

**BOUTIQUE MANAGEMENT SYSTEM**

BY

HUAM ZE KHAI

A REPORT

SUBMITTED TO

Universiti Tunku Abdul Rahman

in partial fulfillment of the requirements

for the degree of

BACHELOR OF INFORMATION SYSTEMS (HONOURS) INFORMATION SYSTEMS  
ENGINEERING

Faculty of Information and Communication Technology  
(Kampar Campus)

JAN 2022

|  |  |  |  |
|--|--|--|--|
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

## **ACKNOWLEDGEMENTS**

I would like to express thanks and appreciation to my supervisor, Ts Sun Teik Heng and my moderator, Dr Abdulkarim Kanaan Jebna who have given me a golden opportunity to involve on the Internet of Things field study. Besides that, they have given me a lot of guidance in order to complete this project. When I was facing problems in this project, the advice from them always assists me in overcoming the problems. Again, a million thanks to my supervisor and moderator.

Other than that, I must say thanks to my parents and my family for their love, support, and continuous encouragement throughout the course.

## **ABSTRACT**

This project consists of the development of a contributory web application to manage boutique store through online. Due to the mature and fast growth of technology and internet, peoples try to make everything done through online. A strong and progressive web application is needed in the market. Although there are a lot of web application in current market, but there are still lack of perfectness. The goal of this application is to develop a progressive web application that allows the management of the product inventory and providing useful analytics and notification to the users. A powerful web application is very important toward successful of a company because good management system brings plenty of advantages for a company such as convenience, accuracy of data, and it also help for future planning by looking the dataset provided. To develop this project, HTML, CSS, and JavaScript programming language will be used, and Node.js which is a framework of JavaScript will be used to build web application back-end. In the end of this project, a progressive boutique management web application will be developed.

## **TABLE OF CONTENTS**

|  |            |
|--|------------|
| <b>TITLE PAGE</b>  | <b>i</b>   |
| <b>REPORT STATUS DECLARATION FORM</b>                    | <b>ii</b>  |
| <b>FYP THESIS SUBMISSION FORM</b>                        | <b>iii</b> |
| <b>DECLARATION OF ORIGINALITY</b>                        | <b>iv</b>  |
| <b>ACKNOWLEDGEMENTS</b>                                  | <b>v</b>   |
| <b>ABSTRACT</b>  | <b>vi</b>  |
| <b>TABLE OF CONTENTS</b>                                 | <b>vii</b> |
| <b>LIST OF FIGURES</b>                                   | <b>x</b>   |
| <b>LIST OF TABLES</b>                                    | <b>xiv</b> |
| <b>LIST OF ABBREVIATIONS</b>                             | <b>xv</b>  |
| <br>   |            |
| <b>CHAPTER 1: INTRODUCTION .....</b>                     | <b>1</b>   |
| 1.1 Problem Statement and Motivation .....               | 1          |
| 1.2          Project Scope.....                          | 2          |
| 1.3          Project Objectives.....                     | 2          |
| 1.4          Impact, significance, and contribution..... | 3          |
| 1.5          Background Information.....                 | 3          |
| <br>   |            |
| <b>CHAPTER 2: LITERATURE REVIEWS .....</b>               | <b>5</b>   |
| 2.1 Overview .....                                       | 5          |
| 2.2 Uniqlo website/ application.....                     | 5          |
| 2.3 Padini Website .....                                 | 8          |
| 2.4 Giordano Website .....                               | 10         |
| 2.5 Comparison of Web .....                              | 13         |
| 2.6 Comparison of Tools and technologies.....            | 13         |
| 2.7 Summary .....  | 14         |

|  |            |
|--|------------|
| <b>CHAPTER 3: SYSTEM METHODOLOGY/ APPROACH .....</b>     | <b>15</b>  |
| 3.1 System Design Diagram/ Equation.....                 | 15         |
| 3.1.1 System Methodology Diagram .....                   | 15         |
| 3.1.2 Use Case Diagram and Description.....              | 17         |
| 3.1.3 Activity Diagram.....                              | 19         |
| <b>CHAPTER 4: SYSTEM DESIGN .....</b>                    | <b>29</b>  |
| 4.1 System Block Diagram .....                           | 29         |
| 4.2 ER Diagram.....                                      | 31         |
| 4.3 Class Diagram .....                                  | 33         |
| 4.4 Wireframe.....                                       | 35         |
| <b>CHAPTER 5: SYSTEM IMPLEMENTATION .....</b>            | <b>47</b>  |
| 5.1 Hardware Setup .....                                 | 47         |
| 5.2 Software Setup.....                                  | 47         |
| 5.3 Setting and Configuration .....                      | 49         |
| 5.4 System Operation.....                                | 53         |
| <b>CHAPTER 6: SYSTEM EVALUATION AND DISCUSSION .....</b> | <b>86</b>  |
| 6.1 System Testing .....                                 | 86         |
| 6.2 Analysis of Survey Result .....                      | 92         |
| 6.3 Project Challenge .....                              | 107        |
| 6.4 Objective Evaluation.....                            | 108        |
| 6.5 Concluding Remark .....                              | 109        |
| <b>CHAPTER 7: CONCLUSION AND RECOMMENDATION .....</b>    | <b>110</b> |
| 7.1 Conclusion.....                                      | 110        |
| 7.2 Recommendation .....                                 | 111        |
| <b>REFERENCES .....</b>                                  | <b>1</b>   |
| <b>APPENDIX A .....</b>                                  | <b>2</b>   |

|                                      |                                     |
|--------------------------------------|-------------------------------------|
| <b>POSTER .....</b>                  | <b>4</b>                            |
| <b>PLAGIARISM CHECK RESULT .....</b> | <b>1</b>                            |
| <b>FYP 2 CHECKLIST.....</b>          | <b>ERROR! BOOKMARK NOT DEFINED.</b> |

## LIST OF FIGURES

| Figure Number  | Title                        | Page |
|----------------|------------------------------|------|
| Figure 2.1     | Uniqlo 1                     | 5    |
| Figure 2.2     | Uniqlo 2                     | 6    |
| Figure 2.3     | Uniqlo 3                     | 6    |
| Figure 2.4     | Padini 1                     | 8    |
| Figure 2.5     | Padini 2                     | 8    |
| Figure 2.6     | Padini 3                     | 9    |
| Figure 2.7     | Giordano 1                   | 10   |
| Figure 2.8     | Giordano 2                   | 11   |
| Figure 2.9     | Giordano 3                   | 11   |
| Figure 3.1.1   | Agile Model                  | 15   |
| Figure 3.1.2   | Use case Diagram             | 17   |
| Figure 3.1.3.1 | Activity Diagram (Client)    | 19   |
| Figure 3.1.3.2 | Activity Diagram (Server)    | 21   |
| Figure 3.1.3.3 | Activity Diagram (Employee)  | 23   |
| Figure 3.1.3.4 | Activity Diagram (Order)     | 25   |
| Figure 3.1.3.5 | Activity Diagram (Customer)  | 27   |
| Figure 3.1.3.6 | Activity Diagram (Analytic)  | 28   |
| Figure 4.1     | System block diagram         | 29   |
| Figure 4.2     | ER Diagram                   | 31   |
| Figure 4.3     | Class Diagram                | 33   |
| Figure 4.4.1   | Wireframe (Login)            | 35   |
| Figure 4.4.2   | Wireframe (Home)             | 36   |
| Figure 4.4.3   | Wireframe (Product Detail)   | 37   |
| Figure 4.4.4   | Wireframe (Cart)             | 38   |
| Figure 4.4.5   | Wireframe (Checkout)         | 39   |
| Figure 4.4.6   | Wireframe (Order History)    | 40   |
| Figure 4.4.7   | Wireframe (Inventory)        | 41   |
| Figure 4.4.8   | Wireframe (Inventory Update) | 43   |
| Figure 4.4.9   | Wireframe (Employee)         | 43   |
| Figure 4.4.10  | Wireframe (Employee Update)  | 43   |
| Figure 4.4.11  | Wireframe (Customer)         | 44   |
| Figure 4.4.12  | Wireframe (Order List)       | 44   |
| Figure 4.4.13  | Wireframe (Order Detail)     | 45   |

