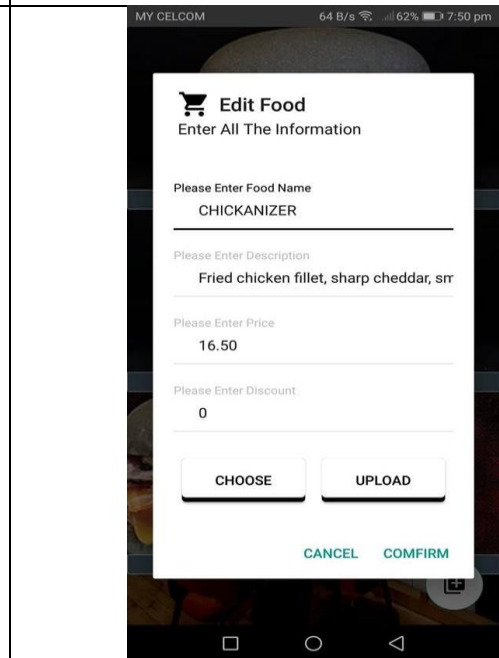
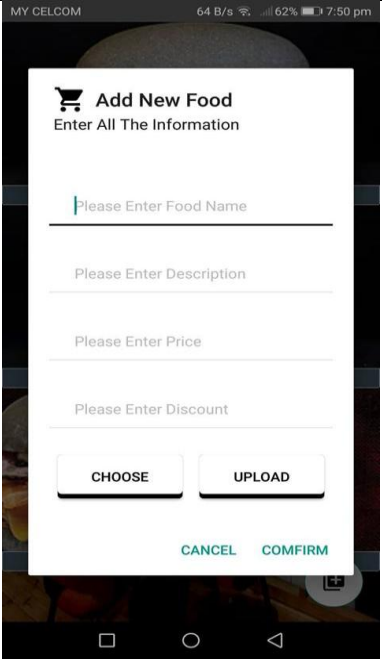
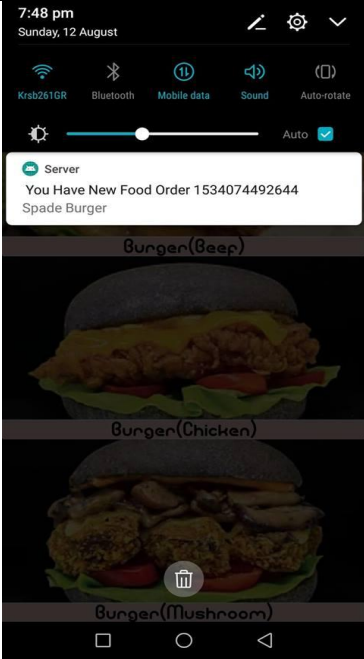


Figure 4-2-32 Update Food Information

<p>Owner/Staff can add a new food category.</p>	<p>Owner/Staff can update the existing food information.</p>
---	--

 <p data-bbox="342 1068 797 1106">Figure 4-2-33 Add New Food Item</p>	 <p data-bbox="915 1073 1398 1161">Figure 4-2-34 Notification New Food Order</p>
---	---

<p>This is the interface design for owner/staff to add new food item.</p>	<p>Server will be notified whenever customer placed an order.</p>
---	---

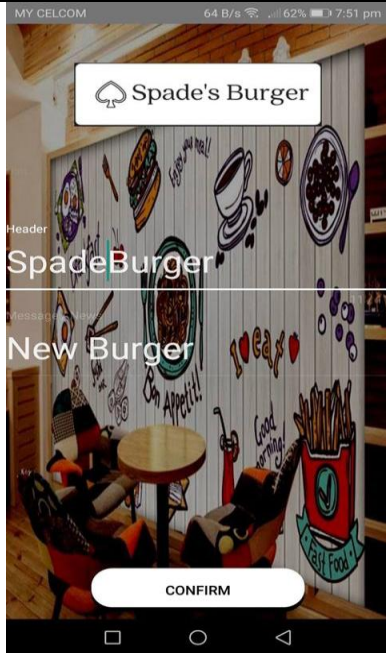


Figure 4-2-35 Send Message

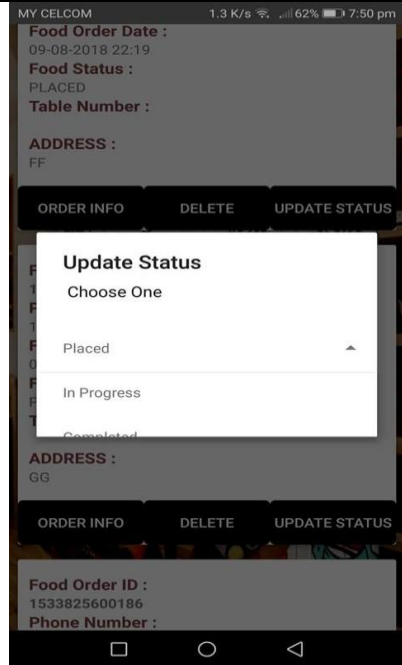


Figure 4-2-36 Update Order Status

Owner/staff can send message to their customer where customer will receive the message instantly.

Owner/staff can update the order status.

Chapter 4 System Design

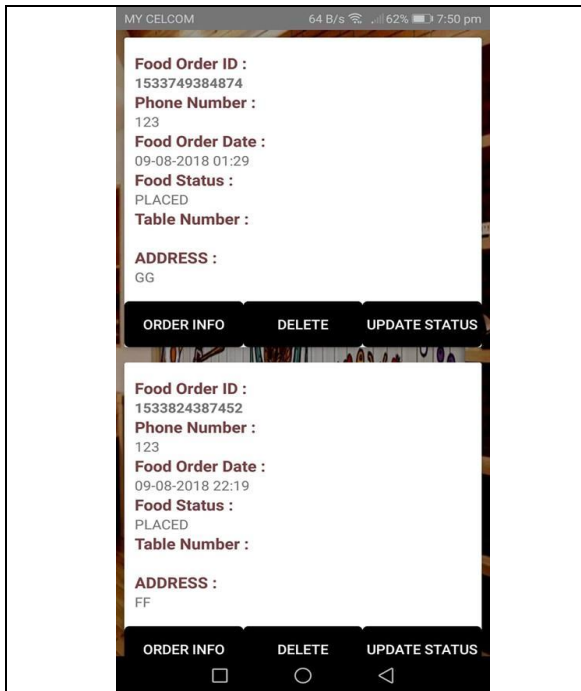


Figure 4-2-37 Order Information

This is the interface design of order information.

4.3 Database in Firebase

The Menu Category Information, Food List Information, Rating Information, Customer Requests Information and User Information are stored in the Firebase.

