CAFETERIA MANAGEMENT AND MONITORING SYSTEM

BY

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A REPORT

SUBMITTED TO

Universiti Tunku Abdul Rahman

in partial fulfillment of the requirements

for the degree of

BACHELOR OF COMPUTER SCIENCE (HONOURS)

Faculty of Information and Communication Technology

(Kampar Campus)

JAN 2024

UNIVERSITI TUNKU ABDUL RAHMAN

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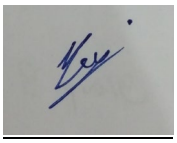

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It is hereby certified that Tan Kean Yew (ID No: 20ACB00148) has completed this final year project entitled " Cafeteria Management and Monitoring System " under the supervision of Ts Dr Chan Lee Kwun (Supervisor) from the Department of Information Systems , Faculty of Information and Communication Technology .

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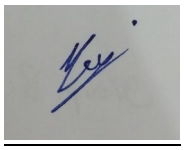

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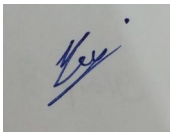
Signature : 

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ACKNOWLEDGEMENTS

I would like to express my appreciation to my supervisor, Ts Dr Chan Lee Kwun. Dr Chan had provided a lot of help in my project. This project wouldn't be successful without supervised by Dr Chan. Lastly, I would like to thank to my friend and family ho giving me love and support all the time.

ABSTRACT

This project is to create a cafeteria management and monitoring system. Basically, this system is a web application that allow user to get know of the cafeteria details and information by real time. It also allows cafeteria hawker to manage their cafeteria business such as update operating status and food menu. This system is different from existing system due to it not only show the cafeteria details and information but also show the sub stall in it. This is because there are a lot of cafeteria like kopitiam which there exist others stall inside the cafeteria in Malaysia. As a customer, we always hope to find those stalls information such as current operating status and what food is on sell currently. This system is a real time system that allow customer to check their interested cafeteria and food stall information from time to time. Furthermore, this system can help cafeteria hawker to improve their business and food as they can know customer feedback and suggestion through this system. The methodology that used to develop this system is prototyping, which is one of the RAD methods. The languages used in this system are HTML, CSS, JavaScript, jQuery, PHP and SQL. The database and web server used is phpMyAdmin and XAMPP server.

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LIST OF ABBREVIATIONS

API	Application Programming Interface
RAD	Rapid Application Development
SDLC	System Development Life Cycle
HTML	HyperText Markup Language
CSS	Cascading Style Sheets
SQL	Structured Query Language
PHP	Hypertext Preprocessor
UI	User Interface
IIPSPW	Introduction to Inventive Problem Solving and Proposal Writing
FYP	Final Year Project

Chapter 1
Introduction

In this era of technology, peoples often rely on internet to find the information they needed. It helps people to save a lot of time for information searching as they can just find everything online. This project is mainly about the cafeteria information, which people can always get known of the cafeteria information via online before they actually headed to the particular cafeteria. Cafeteria management and monitoring system is a system that allow customer or user to check the details information about their interested cafeteria. They can also further check the details of the stalls in cafeteria which can help them to make sure that the stall they are interested is currently operating. The system also allows cafeteria and food stall owner to show their product and stall details to customer and user. Besides, owner can receive anonymous comment from customer that can help them make changes to food or stall so that it become better.

1.1 Problem Statement and Motivation

Problem Statement

1) People can only know the operating hour of cafeteria but not the stall in it

Nowadays, people can easily find the cafeteria information such as operating hour through online and Google map. In Malaysia, there are a lot of traditional cafeteria or we usually call it as kopitiam. Inside kopitiam, there further exist different food stall that sell different variety of food. This had made kopitiam become a popular place for citizen to have their breakfast, lunch and dinner due to variety of choices provide. The main problem is people can only find the information such as operating hour of kopitiam through online and Google map but not the food stall in it. Consequently, it may cause a wastage of time for customer when they headed to the cafeteria. Let me quote an example, Ali favorite food stall that sell nasi lemak is in MeiMei kopitiam, he decided to drive 5km to the kopitiam and have his favorite nasi lemak today. So, he checks on the Google map and it shows that MeiMei kopitiam is operating today. After a 5km driving to MeiMei kopitiam, he only realizes that his favorite nasi lemak stall is

not operating today or the nasi lemak is sold out. This scenario had been faced by a lot of people and it causes the wastage of time.

2) Negative comments that will affects the normal operation of cafeteria

The second problem is nowadays most of the platform include Google maps will show the rating and comments to all the customer. This will affect the normal operation of the particular cafeteria and stall because of the negative comments. Although the negative comments can help customer to further made their decision but there are other causes of the negative comments exists such as strategy of competitor and difficult customer. Although there are possibilities negative comments exists due to customer not satisfy the flavour of food, the cleanliness of stall and the attitude of owner but we should give a chance to the cafeteria and food stall owner to do better. This is due to the reason that the comments of customer not just let other customer to know about the stall condition but also give a chance to owner to receive comments from their customer.

3) Difficulty of finding food menu with labelled price online

Price of a food is said to be undeniable an important factor that customer considers during food purchasing. The problem is it is always difficult to find the price of the food sell in particular cafeteria or stall except that when a cafeteria has their own official website. Although we can check the food menu with pricing if the particular cafeteria or stall is using food delivery app but the pricing usually higher than the actual food price if we visit in stall because the price labelled in food delivering app had included commission. Some of the stall might upload their food menu on Google map in image form. The problem of taking the image and upload online is the image may be low quality and blurred. Hence, customer will be required to visit to the cafeteria by their own to get known with the price. This will also cause the wastage of them if they realize that the price of food is unacceptable by them.

4) Difficulty for admin to manage the application

Admin need to use a lot of platform such as Email, WhatsApp or even receive the application document through physically. This had let the process become more complex and difficult because they did not have a platform to deal with all the

applications. Admin need a platform that can receive, approve and view application from cafeteria owner that wish to use the website to display their business.

5) "Shop near to you" only can show the shop based on area but not distance

User would like to their exact distance with the shop but not area. This is due to the reason that an area can be very big which the distance between user location and shop location is very far. Due to the system is programmed to show "the shop near you" based on the area, so user will still be showed with the shop that far away from them because they are in the same area such as in the same state.

6) Cafeteria owner lack of statistic to make their business strategy

Statistic is very important so that cafeteria owner can analyse the information that get from customer behaviour in order to make their business strategy. This can help them to improve their business and make the business process more efficient.

Motivation

"What to eat today" is a common question that everyone will ask themselves or others during their breakfast, lunch and dinner time. There are a lot of factor that affects a person's decision on what to eat. For example, price of food, flavor of food, favorite cafeteria operating status and so on. Customer need a platform which is real time that will update the information from time to time so that they can get known of the cafeteria and food information before they actually headed to the particular cafeteria. It prevents the wastage of time and make customer's work more convenient. Besides, cafeteria and food stall owner also need a platform to exposed their business and food selling so that customer actually know there exist such food in the cafeteria. Owner also needs to be given chances to do better if they've received negative comments on their business and food. Hence, the comment should not be publicly view by everyone as they deserve a chance to make things better.

1.2 Objectives

Objective one: To identify the problems related to cafeteria and food stall organisation with some fact-finding techniques such as document review, observation etc.

Objective two: To design a prototype that can help cafeteria and food stall owner to manage their business and customer to monitor the status of cafeteria.

Objective three: To develop a software prototype for cafeteria, food stall and customer with 7 modules.

1.3 Project Scope and Direction

This cafeteria "management and monitoring system" web application is able to show user the information and details of a cafeteria. It also can further show the information and details of the food stall that are operating in the particular cafeteria. The information and details show are cafeteria name, current operating status, menu labelled with price, contact information and so on. User just need to select the cafeteria they want to view details and click on it, then the details will be shown to the user.

Then, customer or user can leave an anonymous message or comment privately to cafeteria owner. This is to help the cafeteria made changes and become better based on the comment given. Cafeteria owner can view those comment inside the comment box which can only view by them.

Third, cafeteria owner can setup and edit their profile with all the related information. This information will be retrieved and display to user or customer when owner start operating their stall daily.

Forth, cafeteria owner can always manage the food on sold and operating status. After they start operating their business, they can always edit the food availability status. For example, they can remove nasi lemak from their display details if the nasi lemak is sold out. After food stall owner have end their operation, they can manually set the stall operating status as "closed". They can also view the statistic such as how many users had view their stall on that particular day.

Lastly, admin can always manage the application of cafeteria owner that wish to display their business on the website. Admin can also view all the current cafeteria owner that is displaying their business and have the rights to remove those who violate the rules.

1.4 Contributions

Cafeteria management and monitoring system enable customer or user to view the details of cafeteria and food stall in it such as current operating status, cafeteria information, food menu labelled with price, store owner contact information and so on. Besides, it also allows customer or user to privately message an anonymous comment to cafeteria owner in order to help them to do better. All the function stated on above will be done by frontend and backend work together. Furthermore, user can view the exact distance for the nearest cafeteria between them and the cafeteria. This can be done by getting the address of user and cafeteria. After getting those addresses, the addresses is passed to Google map using Google API to retrieve the exact distance between user and the cafeteria.

1.5 Report Organization

The report comprises six chapters, which are:

1. Introduction
2. Literature Review
3. System Methodology/Approach
4. System Design
5. System Implementation
6. System Evaluation and Discussion
7. Conclusion

In the initial chapter, the introduction of this project encompasses the problem statement, motivation, project scope and direction, objectives, contribution and report organization. The subsequent chapter, the literature review, examines various existing cafeteria information applications in the market to assess their strengths and weaknesses, comparing them to my project. The third chapter is discussion the system methodology and approach of this project. The forth chapter is discussing the overall system design of this project including UI and database. The fifth chapter is regarding the details on how to implement the design of the system and user manual. Next, the sixth chapter is system evaluation and discussion which include the testing of the prototype. Lastly, the seventh chapter is conclusion of the whole project.

Chapter 2

Literature Review

2.1 Previous Works

2.1.1 Google Business Profile and Google Maps

Google Maps (Figure 2.0) is an online maps and Google Business Profile (Figure 2.1) is a tool that enable businesses and organizations to show their information and details on Google Maps.

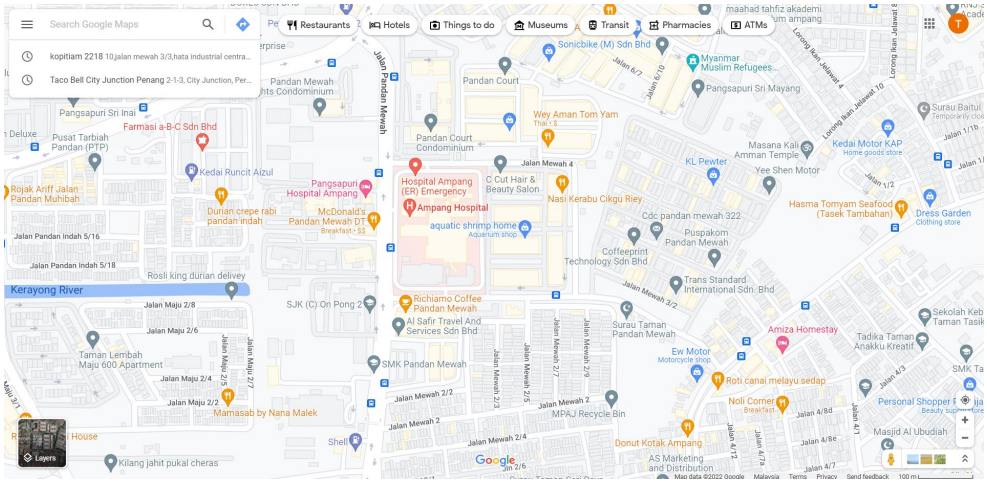

Figure 2.0 Google Maps

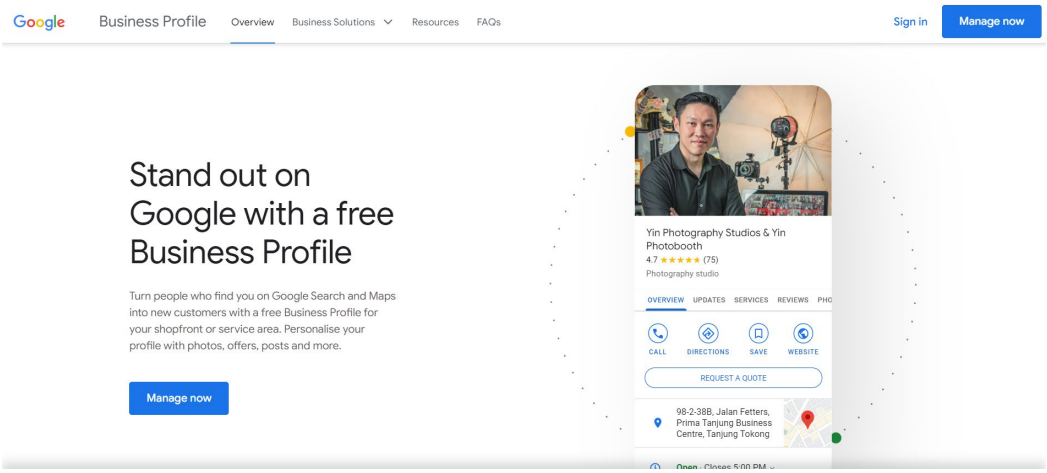

Figure 2.1 Google Business Profile

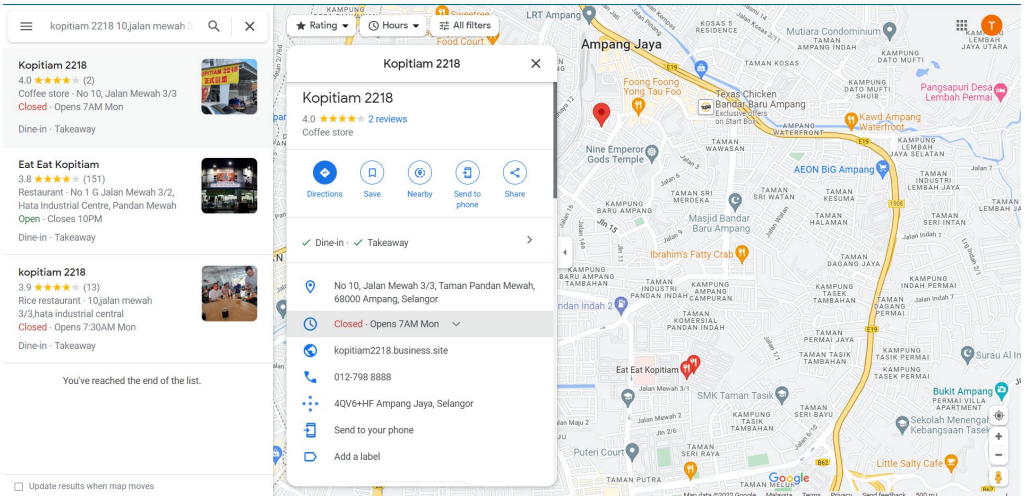

Figure 2.2 Information and details of Kopitiam 2218 on Google Maps

User can manage the information of their businesses shown on the Google Maps by using Google Business Profile. They just have to create a shop by keying in the shop name (Figure 2.3) hence follow the instruction to create a shop (Figure 2.4) and show the details on Google Maps.

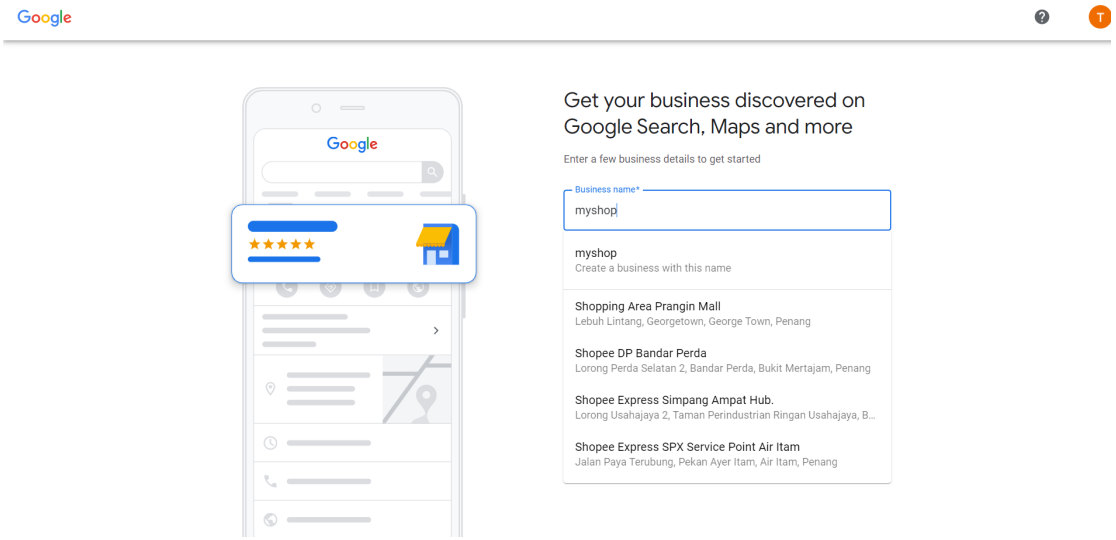

Figure 2.3 Shop name key in (Google Business Profile)

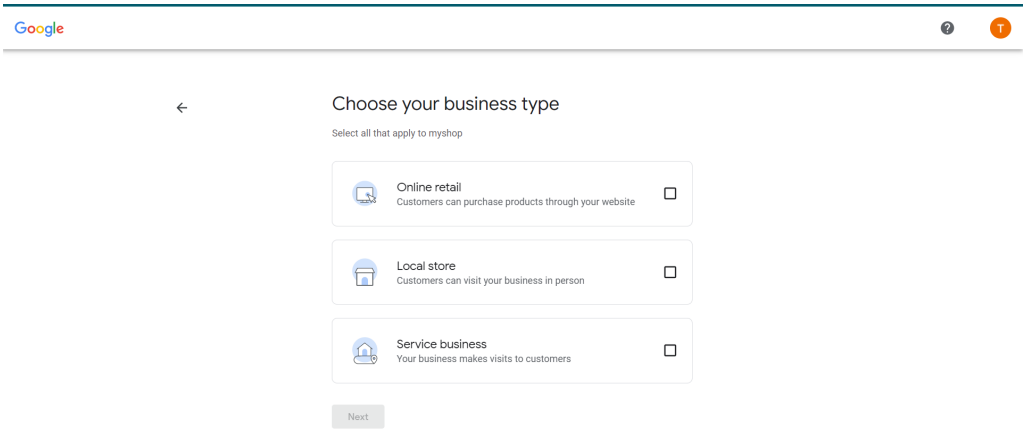

Figure 2.4 Choose business type (Google Business Profile)

If user wish to edit the store that currently display on Google Maps, they just have to search for the store name on Google Business Profile. If the shop had been registered by other email, it will show that you are not the owner of the shop, else user will be allowed to modified and edit the information.

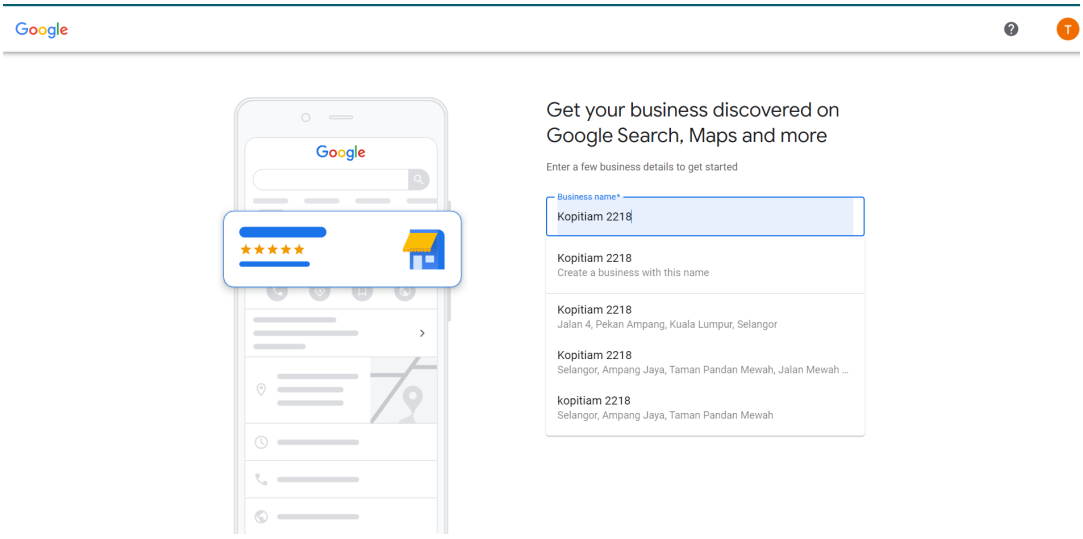

Figure 2.5 Search Kopitiam 2218 on Google Business Profile

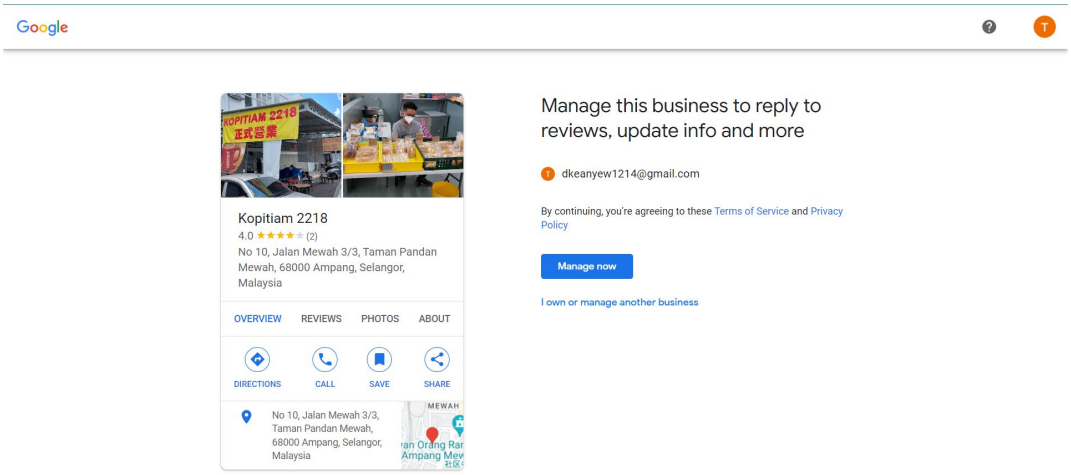

Figure 2.6 Use email to verified as owner

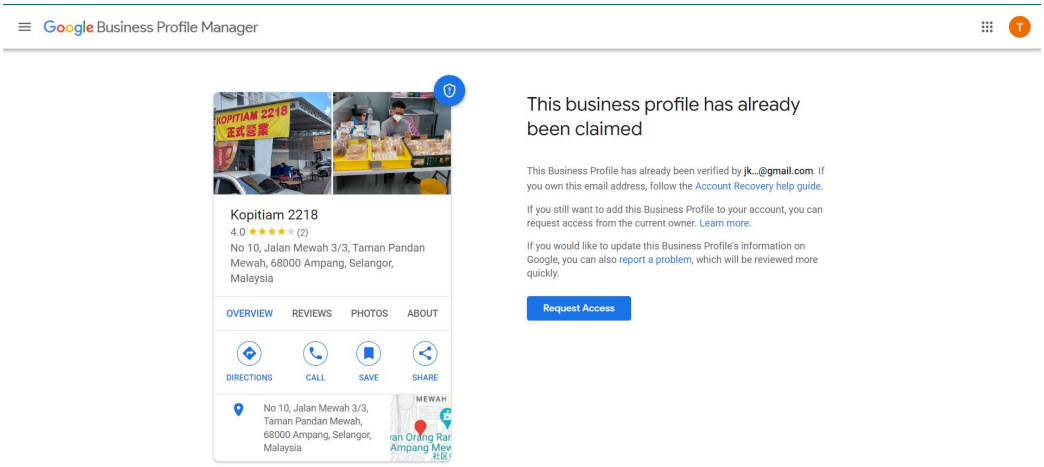

Figure 2.7 Store has been registered by another user

After the information and details has been added or modified through Google Business Profile, all user should be able to see the stall information when they use Google Maps services.

Strengths

1. Shop owner can verify for their identity.
2. Use GPS to show location and direction of the store.
3. Enable shop owner to key in the operating hours from Sunday to Saturday.
4. Enable shop owner to key in contact information.
5. User can leave a comment and rating to the store.
6. Enable user to upload images of the stall.

Weaknesses

1. The operating hours are fix, which means the system will always show the status "Open" when it is in operating hours. There might be a condition which the store is not operating in the operating hours due to store owner private reason but the status still show as "Open" on the Google Map.
2. For cafeteria, the food menu can only be uploaded as image. There might be a possibility the image uploaded is low quality or compressed. This will cause user cannot read the information from the image.
3. For cafeteria that have more stall in it, such as kopitiam. It will only show the information and details of the cafeteria but not the stall in it.

2.1.2 opening-hours.club

Opening-hours.club (Figure 2.8) is a web application that show the details and information of store such as address, contact information and operating hours.

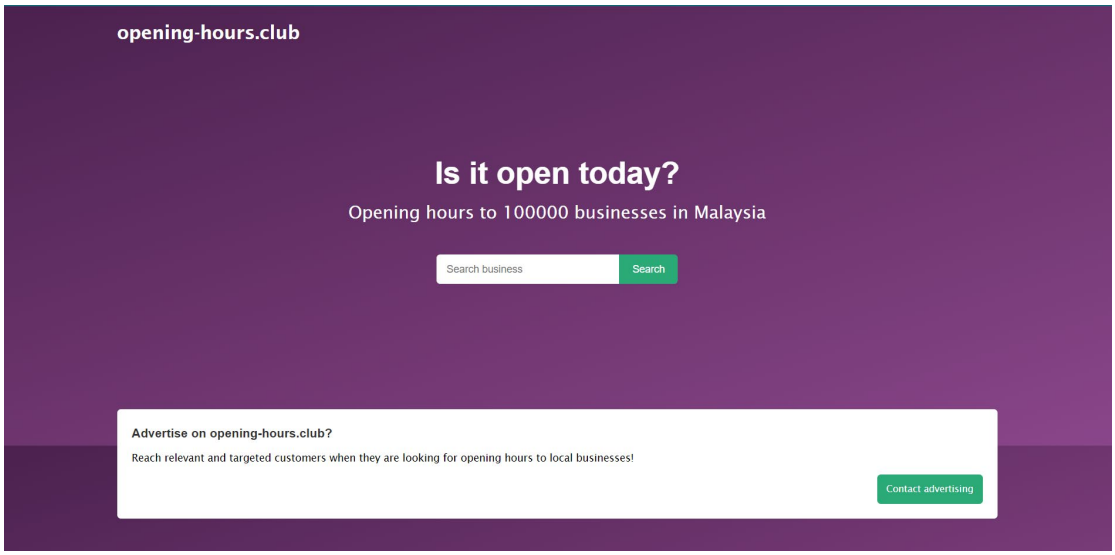

Figure 2.8 Opening-hours.club

Firstly, user has to key in the name of store they want to find and the page will show the results.