|               |   |    |
|---------------|---|----|
| Figure 4.4.14 | Wireframe (Analytic)                                | 45 |
| Figure 4.4.15 | Wireframe (Order Detail)                            | 46 |
| Figure 5.3.1  | Start the node web application                      | 49 |
| Figure 5.3.2  | Screen shot of Visual Studio Code IDE               | 49 |
| Figure 5.3.3  | Dashboard of Facebook Developer                     | 50 |
| Figure 5.3.4  | Graph API Explorer                                  | 50 |
| Figure 5.3.5  | Dashboard of tawk.to                                | 51 |
| Figure 5.3.6  | Chatting with client user                           | 51 |
| Figure 5.3.7  | Payment received through Stripe                     | 52 |
| Figure 5.3.8  | Payment Details                                     | 52 |
| Figure 5.4.1  | Login Page  | 53 |
| Figure 5.4.2  | Client User Logged in page                          | 53 |
| Figure 5.4.3  | Client User clicked “Profile” at top left corner    | 54 |
| Figure 5.4.4  | Home page New Arrivals part                         | 55 |
| Figure 5.4.5  | Filter Man product in New Arrival                   | 55 |
| Figure 5.4.6  | Discounted product                                  | 56 |
| Figure 5.4.7  | Physical store location                             | 56 |
| Figure 5.4.8  | Footer of the page                                  | 57 |
| Figure 5.4.9  | Tawk.to Customer Service                            | 57 |
| Figure 5.4.10 | Categories Page                                     | 58 |
| Figure 5.4.11 | Filter Outwear in Women Wear                        | 58 |
| Figure 5.4.12 | Direct to product detail page                       | 59 |
| Figure 5.4.13 | Product Detail page                                 | 60 |
| Figure 5.4.14 | Validation of product size                          | 60 |
| Figure 5.4.15 | Product successfully added into cart                | 61 |
| Figure 5.4.16 | Cart Page   | 62 |
| Figure 5.4.17 | Update product quantity in cart page                | 62 |
| Figure 5.4.18 | Remove product from cart                            | 63 |
| Figure 5.4.19 | Clear Cart  | 63 |
| Figure 5.4.20 | After product in cart is cleared                    | 64 |
| Figure 5.4.21 | Checkout Page                                       | 65 |
| Figure 5.4.22 | Required field validation                           | 66 |
| Figure 5.4.23 | Input payment details (Stripe)                      | 66 |
| Figure 5.4.24 | Purchase Successfully                               | 67 |
| Figure 5.4.25 | Items in cart clear automatically when payment done | 67 |
| Figure 5.4.26 | Stripe Dashboard to check payment details           | 68 |
| Figure 5.4.27 | Order section in Order History Page                 | 69 |
| Figure 5.4.28 | Order Detail section in Order History Page          | 69 |
| Figure 5.4.29 | Extra entry for staff user                          | 70 |
| Figure 5.4.30 | Inventory Management page                           | 71 |
| Figure 5.4.31 | Add product modal                                   | 71 |
| Figure 5.4.32 | Add product Validation                              | 72 |

|               |   |     |
|---------------|---|-----|
| Figure 5.4.33 | Confirmation of deleting records          | 72  |
| Figure 5.4.34 | Search bar input “Crew” keyword           | 72  |
| Figure 5.4.35 | Output of search “Crew”                   | 73  |
| Figure 5.4.36 | Inventory Management update page          | 74  |
| Figure 5.4.37 | Employee Management                       | 75  |
| Figure 5.4.38 | Add Employee                              | 76  |
| Figure 5.4.39 | Add Employee Validation                   | 76  |
| Figure 5.4.40 | Search Employee By input “Dia” keyword    | 77  |
| Figure 5.4.41 | Confirmation of deleting employee record  | 77  |
| Figure 5.4.42 | Employee Management update page           | 78  |
| Figure 5.4.43 | Customer Management Page                  | 79  |
| Figure 5.4.44 | Search by input “13” keyword Customer ID  | 79  |
| Figure 5.4.45 | Confirmation of deleting customer records | 80  |
| Figure 5.4.46 | Order Management (List) Page              | 81  |
| Figure 5.4.47 | Search by input “18” keyword Order ID     | 81  |
| Figure 5.4.48 | Confirmation of deleting order action     | 82  |
| Figure 5.4.49 | Order Management Update Page              | 83  |
| Figure 5.4.50 | Order Management (Detail) Page            | 84  |
| Figure 5.4.51 | Analytics and Notification                | 85  |
| Figure 6.2.1  | Age                                       | 92  |
| Figure 6.2.2  | Gender                                    | 93  |
| Figure 6.2.3  | Occupation                                | 93  |
| Figure 6.2.4  | Past Experience 1                         | 94  |
| Figure 6.2.5  | Past Experience 2                         | 94  |
| Figure 6.2.6  | Overall design 1                          | 95  |
| Figure 6.2.7  | Overall design 2                          | 95  |
| Figure 6.2.8  | User friendliness                         | 96  |
| Figure 6.2.9  | Animation and image                       | 96  |
| Figure 6.2.10 | Feedback/recommendation                   | 97  |
| Figure 6.2.11 | New Arrival filter                        | 98  |
| Figure 6.2.12 | Store locator                             | 98  |
| Figure 6.2.13 | Customer service                          | 99  |
| Figure 6.2.14 | ” Profile” button                         | 99  |
| Figure 6.2.15 | Add product into cart                     | 100 |
| Figure 6.2.16 | Satisfaction of cart functions            | 100 |
| Figure 6.2.17 | Preferred payment method                  | 101 |
| Figure 6.2.18 | Order history display                     | 101 |
| Figure 6.2.19 | User authorization                        | 102 |
| Figure 6.2.20 | Functionalities of Inventory Management   | 102 |
| Figure 6.2.21 | Functionalities of Employee Management    | 103 |
| Figure 6.2.22 | Functionalities of Order Management       | 103 |
| Figure 6.2.23 | Functionalities of Customer Management    | 104 |
| Figure 6.2.24 | Satisfaction of analytic                  | 104 |

|   |     |
|---|-----|
| Figure 6.2.25 Satisfaction of notification prompt | 105 |
| Figure 6.2.26 Comments on prompt notification     | 105 |
| Figure 6.2.27 Overall web application marking     | 106 |

## **LIST OF TABLES**

| <b>Table Number</b> | <b>Title</b>                      | <b>Page</b> |
|---------------------|-----------------------------------|-------------|
| Table 2.1           | Comparison of Web                 | 13          |
| Table 5.1           | Specifications of laptop          | 47          |
| Table 5.2           | Specification of software / tools | 48          |
| Table 6.1           | System Testing                    | 86          |

## **LIST OF ABBREVIATIONS**

|             |                                |
|-------------|--------------------------------|
| <i>SDLC</i> | Software Development Lifecycle |
| <i>JS</i>   | JavaScript                     |
| <i>HTML</i> | Hypertext Markup Language      |
| <i>CSS</i>  | Cascading Style Sheet          |
| <i>ER</i>   | Entity Relational              |
| <i>BMS</i>  | Boutique Management System     |

## CHAPTER 1: Introduction

This chapter contains a background and motivation for the research, as well as my contributions to the field and a thesis proposal.

### 1.1 Problem Statement and Motivation

After viewed some of the boutique management system web application, found that the inventory system is not perfect enough and it never provide useful analytic and notification to user. With these problems, might cause some inconvenience to user and user deserved more convenience way to manage their online store inventory system and website. Therefore, as the based on this motivation, I'm going to develop a progressive web application that allows good management of the product inventory and providing useful analytics and notification to the users.