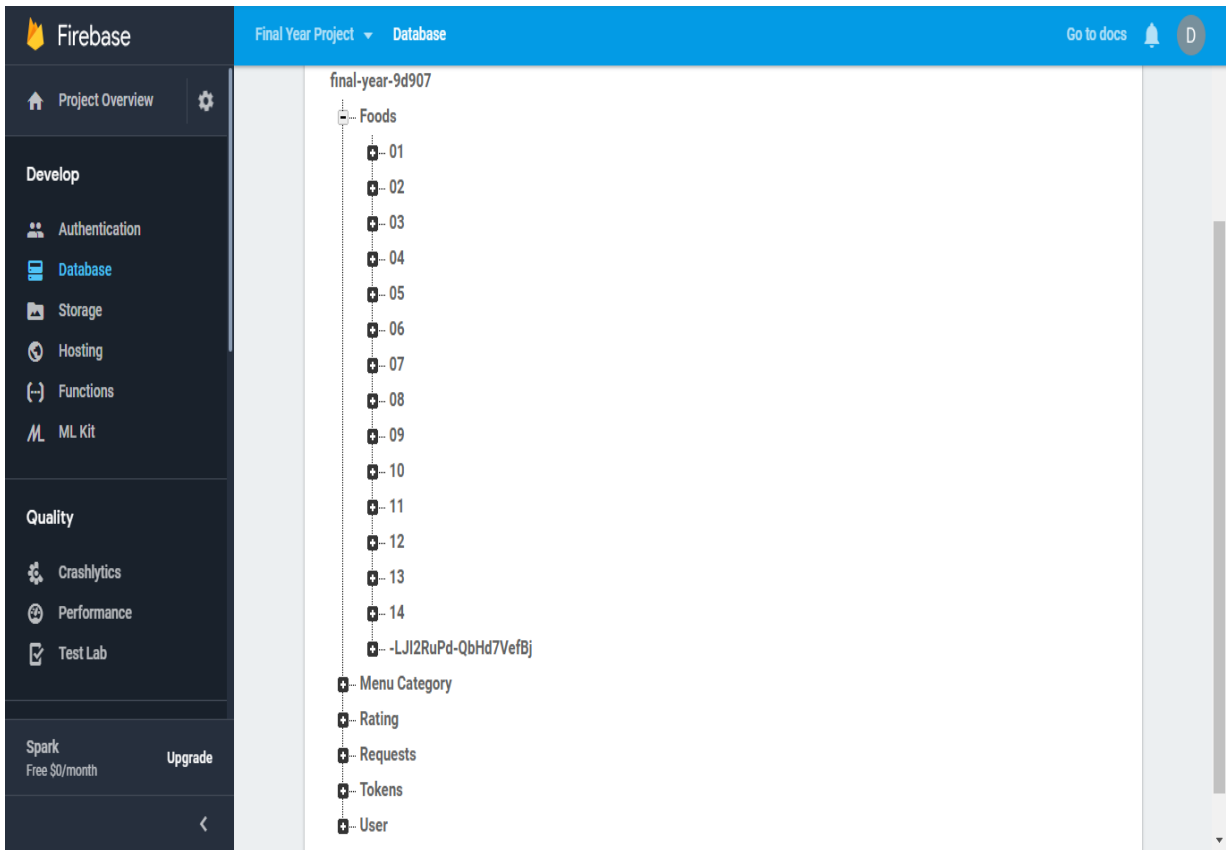


Figure 4-3-1 Database in Firebase

4.4 Data Storage Design

4.4.1 Entity Relationship Diagram

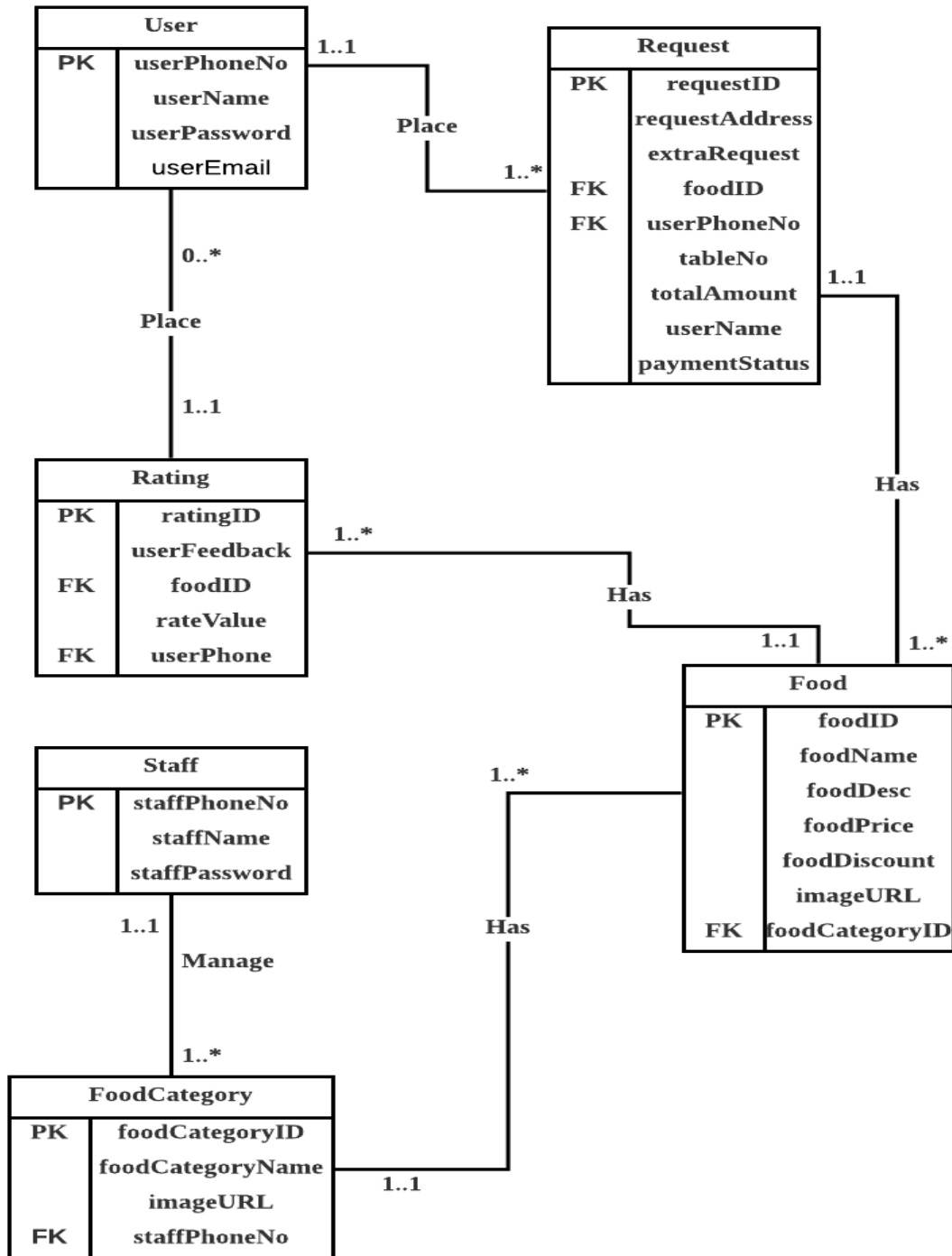


Figure 4-4-1 Entity Relationship Diagram

In the Figure 4-4-1, it contains all the entities and relationship between those entities. The user table is used to store the phone number, password, email, name and password while the Request table contains all the data that are related to it. The relationship between the both tables is user(Customer) place one-to-many orders. The relationship between user table and rating table is customer placed zero-to-one rating. For the staff table, it contains all the attributes such as phone number, name and password. The relationship between staff table and FoodCategory table is staff manages one-to-many FoodCategory. Each Food Category has one-to-many food item.

4.5 Data Dictionary

Tables below shows the data dictionary for each table, with all the attributes, format, data type, size and relationship.

User Table:

Attributes	Data Type	Data Size	PK/FK	FK Referenced Table
userPhoneNo	varchar	10	PK	
userName	varchar	20		
userPassword	varchar	10		
userEmail	varchar	50		

Request Table:

Attributes	Data Type	Data Size	PK/FK	FK Referenced Table
requestID	varchar	13	PK	
requestAddress	varchar	50		
extraRequest	varchar	50		
foodID	varchar	3	FK	Foods
userName	varchar	20		
userPhoneNo	varchar	10	FK	User
tableNo	varchar	2		
totalAmount	number	10		
paymentStatus	varchar	30		

Rating Table:

Attributes	Data Type	Data Size	PK/FK	FK Referenced Table
ratingID	varchar	20	PK	
userFeedback	varchar	50		
foodID	varchar	3	FK	Foods

rateValue	varchar	6		
userPhone	varchar	10	FK	User

Staff Table:

Attributes	Data Type	Data Size	PK/FK	FK Referenced Table
staffPhoneNo	varchar	10	PK	
staffName	varchar	20		
staffPassword	varchar	10		

FoodCategory Table:

Attributes	Data Type	Data Size	PK/FK	FK Referenced Table
foodCategoryID	varchar	3	PK	
foodCategoryName	varchar	20		
imageURL	varchar	30		
staffPhoneNo	Varchar	10	FK	Staff

Foods Table:

Attributes	Data Type	Data Size	PK/FK	FK Referenced Table
foodID	varchar	3	PK	
foodName	varchar	20		
foodDesc	varchar	30		
foodDiscount	decimal	(5,2)		
foodPrice	number	10		
imageURL	varchar	30		
foodCategoryID	varchar	3	FK	FoodCategory

5.1 System Implementation

In the end of system design, the implementation of the system will be started. First of all, the prototype of the system will be shown to my supervisor after each module is done. After collecting all the feedbacks from my supervisor, those comments will help me to improve my system. Beside, during the development phase, the structure of the database is first designed and built. Next, the client side and server side is developed and built which allow the communication between the customer and the owner. Unit testing of each module will be tested to find bugs and errors. This testing is more easy and suitable as its find error through a unit part of system rather than the whole system.

5.2 Implementation Issue and Challenges

- **User which is unfamiliar with technology.**

Users are required to have experience and knowledge on how to operate and navigate by using mobile device. Therefore, during the development phase, a simple and easy to use application is the main consideration so that user can easily navigate through the system.

5.3 Development Tools

1. PayPal SDK

It is used to make a payment gateway.

2. Facebook SDK

It is used to make a sharing feature so that customer can share food post.

3. Android Studio

Android Studio is software and also an integrated development environment (IDE) from Google that provides us with tools needed to build mobile application.

4. Android SDK

Enable us to create mobile application for the Android platform which contain development tool, emulator and others.

5. Android Virtual Device Manager

A device that used to work with the emulator to provide a virtual device specification in which to run Android app.

6. Java Programming Language

It is a programming language used to develop this project.

7. Visual Paradigm Community Edition

Used to create documents for several diagram such as Activity Diagram and Use Case Diagram.

5.4 Unit Testing

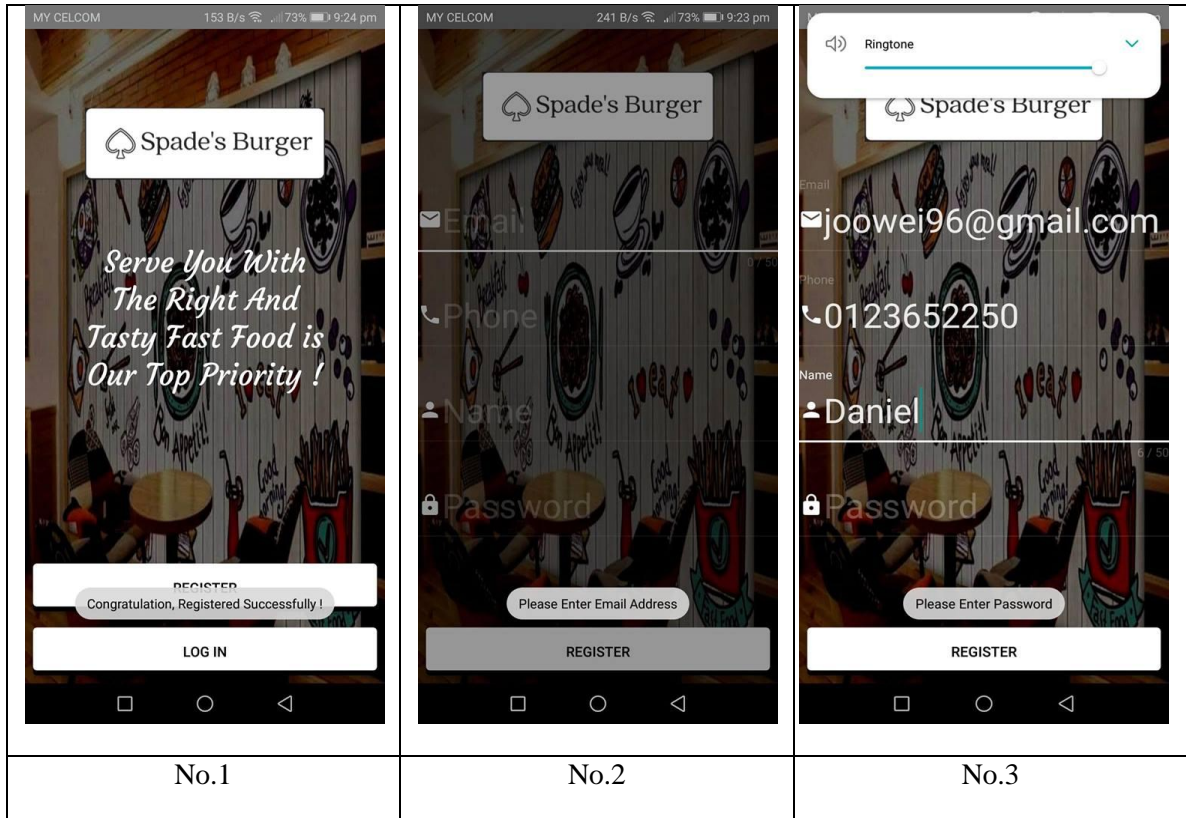
In order to test this system, unit testing will be used. Using this testing, developer can find any bug or error that contain in the system easily. Below are the parts been tested:

Unit Testing 1: Sign up as a new user (Customer)

Testing Objective: Verify that a new user is created successfully.