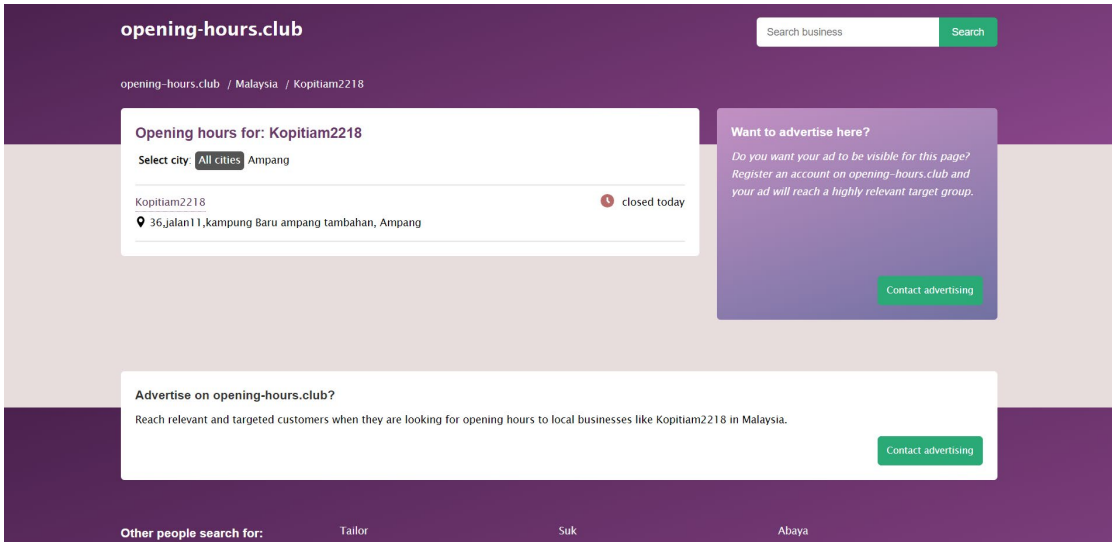

Figure 2.9 Search for Kopitiam 2218

After clicking on it, the page will show the information and details for the particular store (Figure 2.10).

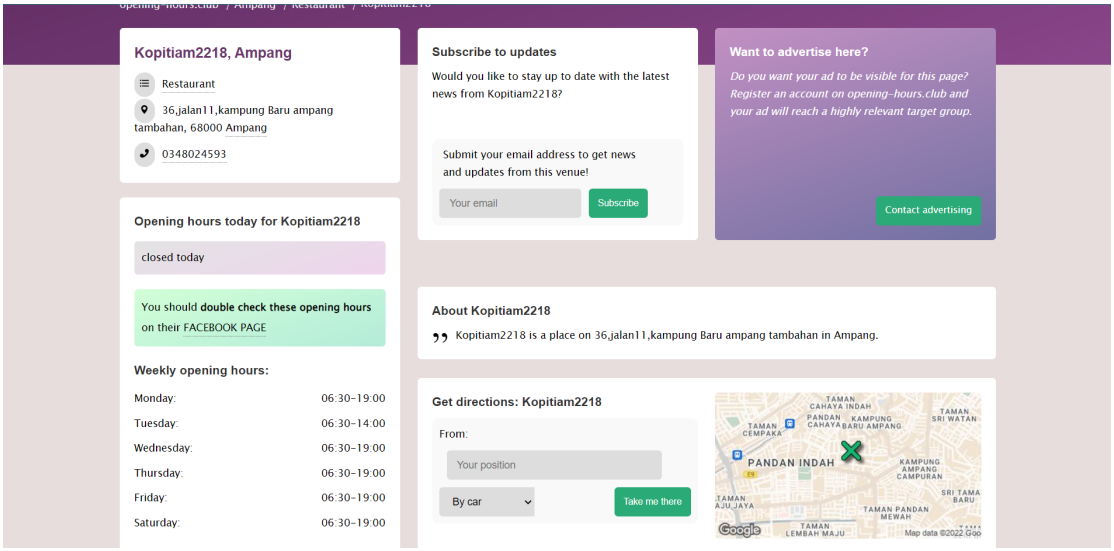

Figure 2.10 Information and details for store

If store owner wishes to display their store in system, they have to contact the relevant authorities via email provided.

Strengths

1. Enable shop owner to key in the operating hours from Sunday to Saturday.
2. Enable shop owner to key in contact information.
3. Enable user to subscribe and receive the latest update of the store via email.
4. User can leave their comments and the system will display to other users.
5. Use GPS to show the location and direction of store.

Weaknesses

1. Store owner has to manually email to particular authorities to add their stall instead of direct add in the system
2. For cafeteria, the system did not contain a section for store owner to upload their menu.
3. For cafeteria that have more stall in it, such as kopitiam. It will only show the information and details of the cafeteria but not the stall in it.
4. The operating hours are fix, which means the system will always show the status “Open” when it is in operating hours. There might be a condition which the store is not operating in the operating hours due to

store owner private reason but the status still show as “Open” on the system.

5. The searching bar is space sensitive, which means if we search the name without space, system will show no result found.

2.1.3 Asiafirms.com

Asiafirms.com (Figure 2.11) is also a web application that allow customer to check store details and allow store owner to manage their business and store on it.

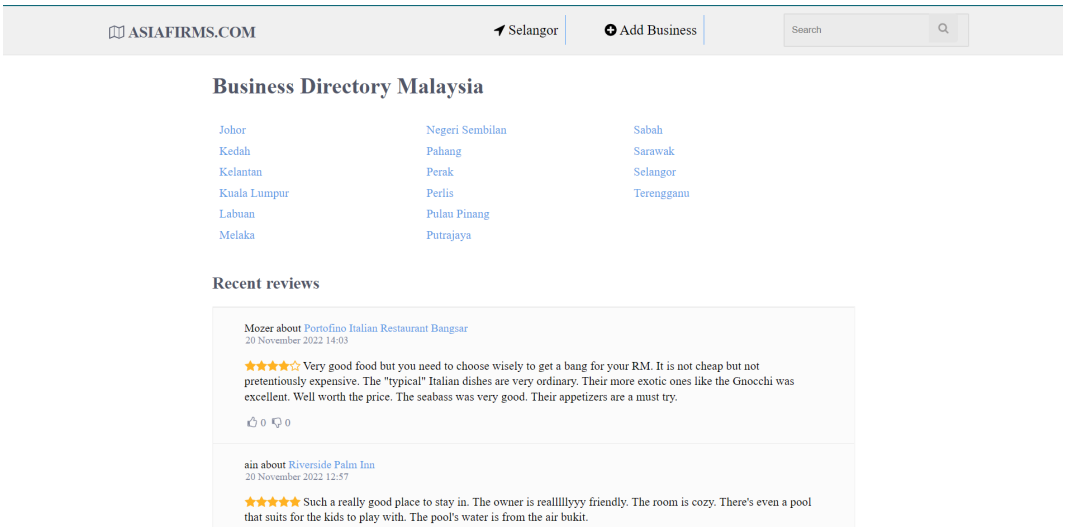

Figure 2.11 Asiafirms.com

User just have to search their interested shop in the search bar, the system will then show the details of the particular shop.

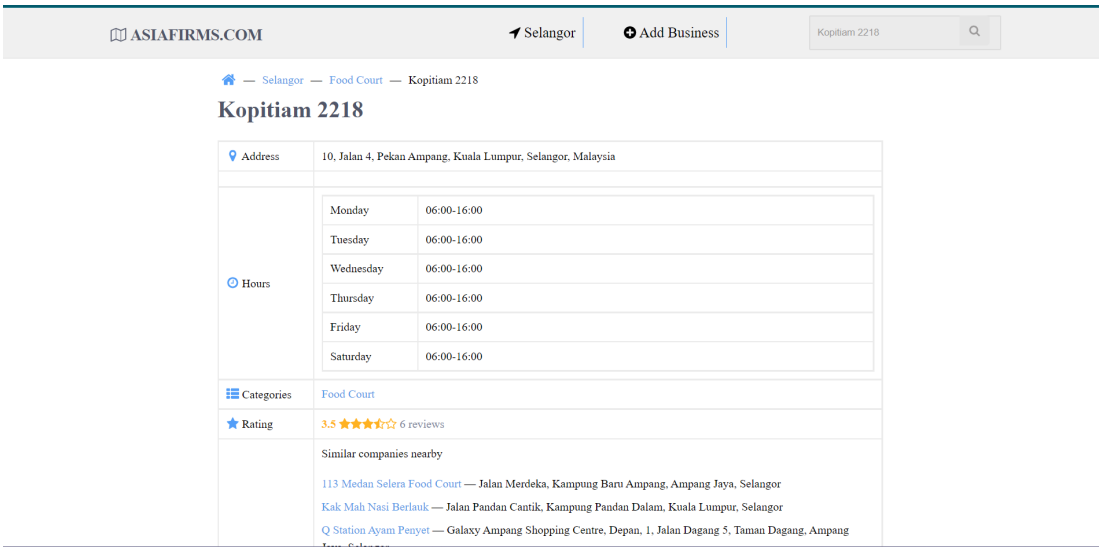

Figure 2.12 Details of kopitiam 2218 after searching

For store owner, they are required to click “Add Business” button to create their business and display to all the user. Owner will need to fill up all the details of their store (Figure 2.13).

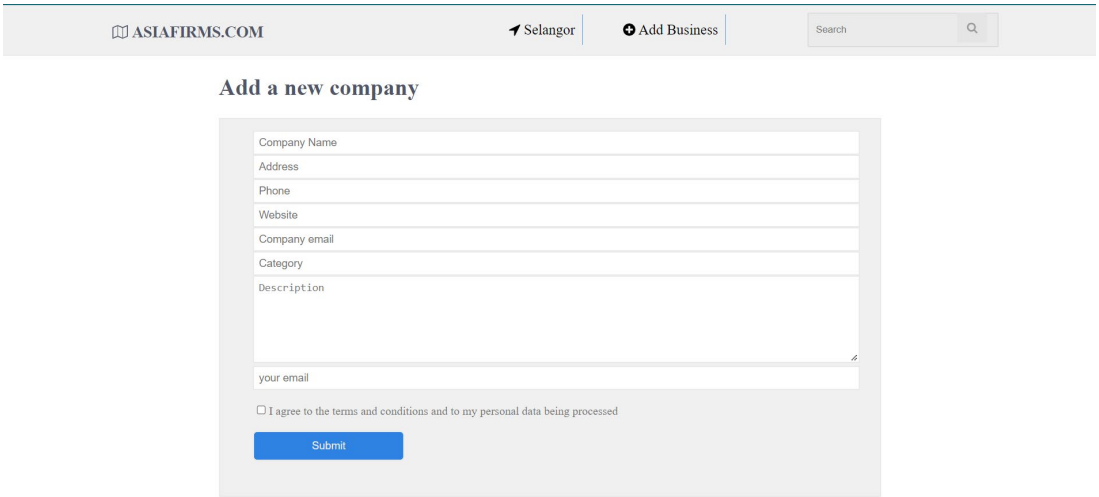

Figure 2.13 Add a new company

Strengths

1. Enable shop owner to key in the operating hours from Sunday to Saturday.
2. User can leave their comments and the system will display to other users.
3. System recommend other similar type of store near the interested store.
4. Contain Google Maps API to show the location of store.

Weaknesses

1. For cafeteria, the system did not contain a section for store owner to upload their menu.
2. For cafeteria that have more stall in it, such as kopitiam. It will only show the information and details of the cafeteria but not the stall in it.
3. The operating hours are fix, which means the system will always show the status “Open” when it is in operating hours. There might be a condition which the store is not operating in the operating hours due to store owner private reason but the status still show as “Open” on the system.
4. The searching bar is space sensitive, which means if we search the name without space, system will show no result found (Figure 2.14).

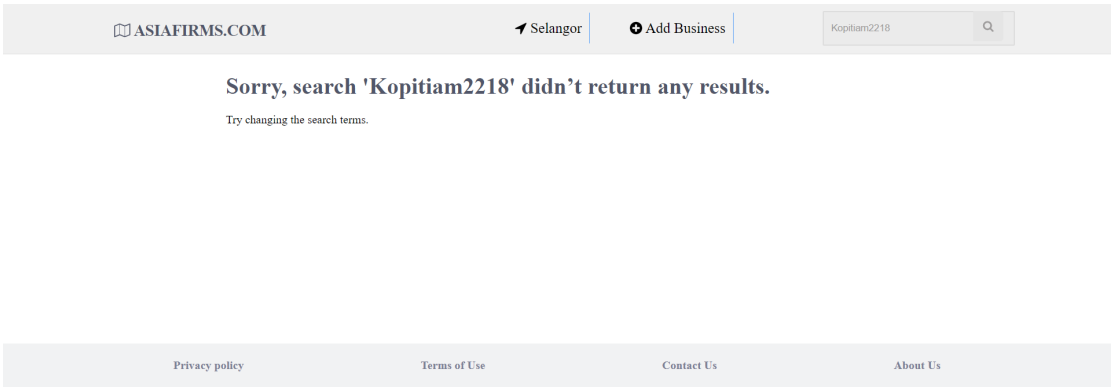

Figure 2.14 No results found

2.2 Critical remarks of previous work

Table 2.0 Comparison between existing system

	Google Business Profile and Google Maps	opening-hours.club	Asiafirms.com	My FYP
Show the operating status of cafeteria (open or close)	Yes	Yes	No, only display the operating hours	Yes
Show the distance to cafeteria	Yes, use real time GPS	Yes, need to key in the depart location	No	Yes, need to key in the depart location
Space sensitive when searching for cafeteria name	No	Yes	Yes	No
Show rating and comment of the cafeteria	Yes	Only show comments	Yes	Show comment on the cafeteria owner site
Real time update the status of cafeteria	No	No	No	Yes
Show the details and information of the stall in the cafeteria	No	No	No	Yes
Allow cafeteria owner to upload food menu	Yes, in image form	No	No	Yes
Type of system	Web and smart phone application	Web application	Web application	Web application
Overall design	Very details, easy to use	Simple and easy to use	Little bit confused and hard to use	Simple and easy to use

Chapter 3

System Methodology/Approach

3.1 Methodology and tools

There are 3 main methodology which are structured design, rapid application development (RAD) and agile development. The methodology that I choose to use for my system is prototyping which is under RAD. Figure 3.0 show the system development life cycle (SDLC) of prototyping.

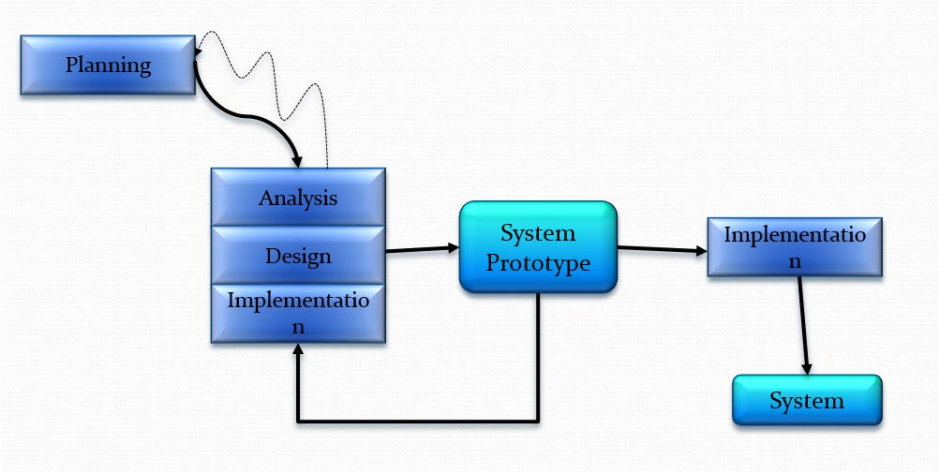

Figure 3.0 SDLC of prototyping

3.1.1 Planning phase

In planning phase, the project proposal is written by implemented overall idea of this project such as project title, project background, objective and project scope, literature review and technology required.

3.1.2 Analysis, Design and Implementation phases

These three phases are repeated concurrently with a prototype model until a satisfied and usable system is come out.

In analysis phase, user expectation and the final product of this project is well defined. The module and function for Cafeteria management and monitoring system are identified such as hawker login module, user profile management module, cafeteria and food stall information

module, user feedback module, food recommendation module and search module. The idea of what function in each module and work flow also should be defined in analysis phase.

In design phase, the wireframe of UI is designed using an online wireframe tool which is "MockFlow". Besides, the program design such as how each module work or communicate with each other also be considered. Lastly, database is designed and integrated to read and write the information such as login details and hawker's profile information.

In implementation phase, the coding session will begin according to the design made in design phase. The language that used in this project is HTML, CSS, JavaScript, jQuery, PHP and SQL. The debug session also done is this phase to make sure the code is runnable. After the implementation, a prototype will come out and further let user to test it. These three phases are further repeated until there is no bug found and satisfied by user.

3.1.3 Implementation phase after system prototype

In this phase, only a minor change and checking is made to the prototype as it already meets user requirements. The documentation work such as source code, project diagram and other related information should be documented and add it into a report.