#### Inventory management system not smart enough

The first problem that found after viewed some of the boutique management system is the product inventory information is not clearly and completely managed. The current Boutique Management system is not smart enough in inventory management, manager of the company unable to track their inventory in online. The problem that the product quantity in inventory and the stock quantity displayed at client-side pages is not match, this might cause lot of problem. Therefore, online business required more accurate and more powerful system to support their business operation. A failure in the system might cause big loss in the company.

#### Lack of analytics and notification

The product inventory information was stored in database. These systems are not able to provide some useful analytics of product inventory / overall stored data and notification to the users. The details of the product might not clearly show in the system. Useful analytics allows user to make buying decision in smarter way. The notification can be sent to reminds the users about the product information.

## CHAPTER 1

### 1.2 Project Scope

At the end of project, a progressive web application will be developed, and this boutique management system should solve the problem of incomplete inventory system and lack of useful analytics and notification. Other than that, the web application will come with better design in interface and several more features.

- The web application allows client user to log in via their social media account.
- The web application allows staff user to log in via their username and password.
- The web application allows user to store and manage order information in database.
- The web application allows client user to make order.
- The web application allows user to store and manage employee information in database.
- The web application allows user to store and manage product information in database.
- The web application allows staff user to keep track on sales time by time.
- The web application provides useful analytic and notification to the user.
- The web application allows user to find the boutique store location on Google Maps.
- The web application provides user an understandable user interface.
- The web application allows user at client side online chatting with store staff.
- The web application allows users to view their order history.

### 1.3 Project Objectives

The project aims to develop a progressive web application that allows the management of the product inventory and providing useful analytics and notification to the users. This project is focus on boutique product inventory management system and user able to receive a useful analytic of overall stored data by using this system. This project helps implement the computerization of the clothes inventory and order. With the development of this system, paperwork will be reduced. With the notification engine embedded in the system, the user can easily pay attention on the analytics that pop up

## CHAPTER 1

in notification form. By using this useful analytic combined with notification engine, user make decision based on the analytic provided by system.

- To build a progressive web application that allows the management of the product inventory and providing useful analytics and notification to the users.
- To implement the computerization of the clothes inventory and sales.
- To reduce the pen paperwork involved

### 1.4 Impact, significance, and contribution

The new web application that will be developed will contain the better inventory management system. It allows users to keep track the inventory in real time of the product. Example, user able to check the stock of the Black color pants in M size. According to [4], with a good inventory management system, it reduces cost, improve cash flow, prevent product shortage or excess stock, and boost business bottom line. Manager of the system allows to manage the inventory online. The customer information will be store in the database of the system.

Other than that, the new system provides useful analytics and notification to the user. Example, system send the notification of analytic of report about today sale. Through the development of this project, consumer's experience for online boutique system will be improved, manager of the system take convenience in managing the stock inventory.

### 1.5 Background Information

Internet Technology, as the newest technology in the world, brings many conveniences to the people nowadays. Internet Technology (IT) not just involve in traditional industry, but in e-commerce as well [5]. Through e-commerce, the condition of shopping will not be limited by time and venue. It is convenient to acknowledge and understand the information of all commodities. Retail industry is the industry that grow rapidly where the number of retail business still increasing now and again to fulfil the demand from consumers of specified audiences. Most of the store can be found at streets, residential areas, or in a shopping mall. Boutique is a store or shop that sells stylish clothing,

## CHAPTER 1

jewellery, or usually luxury goods. A boutique shop is a specialized type of retail store. When the size of the store gets bigger, more items will be made available in large quantity, the traditional way seller keeps their inventory in spreadsheet will be not effective anymore [1]. Thus, inventory level made with tracking the sale would be complicated and time consuming for the seller. Inventory problem of too small or too large quantities on hand may cause business failure [3]. When the seller does not handle well this situation, overall business getting worst. Other than that, as soon as Covid-19 pandemic hits our country, government has then implemented Movement Control Restriction (MCO) to prevent further spread of the virus. This restriction limited Malaysian's outdoor activity, which also restrict boutique store from being held. Therefore, the project will provide solution for seller which is a "Boutique Management System". The system is to build a progressive web application that allows the management of the product inventory and providing useful analytics and notifications to the users.

## CHAPTER 2: Literature Reviews

### 2.1 Overview

Since Internet Technology (IT) development is the most powerful technology and brings convenience to people, most of the task or activity can be done online especially online shopping (E-commerce). Peoples nowadays can buy many things without step out from their house. With internet connection, people just open their technology device (Smart Phone, Computer), go to the website or application, choose what they wanted to buy, and key in the address, the product will be delivered to their house. Therefore, a lot of boutique business company build their own website or application to run their business as well. As mentioned in problem statement, boutique management system can be improved to be a better system in order to manage their business effectively and efficiently. In this chapter, existing application or website will be discussed, as well as their strengths and weaknesses.