No	Description	Predictions	Result
1	Create new user.	Prompt a message showing that user is created.	Successful
2	Create a new user with no information entered.	Prompt a message showing that entering information is required.	Successful
3	Create a new user that has one or more field is empty.	Prompt a message showing that entering information is required.	Successful

Chapter 5 System Testing



Unit Testing 2: Login as a user (Customer)

Testing Objective: Verify that user can enter to the system successfully.


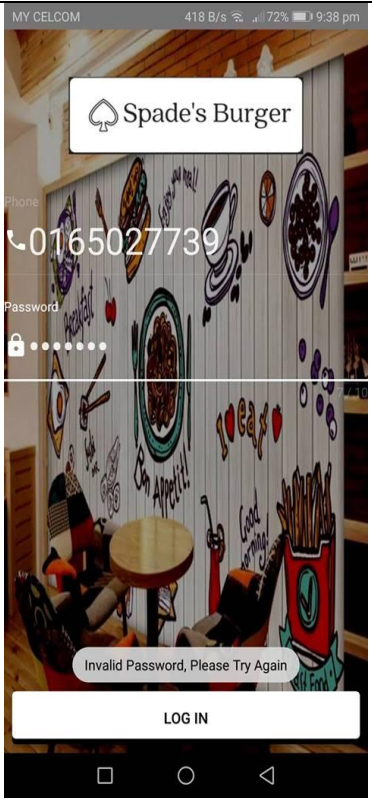
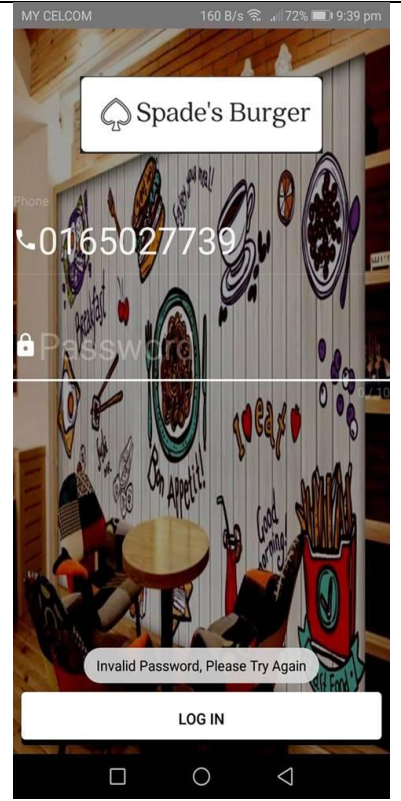
No	Description	Predictions	Result
1	User enters correct phone number and password.	Prompt a message showing “Welcome”	Successful
2	User enters invalid phone number and password.	Prompt a message showing that login failed.	Successful
3	Users leave the entire field blank.	Prompt a message showing that input is needed.	Successful

<p>No.1</p>	<p>No.2</p>	<p>No.3</p>

Unit Testing 3: Login as a user (Staff)

Testing Objective: Verify that user can enter to the system successfully.

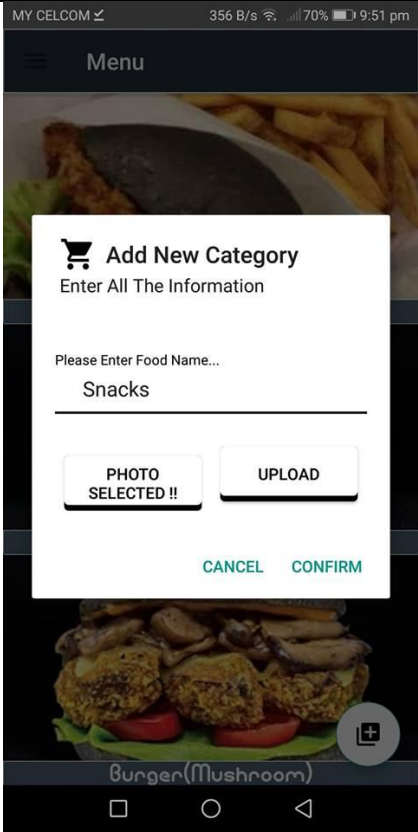

No	Description	Predictions	Result
1	User enters correct phone number and password.	Able to go to the menu management interface.	Successful
2	User enters invalid phone number and password.	Prompt a message showing that login failed.	Successful
3	Users leave the entire field blank.	Prompt a error message.	Successful

		
No.1	No.2	No.3

Unit Testing 4: Create new food category to the menu

Testing Objective: To make sure that restaurant owner add new food category correctly.

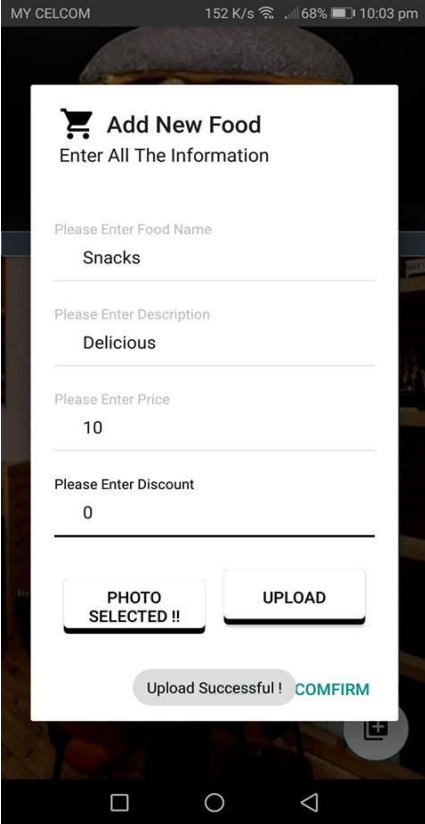

No	Description	Predictions	Result
1	Owner enters, upload the category name and image and click “Confirm”.	The category name and image will be uploaded into the menu interface and stored in the Firebase.	Successful

	
<p>Enter food name and select photo.</p>	<p>Upload successfully to Food Category.</p>

Unit Testing 5: Create new food to the menu

Testing Objective: To make sure that restaurant owner add new food correctly.

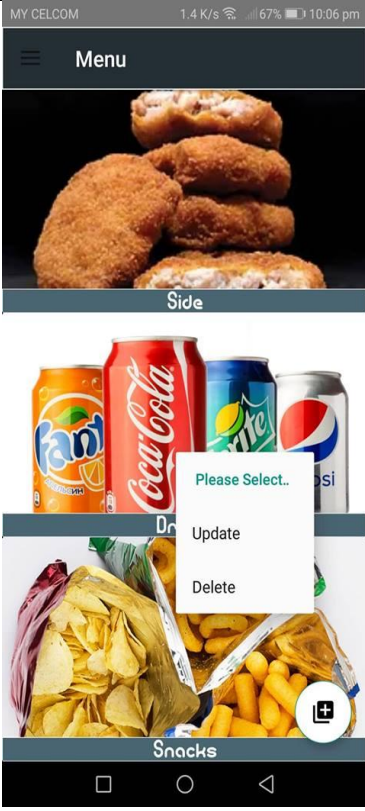


No	Description	Predictions	Result
1	Owner enters and uploads the food name, description, price, discount and image and click “Confirm”.	All the food information will be uploaded into the menu interface and stored in the Firebase.	Successful

	
<p>Enter all the required information.</p>	<p>Upload successfully to Food List.</p>

Unit Testing 6: Update and delete food category

Testing Objective: To ensure that restaurant owner is able to update and delete the food category.







No	Description	Predictions	Result
1	Owner clicks “Delete” on one of the food category.	The food category will be deleted and information in the Firebase will be updated.	Successful
2	Owner updates the image and the name on one of the food category	The food category and the information in the Firebase will be updated.	Successful

		
<p>Select the food category that needs to be deleted / update.</p>	<p>“Snacks” has been updated to “french fries”</p>	<p>“French fries” has been deleted.</p>

Unit Testing 7: Update and delete food

Testing Objective: To ensure that restaurant owner is able to update and delete the food.