3.2 UML Diagram

3.2.1 Use case diagram

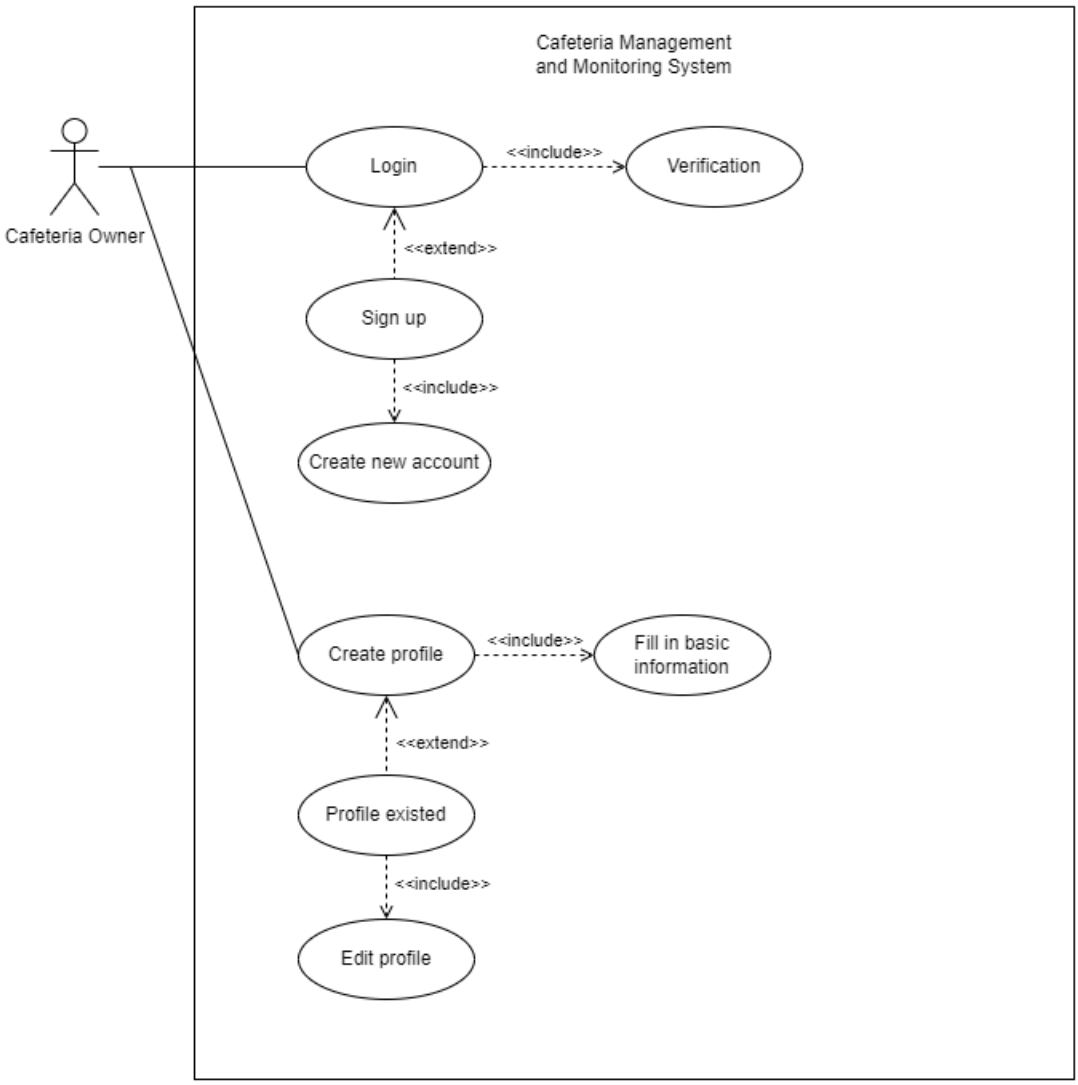

Figure 3.1 Use case diagram for module 1

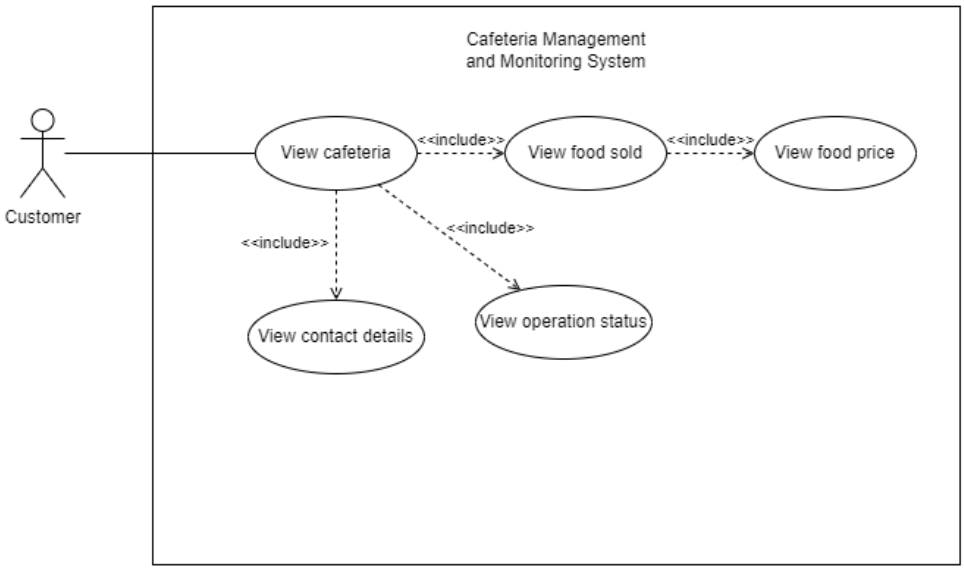

Figure 3.2 Use case diagram for module 2

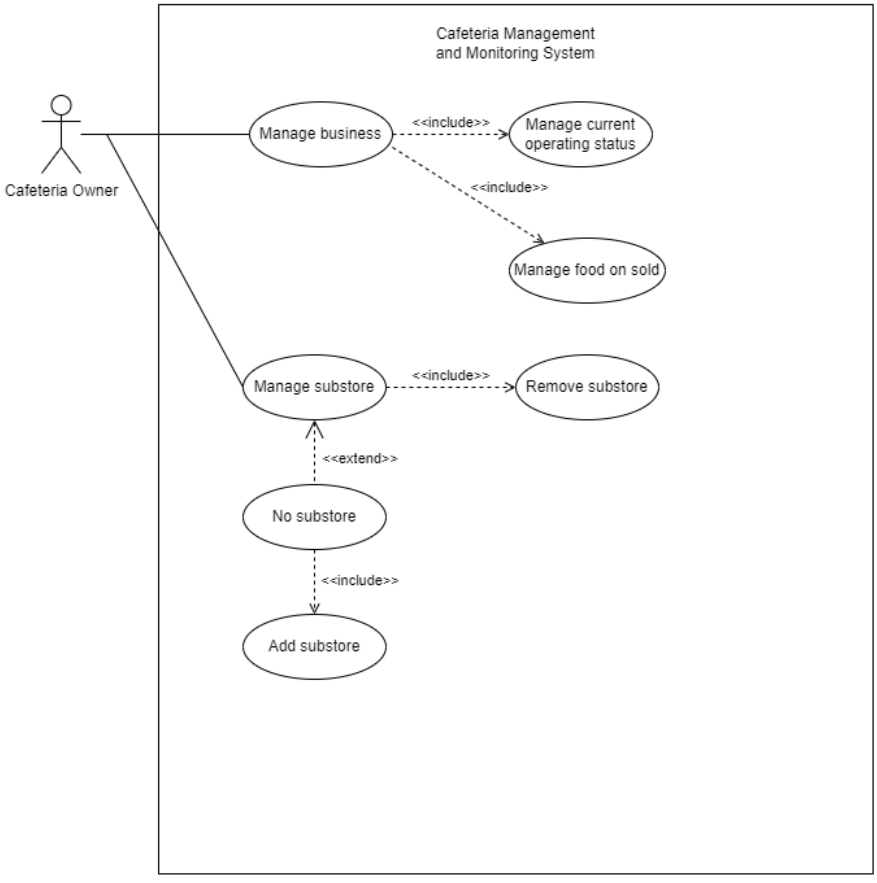

Figure 3.3 Use case diagram for module 3

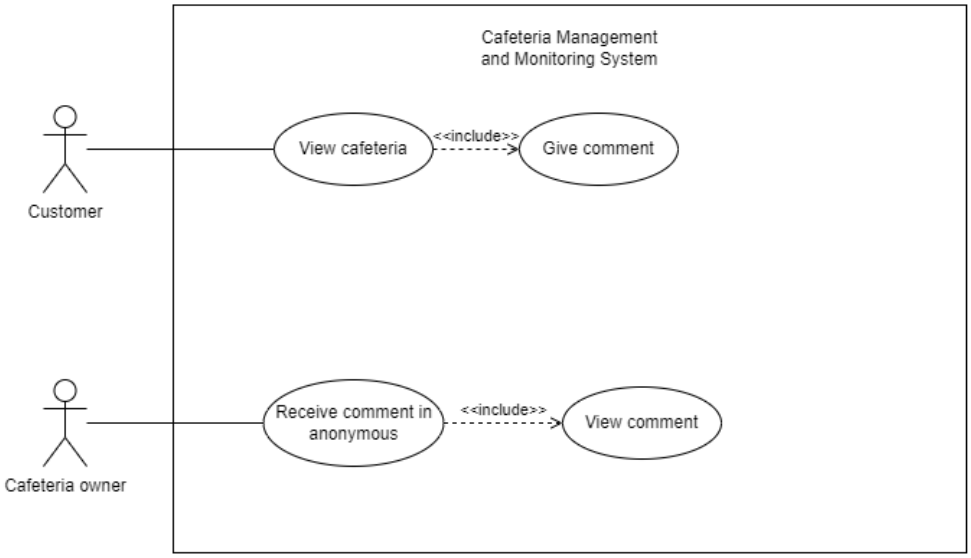

Figure 3.4 Use case diagram for module 4

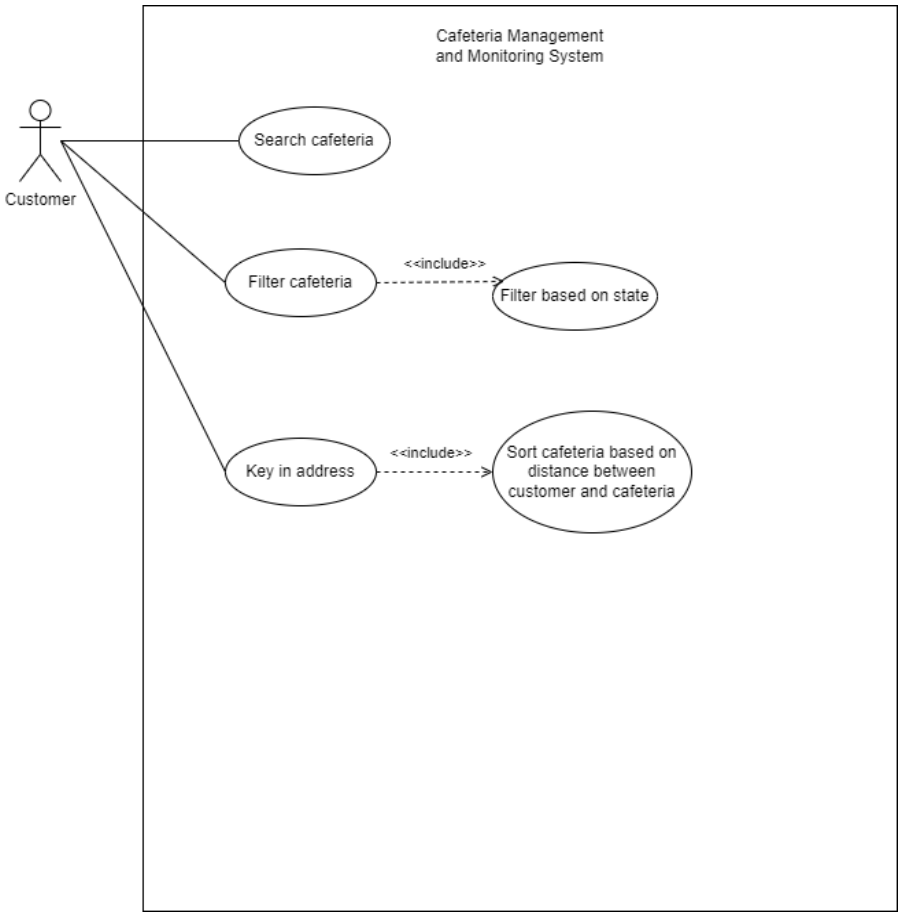

Figure 3.5 Use case diagram for module 5

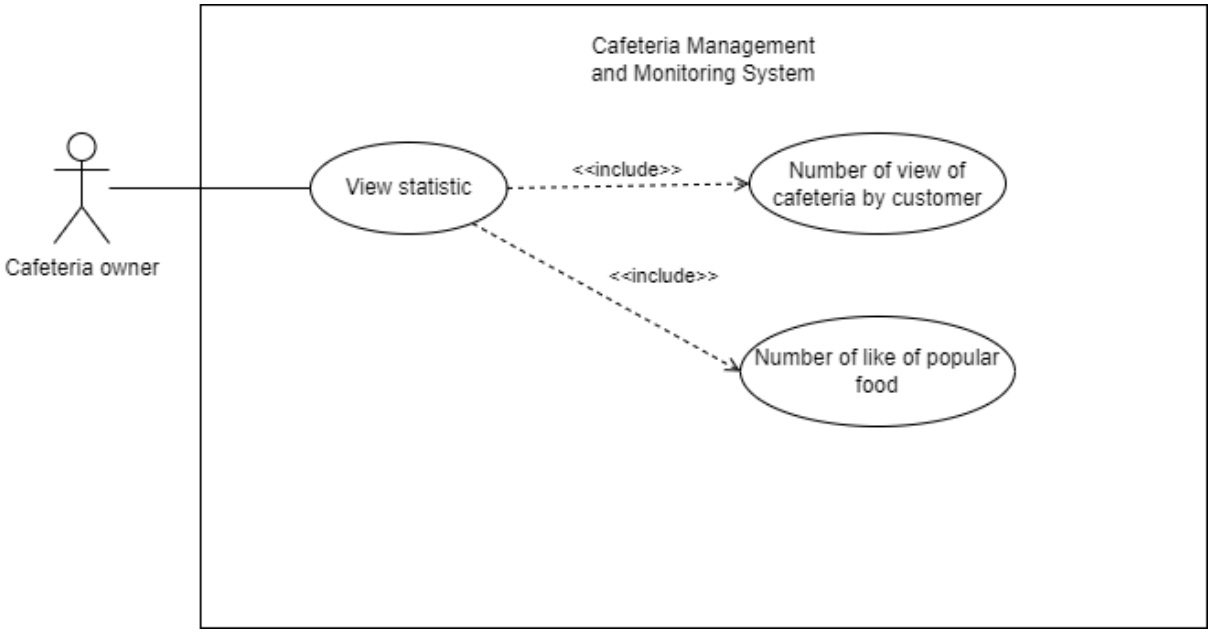

Figure 3.6 Use case diagram for module 6

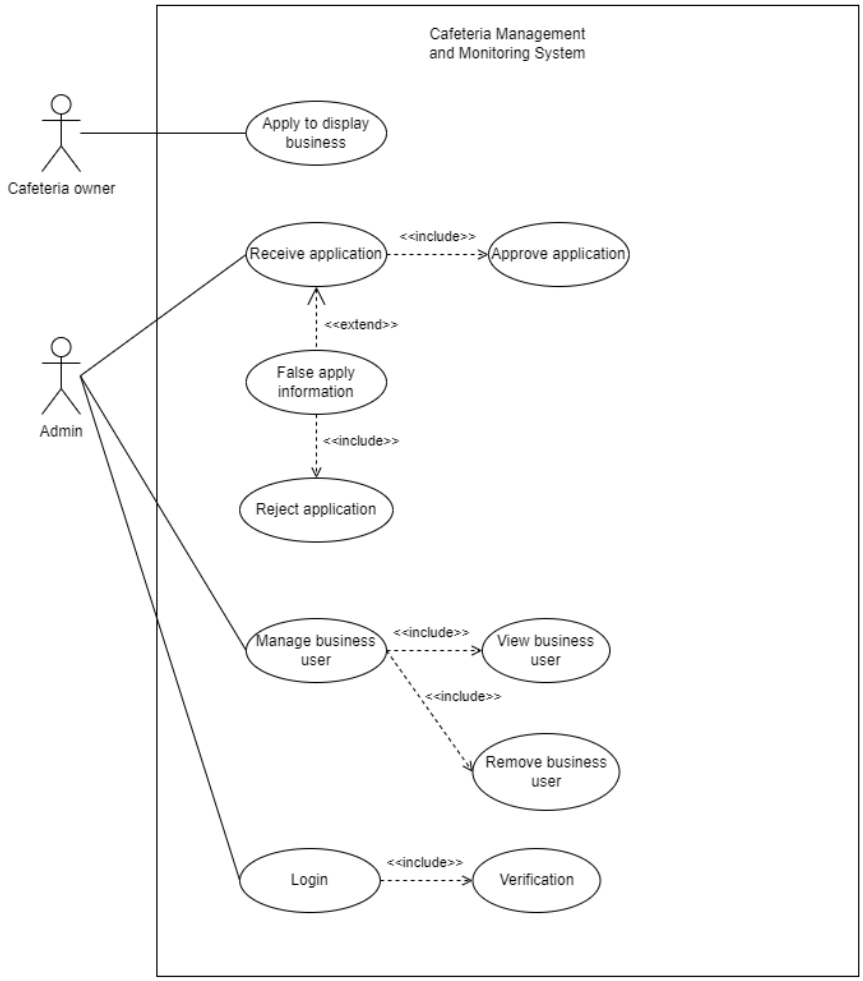

Figure 3.7 Use case diagram for module 7

3.2.2 Activity diagram

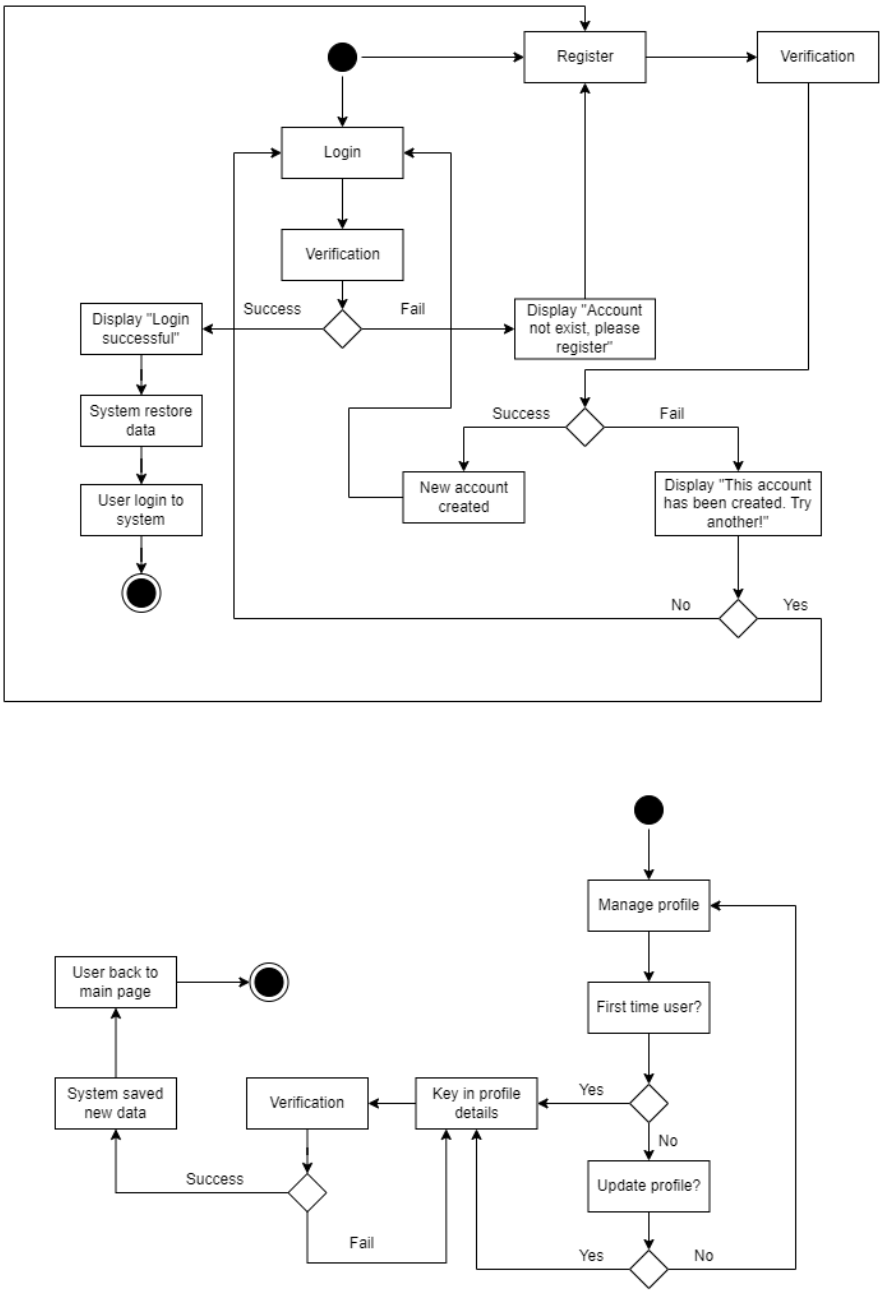

Figure 3.8 Activity diagram for module 1

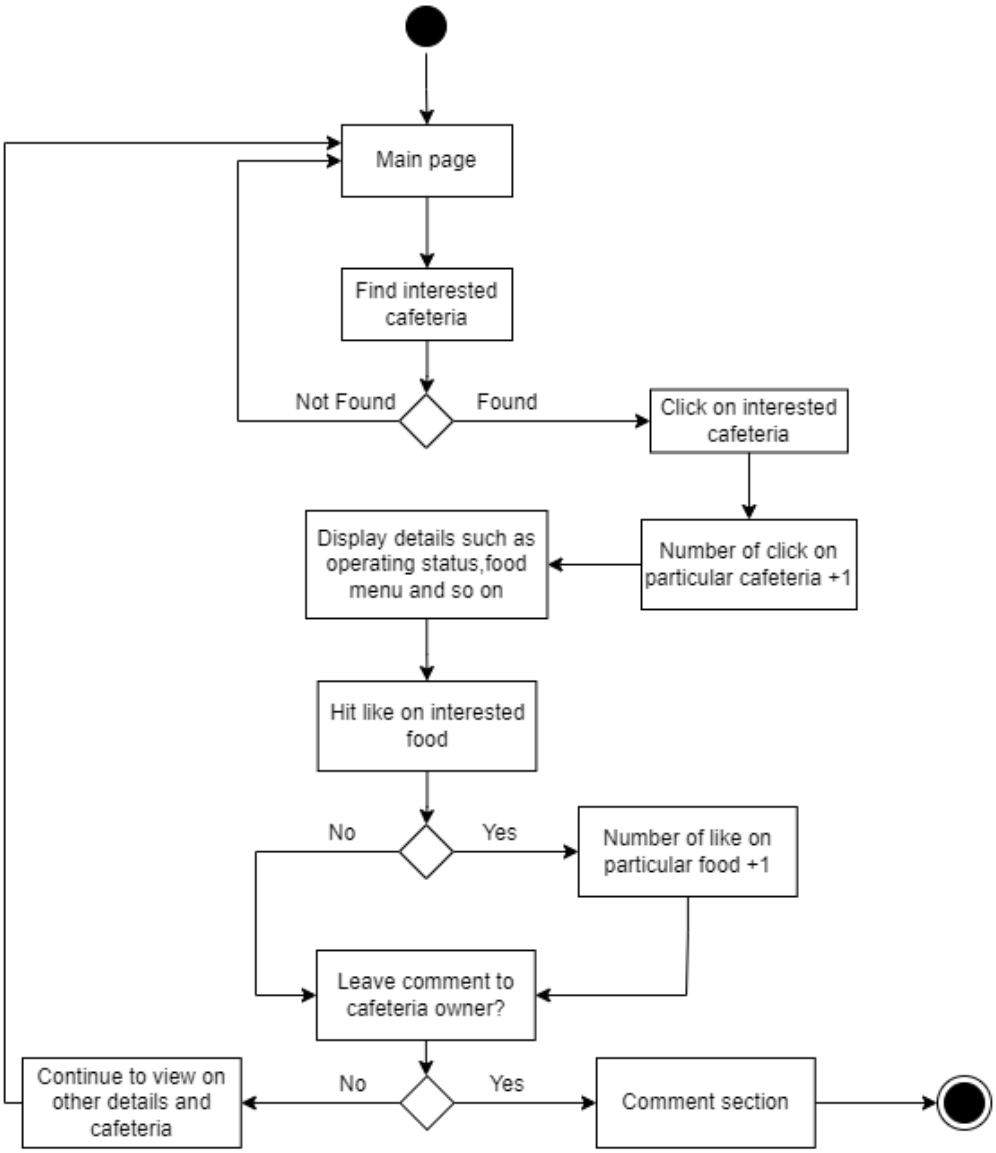

Figure 3.9 Activity diagram for module 2

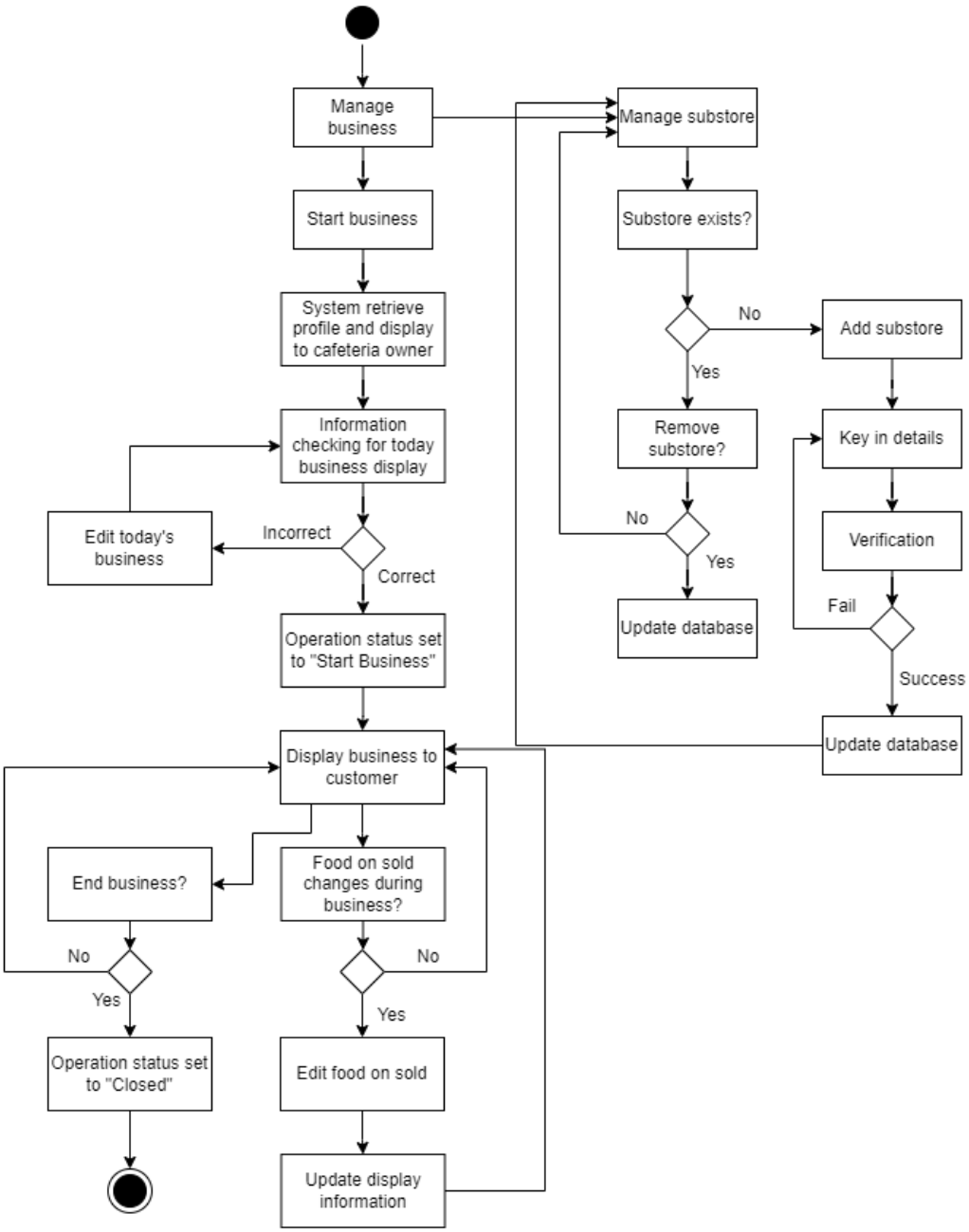

Figure 3.10 Activity diagram for module 3

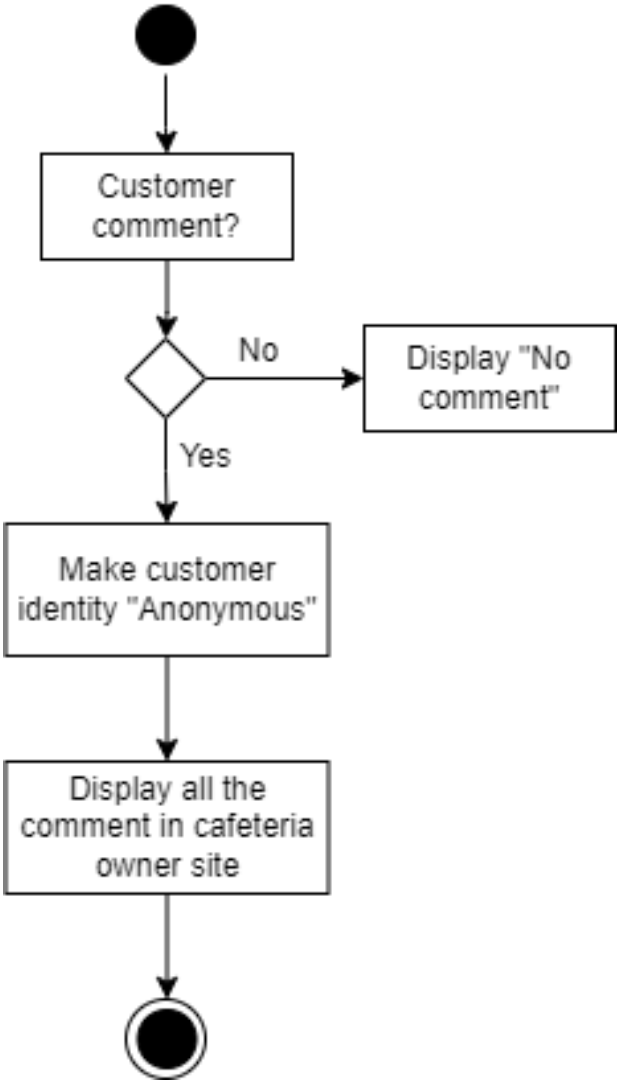

Figure 3.11 Activity diagram for module 4

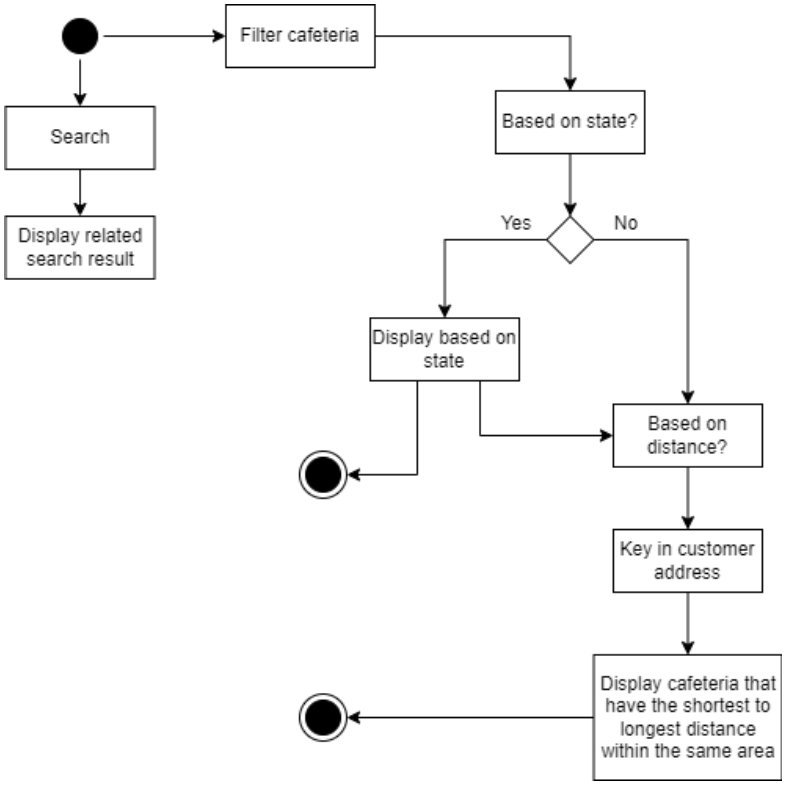

Figure 3.12 Activity diagram for module 5

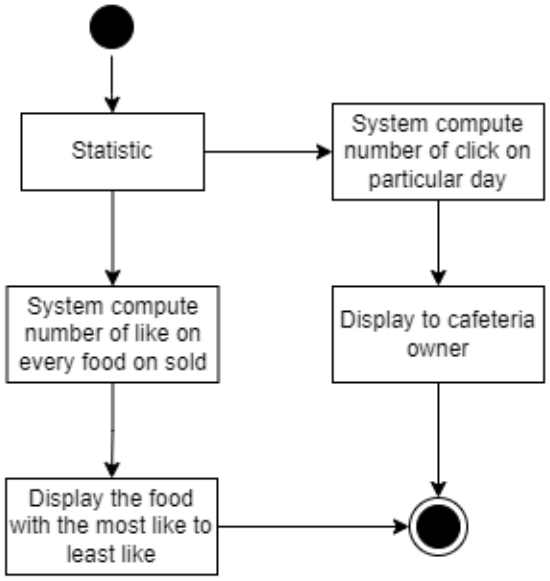

Figure 3.13 Activity diagram for module 6

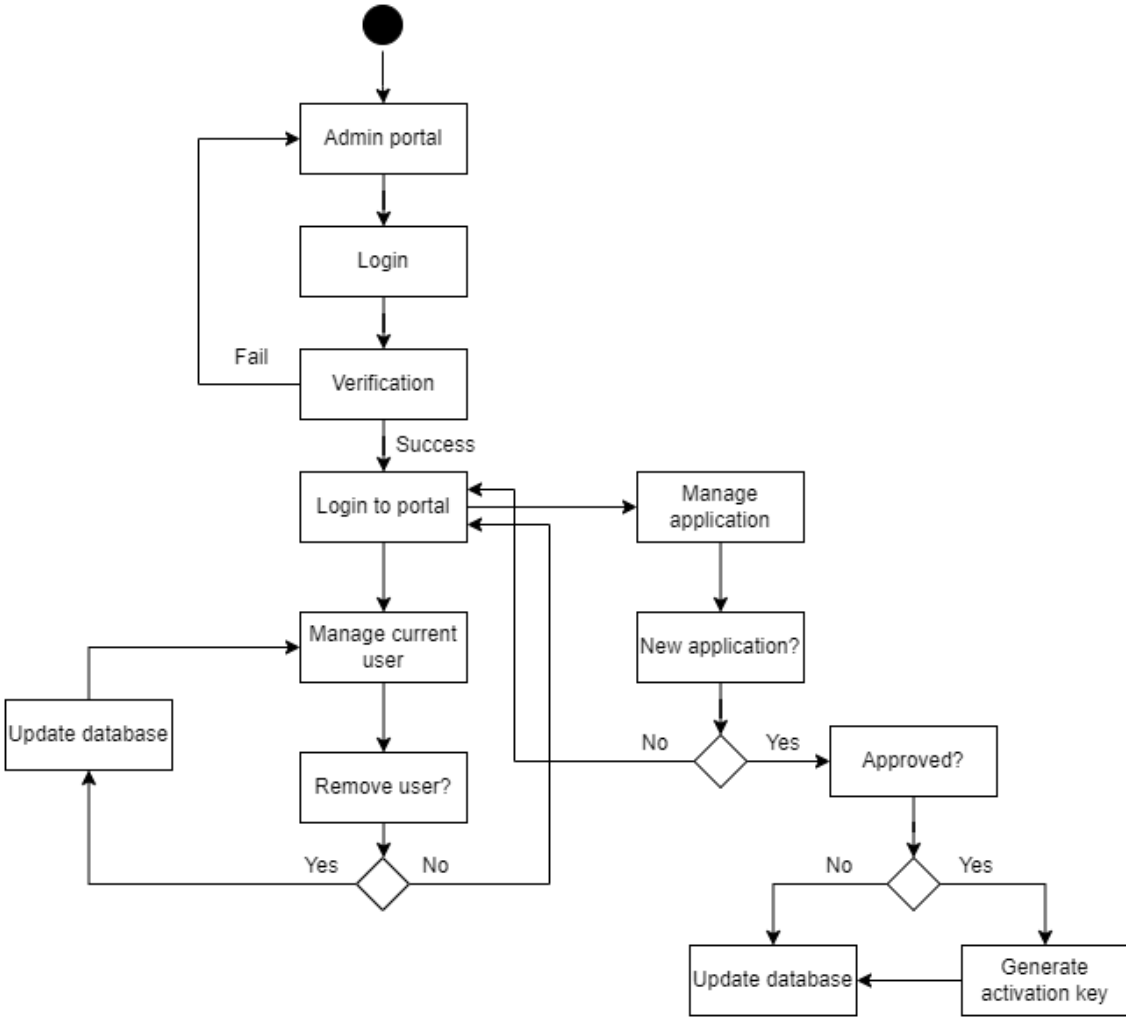

Figure 3.14 Activity diagram for module 7

Chapter 4

System Design

4.1 Database Design

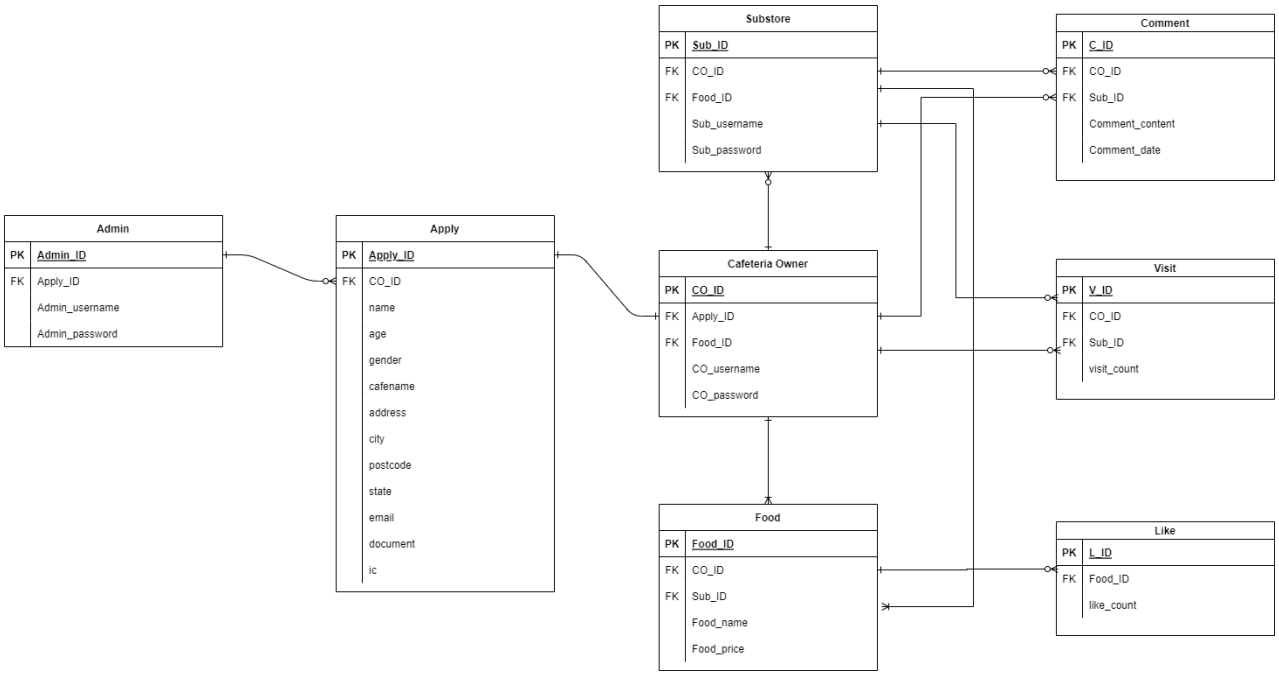

Figure 4.0 ERD diagram

4.2 Data Dictionary

Table 4.0 Data dictionary

Field Name	Data Type	Description
Admin_ID	Integer	Unique number ID for all admin
Admin_username	Varchar	Username of admin
Admin_password	Varchar	Password of admin
Apply_ID	Integer	Unique number ID for all apply
name	Varchar	Name of applicant
age	Integer	Age of applicant