### 2.2 Uniqlo website/ application

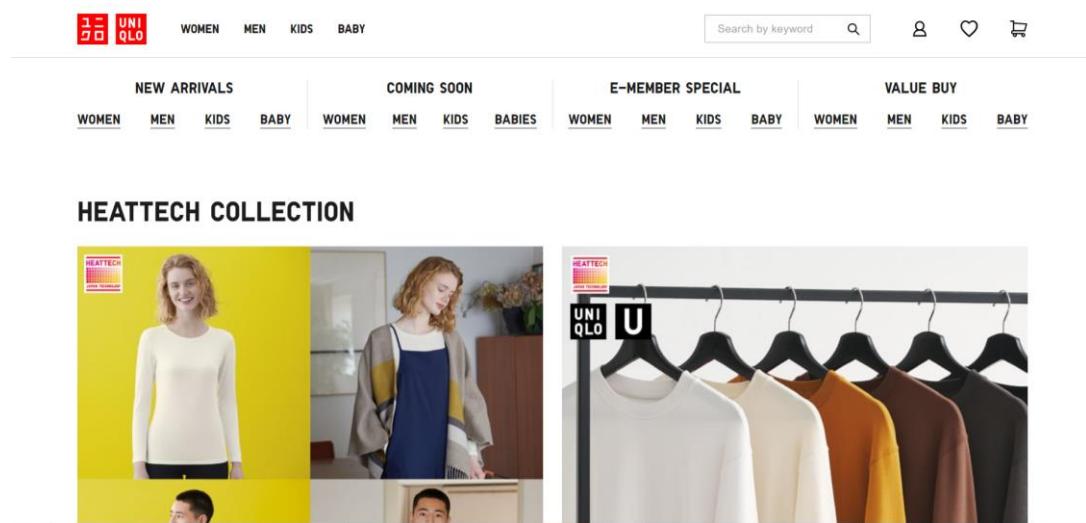


Figure 2.1 Uniqlo 1

## CHAPTER 2

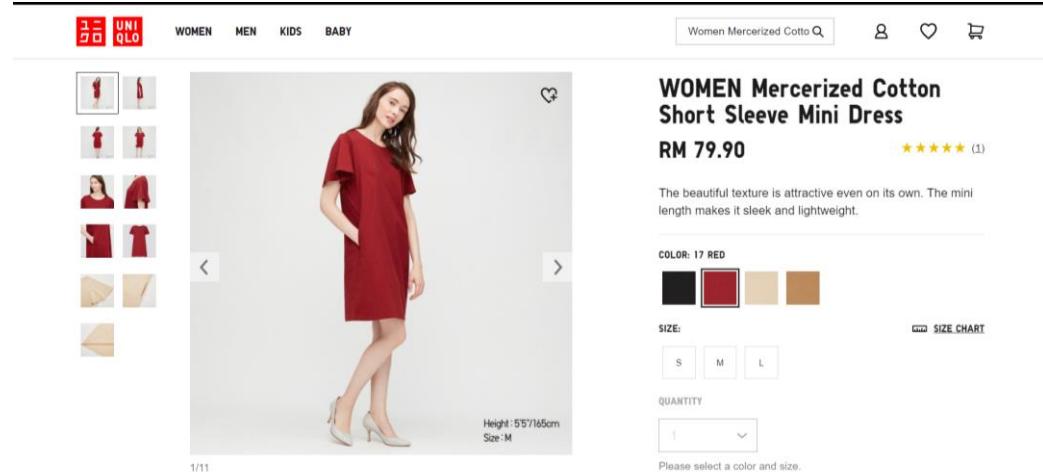


Figure 2.2 Uniqlo 2

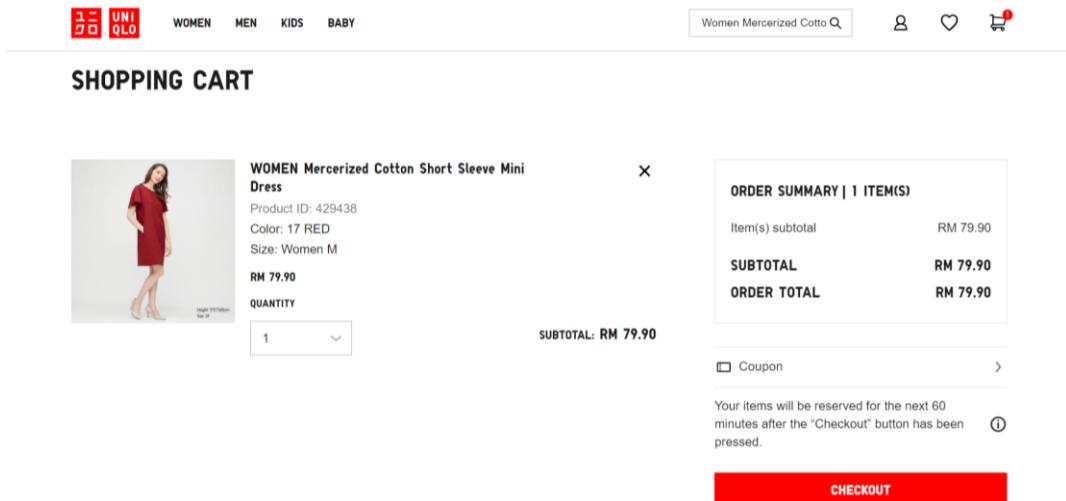


Figure 2.3 Uniqlo 3

Figure 1 shown the home page of Uniqlo website, the product was categorized well on the top of the page[9]. The design of the interface is understandable and user friendly. After click on one of the products, it brings user to the product detail page as Figure 2.2 shown. Product details page included the detail information of the product (materials, overview), price, review, rating and social plugin (Facebook, Twitter). Once user decided to buy the product, it will go to cart page as Figure 2.3 shown.

## CHAPTER 2

### Strengths of Uniqlo website

The first strength of Uniqlo web application is “Stock of the product can be found”. This is a powerful strength to improve the inventory management system of a company. Uniqlo allow user to keep track to the stock of specified product they interested to. The second strength is “Interface design is well categorized and colorful”. The interface of Uniqlo web is very detail and understandable. Next, this web included “Social plugin”, it allows user to share the product to Facebook and Twitter. Other than that, “Store locator” is also a good function in this website. It shows the location of the store for those users who wanted to go for real boutique store to test the size of the product. Uniqlo allows user to create an account, and the account would store the information of the customers. Example, user login and track his order in this system.

### Limitation of Uniqlo website

Uniqlo web did not included the Online chatting with customer. Consumers are not able to receive the reply of their question rapidly when they have some question to ask about the product. Last, analytic and notification is not included in this website.

### Recommendation to solve the limitation

Develop the online chatting at the bottom right of the home web. Catch up the customer buying wish, reply rapidly can improve the customer flow. Lastly, provide a useful analytic and notification to the user. It helps attract the attention of the user.