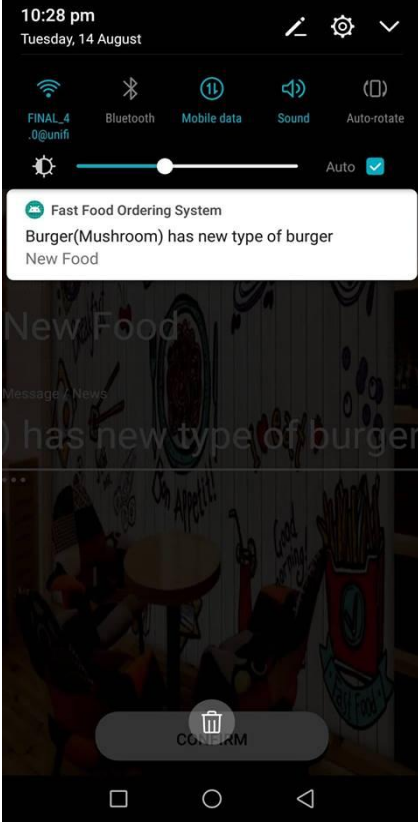
No	Description	Predictions	Result
1	Owner clicks “Delete” on one of the food.	The food will be deleted and information in the Firebase will be updated.	Successful
2	Owner updates all the food information on the existing food.	The food and the information in the Firebase will be updated.	Successful

 <p>SHROOMCEPTION</p>	 <p>SHROOMCEPTION</p>	 <p>SHROOMCEPTION</p>
 <p>Smoked Burger</p>	 <p>Sizzling Burger</p>	
<p>Select the food item that needs to be deleted / update.</p>	<p>“Smoked Burger” has been updated to “Sizzling Burger”</p>	<p>“Sizzling Burger” has been deleted.</p>

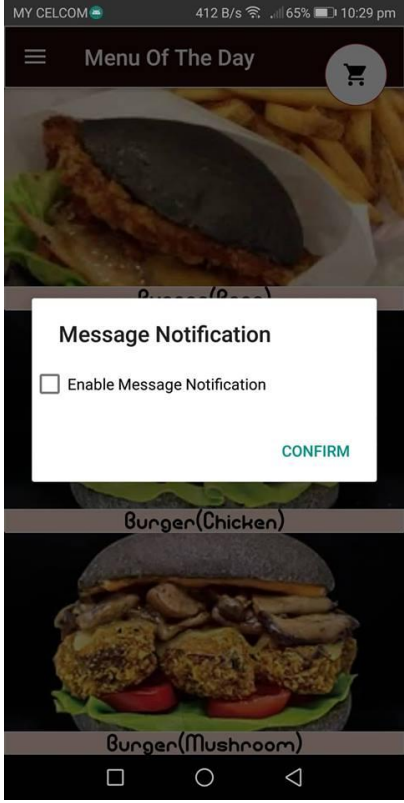
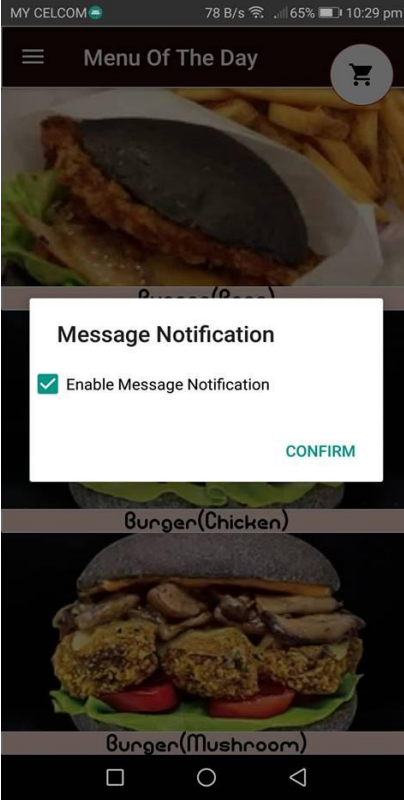
Unit Testing 8: Notification of Message System

Testing Objective: To ensure that message can be sent to all the customer instantly and in real-time.

No	Description	Predictions	Result
1	Verify that message has been sent to the customer.	Prompt a message showing that message sent successfully.	Successful
2	Verify that customers are able to receive the notification of message	A notification will be display in customer's mobile.	Successful
3	Verify that customer can disable the notification of message.	Customer will not receive the notification.	Successful
4	Verify that customer can enable the notification of message	Customer will be able to receive the notification	Successful

 <p>MY CELCOM 5.5 K/s 65% 10:28 pm</p> <p>Spade's Burger</p> <p>New Food</p> <p>Burger(Mushroom) has new type of burger</p> <p>Message Sent Successfully!</p> <p>CONFIRM</p>	 <p>10:28 pm Tuesday, 14 August</p> <p>Fast Food Ordering System</p> <p>Burger(Mushroom) has new type of burger New Food</p> <p>CONFIRM</p>
<p>No.1</p>	<p>No.2</p>

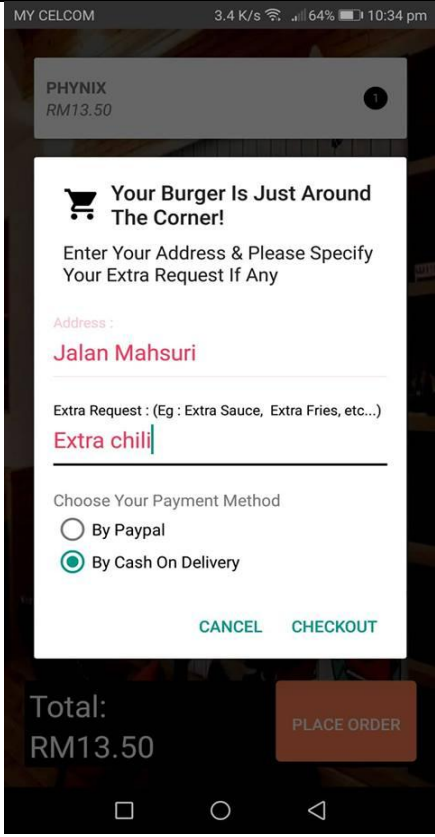
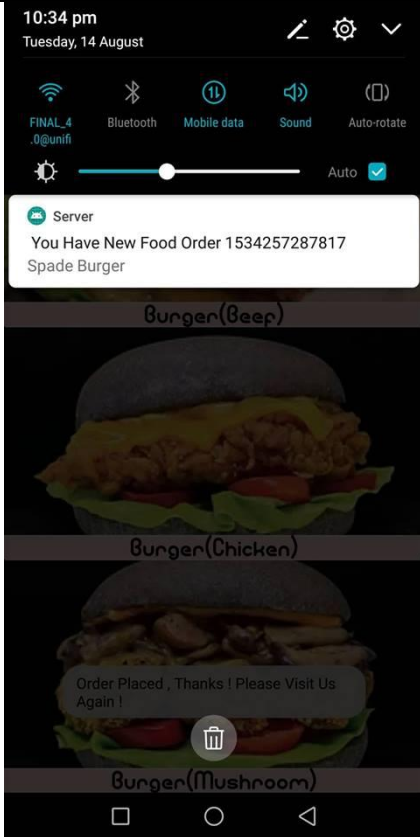
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 <p>MY CELCOM 412 B/s 65% 10:29 pm</p> <p>Menu Of The Day</p> <p>Message Notification</p> <p><input type="checkbox"/> Enable Message Notification</p> <p>CONFIRM</p> <p>Burger (Chicken)</p> <p>Burger (Mushroom)</p>	 <p>MY CELCOM 78 B/s 65% 10:29 pm</p> <p>Menu Of The Day</p> <p>Message Notification</p> <p><input checked="" type="checkbox"/> Enable Message Notification</p> <p>CONFIRM</p> <p>Burger (Chicken)</p> <p>Burger (Mushroom)</p>
<p>No.3</p>	<p>No.4</p>

Unit Testing 9: Receive the Notification of New Food Order

Testing Objective: To ensure that restaurant owner is able to receive the notification of new food order.

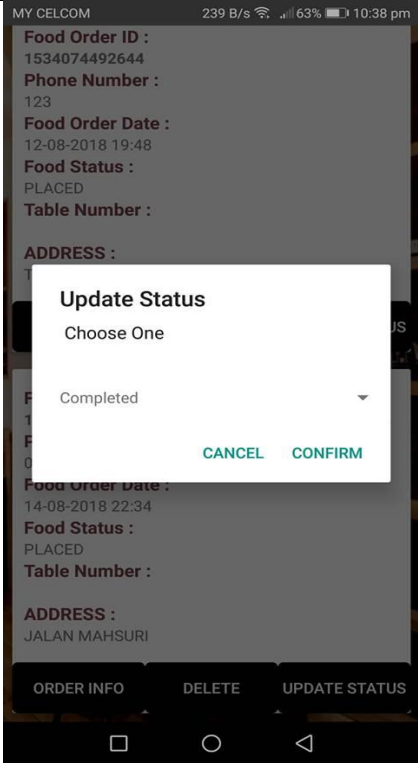
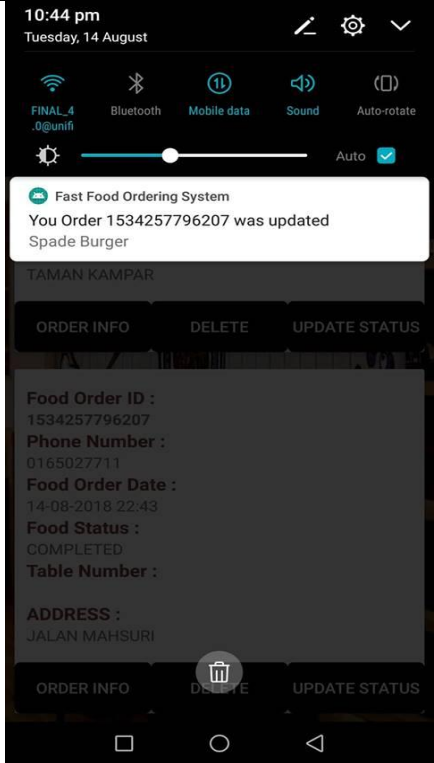
No	Description	Predictions	Result
1	Customer place food order.	Restaurant Owner will be able to receive the notification.	Successful