gender	Varchar	Gender of applicant
cafename	Varchar	Cafeteria name of applicant
address	Varchar	Address of applicant
city	Varchar	City of applicant
postcode	Integer	Postcode of applicant
state	Varchar	State of applicant
email	Varchar	Email of applicant
document	Longblob	Document submit by applicant in pdf
ic	Longblob	IC of applicant in pdf
CO_ID	Integer	Unique number ID for all cafeteria owner
CO_username	Varchar	Username of cafeteria owner
CO_password	Varchar	Password of cafeteria owner
Sub_ID	Integer	Unique number ID for all substore
Sub_username	Varchar	Username of substore
Sub_password	Varchar	Password of substore
Food_ID	Integer	Unique number of ID for all food
Food_name	Varchar	Name of food
Food_price	Varchar	Price of food
C_ID	Integer	Unique number of ID for all comment
Comment_content	Text	Content of comment
Comment_date	Timestamp	Date of comment
V_ID	Integer	Unique number of ID for all visit
visit_count	Integer	Count of visit
L_ID	Integer	Unique number of ID for all like
like_count	Integer	Count of like

4.3 User Interface Design

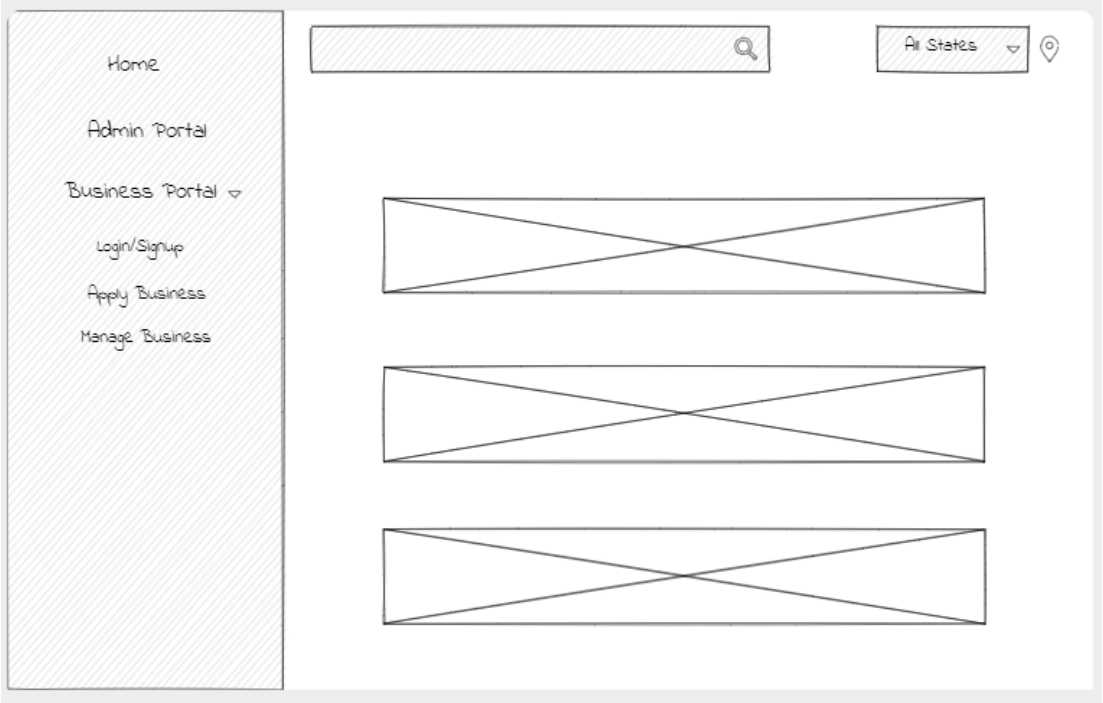

Figure 4.1 Home page

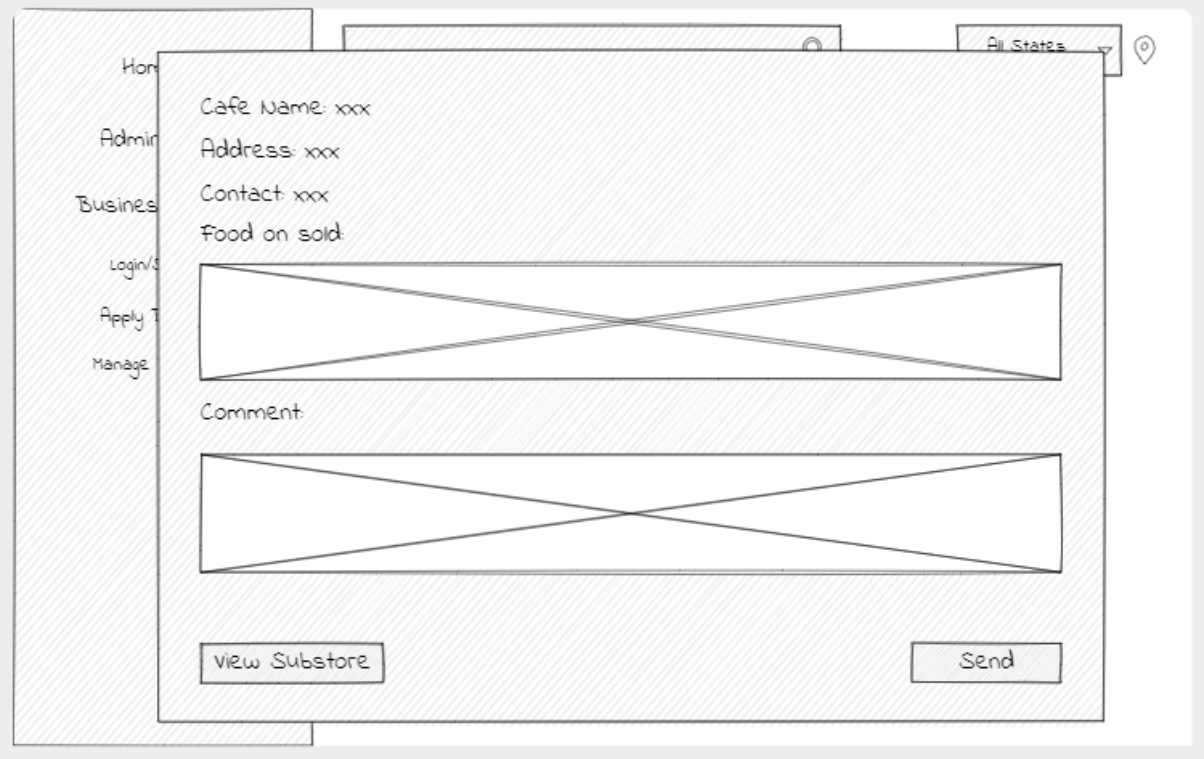

Figure 4.2 Cafeteria details

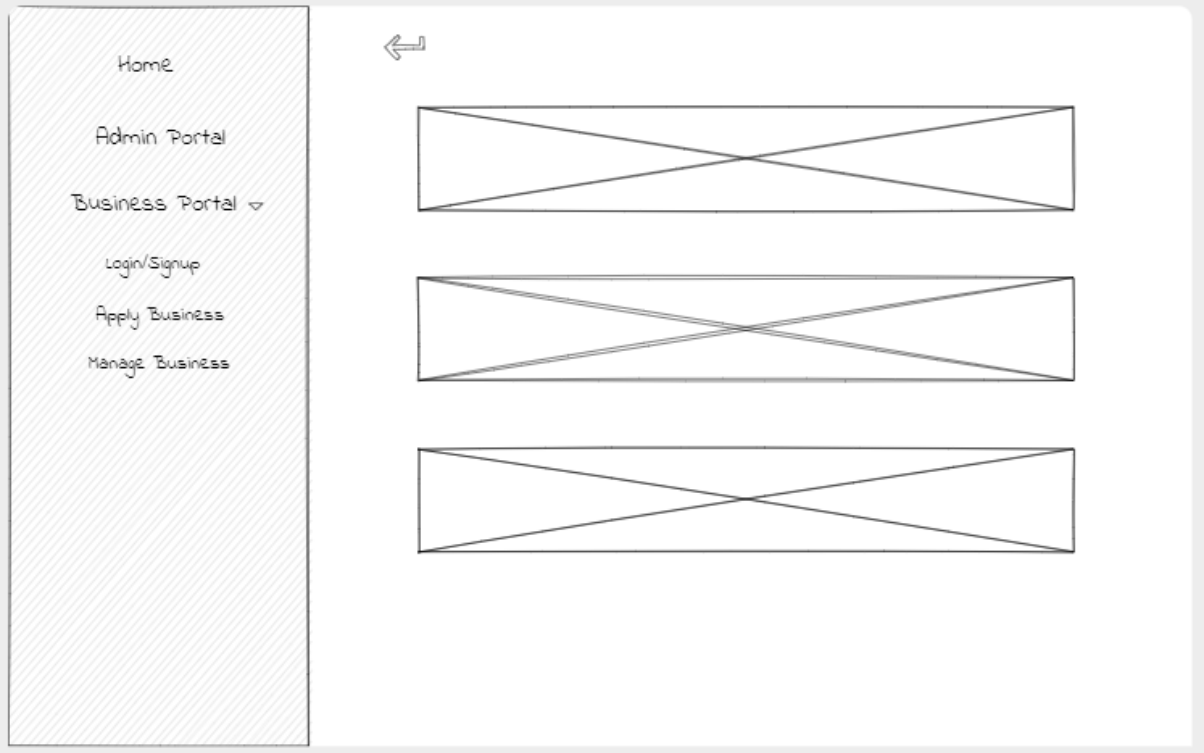

Figure 4.3 View substore

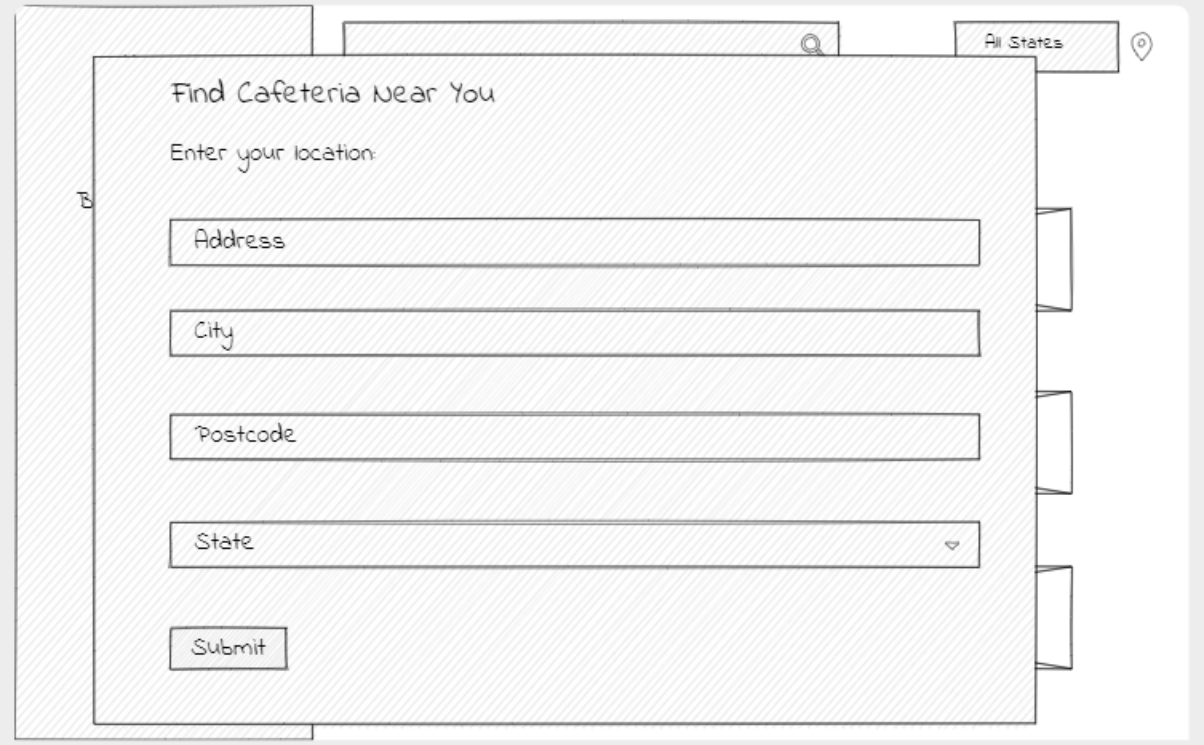

Figure 4.4 Find cafeteria near you

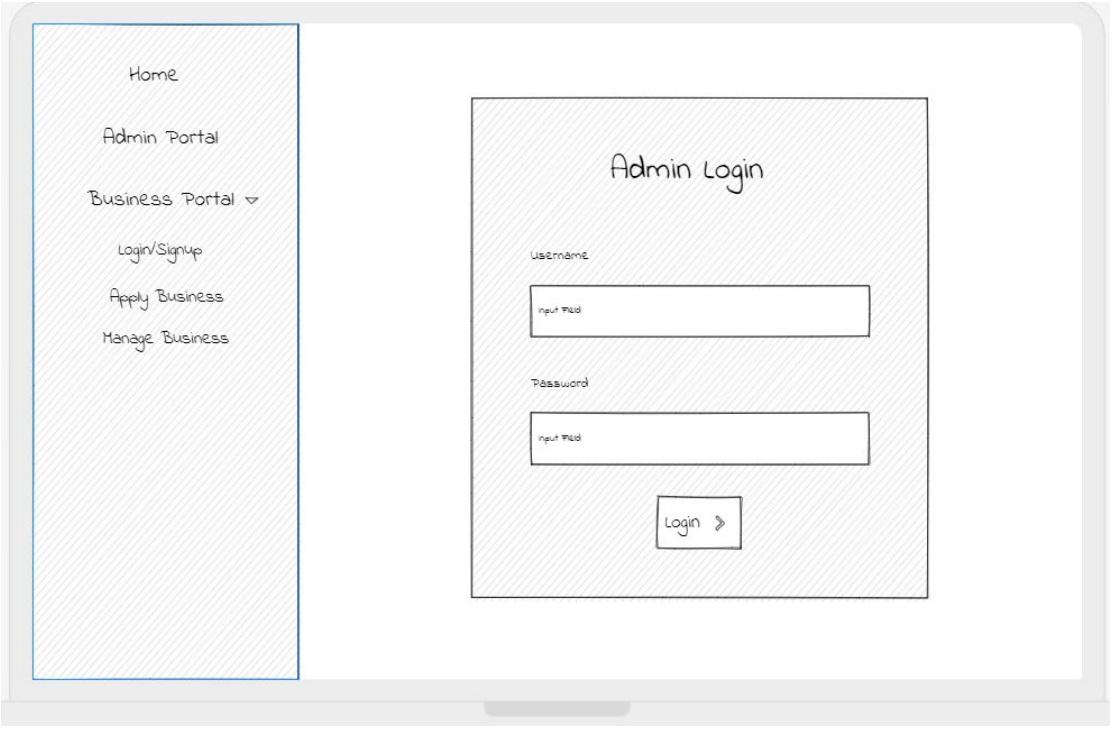

Figure 4.5 Admin login

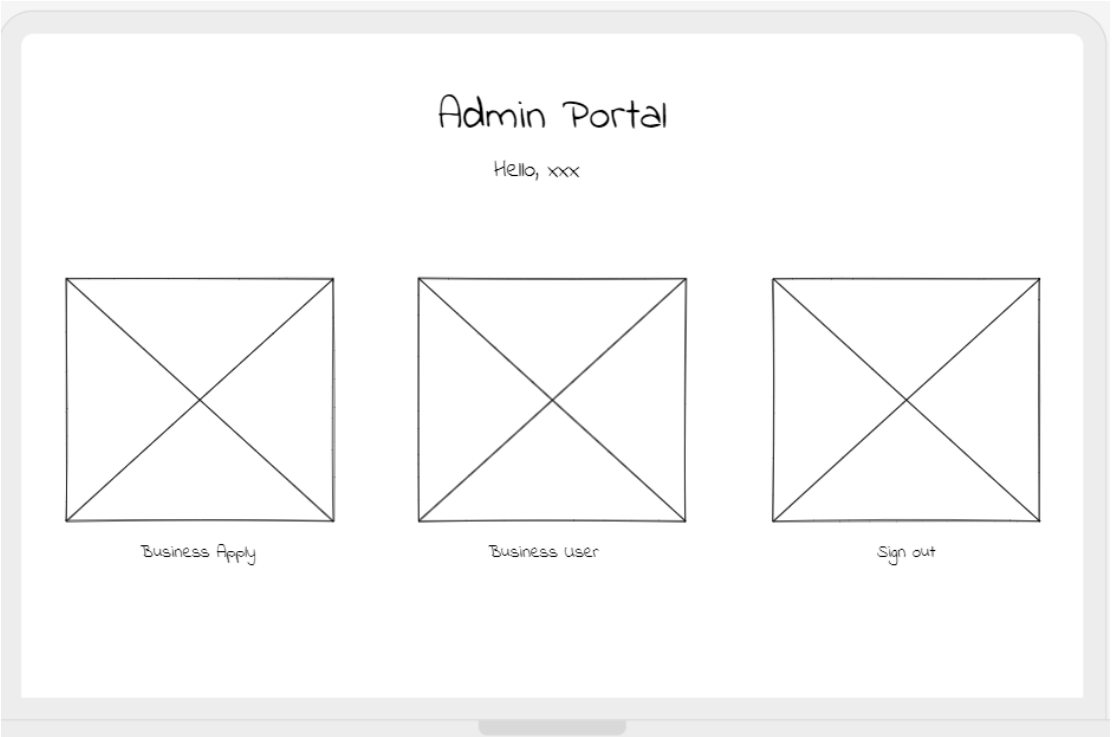

Figure 4.6 Admin portal

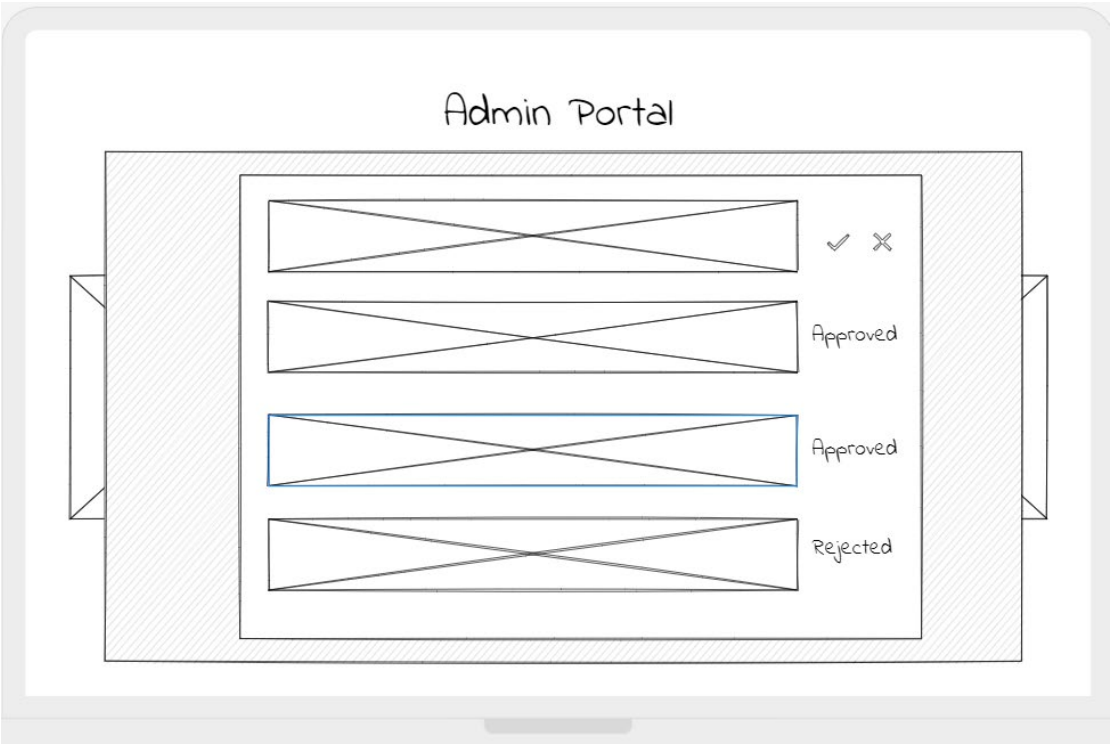

Figure 4.7 Business Apply (Admin portal)

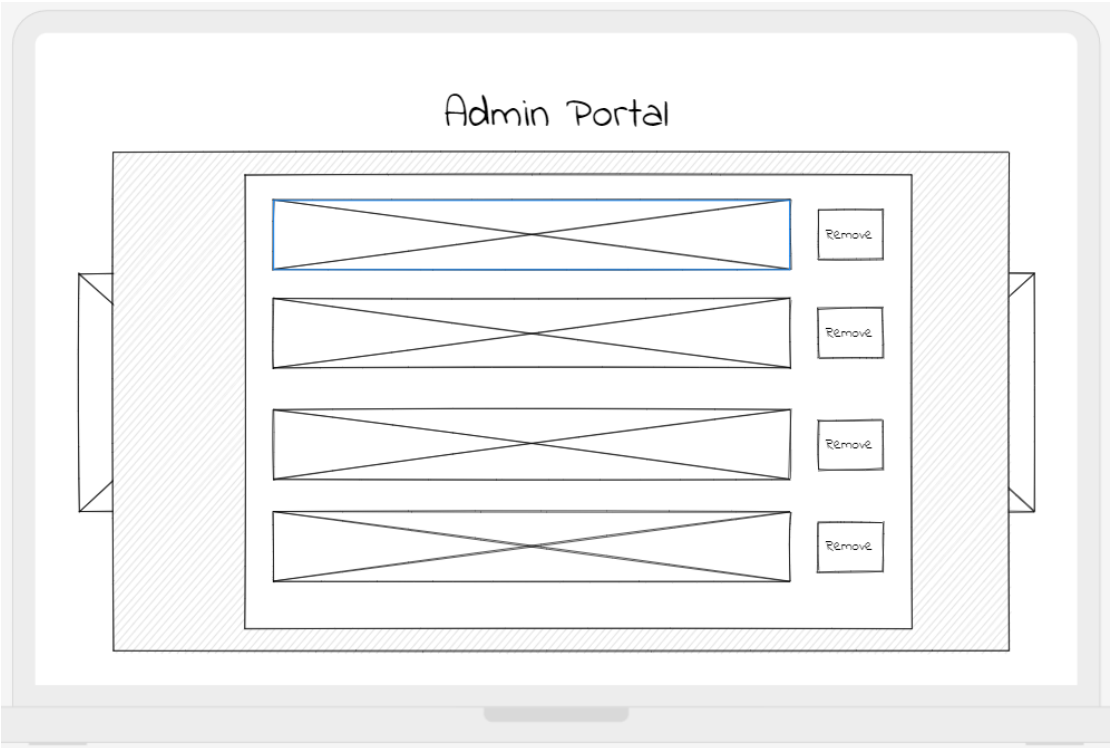

Figure 4.8 Business User (Admin portal)