## CHAPTER 2

### 2.3 Padini Website

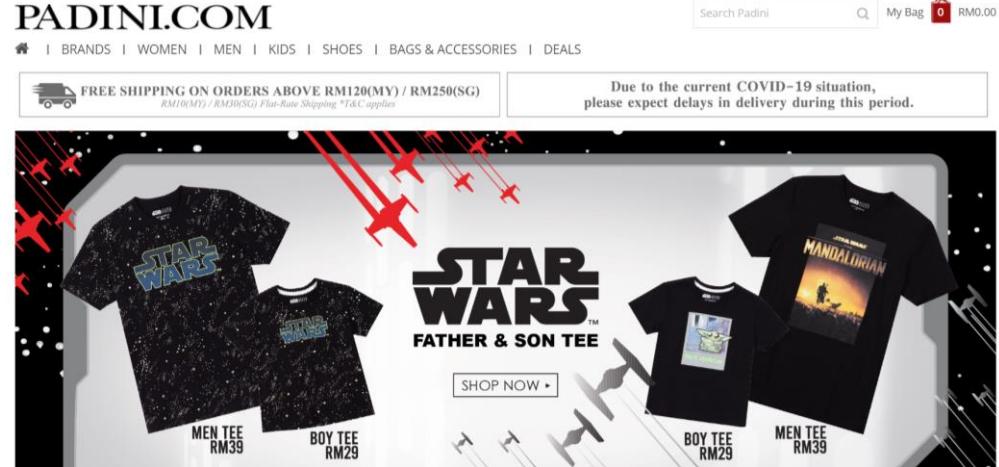


Figure 2.4 Padini 1

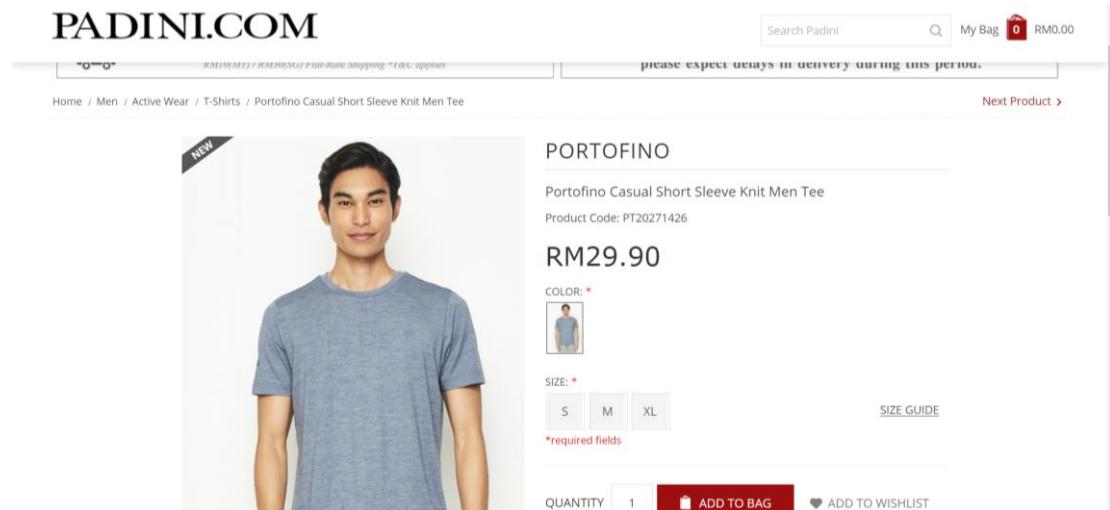


Figure 2.5 Padini 2

## CHAPTER 2

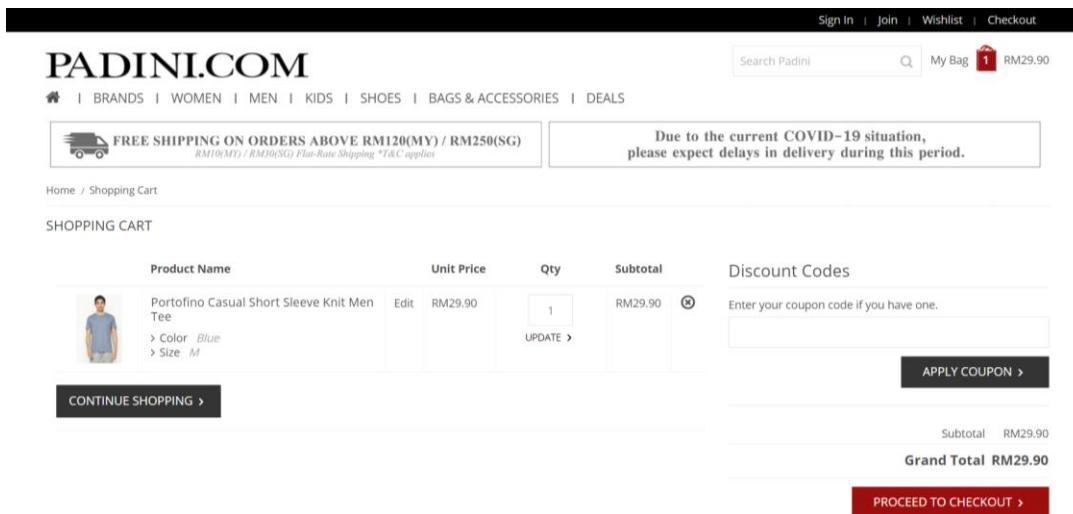


Figure 2.6 Padini 3

Figure 1 shown the home page of Padini website [10], the product was categorized well on the top of the page. The design of the interface is clear. After click on the products, it goes to the product detail page as Figure 2.5 shown. Product details page included the detail information of the product (materials, overview), price, size guide and social plugin (Facebook, Twitter). Once user decided to buy the product, it will go to cart page as Figure 2.6 shown.

### Strength of Padini Website

The first strength of Padini web application is “Interface design is well categorized”. The interface of Padini web is very detail, and understandable. Next, this web included “Social plugin”, it allows user to share the product to Facebook, Google+, Email and Twitter. Padini allows user to create an account, and the account would store the information of the customers. Example, user login and track his order in this system. Other than that, “Store locator” is also a good function in this website. It shows the location of the store for those users who wanted to go for real boutique store to test the size of the product.

### Limitation of Padini website

Padini web did not included the Online chatting with customer. Consumers are not able to receive the reply of their question rapidly when they have some question to

## CHAPTER 2

ask about the product. Analytic and notification is not included in this website. Lastly, user unable to keep track the stock left of the product.

### Recommendation to solve the limitation

Include the online chatting function at the bottom of the home web. Catch up the customer buying wish, reply rapidly can improve the customer flow. Other than that, provide a useful analytic and notification to the user. It helps attract the attention of the user. Lastly, make a function that make user able to keep track in the stock of product.

### 2.4 Giordano Website

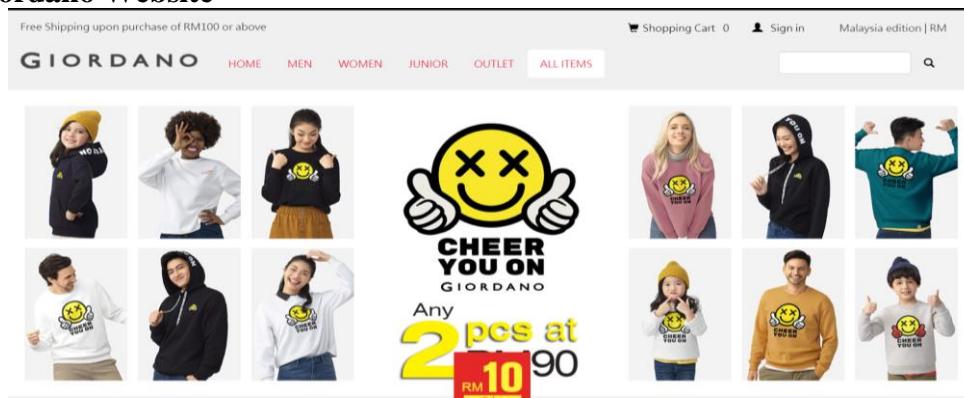


Figure 2.7 Giordano 1

## CHAPTER 2



Figure 2.8 Giordano 2

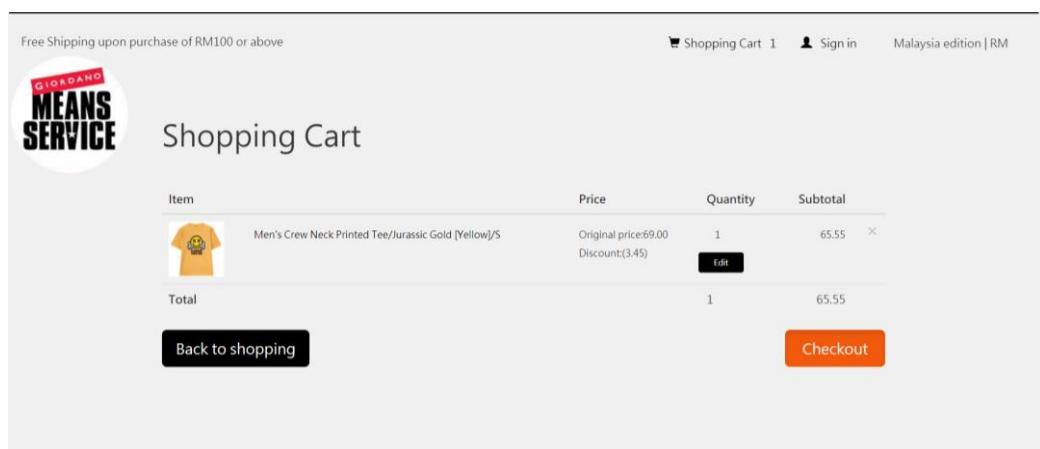


Figure 2.9 Giordano 3

Figure 1 shown the home page of Giordano website, the product was categorized well on the top of the page[11]. The design of the interface is clear. After click on the products, it goes to the product detail page as Figure 2.8 shown. Product details page included the detail information of the product (materials, overview), price, size chart and store located. Once user decided to buy the product, it will go to cart page as Figure 2.9 shown.

### Strength of Giordano Website

The first strength of Giordano web application is “Interface design is well categorized and interesting”. The interface of Giordano web is very detail, colorful

## CHAPTER 2

and interesting. Chinese and English are included in the introduction of categories. Other than that, “Store locator” is also a good function in this website. It shows the accurate location of the store for those users who wanted to go for real boutique store to test the size of the product. Besides, the home page of Giordano web included the video animation to promote their new product. Users can understand the stock left of the product. Giordano allows user to create an account, and the account would store the information of the customers. Example, user login and track his order in this system.

### Limitation of Giordano website

Analytic and notification is not included in this website. Next, Giordano web did not include the Online chatting with customer. Consumers are not able to receive the reply of their question rapidly when they have some question to ask about the product. Besides, social plugin is not included in Giordano web.

### Recommendation to solve the limitation

Include the online chatting function at the bottom of the home web. Catch up the customer buying wish, reply rapidly might increase the customer buying flow. Other than that, provide a useful analytic and notification to the user. It helps attract the attention of the user. Lastly, include social plugin in the web to allow user to share the product.

## CHAPTER 2

### 2.5 Comparison of Web

Table below shows the comparison of Uniqlo, Padini and Giordano website.

| Web App Function                    | Uniqlo   | Padini | Giordano    | The Proposed Apps |
|-------------------------------------|----------|--------|-------------|-------------------|
| Login                               | /        | /      | /           | /                 |
| Login by using social media account | /        | N/A    | /           | /                 |
| Check Stock Left                    | /        | N/A    | /           | /                 |
| Interface Design                    | Colorful | Simple | Interesting | Well Designed     |
| Store Locator                       | /        | /      | /           | /                 |
| Make order                          | /        | /      | /           | /                 |
| View order history                  | /        | /      | /           | /                 |
| Online chatting                     | N/A      | N/A    | N/A         | /                 |
| Notification engine                 | N/A      | N/A    | N/A         | /                 |
| Customer Management                 | /        | /      | /           | /                 |
| Inventory Management                | /        | /      | /           | /                 |
| Employee Management                 | /        | /      | /           | /                 |
| Order Management                    | /        | /      | /           | /                 |
| Useful Analytics                    | N/A      | N/A    | N/A         | /                 |

Table 2.1 Comparison of web

### 2.6 Comparison of Tools and technologies

In this project, I am using Node.js to build my server-side web application.