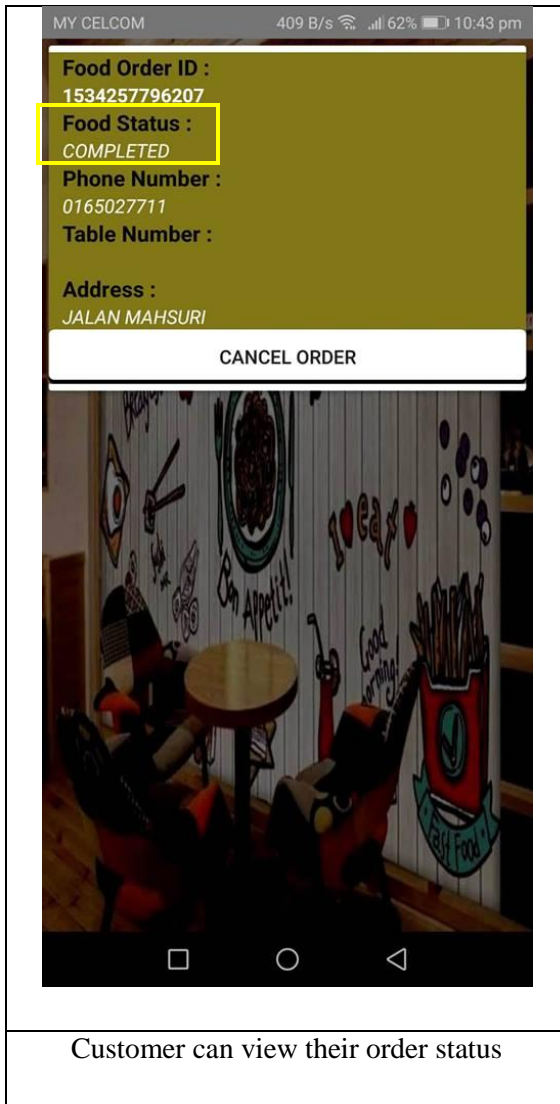
	
<p>Customer placed order.</p>	<p>Server received notification.</p>

Unit Testing 10: Update the status of food order and delete food order.

Testing Objective: To ensure that restaurant owner is able to update the status of food order.

No	Description	Predictions	Result
1	Restaurant owner update the status of customer order.	Customer will be able to receive the notification of the food order status.	Successful
2	Restaurant Owner clicks the “Delete” button.	The food order will be deleted in the order status interface.	Successful

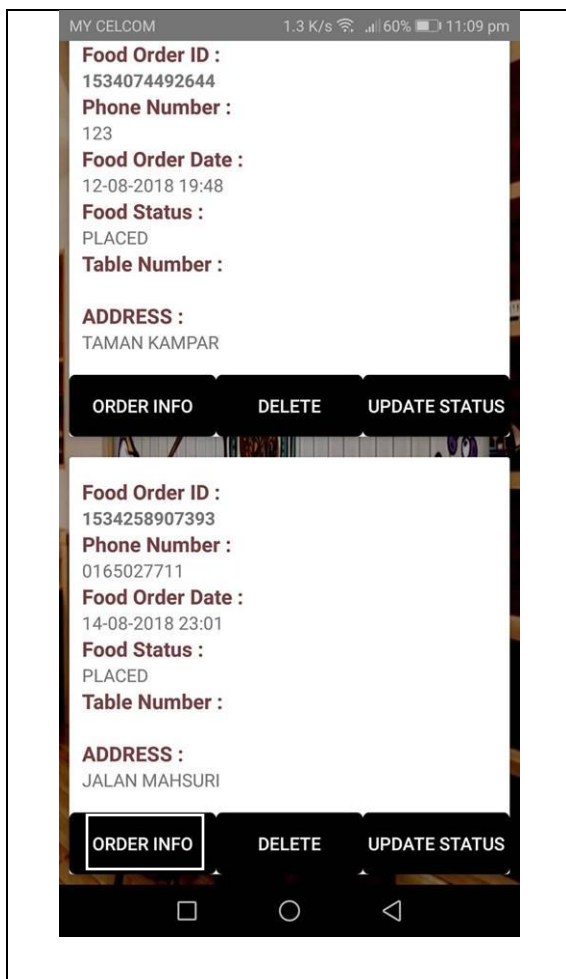
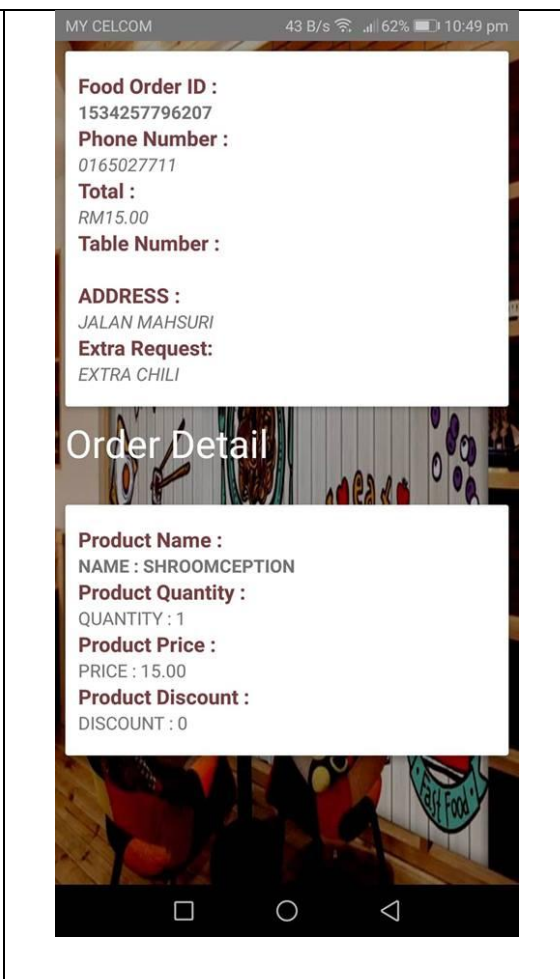
	
<p>Restaurant owner/staff updates customer food order status.</p>	<p>Customer received the notification when order is updated.</p>



Unit Testing 11: Display Order Details for Restaurant Owner.

Testing Objective: To ensure that restaurant owner is able view the order details of each customer’s order.

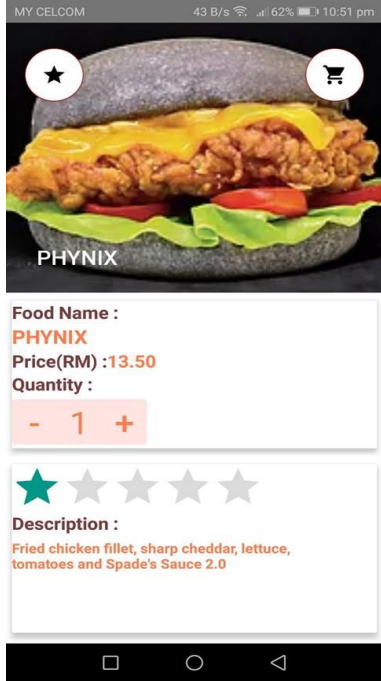

No	Description	Predictions	Result
1	Restaurant owner clicks the “Order Info” button.	Restaurant owner will be able to view the order details.	Successful

	
<p>Click the “Order Info” button.</p>	<p>Order Details</p>

Unit Testing 12: Choose Desired Food and Place Into Food Cart.

Testing Objective: To ensure that customer is able to choose their desired food and place into food cart.

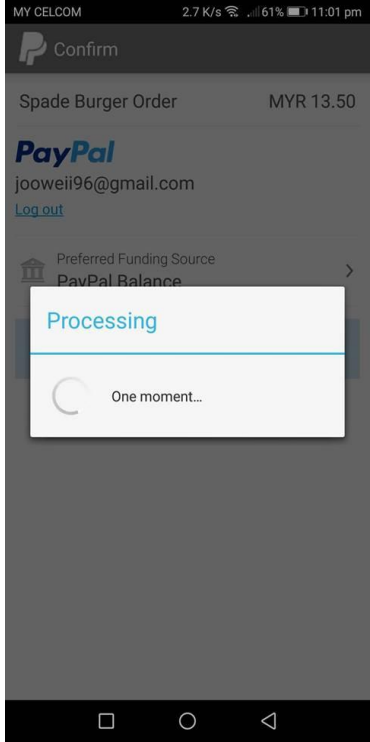

No	Description	Predictions	Result
1	Customers enter the food details page.	Customer will be able to view the information of the food such as name, price and description.	Successful
2	Customers select their desired food and place into food cart.	Customers will be able to view the food item that they selected, price, quantity of each item and the total price.	Successful

	
<p>Food Details Interface</p>	<p>Customers will be able to view the food that they selected.</p>

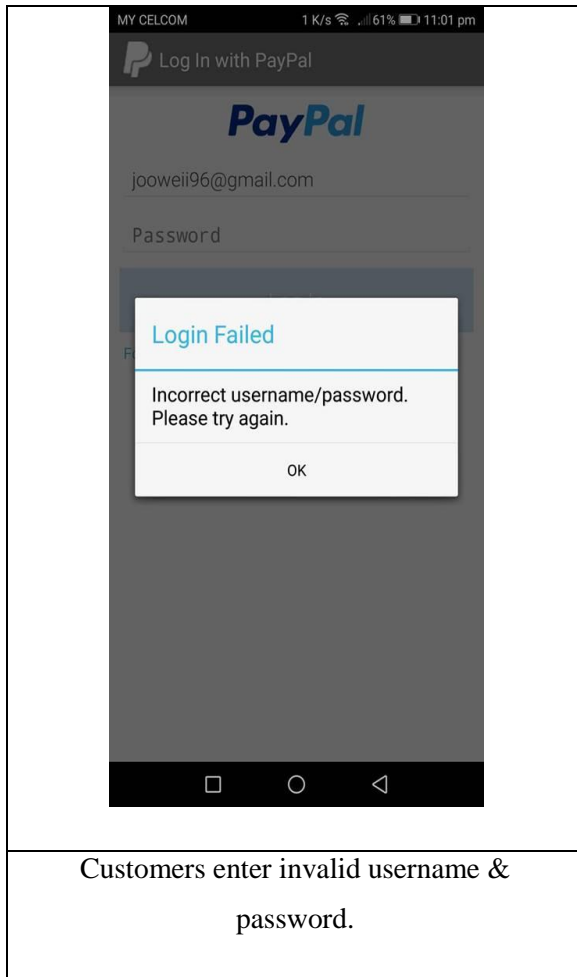
Unit Testing 13: Make Payment (Delivery)

Testing Objective: To ensure that customer is able to make their food order payment.