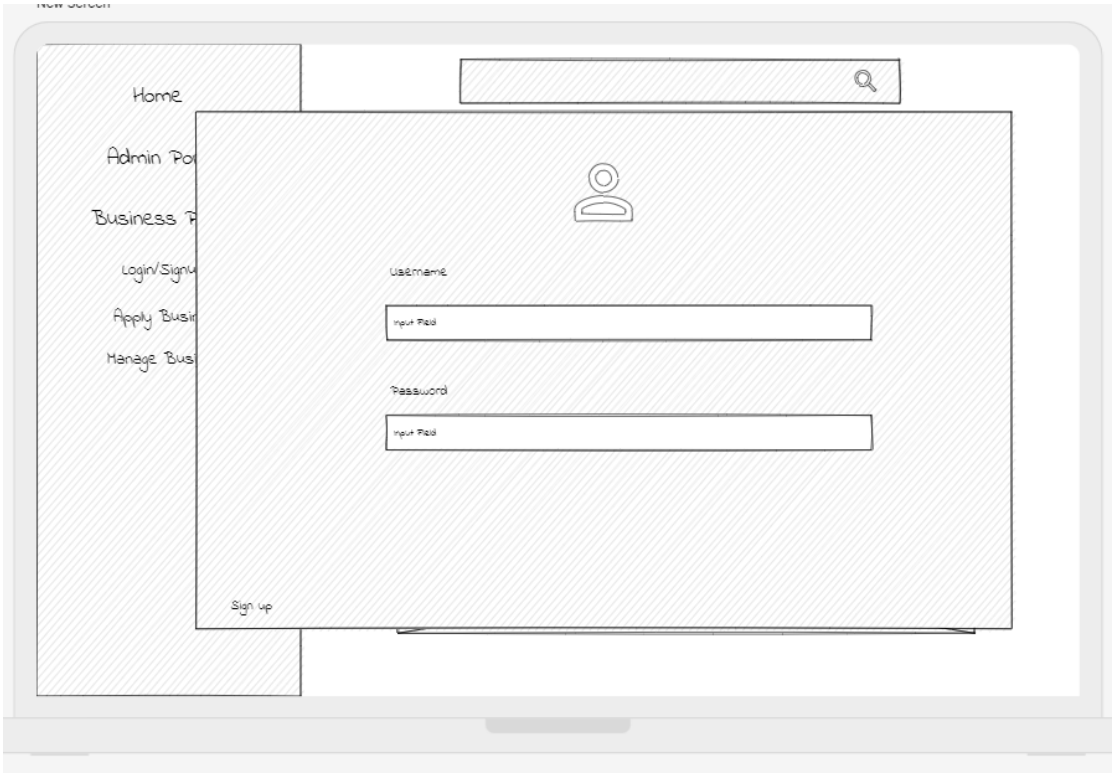

Figure 4.9 Login page (Cafeteria owner)

Figure 4.10 Sign up page (Cafeteria owner)

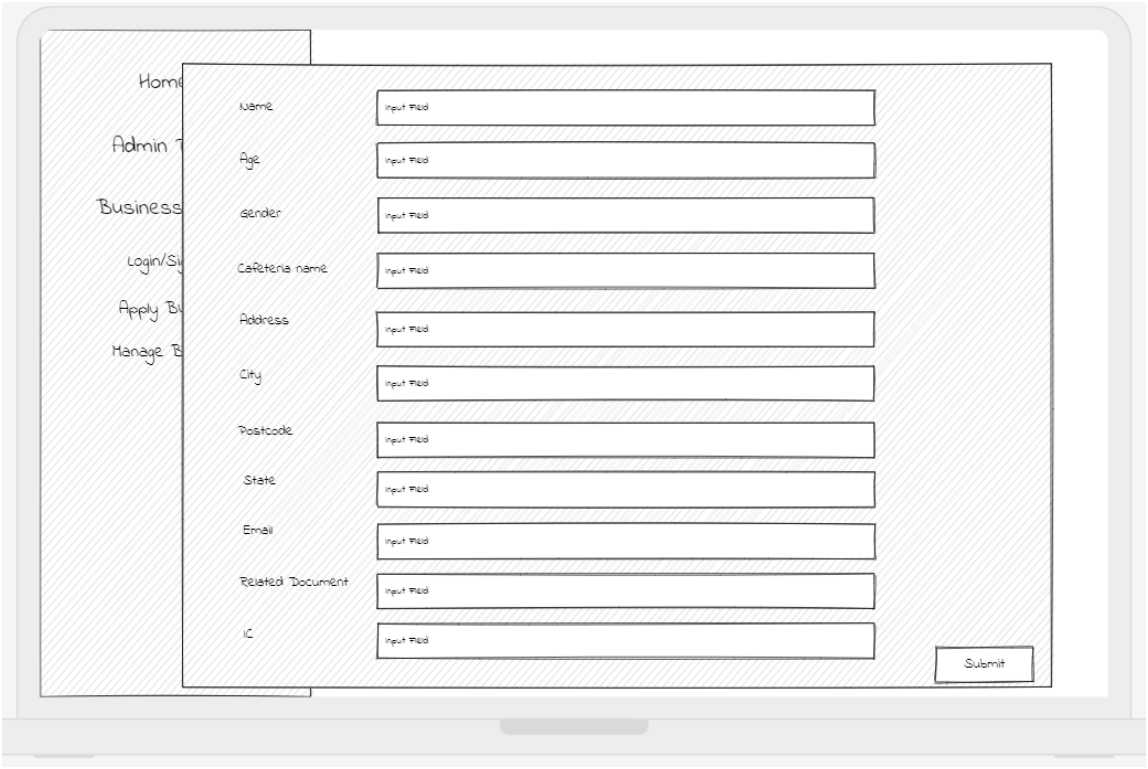

Figure 4.11 Apply business (Cafeteria owner)

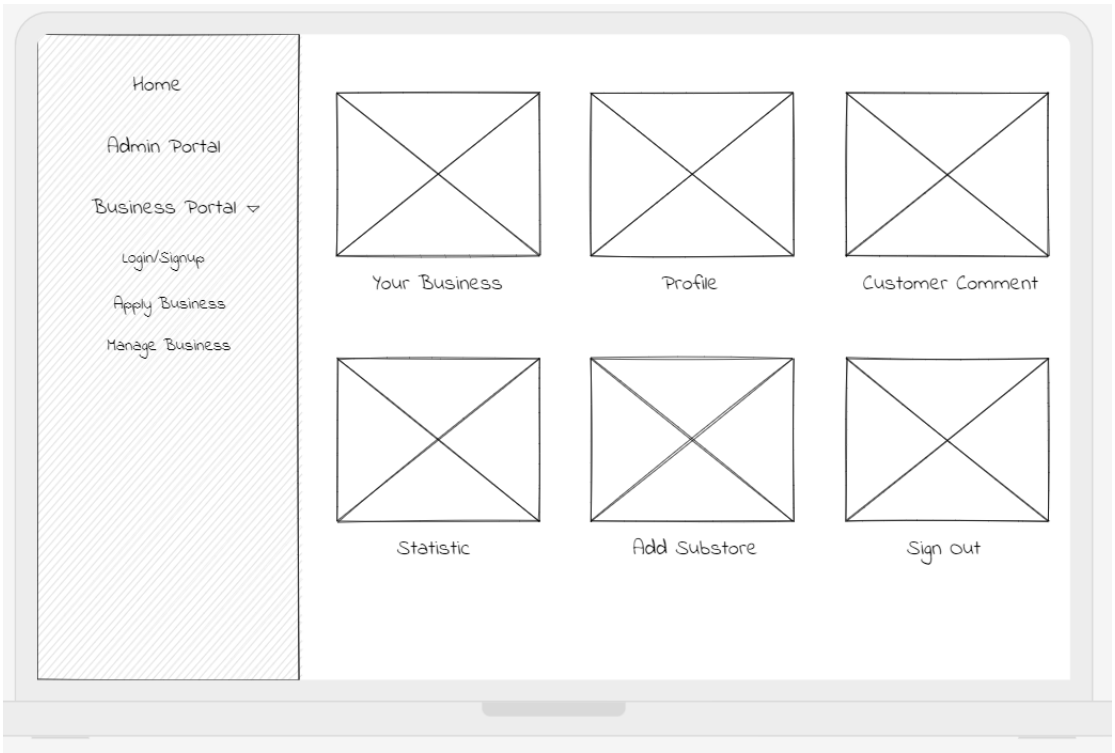

Figure 4.12 Manage business (Cafeteria owner)

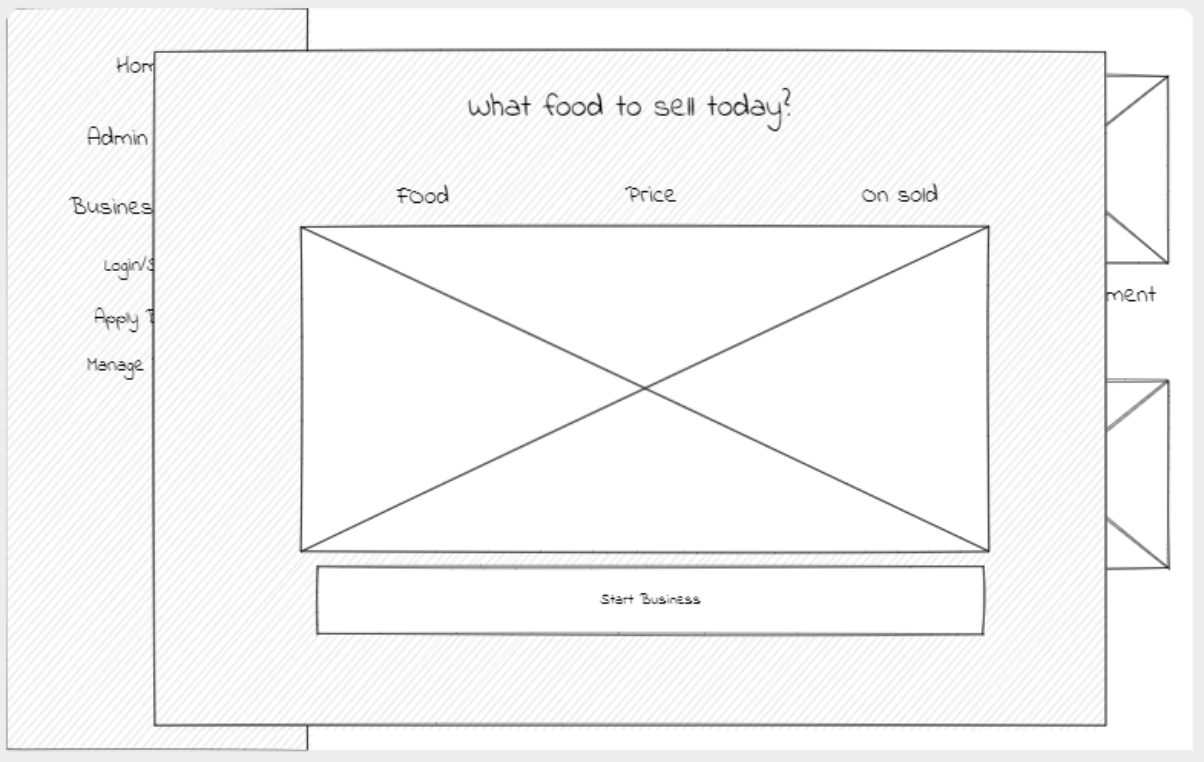

Figure 4.13 Your business (Manage Business)

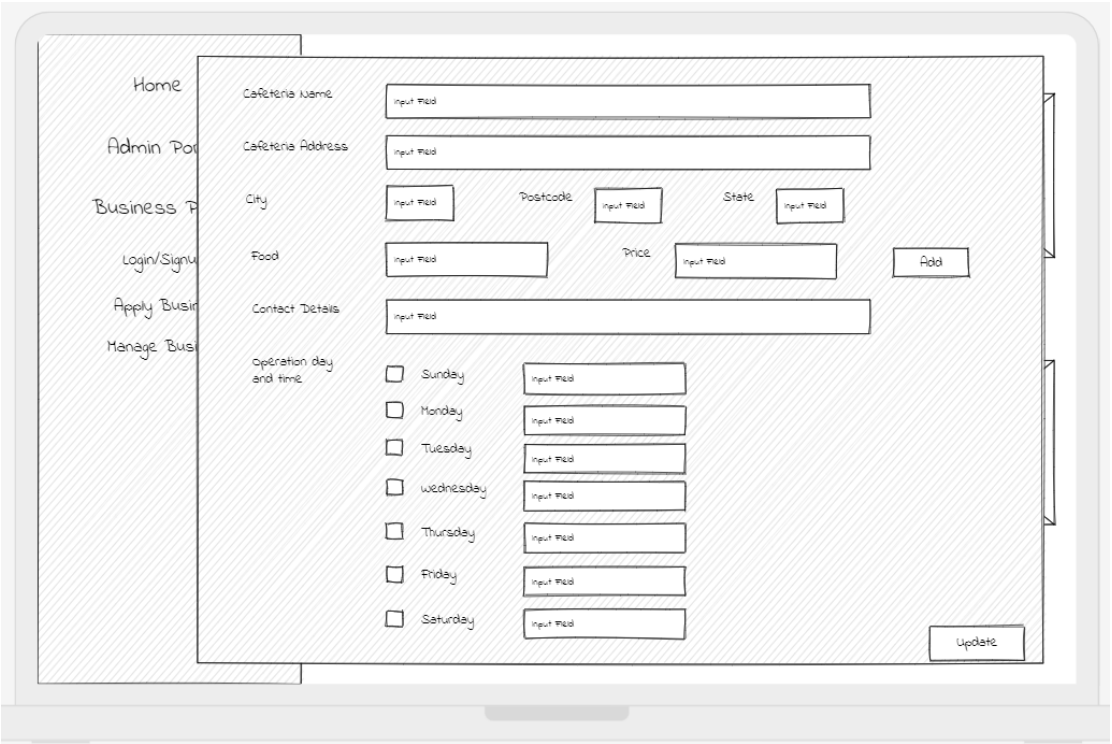

Figure 4.14 Profile (Manage Business)

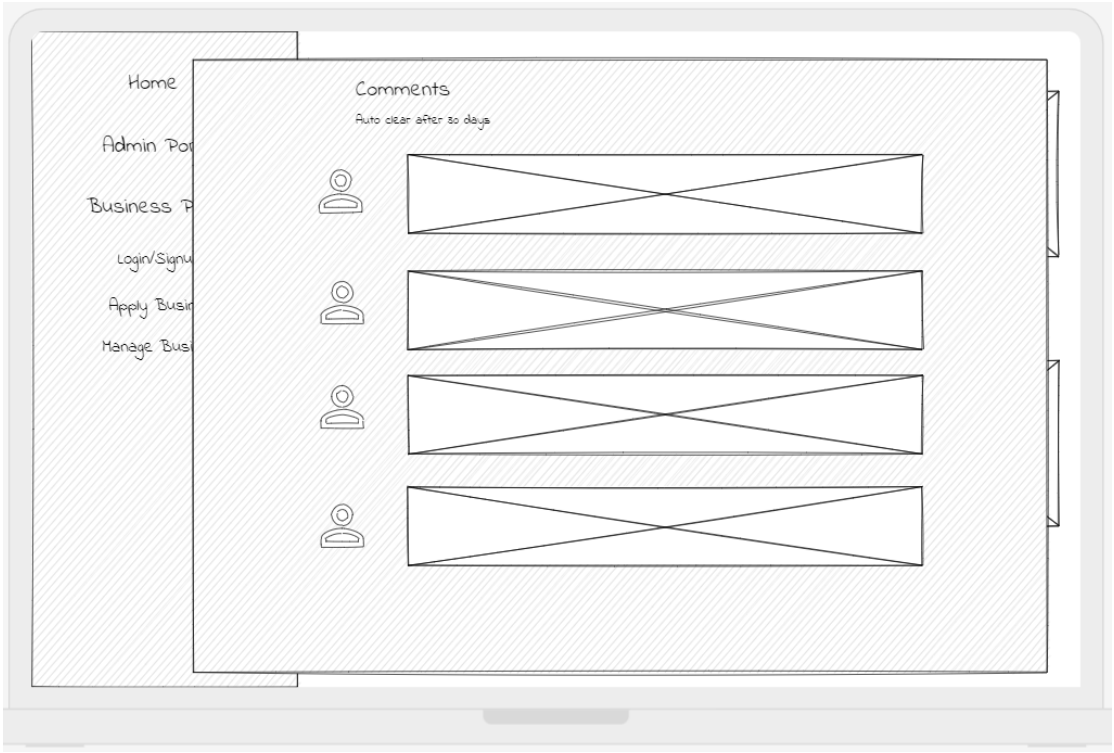

Figure 4.15 Customer Comment (Manage Business)

Figure 4.16 Statistics (Manage Business)

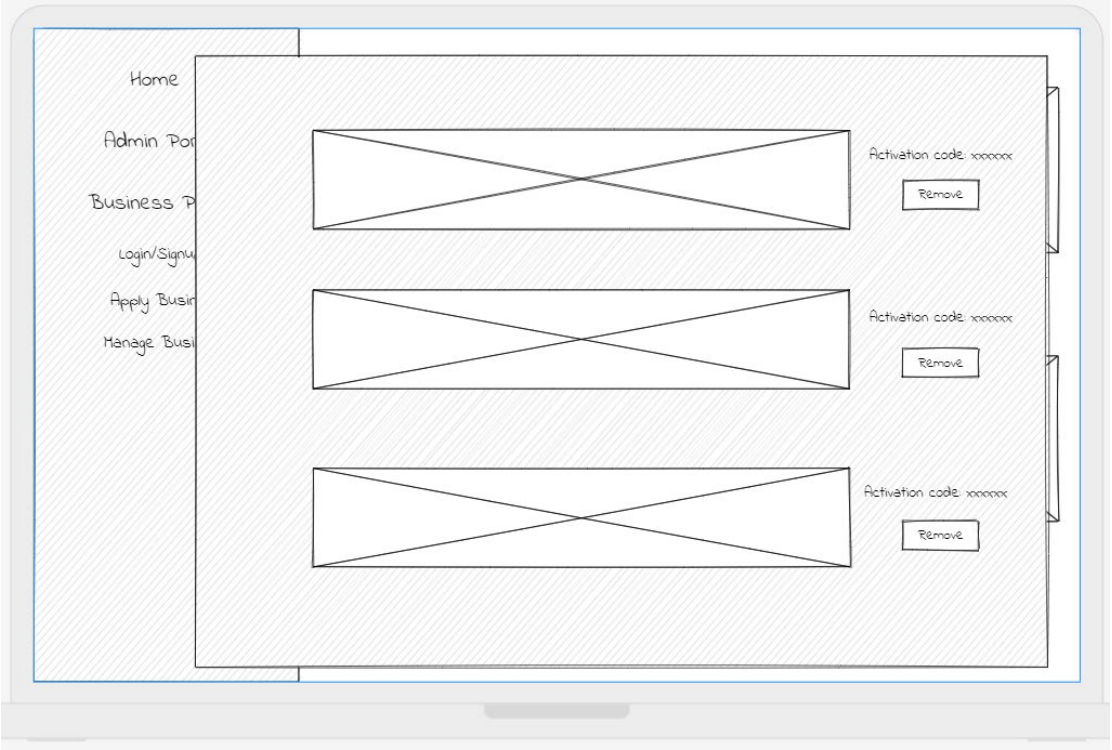

Figure 4.17 Add Substore (Manage Business)

Chapter 5

System Implementation

5.1 Requirement Specification

5.1.1 Hardware

The hardware involved in this project is computer and mobile device. A computer is used for development such as UI design, coding and testing. A mobile device is only used for testing purpose and make sure that the web application is mobile responsive.

Table 5.0 Specifications of laptop

Description	Specifications
Model	Acer Aspire 3
Processor	Intel Core i5-10210U
Operating System	Windows 11
Graphic	NVIDIA GeForce MX230
Memory	12GB DDR4 RAM
Storage	512GB SSD

5.1.2 Software

Table 5.1 Software used

Description	Software used
Compiler	Visual Studio Code
Database	phpMyAdmin
Web Server	XAMPP server

5.1.3 Programming Language

HTML, CSS, PHP, JavaScript, SQL

5.2 Timeline

Figure 5.0 IIPSPW gantt chart

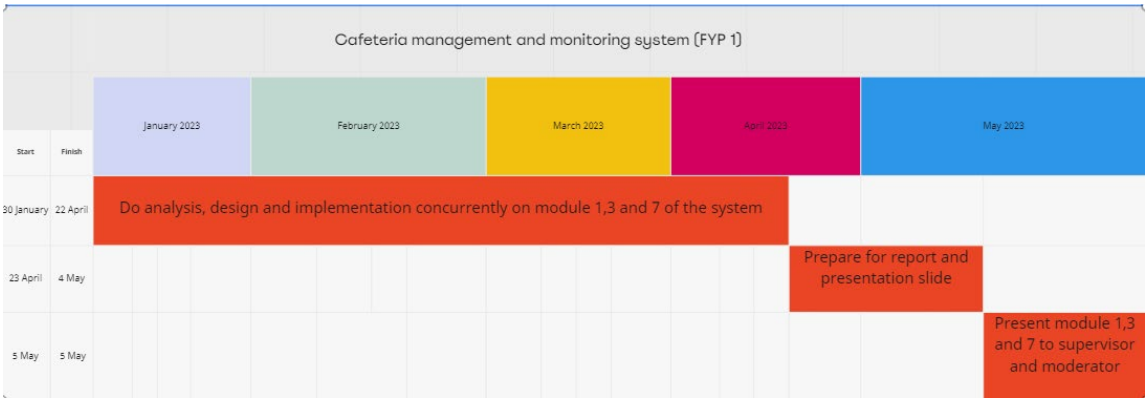

Figure 5.1 FYP1 gantt chart

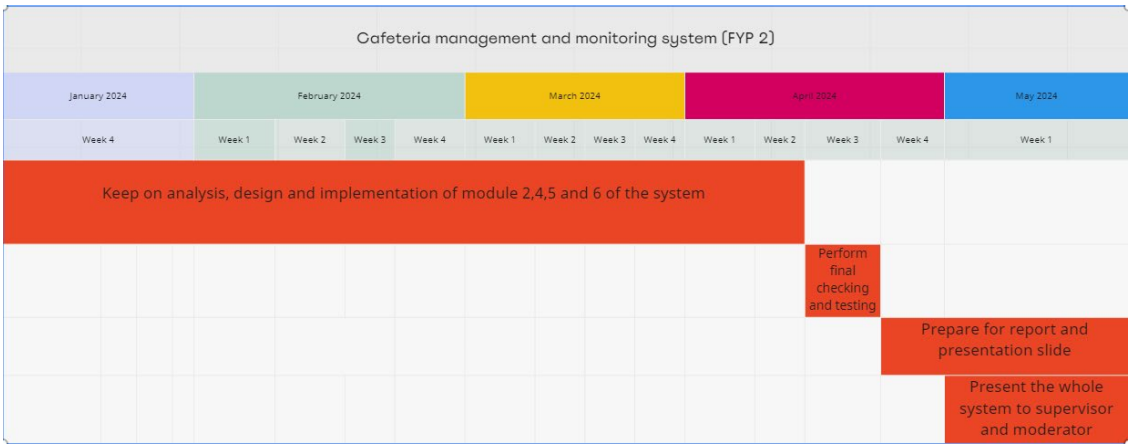

Figure 5.2 FYP2 gantt chart

5.3 Operating Manual

Customer

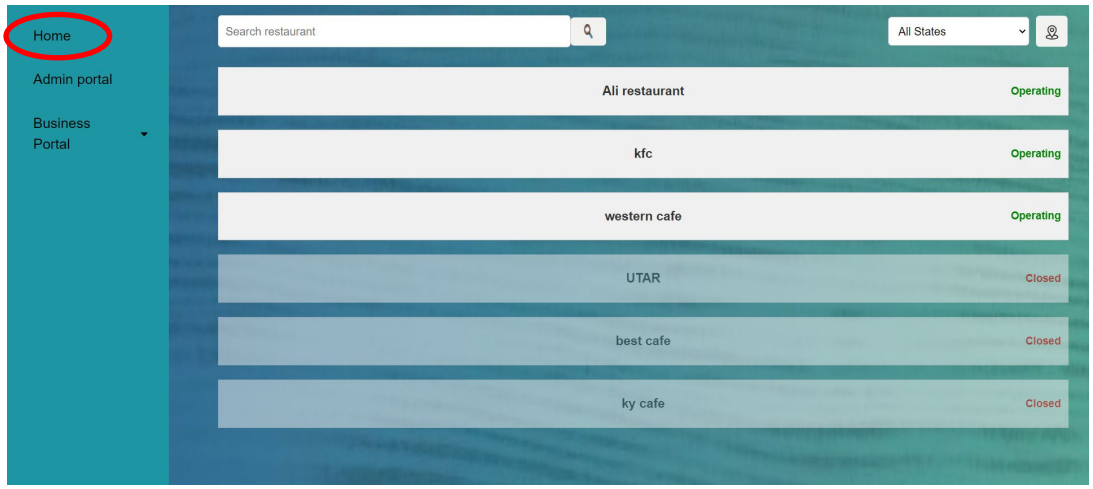

Figure 5.3 Operating Manual

User can view all the cafeteria with operating status at the Home page.

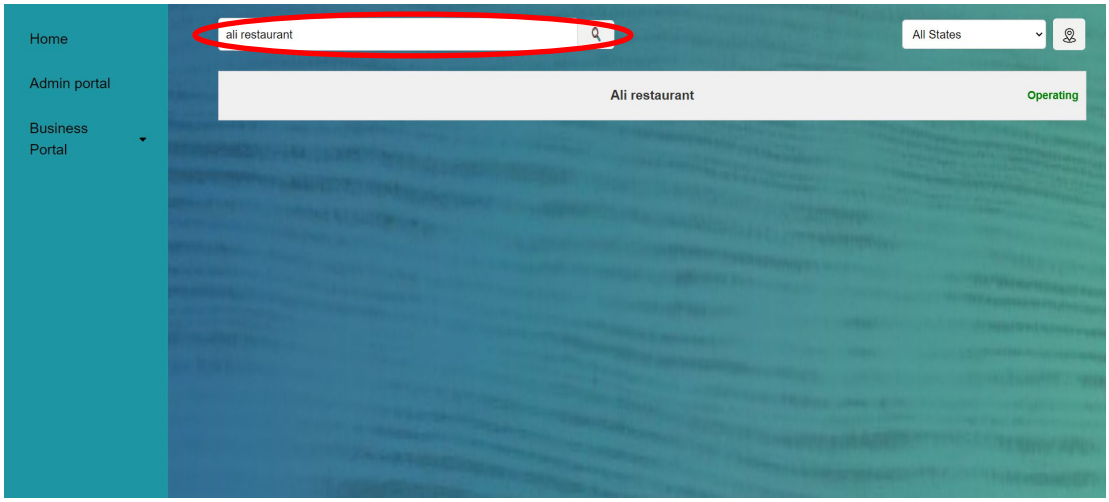

Figure 5.4 Operating Manual

User can search the restaurant in the search bar.

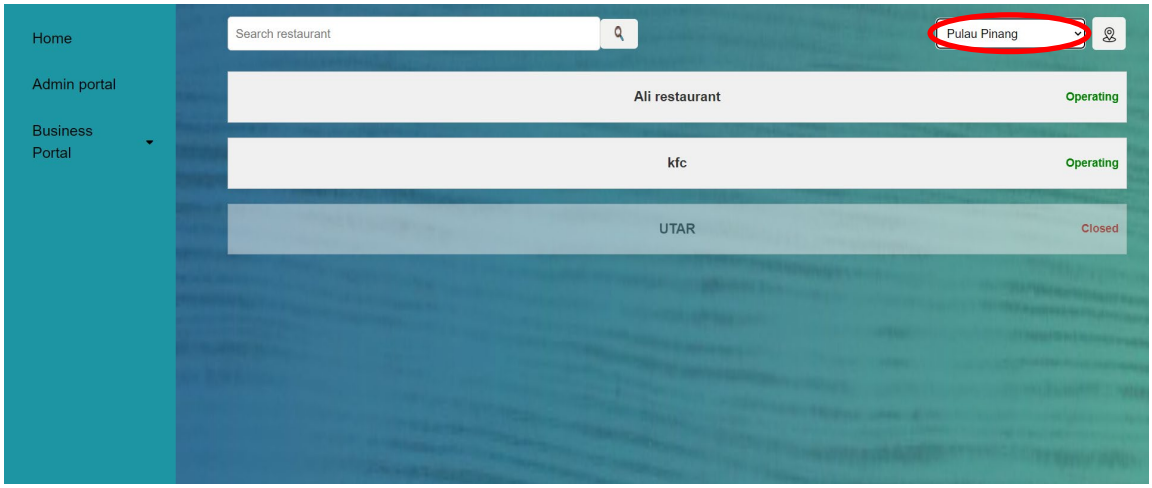

Figure 5.5 Operating Manual

User can filter the cafeteria by state.