Node.js, core library written primarily in JavaScript are all included, and Google's V8 JavaScript engine, the libuv platform abstraction layer [2]. JavaScript is a strong programming language, and this is also one of the reasons why I am using this to develop my project. Express.js is a Node.js-based modular web application framework. Express can function as an internet-facing web server and even supports TLS/SSL out of the box. However, for performance concerns, it is frequently used in combination with a reverse proxy such as Apache or NGINX.

## CHAPTER 2

For database, I am using MySQL as the project database to store all the data. The reason why I use MySQL other than other database platform is its high availability. MySQL's strong feature is its consistent availability; businesses that use it may expect round-the-clock uptime. MySQL has a number of cluster servers and master-slave replication setups that allow for fast failover and continuous access. MySQL is built to handle millions of queries and thousands of transactions with unique memory caches, full-text indexes, and lightning-fast performance. For website design front end, I am going to use HTML5, CSS and JavaScript to design the user interface. Since I never learn another framework to design the website front end, so I will only use these.

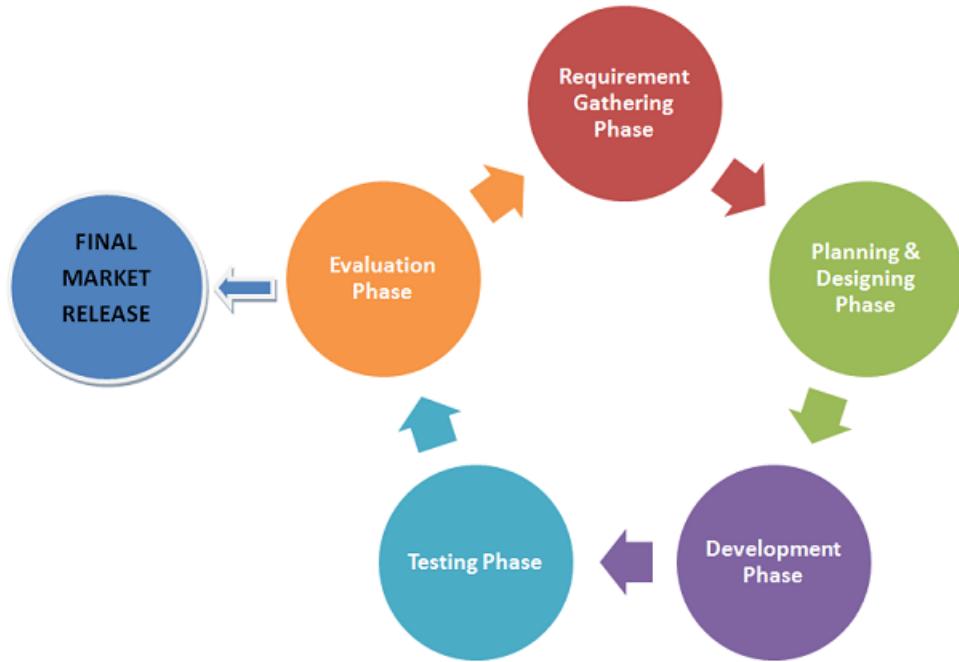
### 2.7 Summary

In this chapter, the functionalities, strength and weakness been discussed in detail, in order to produce a better Boutique Management System. Through this literature review, the structure and functionalities of boutique management system are clearly described. Therefore, the functionalities will be applied in this project.

## CHAPTER 3: System Methodology/ Approach

### 3.1 System Design Diagram/ Equation

#### 3.1.1 System Methodology Diagram



**Figure 3.1: Agile Model**

The project's processes were divided into distinct phases during its development. Agile SDLC model is a combination incremental and iterative process models [7]. By delivering a functional software solution quickly, Agile focus on process flexibility and customer satisfaction [8]. Agile methods divide tasks into smaller iterations or pieces and avoid long-term planning. Each iteration of agile SDLC consists of working on various phases which were Requirement gathering phase, planning & designing phase, development phase, testing phase, and evaluation phase.

#### Requirement gathering phase

In this phase, requirement of this project should be defined as much as possible. Project business logic and the estimation of time and effort needed in this project should be described. Technical and economic feasibility can be accessed based on this information.

### Planning & designing phase

In this phase, the solution to approach the requirements will be explored and the tools required to achieve best outcome will be decided. For example, decides on the programming language, frameworks, and libraries that will be used in the project. Other than that, the page mockup of UI design will be created as well. On further iteration, features implementation and internal structure will be decided. UI design is refined or reworked to accommodate the additional features in further iteration.

### Development phase

Within the software development process, the development phase involves developing code and transforming design documents into actual software. This is the most time-consuming step of the SDLC since it forms the foundation of the whole process.

### Testing phase

The aim of this phase is to ensure that the system/code is bug-free and compatible with everything else built previously. Runs a set of tests to check that the code is clean and that the solution's business goals are satisfied. In further iteration, the testing becomes more involved and include not just functionality testing but also systems integration, interoperability, and user acceptability testing, among other things.

### Evaluation phase

In this phase, the project is deployed on the server and provided to others, either for demo or actual use. Further iteration is to update the existing system, fixing issue and introducing new features.