No	Description	Predictions	Result
1	Customers enter their address, place extra request(if any) and choose Paypal as their payment type.	Customer will be redirect to the Paypal payment interface.	Successful
2	Customers enter their valid Paypal's username and password.	Order placed and paid successfully.	Successful
3	Customer enters invalid Paypal username and password.	Prompt en error message showing invalid username and password.	Successful

	
<p>Customers enter valid username and password.</p>	<p>Order placed when they entered valid username and password.</p>

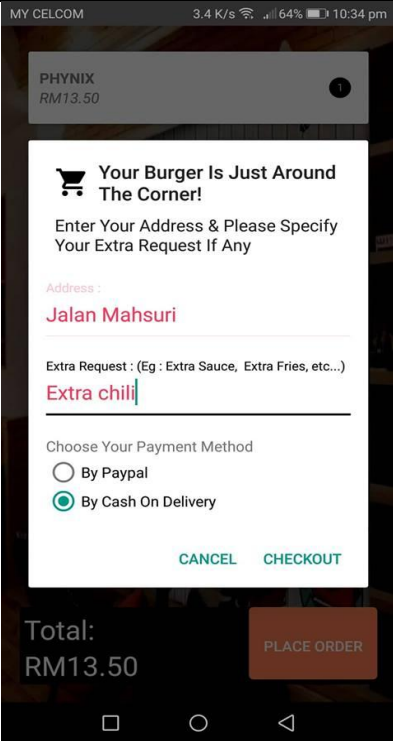

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Unit Testing 14: Make Payment (Cash on Delivery)

Testing Objective: To ensure that customer is able to make their food order payment.

No	Description	Predictions	Result
1	Customers enter their address, place extra request (if any) and choose Cash On Delivery as their payment type.	Order Placed and save into Firebase with an “unpaid” payment status.	Successful

	
<p>Customers enter their address, place extra request (if any) and choose Cash On Delivery as their payment type</p>	<p>Prompt a message “Order Placed”</p>

The screenshot shows the Firebase Database console for a project named 'Final Year Project'. The 'Database' tab is selected, displaying a list of records. The record with ID '1534259811012' is expanded, showing the following fields:

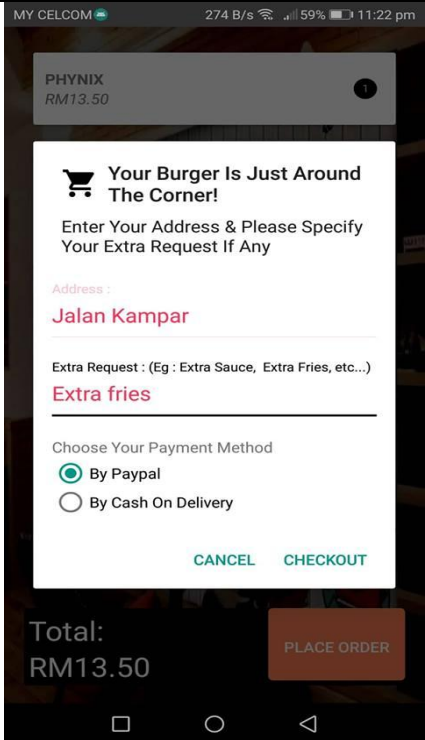

- address: "Jalan Mahsuri"
- comment: "Extra chili"
- foods
 - name: "Sam"
 - paymentMethod: "Cash On Delivery"
 - paymentState: "Unpaid"
 - phone: "0165027711"
 - status: "0"
 - tableNo: ""
 - total: "RM13.50"

The 'paymentState' field is highlighted with a red box. Below the screenshot, a caption reads: "Unpaid" status for Cash On Delivery.

Unit Testing 15: Make Payment (Dine In)

Testing Objective: To ensure that customer is able to make their food order payment.


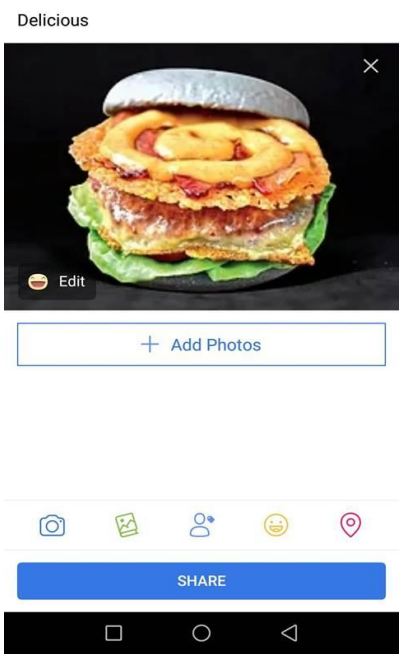
No	Description	Predictions	Result
1	Customers enter their table number, place extra request(if any) and choose Paypal as their payment type.	Customer will be redirect to the Paypal payment interface.	Successful
2	Customers enter their valid Paypal's username and password.	Order placed and paid successfully.	Successful

	
<p>Customers enter their table number, place extra request(if any) and choose Paypal as their payment type.</p>	<p>Order placed when they entered valid username and password.</p>

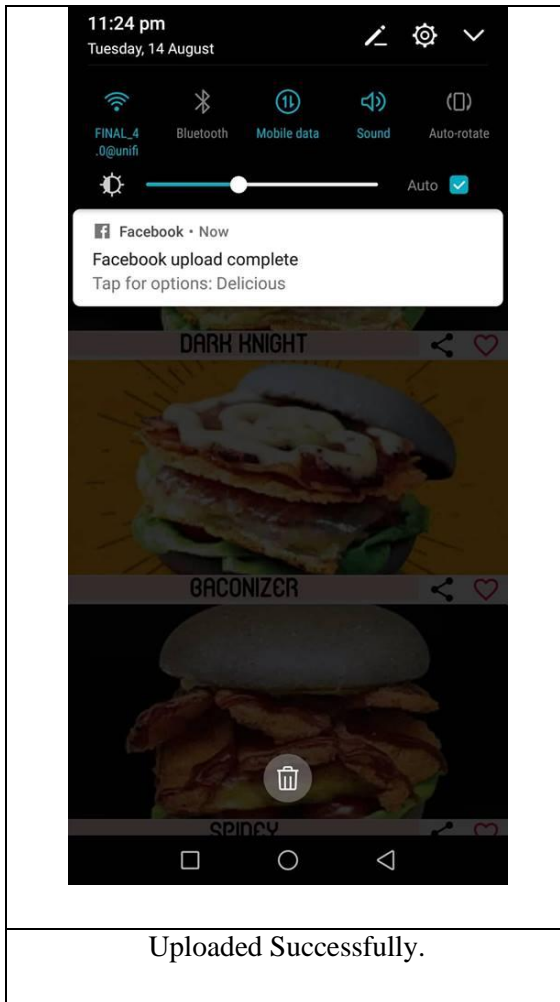
Unit Testing 16: Share to Social Media Channel (Facebook)

Testing Objective: To ensure that customer is able to share the food to their social media channel.

No	Description	Predictions	Result
1	Customer clicks the “Share” icon on one of the fast food.	Customer will be redirect to the Facebook Sharing Interface.	Successful
2	Customers comment something about the photo and click “Share” button.	Prompt a message notification showing Facebook upload completed.	Successful

	
<p>Clicks “Share Icon”</p>	<p>Order placed when they entered valid username and password.</p>

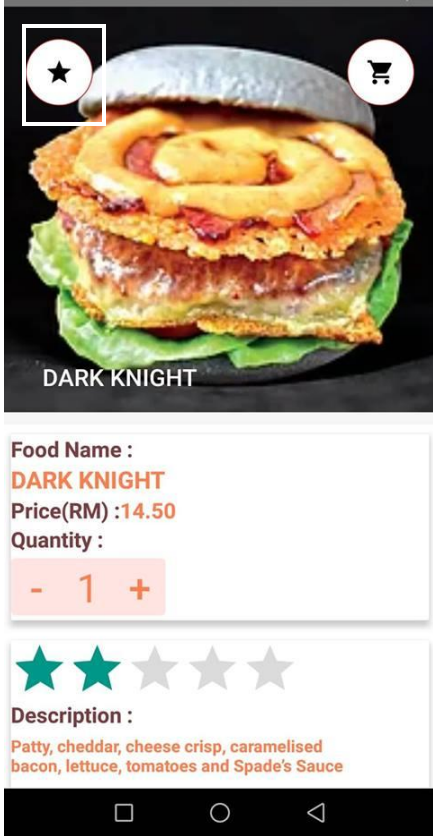
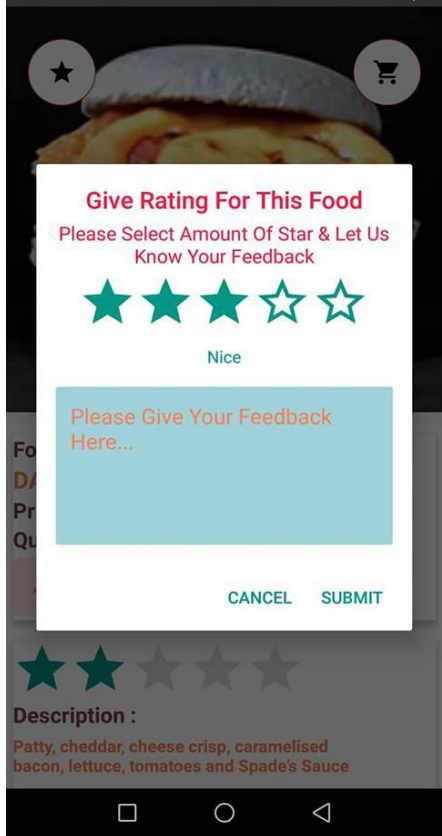
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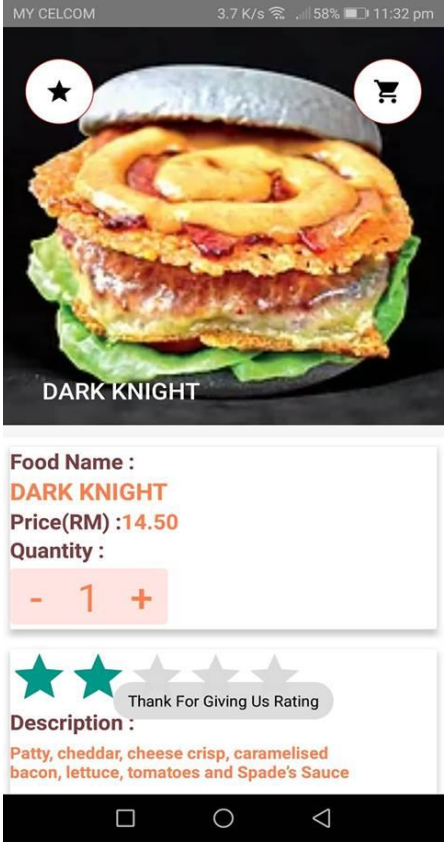


Unit Testing 17: Rating Feature.