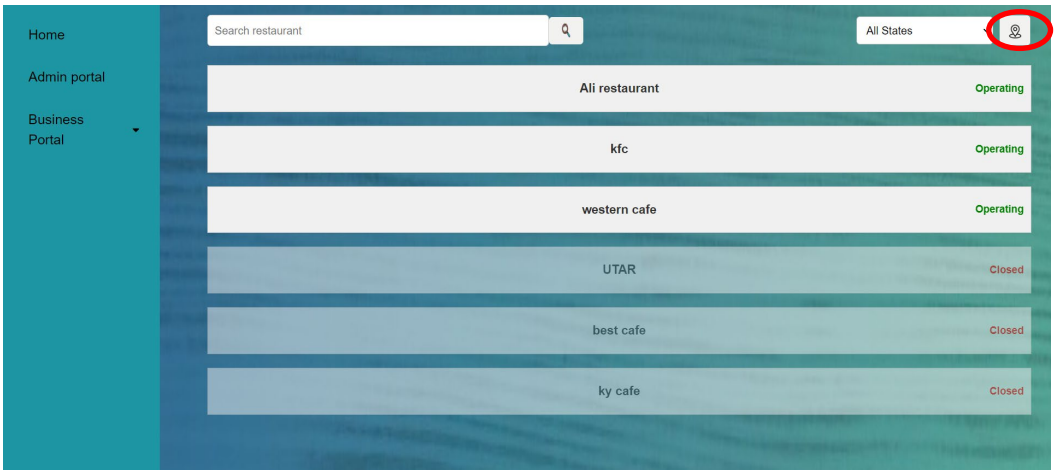

Figure 5.6 Operating Manual

To find the cafeteria near you, click on the button with the location icon.

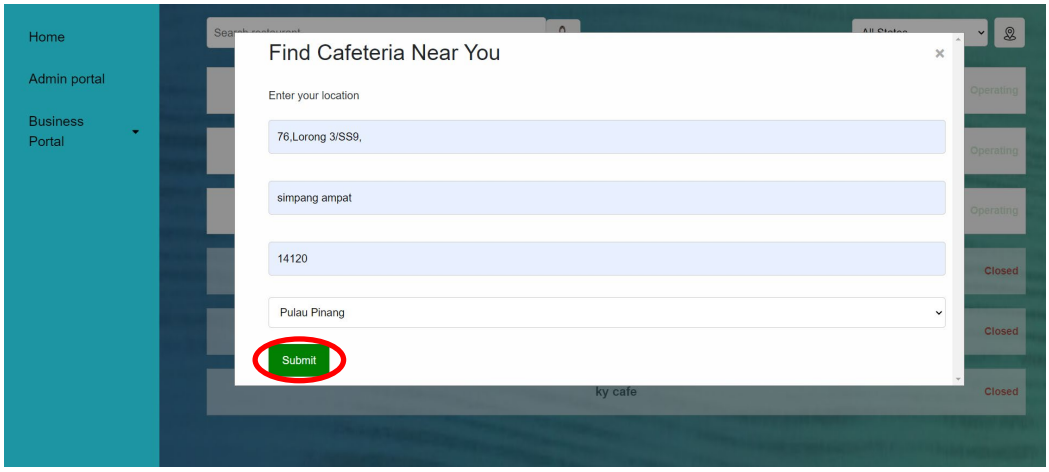

Figure 5.7 Operating Manual

Key in all the address details and click “Submit”.

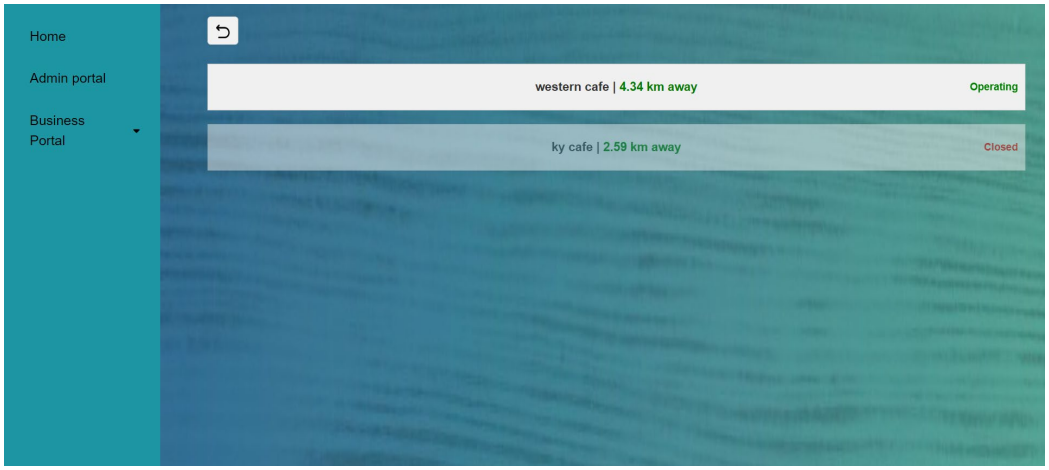

Figure 5.8 Operating Manual

The system will show the cafeteria in your area with the exact distance.

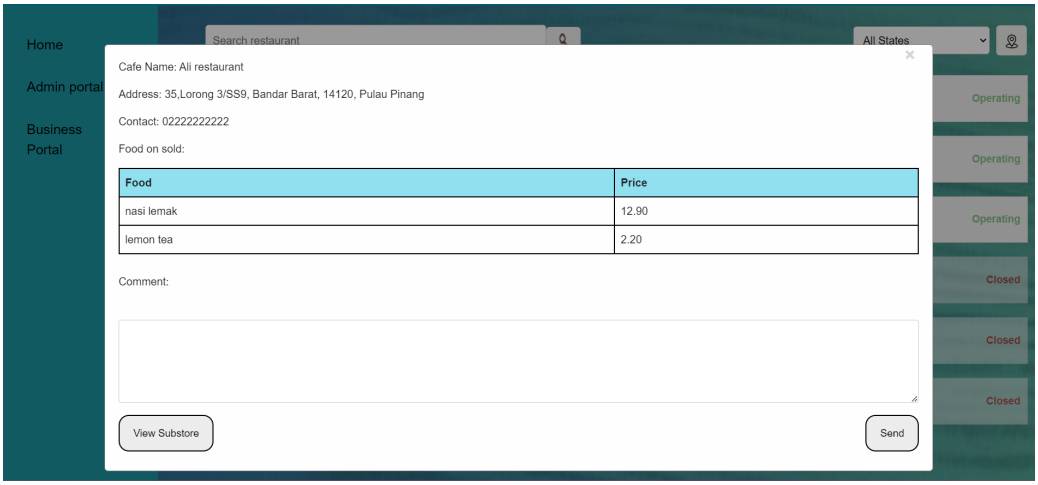

Figure 5.9 Operating Manual

Click on the particular cafeteria bar to view the details.

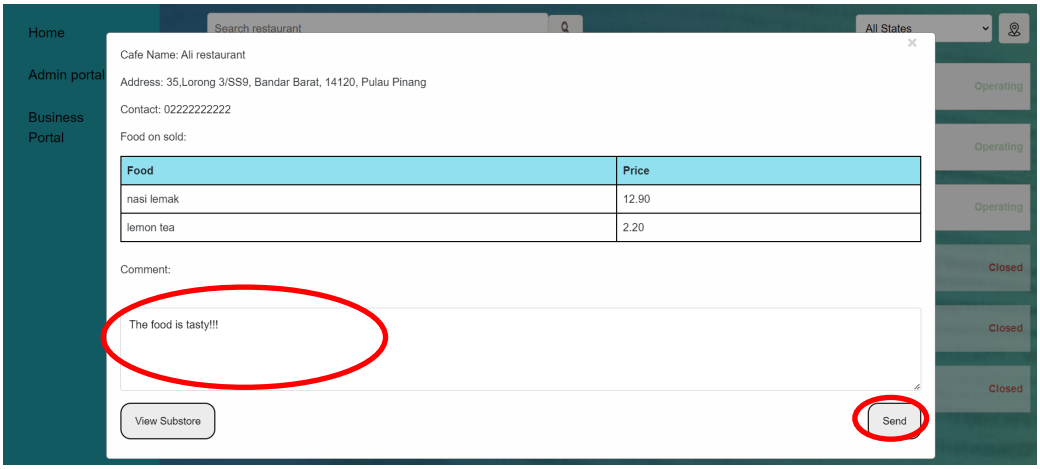

Figure 5.10 Operating Manual

Customer can comment the cafeteria by leaving the comment in the comment box and click "Send".

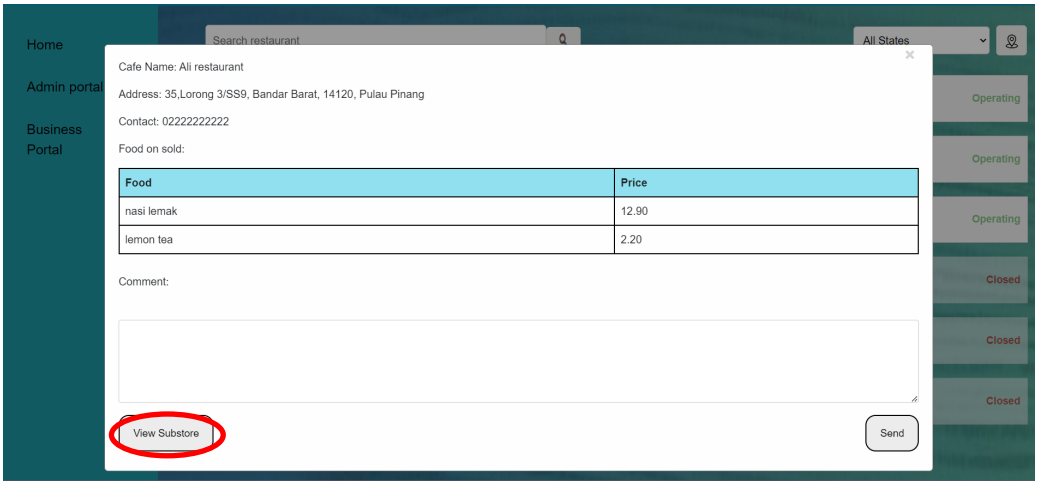

Figure 5.11 Operating Manual

To view the substore of the particular cafeteria, click the "View Substore".

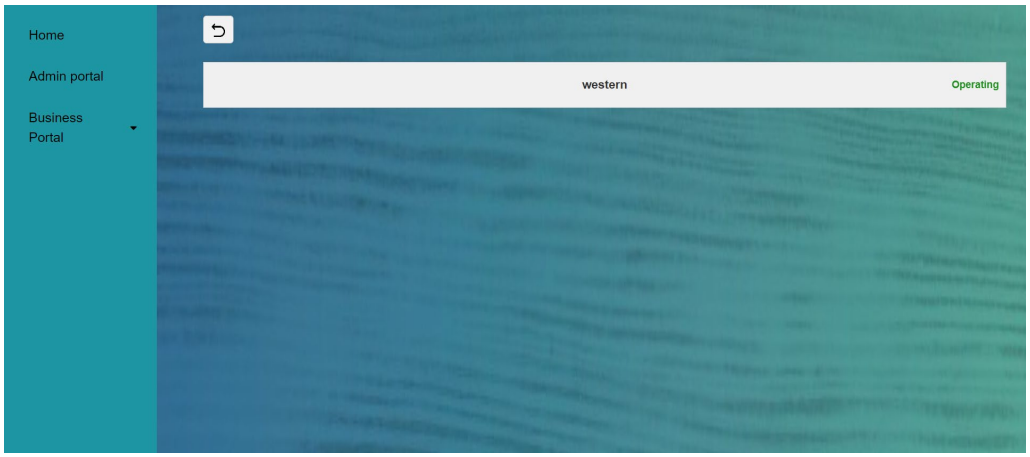

Figure 5.12 Operating Manual

The system will then display all the substores in particular cafeteria.

Cafeteria Owner

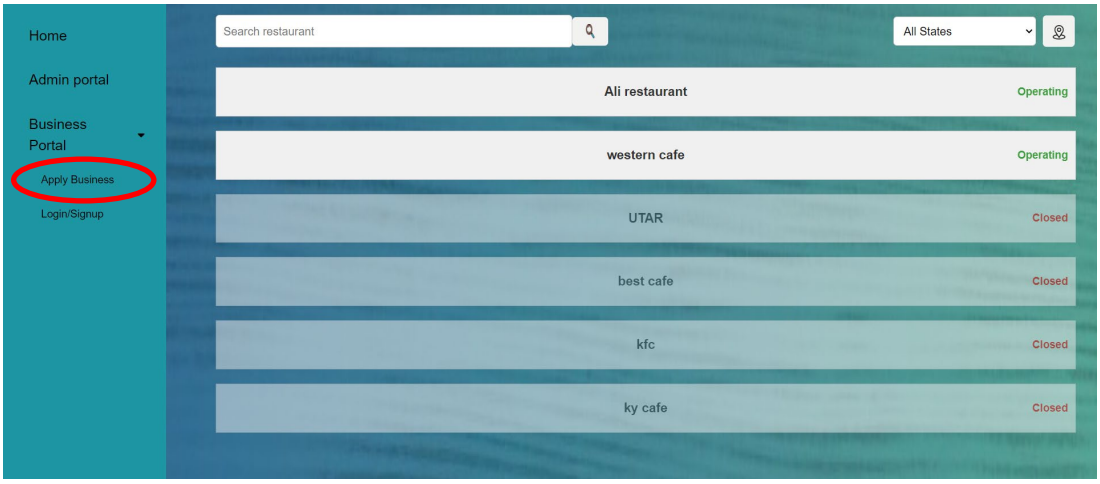

Figure 5.13 Operating Manual

To start display business on the website, click on Business Portal > Apply Business.

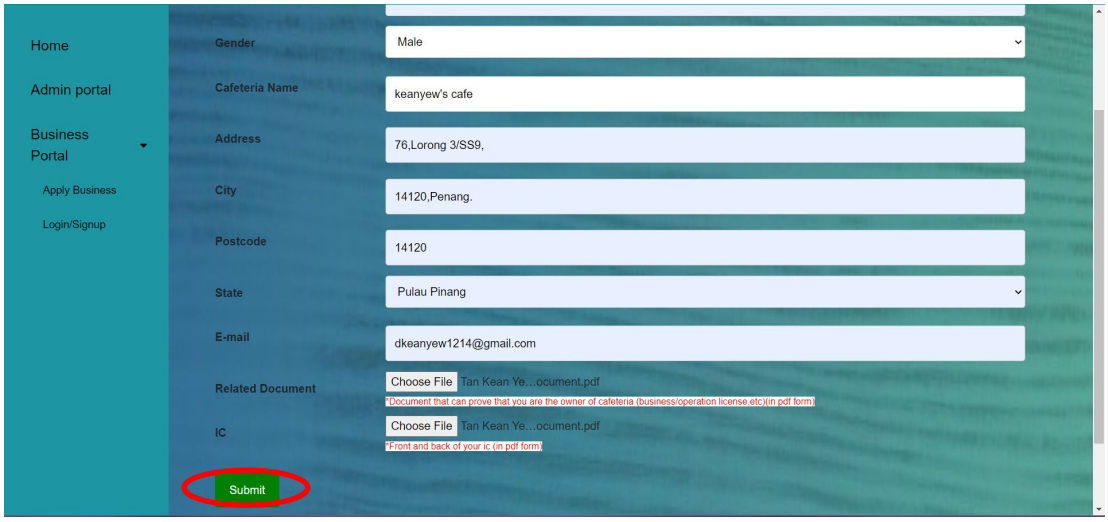

Figure 5.14 Operating Manual

Fill in all the information and upload necessary document. Click submit after all the information has been filled in.

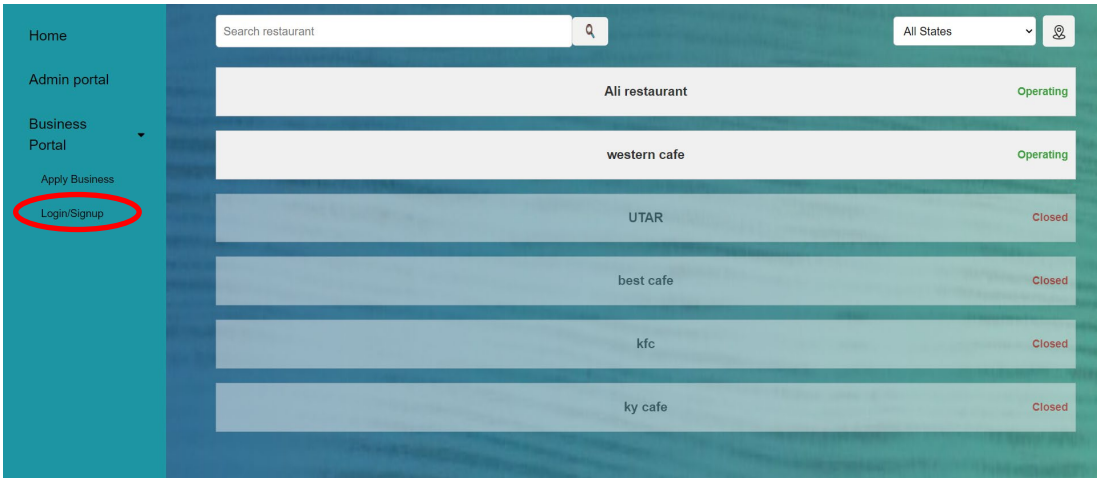

Figure 5.15 Operating Manual

After admin verified that all the document and information is legit and real, you will receive an activation code. Click Business Portal > Login/Signup

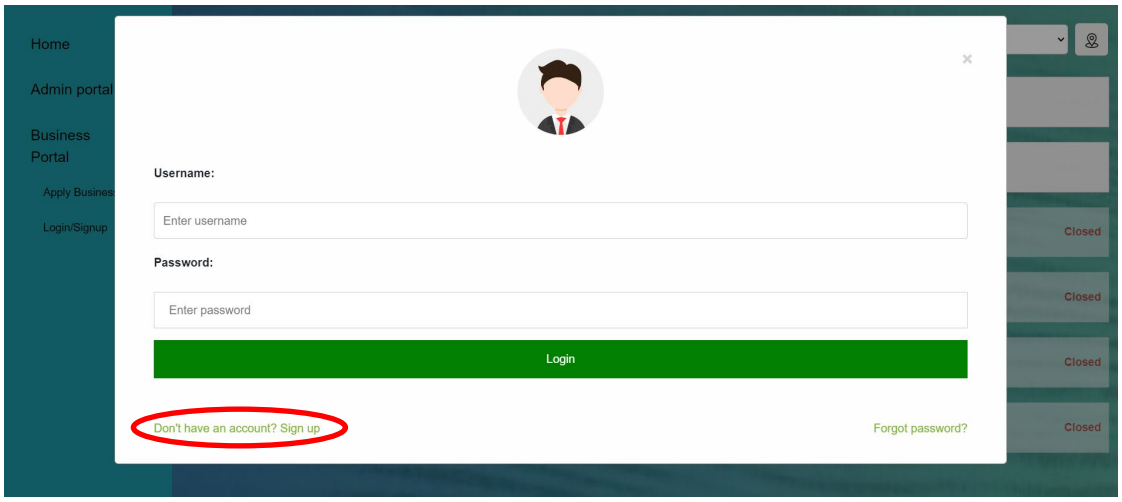

Figure 5.16 Operating Manual

Sign up for a new account.

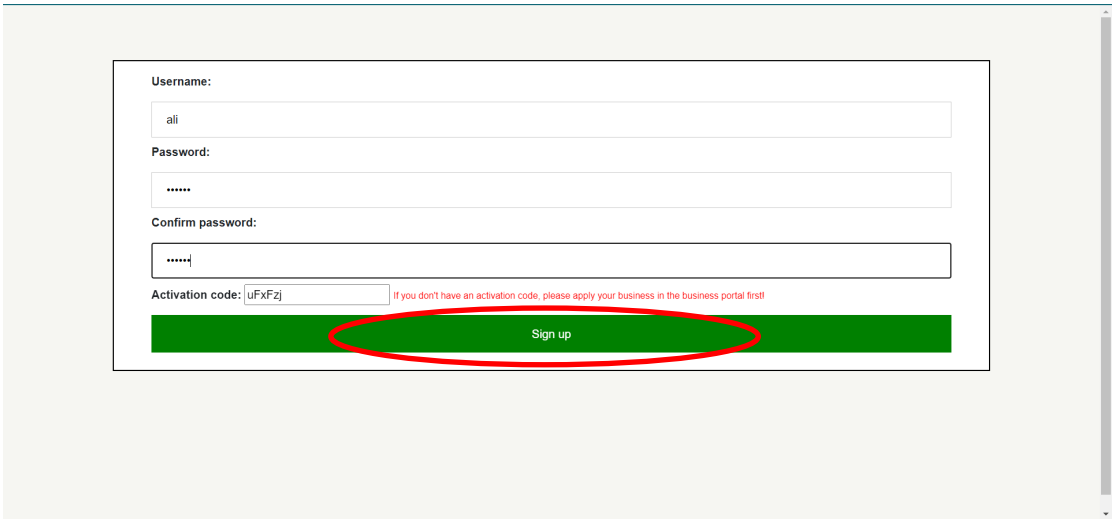

Figure 5.17 Operating Manual

Fill in the username, password and the activation code that get from admin. Click “Sign up” button.

Figure 5.18 Operating Manual

After successfully sign up for new account, proceed back to log in and key in username and password.

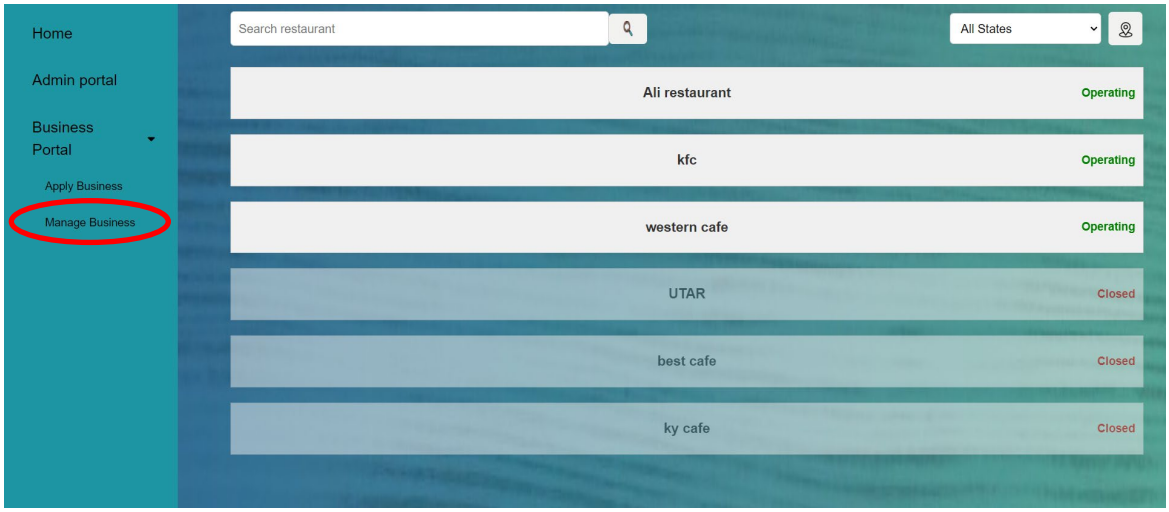

Figure 5.19 Operating Manual

After log in, you should be able to see "Manage Business" under the Business Portal, click on it to perform business actions.

Profile

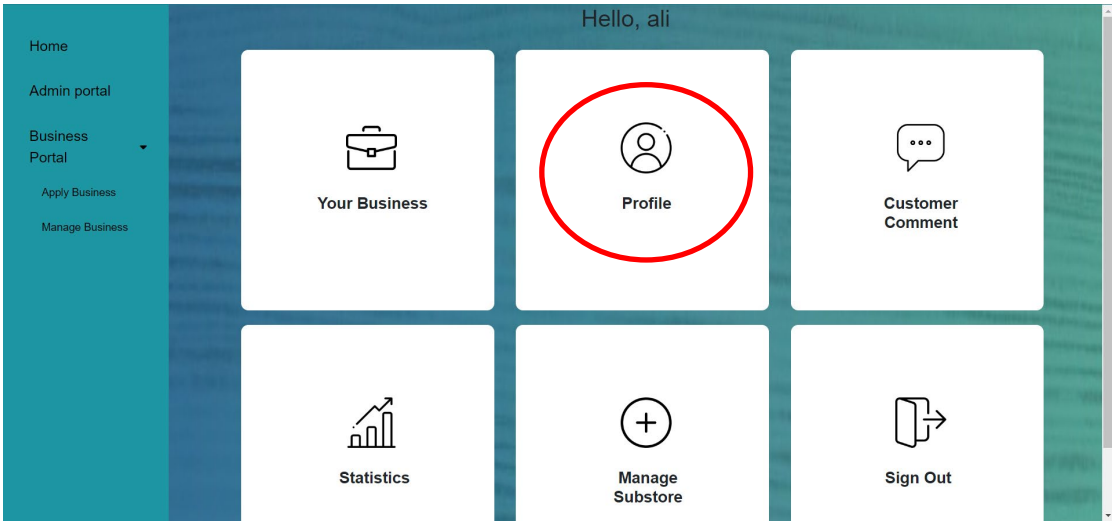

Figure 5,20 Operating Manual

Click on Profile in "Manage Business".

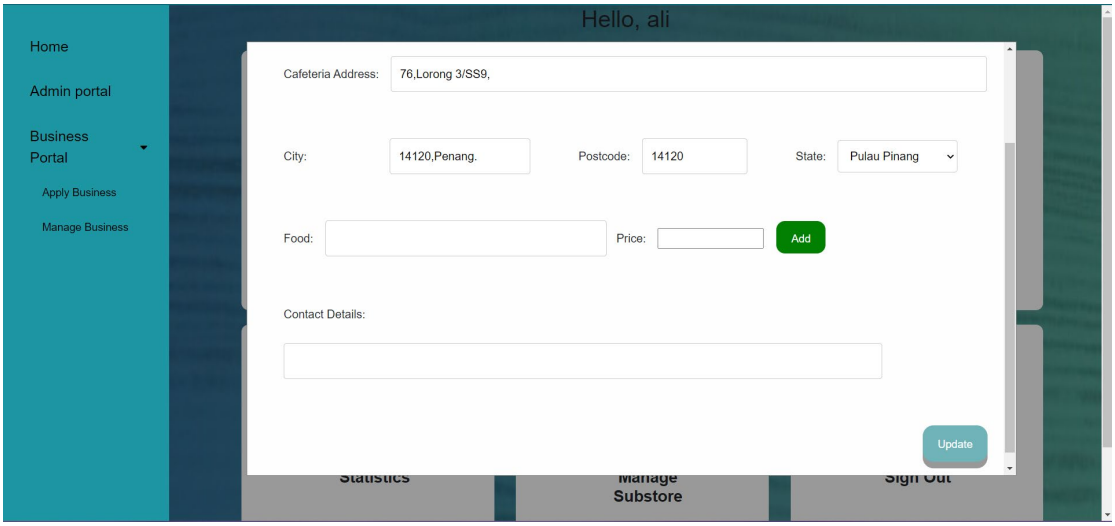

Figure 5.21 Operating Manual

The basic details are prefilled in by the system using the information from apply form. You can use the default information or update yourself manually. Besides, you can also fill in the food that you sold and contact details.