## CHAPTER 3

### 3.1.2 Use Case Diagram and Description

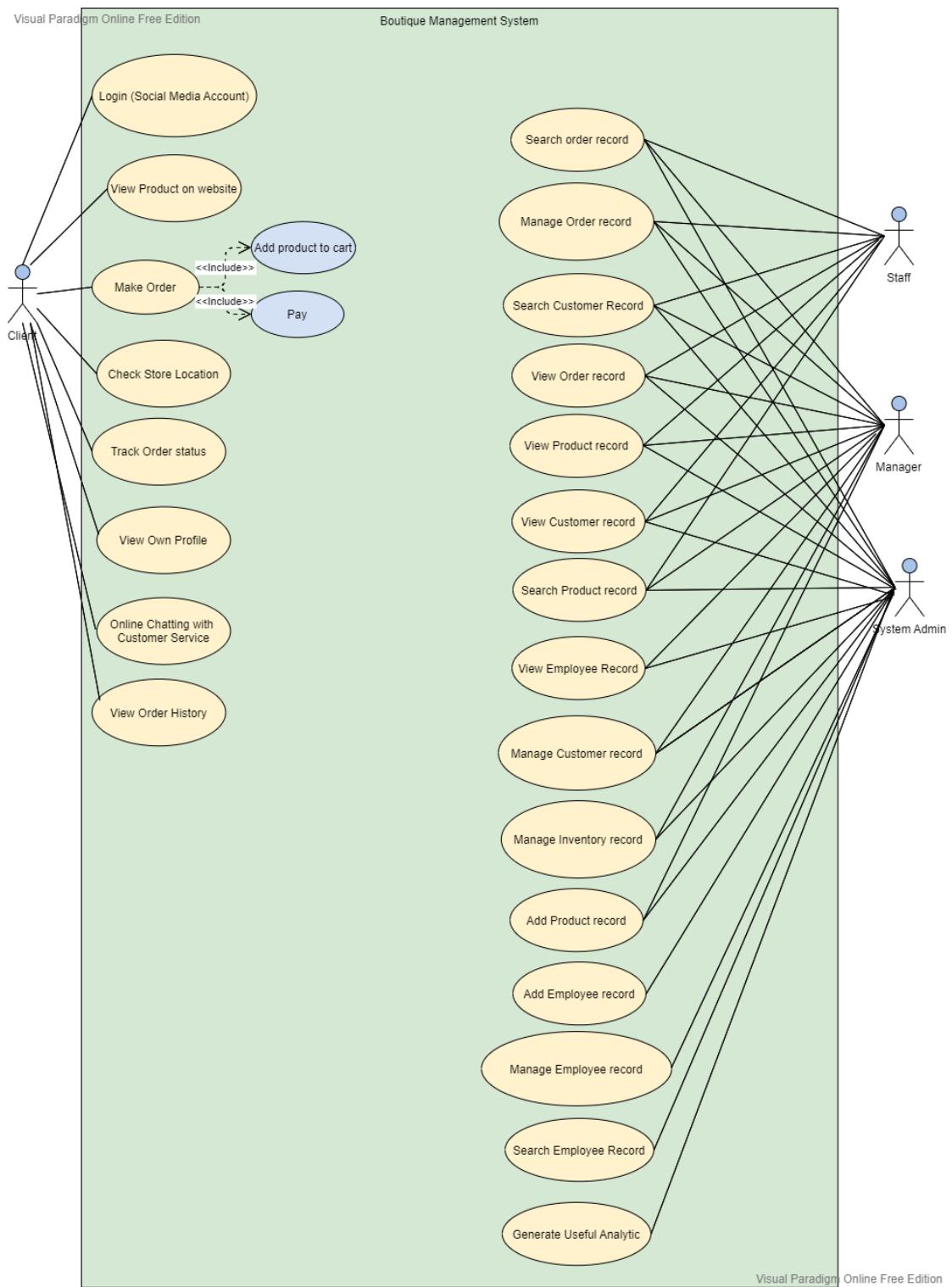


Figure 3.1.2 Use case Diagram

## CHAPTER 3

Figure 3.1.2 shows the use case diagram for overall web application. First, for the client role, client can login to the website by using their social media account, view product on the website, check store location, view their own profile details, online chatting with customer service, make order, track order status, and view order history. Next for the server-side, the staff role can view own profile details, search order records, manage order records, view all customer records, search customer record, view all order records, view all product records, search product records. Next for the manager roles, manager have a higher authority than normal staff, manager can do all the operation that staff can do. Other than staff authority operation, manager can view all employee records, manages customer records, management inventory/ product records, and add product records. Lastly, system admin has the highest authority, and do all the operation. Other than manager authority task, system admin can add employee record, manage employee records, search employee records, and generate useful analytics.

## CHAPTER 3

### 3.1.3 Activity Diagram

#### Client Side

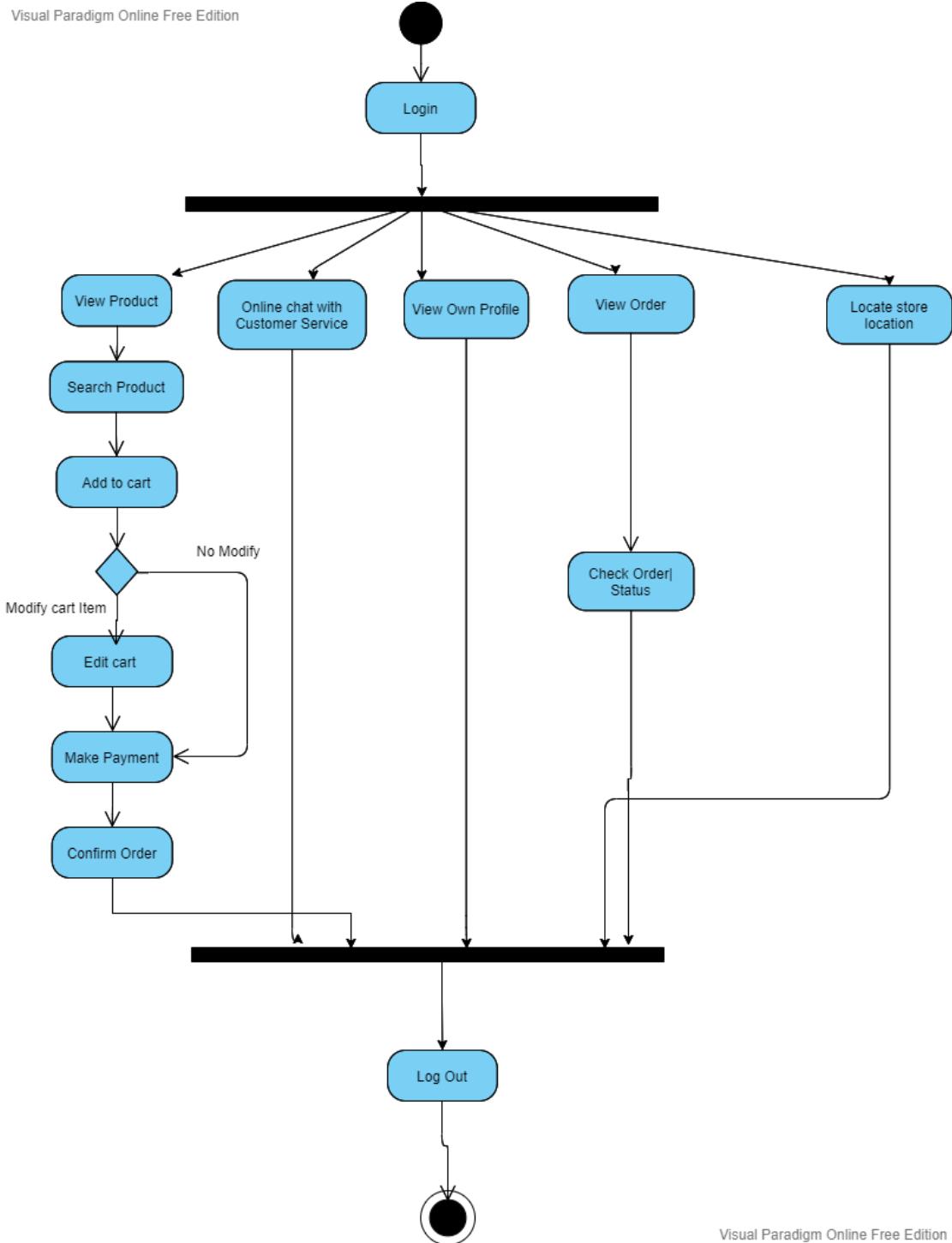


Figure 3.1.3.1 Activity Diagram (Client)

## CHAPTER 3

Client first login using the social media platform. After client users logged in to the website, they have 5 choices to go. First is view the product, search product, after found the product that they wish to buy, users add item to the cart, then users can modify or no modify the cart product, then make payment and confirm order. Second choice is to chat with the customer service. Third is view their own profile, forth is locate the store location. Last choice is to view their order, if users order is based on delivery method, users can check order status. Users can view their own order history. When user wish to close the web application, users may log out from the website.