Testing Objective: To ensure that customer is able to give rating.

No	Description	Predictions	Result
1	Customers click the star icon.	Prompt an alert dialog to allow customer to select amount of stars.	Successful
2	Customers give rating by selecting amount of stars.	Prompt a message showing “Thanks For Giving Us Rating”. Customer will able to see the amount of star that they selected in the Food Detail Interface.	Successful

 <p>MY CELCOM 84 B/s 58% 11:32 pm</p> <p>★</p> <p>DARK KNIGHT</p> <p>Food Name : DARK KNIGHT Price(RM) :14.50 Quantity : - 1 +</p> <p>★ ★ ☆ ☆ ☆</p> <p>Description : Patty, cheddar, cheese crisp, caramelised bacon, lettuce, tomatoes and Spade's Sauce</p>	 <p>MY CELCOM 21 B/s 57% 11:33 pm</p> <p>★</p> <p>Give Rating For This Food Please Select Amount Of Star & Let Us Know Your Feedback</p> <p>★ ★ ★ ☆ ☆</p> <p>Nice</p> <p>Please Give Your Feedback Here...</p> <p>CANCEL SUBMIT</p> <p>★ ★ ☆ ☆ ☆</p> <p>Description : Patty, cheddar, cheese crisp, caramelised bacon, lettuce, tomatoes and Spade's Sauce</p>
<p>Click the Star Button.</p>	<p>Customer select amount of stars after clicking the star icon.</p>



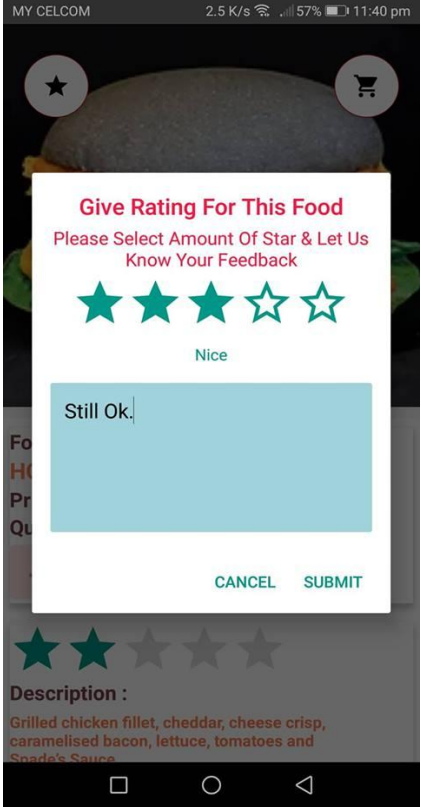
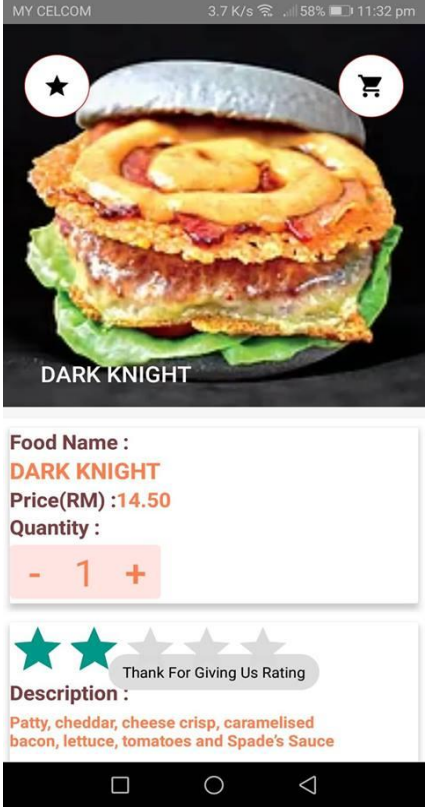
The screenshot shows a mobile application interface for a food item. At the top, the status bar displays 'MY CELCOM', '3.7 K/s', '58%' battery, and '11:32 pm'. The main image is a burger labeled 'DARK KNIGHT' with a star icon and a shopping cart icon. Below the image, the text reads: 'Food Name : DARK KNIGHT', 'Price(RM) :14.50', and 'Quantity : - 1 +'. A rating section shows two green stars and a message 'Thank For Giving Us Rating'. The description is: 'Patty, cheddar, cheese crisp, caramelised bacon, lettuce, tomatoes and Spade's Sauce'. The bottom navigation bar is visible.

Prompt a message showing “Thanks For Giving Us Rating”

Unit Testing 18: Give Real-Time Customer Feedback

Testing Objective: To ensure that customer is able to give feedback and also view other customer feedback.

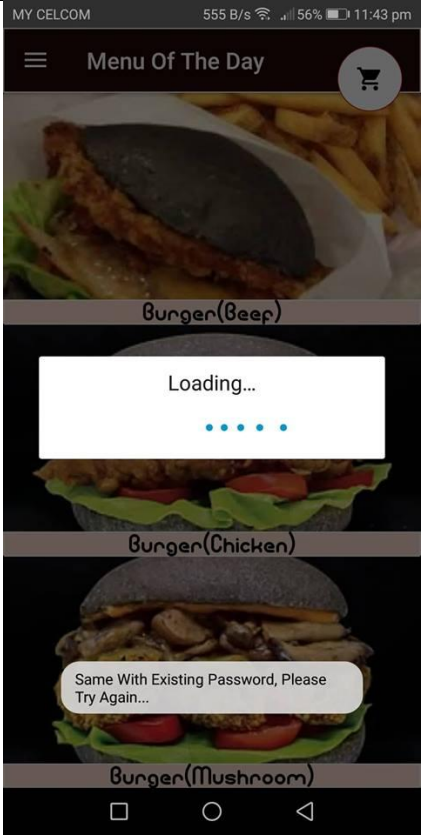

No	Description	Predictions	Result
1	Customers click the star icon.	Prompt an alert dialog to allow customer to give feedback	Successful
2	Customers enter their comment in the space given and click submits.	Prompt a message showing “Thanks For Giving Us Rating”. Customer will able to see their feedback and also other customers’ feedback after clicking the “Feedback” button.	Successful

	
<p>Prompt an alert dialog to allow customer to give feedback</p>	<p>Prompt a message showing “Thanks For Giving Us Rating”.</p>

Unit Testing 19: Reset Password

Testing Objective: To ensure that customer is able to reset their password.

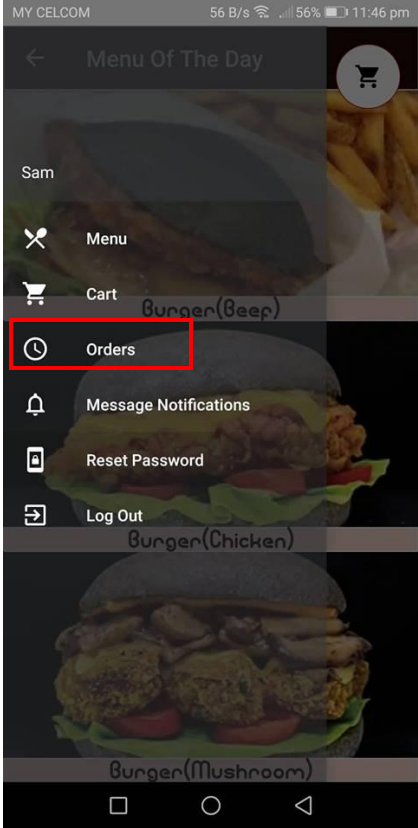
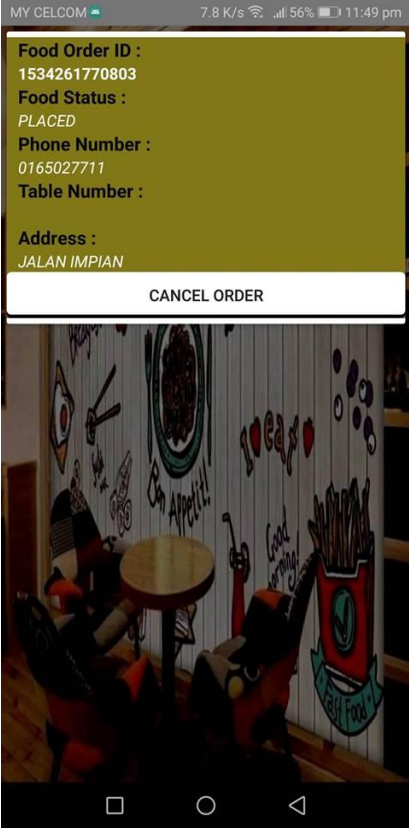
No	Description	Predictions	Result
1	Customers enter the same existing password.	Prompt an error message.	Successful
2	Customers enter new password that are different from existing password.	Password reset successfully.	Successful