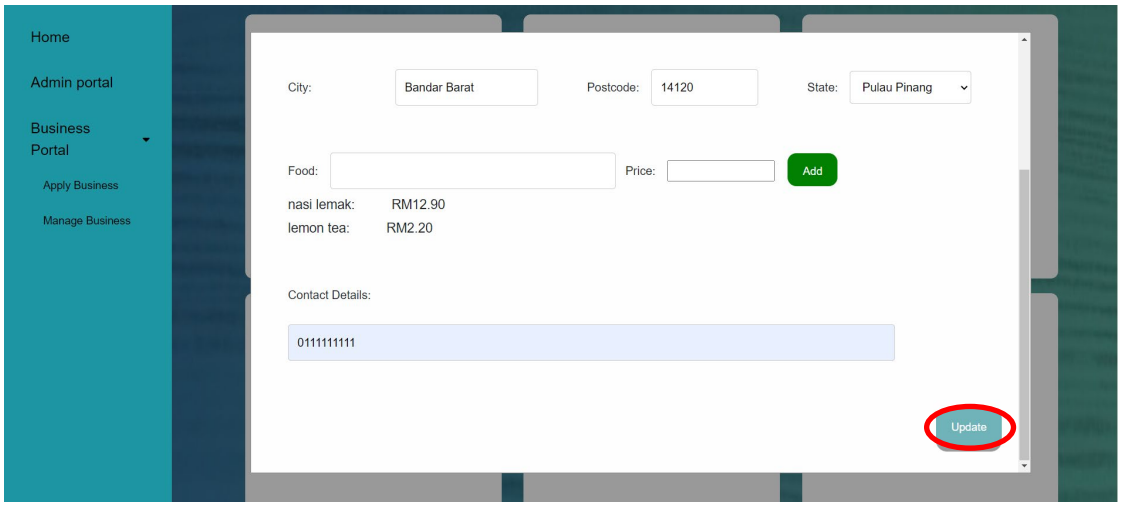

Figure 5.22 Operating Manual

Click on “Update” after all the details has been filled in, then you are done setting up your profile.

Your Business

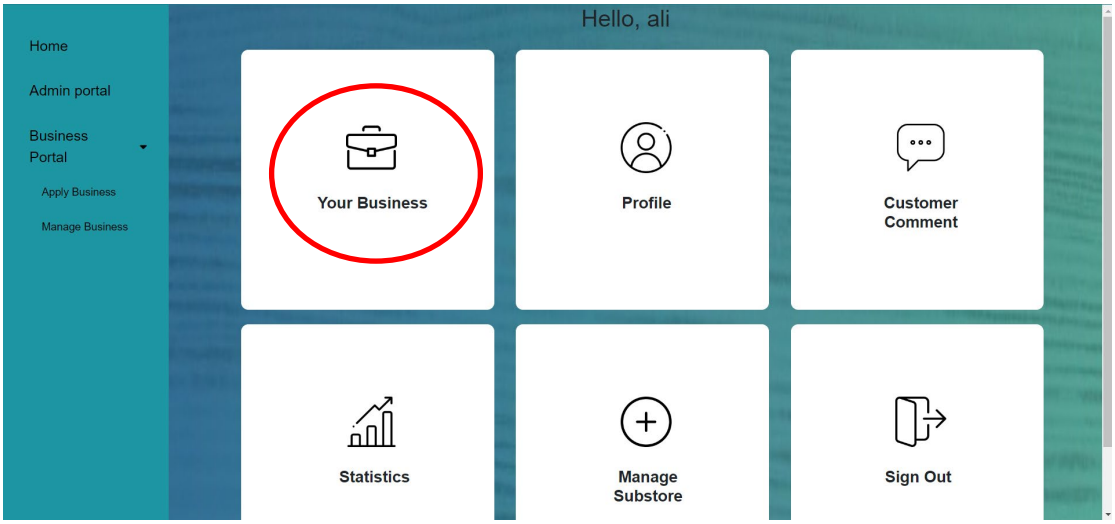

Figure 5.23 Operating Manual

Click on Your Business in “Manage Business”.

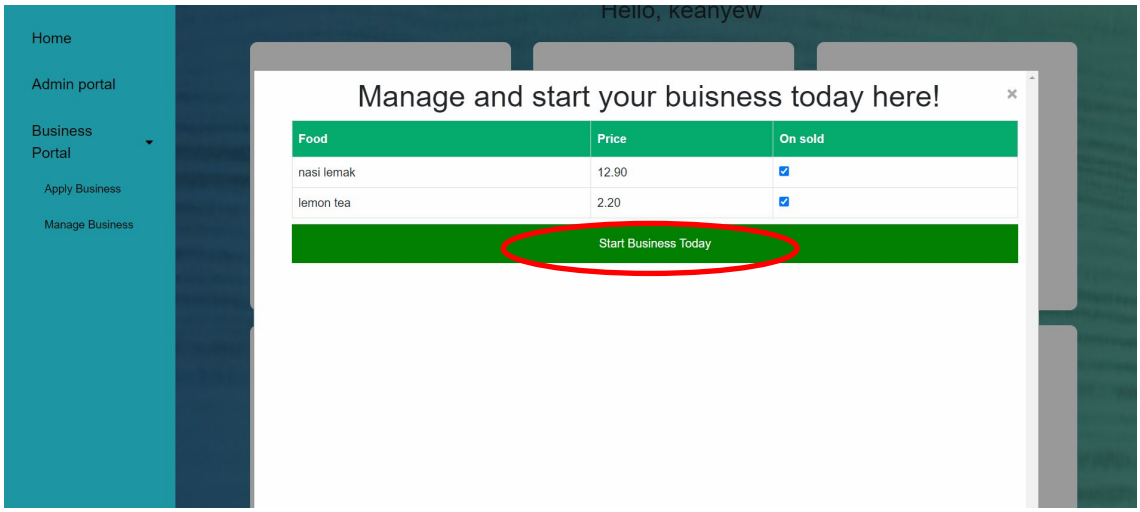

Figure 5.24 Operating Manual

Select the food that you want to sell today and click “Start Business Today”. The status of the cafeteria will then be updated to “Operating” in Home page with the food on sold.

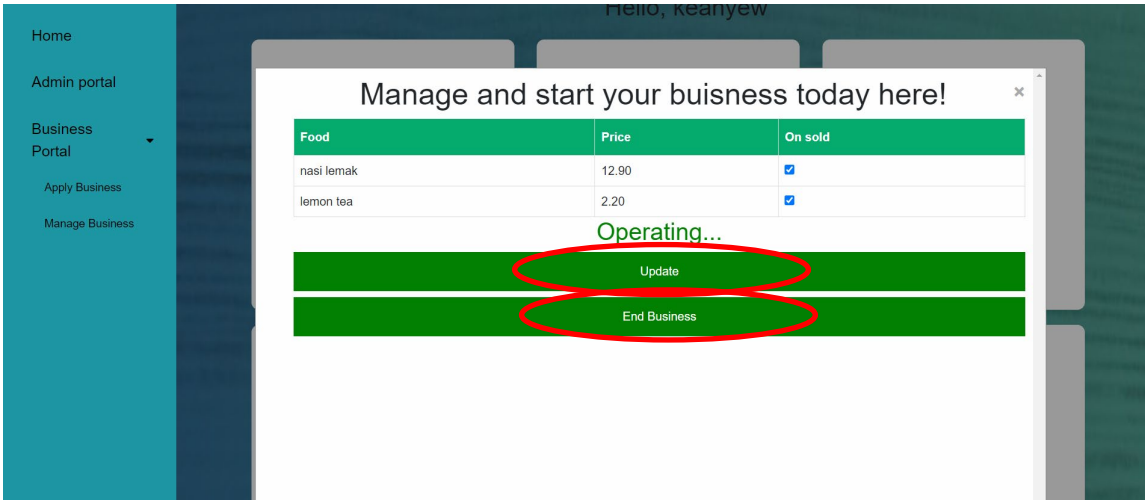

Figure 5.25 Operating Manual

Cafeteria owner can always choose to update the food on sold by clicking the "Update" or choose to end the business by clicking "End Business".

Customer Comment

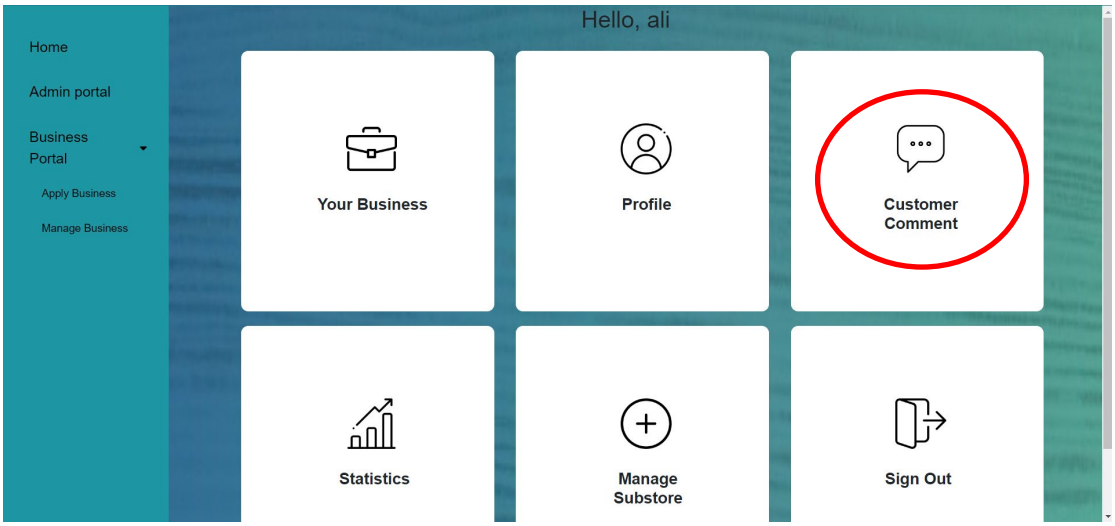

Figure 5.26 Operating Manual

Cafeteria owner can check the customer comment by clicking "Customer Comment".

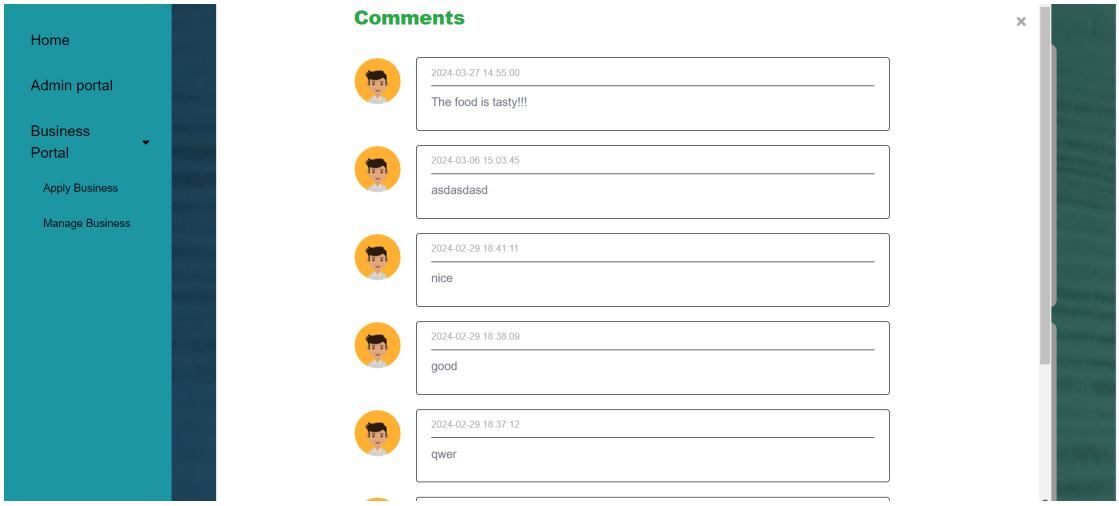

Figure 5.27 Operating Manual

The comments were show anonymously.

Statistics

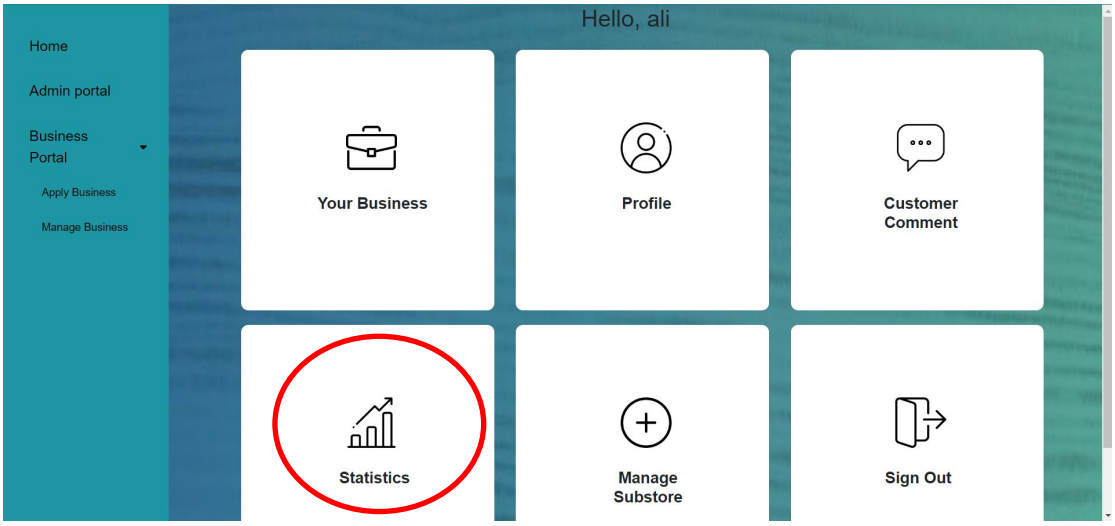

Figure 5.28 Operating Manual

Cafeteria owner can check the cafeteria statistics by clicking the “Statistics”.

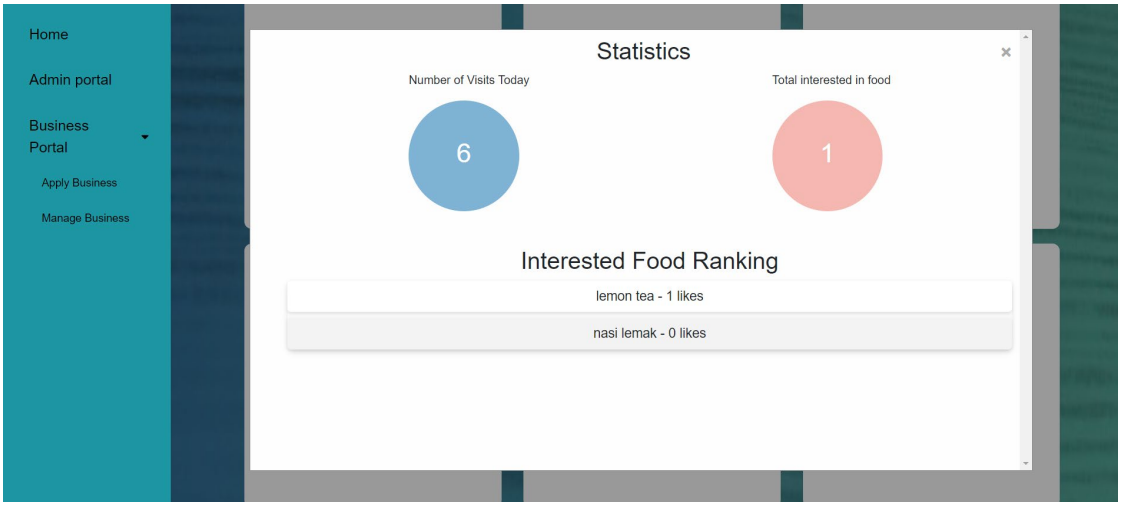

Figure 5.29 Operating Manual

The statistics such as “Number of visits today”, “Total interested in food” and “Interested food ranking” will be displayed.

Substore

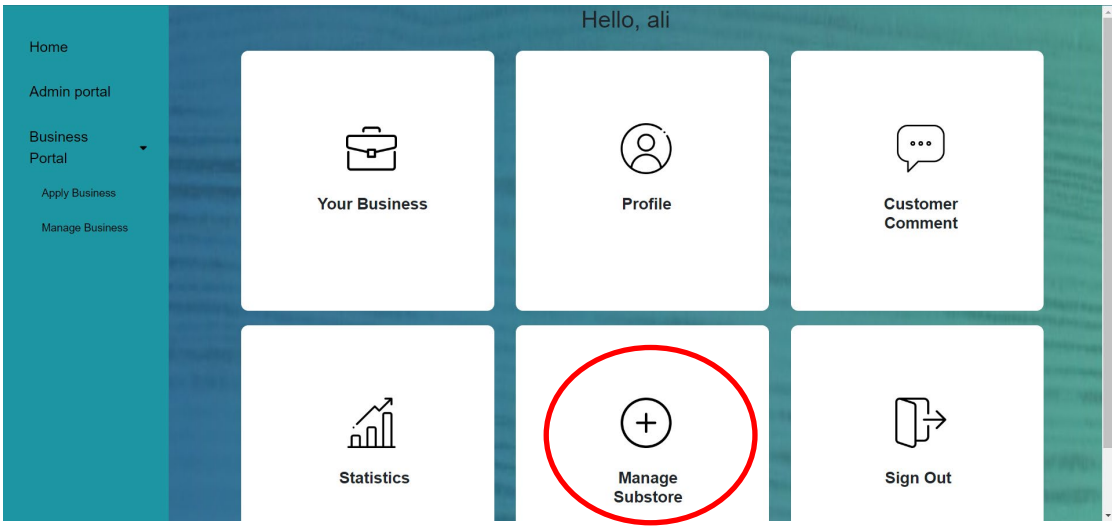

Figure 5.30 Operating Manual

If you are operating a kopitiam or you have substores in your cafeteria, click on Manage Substore in “Manage Business”.

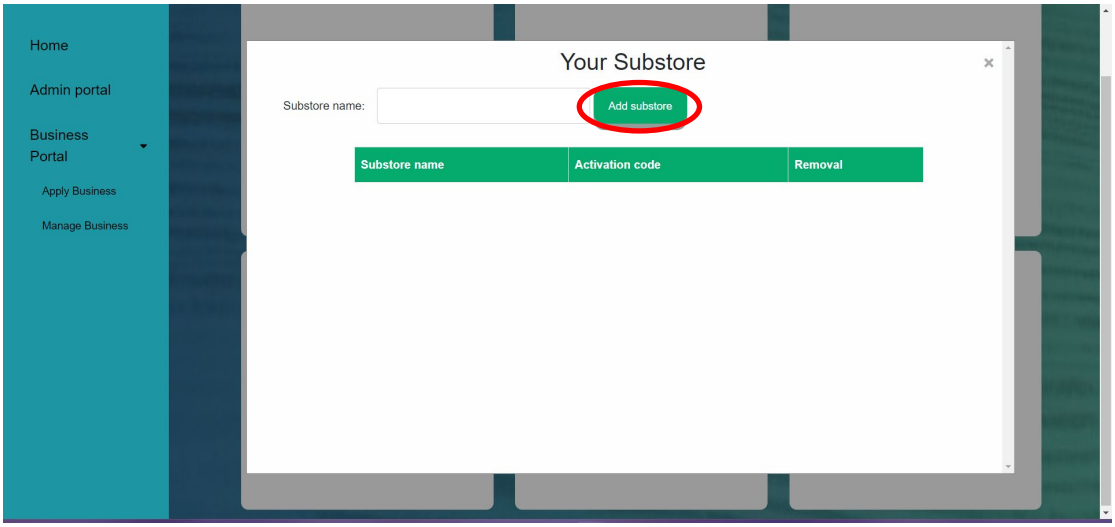

Figure 5.31 Operating Manual

Key in substore's name and press "Add substore".

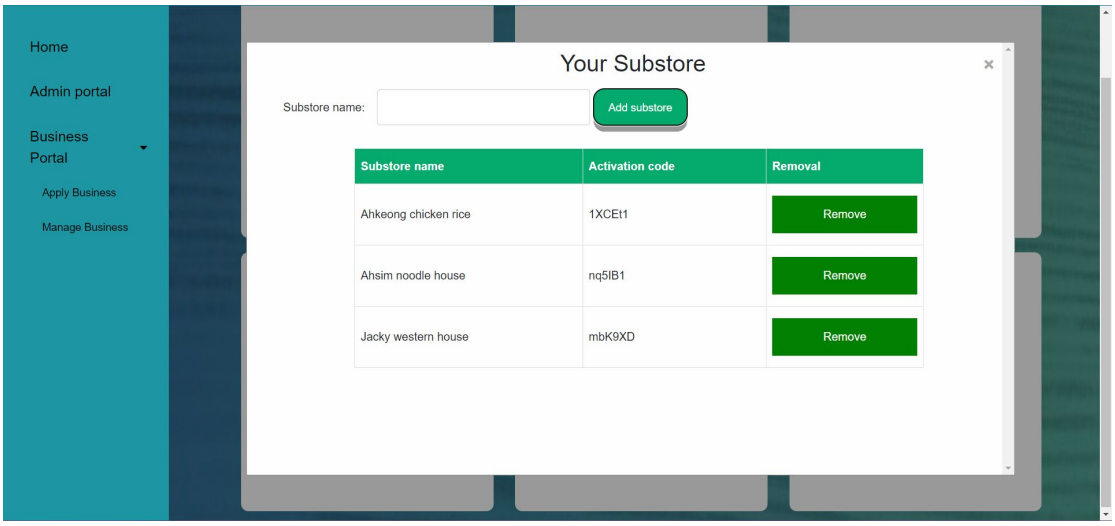

Figure 5.32 Operating Manual

After you had created the substore, send the activation code to the substore's owner so that they can register for a new account. You can also remove substore by just clicking the "Remove" button.

Admin

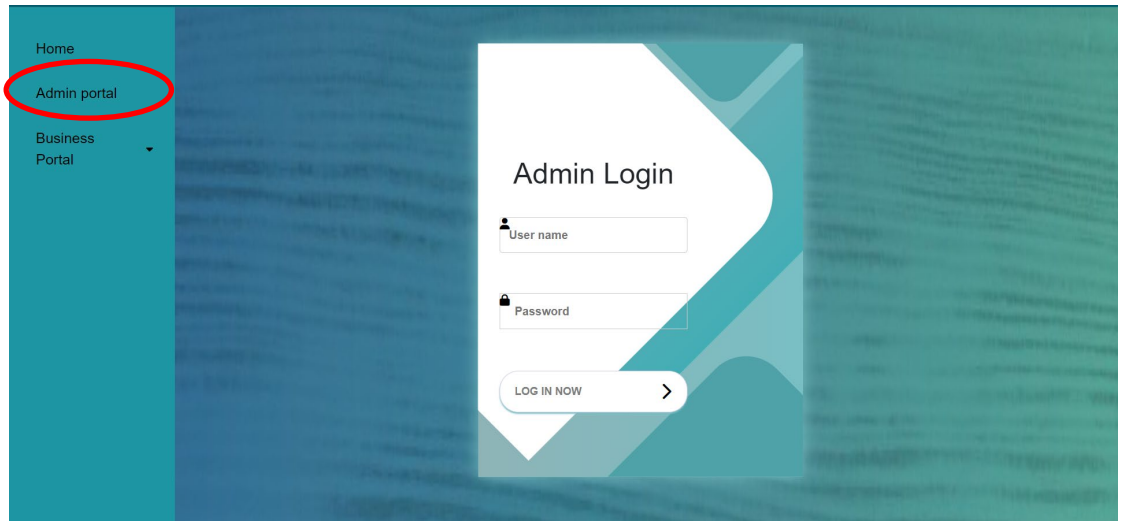

Figure 5.33 Operating Manual

Click on “Admin portal”. Key in the user name and password to login.

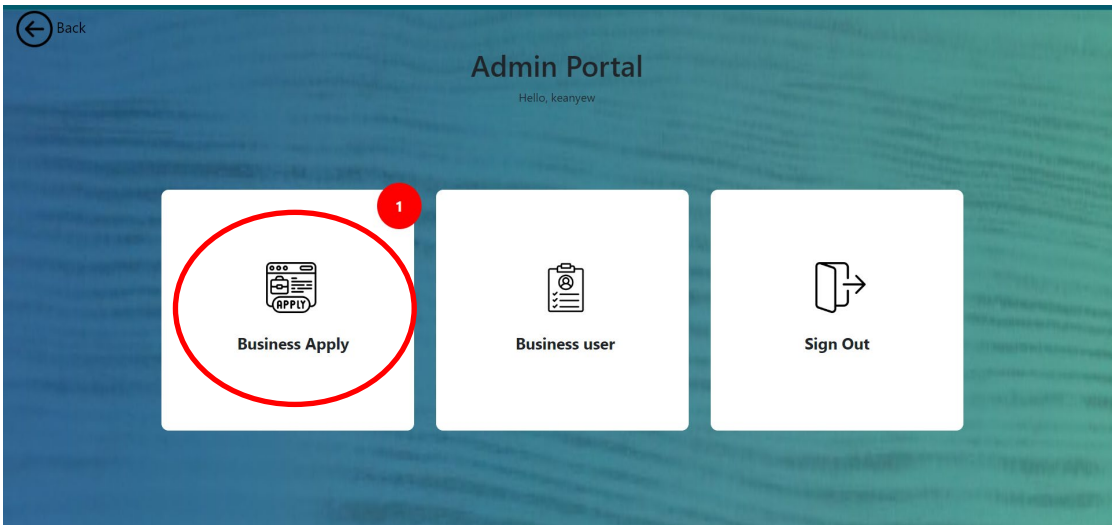

Figure 5.34 Operating Manual

After successfully log in to the admin portal, you should able to see new business apply that made by cafeteria owner, click on it.

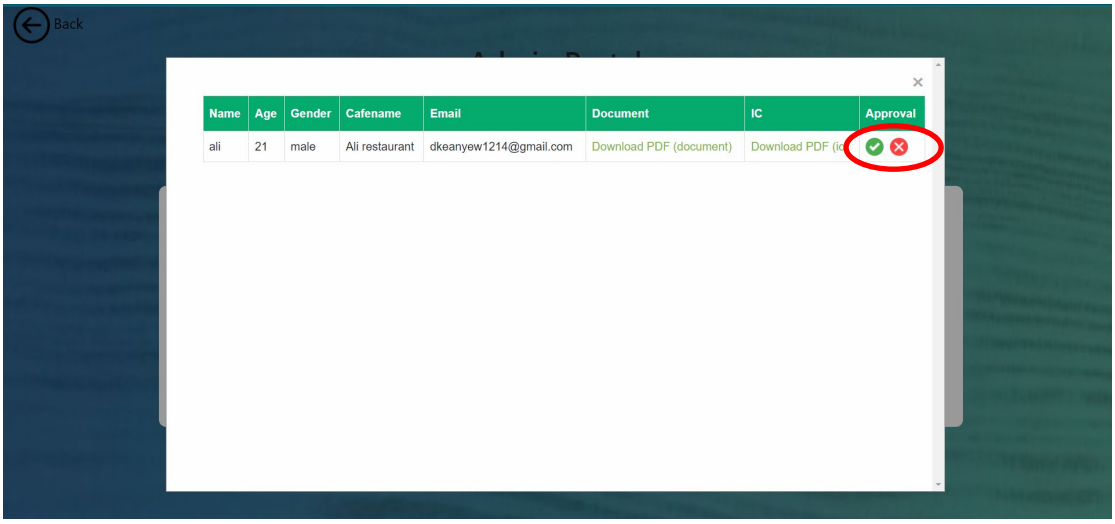

Figure 5.35 Operating Manual

You can check on the apply information and download the related document. After viewing the information, click the tick or cross button to approve and reject the application.

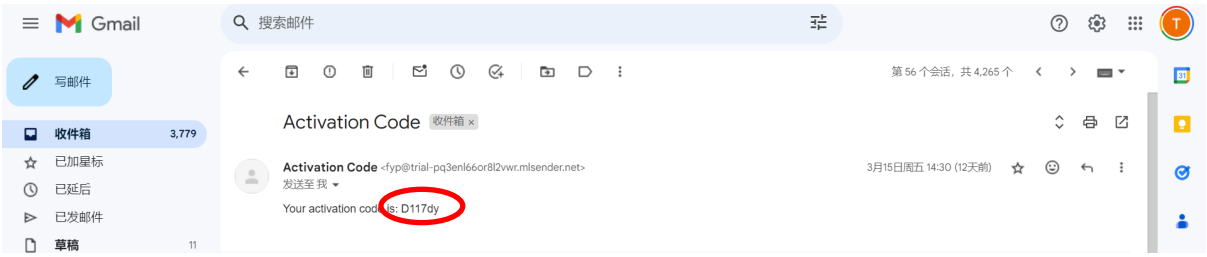

Figure 5.36 Operating Manual

If you approve for the application, the system will auto generate an activation code for particular applicant and email to the particular email address.

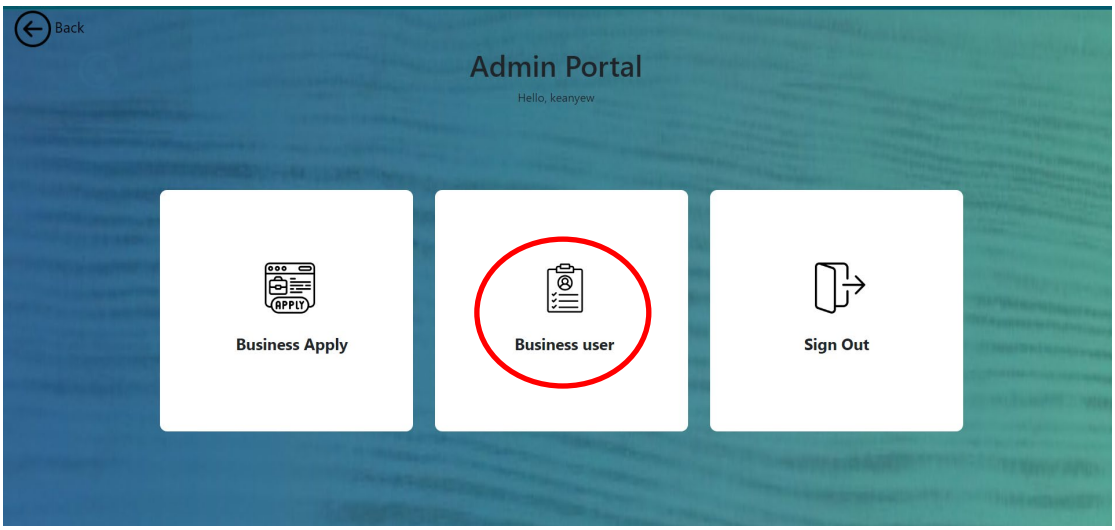

Figure 5.37 Operating Manual

Admin can also manage the user that currently using the system to display their business by just clicking the “Business user”.

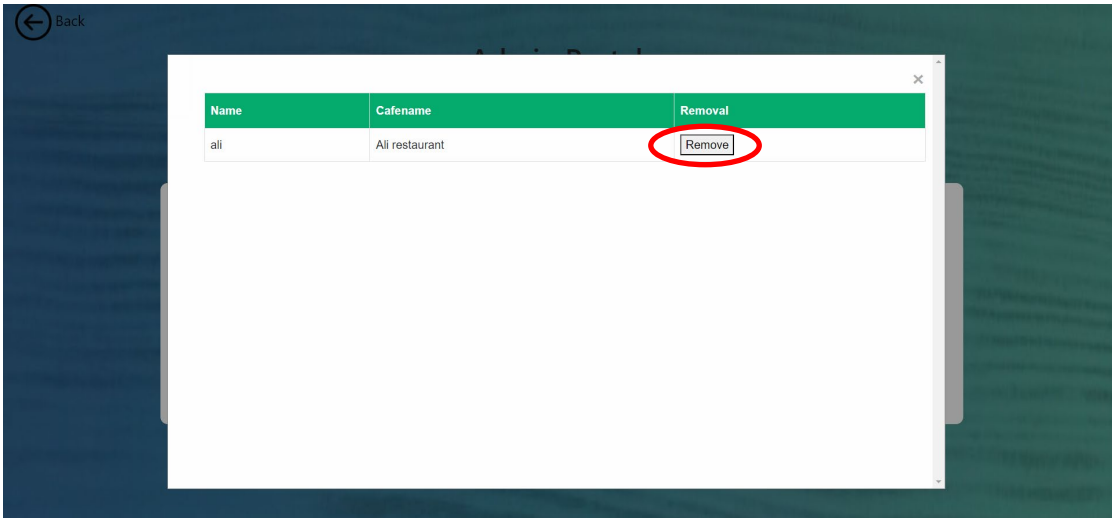

Figure 5.38 Operating Manual

If the user violates the rules and regulations, admin can directly remove the business user by just clicking the “Remove” button in it.

5.4 Implementation Issues and Challenges

There are several issues and challenges that I met when during the implementation process:

XAMPP server crashing issue

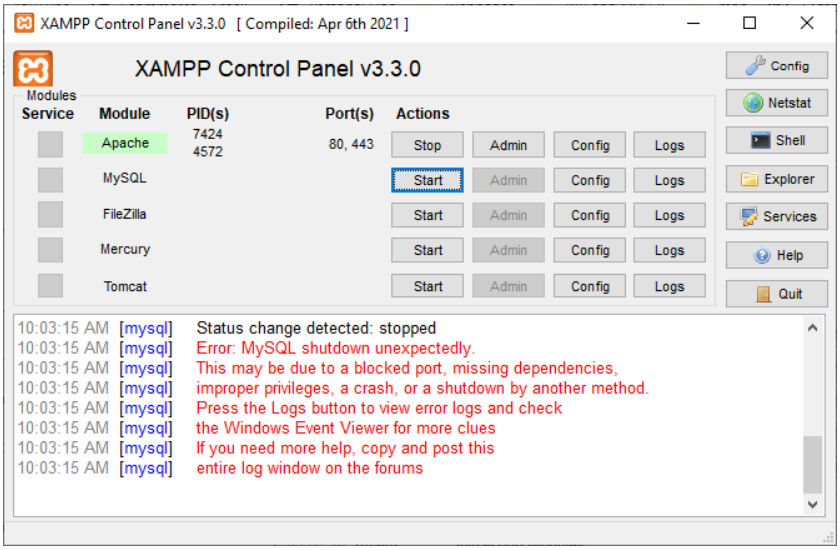

Figure 5.39 XAMPP server crash

As shown in Figure xxx, the XAMPP server often crashed and shut down unexpectedly. This had delayed the process of the implementation as the MySQL database is not working when

the server crashed. I have to spent time by searching the solution in Google do deal with the issue in order to continue the implementation step.

Time consuming process when using Google Cloud

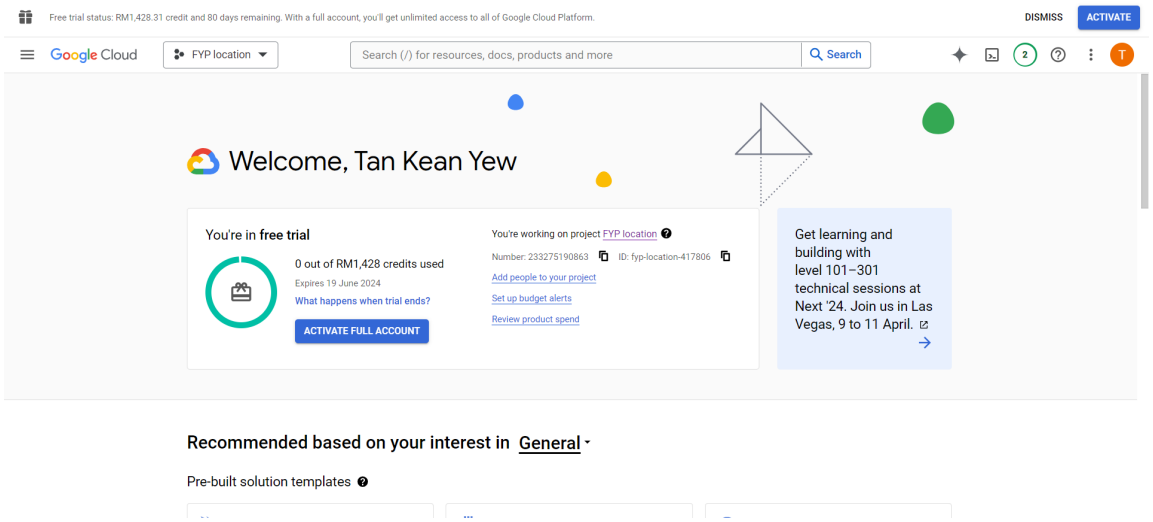

Figure 5.40 Google Cloud

A Google Cloud account needs to be created by adding a credit card because some of the services require payment to use. Furthermore, after setting up the Google Cloud account, I spent some time exploring the platform, as there are many services provided by Google Cloud, each with its own documentation for usage.

Chapter 6

System Evaluation and Discussion

6.1 Testing Techniques

There are several testing techniques that I used to test my Cafeteria Management and Monitoring System:

Functional testing

Functional testing is a testing technique that used to test the functional requirements of the system. It mainly concentrates on the main function of the system, basic usability, accessibility and error condition of the system. The ways to done functional testing is as below:

1. Identify the requirements
2. Create test cases
3. Execute test cases
4. Report error
5. Fix the error and retest

The testing is repeated until no errors found in the system.

Security testing

Security testing is a testing technique that used to test how well for a system to protect against security threats and unauthorized access. The ways to done security testing is as below:

1. Identify security requirements
2. Identify the potential threats in my system
3. Generate the test cases
4. Execute the test cases
5. Report security issue
6. Fix security issue

The testing is repeated until no security issues found in the system.

Acceptance testing

Acceptance testing is a testing technique that used to test whether the system meets user's requirement or not. The ways to done acceptance testing is as below:

1. Understand user's requirements
2. Develop test scenario
3. Execute test scenario
4. Report defects
5. Fix the defects

The testing is repeated until no defects found in the system. Let the user test the system too if necessary.

Integration testing

Integration testing is a testing technique that used to test the interaction between functions, components and modules in the system. They should work properly with each other. The ways to done integration testing is as below:

1. Identify the components to be tested
2. Create test cases
3. Execute test cases
4. Report problems
5. Fix problems
6. Verify compatibility among components
7. Validate system behavior

The testing is repeated until no problems found in the system.

6.2 Test Case

Table 6.0 Test case

Function	Status	Details
Sign up	Passed	• Cafeteria owner able to sign up for a new account.
Activation code	Passed	• Activation code able to be generated. • Activation code able to be received in cafeteria owner's email.
Login	Passed	• Cafeteria owner able to login with username and password.
Apply Business	Passed	• Cafeteria owner able to apply the business. • Admin able to receive the application from cafeteria owner.
Admin portal	Passed	• Admin able to approve or disapprove the application to create business from cafeteria owner. • Admin able to remove current business user from using the system. • Admin able to sign out from admin portal.
Manage business	Passed	• Cafeteria owner able to start and end business. • Cafeteria owner able to choose to display what food they are currently selling.
Profile	Passed	• Cafeteria owner able to key in their profile. • Customer able to view the profile details of cafeteria owner.

Comment	Passed	• Cafeteria owner able to view customer comment. • Customer able to comment anonymously on particular cafeteria.
Statistics	Passed	• Cafeteria owner able to view the statistics of their store. • Number of visit able to be recorded. • Number of foods like able to be recorded.
Substore	Passed	• Cafeteria owner able to add substore. • Cafeteria owner able to delete substore. • Created substore able to login. • Cretaed substore able to manage their business.
Sign out	Passed	• Cafeteria owner able to sign out.
Cafeteria Display	Passed	• Customer able to view cafeteria with operating status. • The details of cafeteria able to be displayed when customer click on it.
Search	Passed	• Customer able to search cafeteria by the name.
Filter	Passed	• Customer able to filter the cafeteria by the state. • Customer able to filter the cafeteria by distance.

Chapter 7
Conclusion and Recommendation

7.1 Conclusion

In this project, a Cafeteria Management and Monitoring System which can perform better function that existing system is successfully produced. Although I able to produce a usable system but there are still some problems faced during development of this project. The first problem that I faced is limitation of technology. The specification of laptop that I used to develop this project had limit me to use better technology and software as it does not meet the software requirement. The second problem that I faced is PHP language is a completely new language for me as I only learn front end development in my current degree course. It takes some time for me to learn the backend development by using PHP and how to enable frontend and backend work together. Besides, this system still has some limitation that needs to solve by better technology and human power. This is in light of the fact that the system is fully develop by me, I believed that the system could be completer and more improved if this system is developed by a team but not a single person. Last but not least, I had learnt some new knowledge such as backend development in this project development. Furthermore, I also know that time management is very important as I have to work as planned so that my work is able to complete and produce a usable system. I hope that my system is able to bring more convenient in this area especially in this era of technology.

7.2 Recommendation

There are some recommendations which can improve the performance and user experience of the system in the future:

Use of third-party platform for login and sign up function

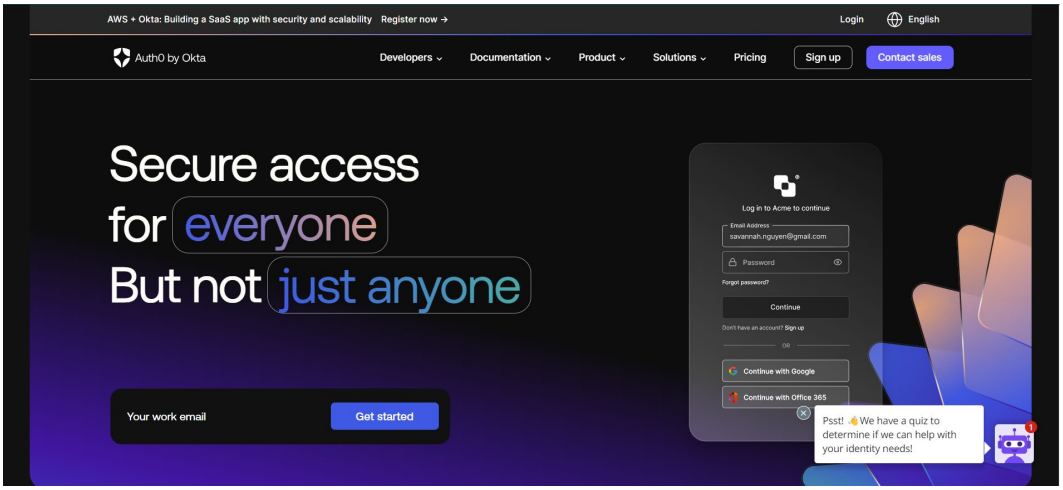

Figure 7.0 Auth0

There are several platforms available for login and sign-up functions, such as Auth0 (shown in Figure xxx). Auth0 is an authentication and authorization platform that can be integrated into the system to enhance security and streamline the authentication process.

Extra function can be added into the system

Due to the time limit consideration for this project, I unable to integrate too many functions in my system. There are still some extra functions that can enhance user experience such as food recommendation function, food picture upload function, cafeteria floor plan upload function and so on can be added into the system in the future.

Optimization for mobile devices

The web application can be optimized for mobile devices in the future across various screen size and devices. This includes implementing the responsive design techniques and ensuring all functions are accessible on smartphones and tablets.

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FINAL YEAR PROJECT WEEKLY REPORT

(Project II)

Trimester, Year: Y4S1	**Study week no.:4**
Student Name & ID: Tan Kean Yew 2000148	
Supervisor: Ts Dr Chan Lee Kwun	
Project Title: Cafeteria management and monitoring system	

1. WORK DONE

I revised back the code and work done during my FYP1. Setting up the software and database that I am going to use.

2. WORK TO BE DONE

Start to work with my prototype.

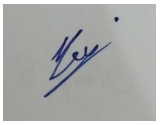
3. PROBLEMS ENCOUNTERED

So far no.

4. SELF EVALUATION OF THE PROGRESS

Just started with the project after Chinese New Year.

Supervisor's signature



Student's signature

FINAL YEAR PROJECT WEEKLY REPORT

(Project II)

Trimester, Year: Y4S1	**Study week no.:5**
Student Name & ID: Tan Kean Yew 2000148	
Supervisor: Ts Dr Chan Lee Kwun	
Project Title: Cafeteria management and monitoring system	

1. WORK DONE

Completed information display module.

2. WORK TO BE DONE

Start comment and feedback module.

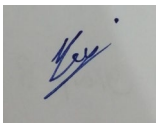
3. PROBLEMS ENCOUNTERED

So far no.

4. SELF EVALUATION OF THE PROGRESS

Able to complete what I planned.

Supervisor's signature



Student's signature

FINAL YEAR PROJECT WEEKLY REPORT

(Project II)

Trimester, Year: Y4S1	**Study week no.:6**
Student Name & ID: Tan Kean Yew 2000148	
Supervisor: Ts Dr Chan Lee Kwun	
Project Title: Cafeteria management and monitoring system	

1. WORK DONE

Completed comment and feedback module.

2. WORK TO BE DONE

Start statistic module.

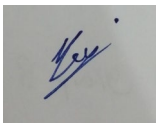
3. PROBLEMS ENCOUNTERED

So far no.

4. SELF EVALUATION OF THE PROGRESS

Able to complete what I planned.

Supervisor's signature



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FINAL YEAR PROJECT WEEKLY REPORT

(Project II)

Trimester, Year: Y4S1	**Study week no.:7**
Student Name & ID: Tan Kean Yew 2000148	
Supervisor: Ts Dr Chan Lee Kwun	
Project Title: Cafeteria management and monitoring system	

1. WORK DONE

Completed statistic module.

2. WORK TO BE DONE

Start search module.

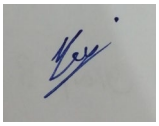
3. PROBLEMS ENCOUNTERED

So far no.

4. SELF EVALUATION OF THE PROGRESS

Able to complete what I planned.

Supervisor's signature



Student's signature

FINAL YEAR PROJECT WEEKLY REPORT

(Project II)

Trimester, Year: Y4S1	**Study week no.:8**
Student Name & ID: Tan Kean Yew 2000148	
Supervisor: Ts Dr Chan Lee Kwun	
Project Title: Cafeteria management and monitoring system	

1. WORK DONE

Completed search module.

2. WORK TO BE DONE

Start to do sorting function. Explore Google Cloud to use the Google map services.

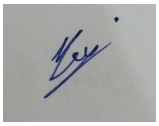
3. PROBLEMS ENCOUNTERED

So far no.

4. SELF EVALUATION OF THE PROGRESS

Able to complete what I planned.

Supervisor's signature



Student's signature

FINAL YEAR PROJECT WEEKLY REPORT

(Project II)

Trimester, Year: Y4S1	**Study week no.:9**
Student Name & ID: Tan Kean Yew 2000148	
Supervisor: Ts Dr Chan Lee Kwun	
Project Title: Cafeteria management and monitoring system	

1. WORK DONE

Completed sorting function. The Google map is successfully implemented with the used of Google API.

2. WORK TO BE DONE

Start final testing of the prototype.

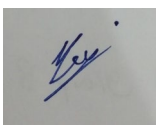
3. PROBLEMS ENCOUNTERED

So far no.

4. SELF EVALUATION OF THE PROGRESS

Able to complete what I planned.

Supervisor's signature



Student's signature

FINAL YEAR PROJECT WEEKLY REPORT

(Project II)

Trimester, Year: Y4S1	**Study week no.:10**
Student Name & ID: Tan Kean Yew 2000148	
Supervisor: Ts Dr Chan Lee Kwun	
Project Title: Cafeteria management and monitoring system	

1. WORK DONE

Completed final testing.

2. WORK TO BE DONE

Start to do report.

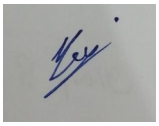
3. PROBLEMS ENCOUNTERED

So far no.

4. SELF EVALUATION OF THE PROGRESS

Able to complete what I planned.

Supervisor's signature



Student's signature

FINAL YEAR PROJECT WEEKLY REPORT

(Project II)

Trimester, Year: Y4S1	**Study week no.:11**
Student Name & ID: Tan Kean Yew 2000148	
Supervisor: Ts Dr Chan Lee Kwun	
Project Title: Cafeteria management and monitoring system	

1. WORK DONE

Prototype and report are done.

2. WORK TO BE DONE

Finalize my report and prototype before submit.

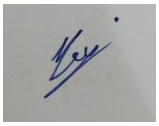
3. PROBLEMS ENCOUNTERED

So far no.

4. SELF EVALUATION OF THE PROGRESS

Able to finish the thing before the deadline. Everything works well.

Supervisor's signature

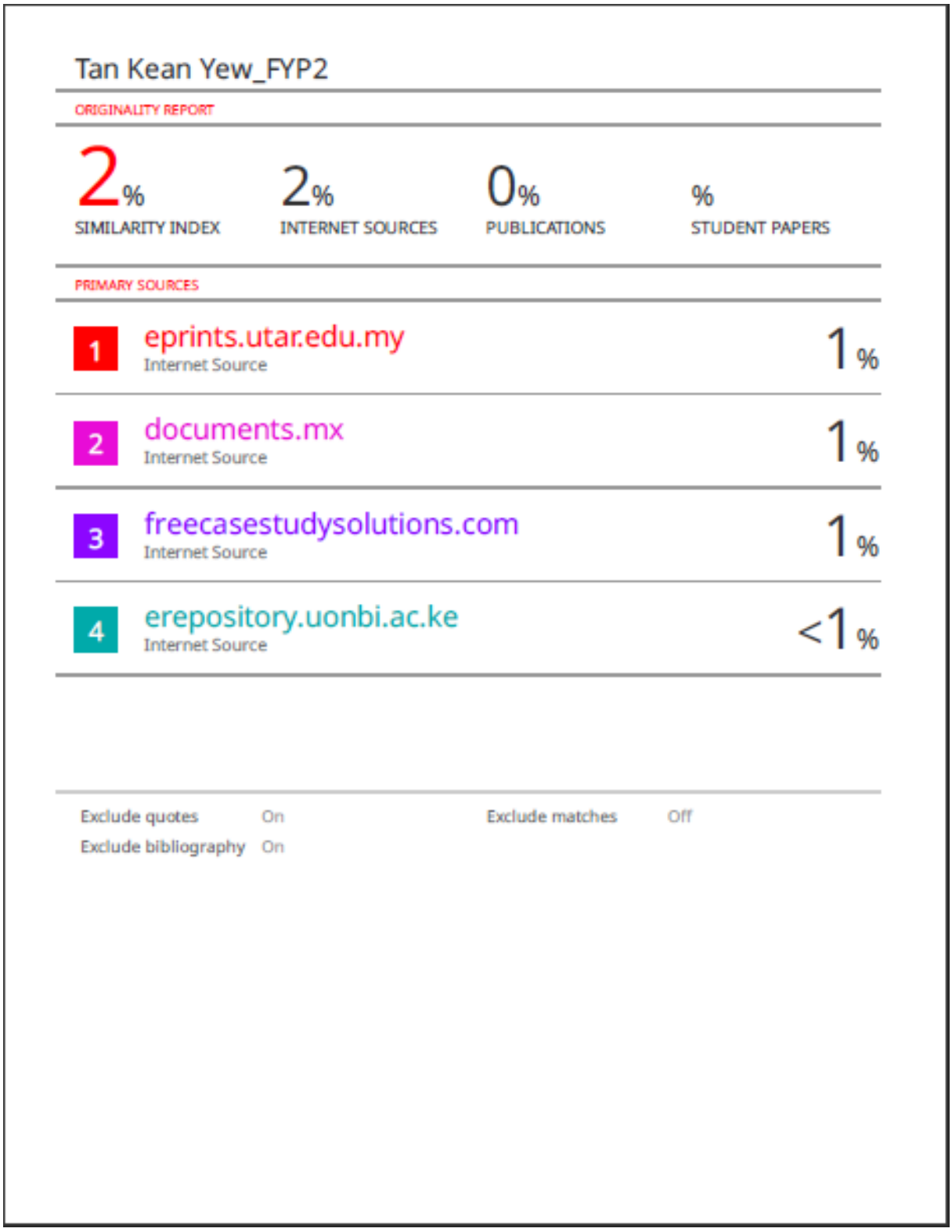


Student's signature

POSTER


UTAR
UNIVERSITI TUNKU ABDUL RAHMAN
CAFETERIA MANAGEMENT AND MONITORING SYSTEM
INTRODUCTION
The system can enable customer to always monitor the operating status and food sold by a cefeteria. Cafeteria owner can always manage their business on the system too.
OBJECTIVE
To make food and cafeteria information searching more advance and get to known more information. Besides, the system also make cafeteria management more easy and convenient.
WHY OUR SYSTEM IS BETTER?
1
Real Time- It can always show the current information such as operating status, food sold, food price and so on. Customer can view the availability of their cafeteria and food before heading to particular cafeteria.
2
Cafeteria owner identity authentication- For those cafeteria owner who wish to display their business on the system, the information and identity of cafeteria owner will be authenticate by our admin.
3
Faster and easier to use- User friendly
4
Anonymity- Customer can directly feedback to cafeteria owner anonymously to encourage open discussion without fear of repercussions or judgment based on their identity.
PROJECT DEVOLOPER: TAN KEAN YEW
PROJECT SUPERVISOR: TS DR CHAN LEE KWUN

PLAGIARISM CHECK RESULT



Tan Kean Yew_FYP2

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FACULTY OF INFORMATION AND COMMUNICATION TECHNOLOGY

Full Name(s) of Candidate(s)	Tan Kean Yew
ID Number(s)	20ACB00148
Programme / Course	CS
Title of Final Year Project	Cafeteria Management and Monitoring System

Similarity	**Supervisor's Comments (Compulsory if parameters of originality exceeds the limits approved by UTAR)**
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Chan

Signature of Supervisor

Name: Chan Lee Kwun

Date: 19th April 2024

Signature of Co-Supervisor

Name: _____

Date: _____

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CHECKLIST FOR FYP2 THESIS SUBMISSION

Student Id	20ACB00148
Student Name	Tan Kean Yew
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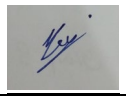

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