	
<p>Prompt an error message.</p>	<p>Password reset successfully.</p>

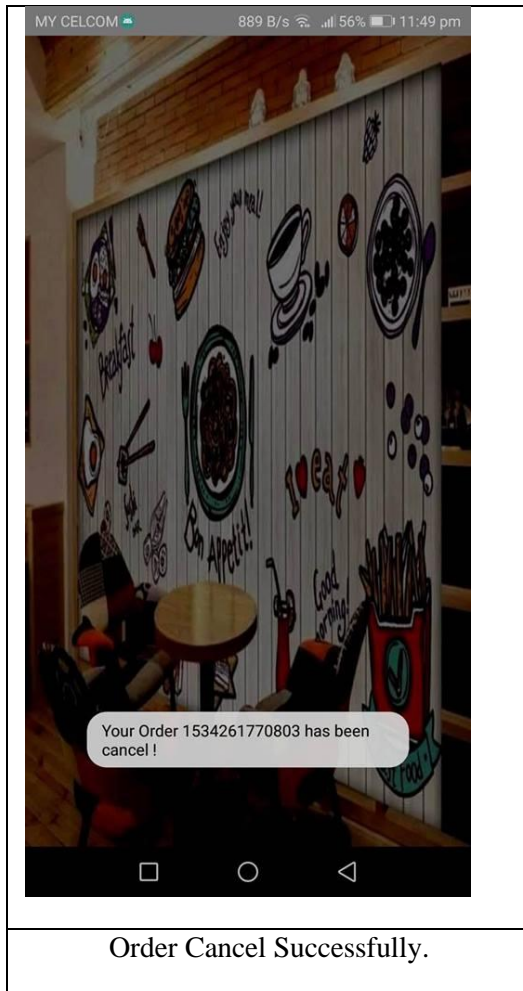
Unit Testing 20: Able to view order information and cancel order.

Testing Objective: To ensure that customer is able to view their order information and cancel their order.

No	Description	Predictions	Result
1	Customers click the order button in the navigation bar.	Customer will be redirect to their order information page where they can see their order information such as order status.	Successful
2	Customers click the “Cancel” button.	Order deleted.	Successful

	
<p>Clicks The “Orders”</p>	<p>Clicks “Cancel Order”</p>

Chapter 5 System Testing



6.1 Proposed System Completion

This system is built in order to solve the problems and the weaknesses of the existing system. This system is able to notify the customer whenever the food order is completed and also it is also able to notify the server whenever there is a new order. Therefore, customers will be able to know their order status proceed to the counter to take their food. Thus, it achieves the objective of developing a fast food ordering system that will notify the customer about their status of the food in which customer can check their food status in the order status user interface. Furthermore, this proposed system also provide real-time customer feedback whereby all the customer can view their feedback and also the others customer feedback. With real-time customer feedback, the restaurant owner will be able to capture the information in a short time and immediately solve the problem. Besides, this system also provides a feature where customer can share food post to their Facebook. Thus, many people will know about this restaurant and have a visit on that particular restaurant. Lastly, this proposed system provides a feature where the restaurant owner/staff can send message notification to their customer and customer can receive the notification instantly.

6.2 System Strengths

1. Place order everywhere and anytime within the restaurant operation time.

- This fast food ordering system using mobile application allows customer to place their order in a graphical user interface. Customer can request for delivery whenever they are busy or lazy to walk out their doorstep. This system provides convenience for the customers since all the process is done by just using their mobile device.

2. Notification of food order status.

- The system is able to send notification to their customer whenever their food order is updated whether it is in progress or completed. Besides, whenever there is a new food order placed by the customer, the restaurant owner/staff will also be notified.

3. Message Notification

- The system is able to send message notification such as special offer to their customer and the customer will be able to receive the message notification immediately.

4. Real-time customer feedback and rating feature.

- The system provides a feature whereby customer can provide real-time customer feedback and also able to view other customer feedback. It also provides a rating feature whereby customer can give rating about the quality of the food and can be viewed by other customers too.

6.3 System Limitation

1. Incompatible with IOS mobile device

- Since this system is built under Android environment, therefore for those people with Apple mobile device they will not be able to use this application.

2. Required Internet Connection

- This system can only be used and performed under internet connection. Customer has to connect to wireless internet connection or using their phone data in order to place their order.

6.4 Future Enhancements

1. Customization

Provide a feature where customer can customize their order by which they can select any type of meat, extra salad and etc. After customize their food, they can saved into their favorites list for future order.

2. Mini Games

Implement some mini games in the application so that customer can use their waiting time to play on those mini games.

3. Multiple Payment Methods

Having a wide options of payment methods provide more convenience to the customers, which will help to prevent any food cart abandonment. By providing more than one payment methods, it will definitely create a seamless user experience.

Conclusion

According to Bomkamp (2018), using mobile device to place order is so popular because it can help to bring in improved sales and customer usually visit more often when they are using mobile device to order food. At the end of the project, this fast food restaurant ordering system using mobile application will help to improve the current fast food ordering system. With this system, customer can be notified when their order is completed. This eventually will help to reduce the need to queue up at the counter to take their food. Furthermore, the restaurant owner will be also be notified immediately whenever there is a new order placed by the customer. Besides, by letting customer to provide real-time customer feedback, the restaurant owner will be able to overcome their weaknesses. Customer can also view the other customers' feedback since it is real-time. According to Madaan (2018), customer engagement is essential so that customer will feel that they have value. In addition, this system also provides convenient to customer as it contain the search engine option where customer can save their time by using it.

On the other hand, this system also provide push notification whereby the customer can received message notification instantly when the restaurant owner send message such as special offer. By implementing social media plug-in feature, it can attract a lot of new customer when the old customer shares the food post to their social media channel. Thus, this proposed system is developed in order to improve the current fast food ordering system.

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FINAL YEAR PROJECT WEEKLY REPORT

(Project II)

Trimester, Year: Year 3 Trimester 3	Study week no.:1
Student Name & ID: Lim Joo Wei 1402014	
Supervisor: Mr Ku Chin Soon	
Project Title: Fast Food Ordering System Using Mobile Application	

1. Work Done

Try to search for any information or relating system that can be referred.

2. WORK TO BE DONE

Start to code.

3. PROBLEMS ENCOUNTERED

Hard to understand business rules.

4. SELF EVALUATION OF THE PROGRESS

Good.

Supervisor's signature

Student's signature

FINAL YEAR PROJECT WEEKLY REPORT

(Project II)

Trimester, Year: Year 3 Trimester 3	Study week no.:2
Student Name & ID: Lim Joo Wei 1402014	
Supervisor: Mr Ku Chin Soon	
Project Title: Fast Food Ordering System Using Mobile Application	

1. Work Done

Understand and evaluate all the business rules.

2. WORK TO BE DONE

Code the system.

3. PROBLEMS ENCOUNTERED

Coding problems.

4. SELF EVALUATION OF THE PROGRESS

Good.

Supervisor's signature

Student's signature

FINAL YEAR PROJECT WEEKLY REPORT

(Project II)

Trimester, Year: Year 3 Trimester 3	Study week no.:3
Student Name & ID: Lim Joo Wei 1402014	
Supervisor: Mr Ku Chin Soon	
Project Title: Fast Food Ordering System Using Mobile Application	

1. Work Done

Interface has been done.

2. WORK TO BE DONE

Analyze how to use the Firebase.

3. PROBLEMS ENCOUNTERED

No problem

4. SELF EVALUATION OF THE PROGRESS

Good.

Supervisor's signature

Student's signature

FINAL YEAR PROJECT WEEKLY REPORT

(Project II)

Trimester, Year: Year 3 Trimester 3	Study week no.:6
Student Name & ID: Lim Joo Wei 1402014	
Supervisor: Mr Ku Chin Soon	
Project Title: Fast Food Ordering System Using Mobile Application	

1. Work Done

Completed few modules which is the registration module, menu information module , food cart module.

2. WORK TO BE DONE

Continue to code

3. PROBLEMS ENCOUNTERED

No

4. SELF EVALUATION OF THE PROGRESS

Good.

Supervisor's signature

Student's signature

FINAL YEAR PROJECT WEEKLY REPORT

(Project II)

Trimester, Year: Year 3 Trimester 3	Study week no.:8
Student Name & ID: Lim Joo Wei 1402014	
Supervisor: Mr Ku Chin Soon	
Project Title: Fast Food Ordering System Using Mobile Application	

1. Work Done

Done client side.

2. WORK TO BE DONE

Develop server side.

3. PROBLEMS ENCOUNTERED

Coding problems.

4. SELF EVALUATION OF THE PROGRESS

Good.

Supervisor's signature

Student's signature

FINAL YEAR PROJECT WEEKLY REPORT

(Project II)

Trimester, Year: Year 3 Trimester 3	Study week no.:10
Student Name & ID: Lim Joo Wei 1402014	
Supervisor: Mr Ku Chin Soon	
Project Title: Fast Food Ordering System Using Mobile Application	

1. Work Done

Completed client and server side.

2. WORK TO BE DONE

Improve the system and search any errors.

3. PROBLEMS ENCOUNTERED

No

4. SELF EVALUATION OF THE PROGRESS

Good.

Supervisor's signature

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FINAL YEAR PROJECT WEEKLY REPORT

(Project II)

Trimester, Year: Year 3 Trimester 3	Study week no.:12
Student Name & ID: Lim Joo Wei 1402014	
Supervisor: Mr Ku Chin Soon	
Project Title: Fast Food Ordering System Using Mobile Application	

1. Work Done Testing has been done
2. WORK TO BE DONE Complete the final year project report.
3. PROBLEMS ENCOUNTERED No
4. SELF EVALUATION OF THE PROGRESS Good.

Supervisor's signature

Student's signature