## CHAPTER 3

### Server Side

#### Inventory Management

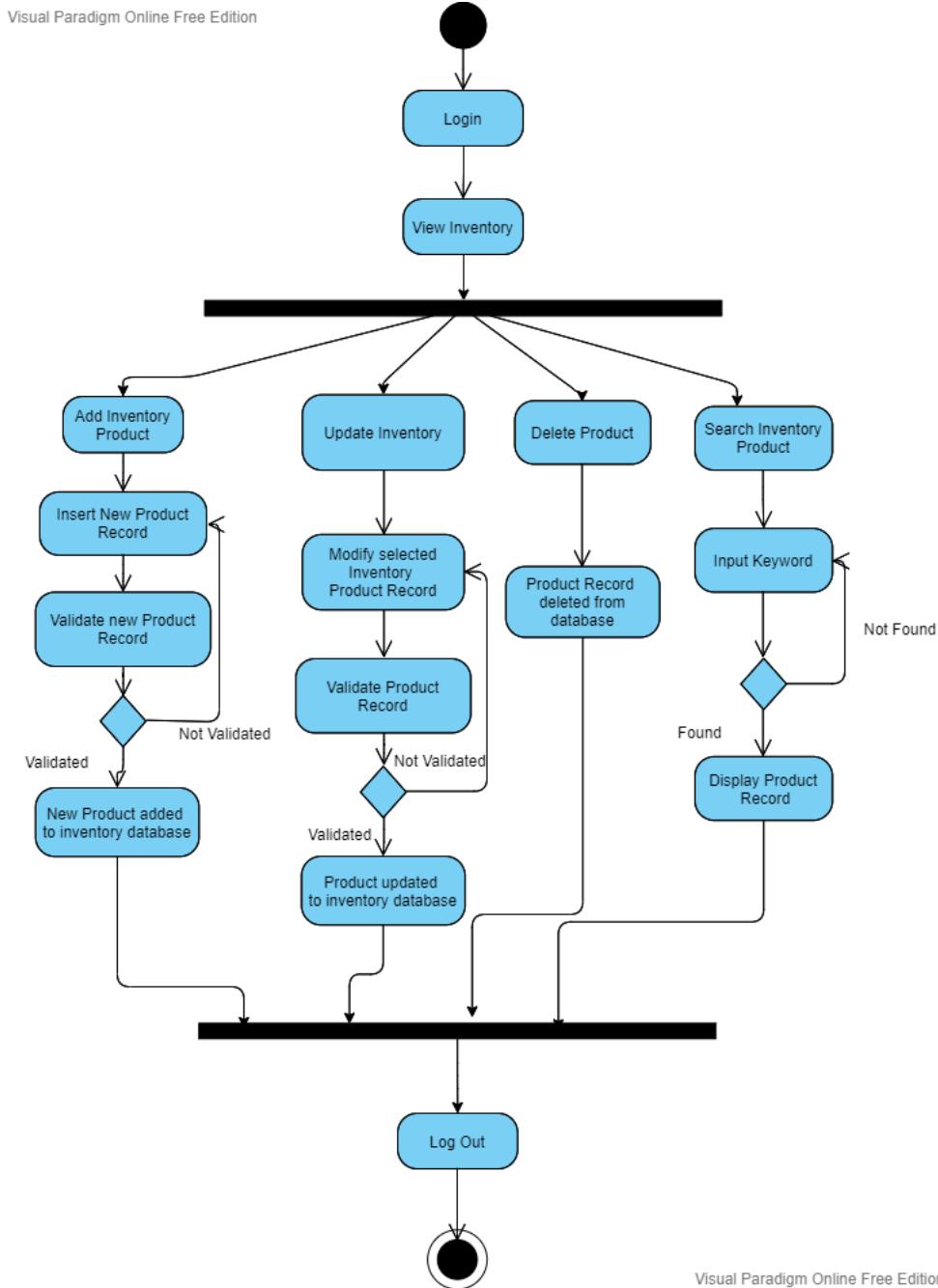


Figure 3.1.3.2 Activity Diagram (Server)

## CHAPTER 3

Log in as the system admin. Inventory product will first display to user. First choice of user is to add new product record. Insert new product details, and the system will validate the product details. If it is not validated user may insert again, else new product record will be added to the database. Second choice is to update product, user modify selected inventory product record, and the system will validate the modification. If it is not validated, user may modify again to correct format, else product records updated to the inventory database. Next choice is deleting product function, user choose the product that wish to delete, then the product selected will be removed from the database. Last function is search inventory records; user input the product details keywords. If it is found, system display the product details, else it displays not found message.

## Employee Management

Visual Paradigm Online Free Edition

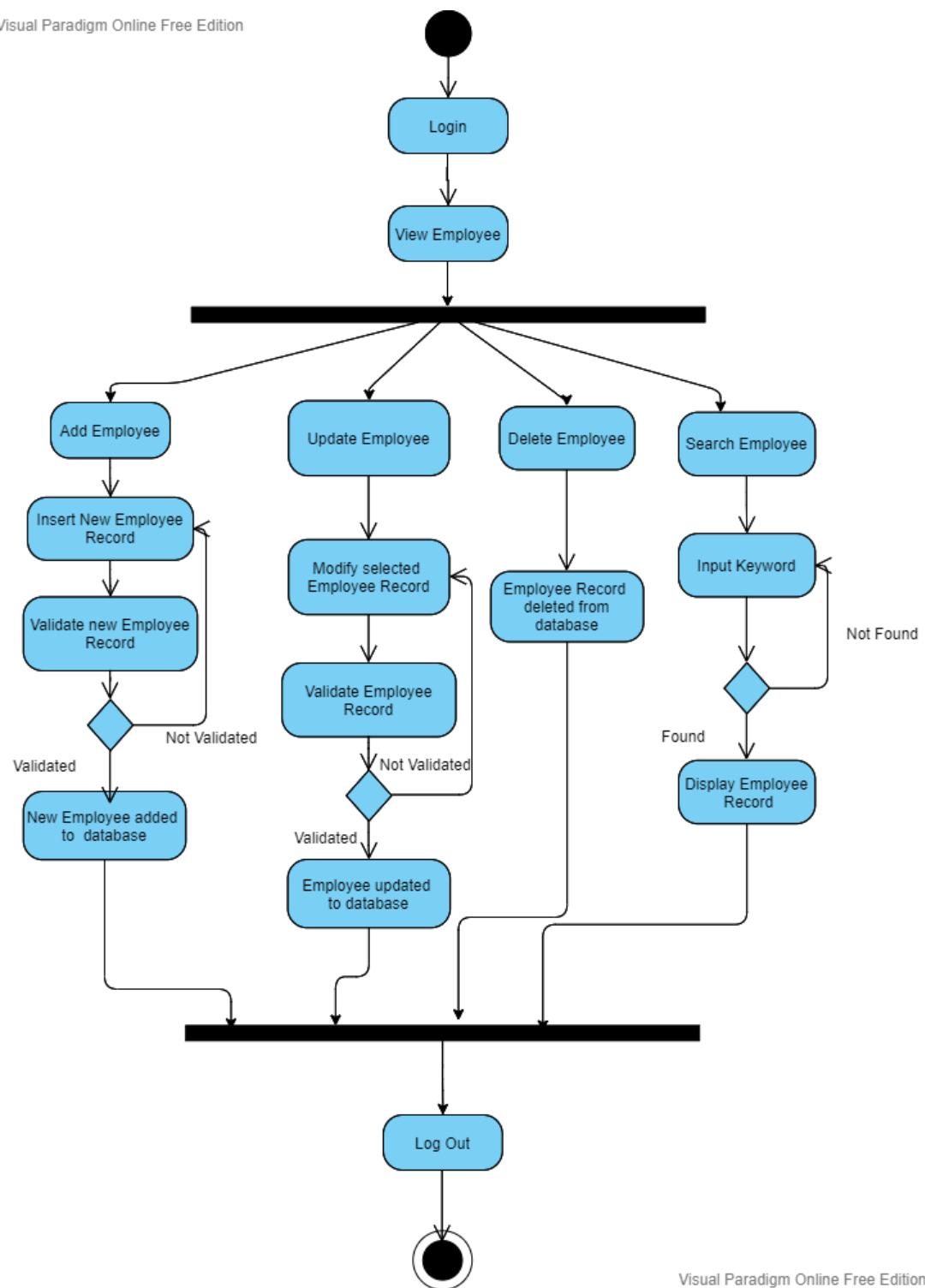


Figure 3.1.3.3 Activity Diagram (Employee)

## CHAPTER 3

Log in as the system admin. Employee records will first display to user. First choice of user is to add new employee record. Insert new employee details, and the system will validate the employee details. If it is not validated user may insert again, else new employee record will be added to the database. Second choice is to update employee, user modify selected employee record, and the system will validate the modification. If it is not validated, user may modify again to correct format, else employee records updated to the database. Next choice is deleting employee function, user choose the employee that wish to delete, then the employee selected will be removed from the database. Last function is search employee records; user input the employee details keywords. If it is found, system display the employee details, else it displays not found message.

## Order Management

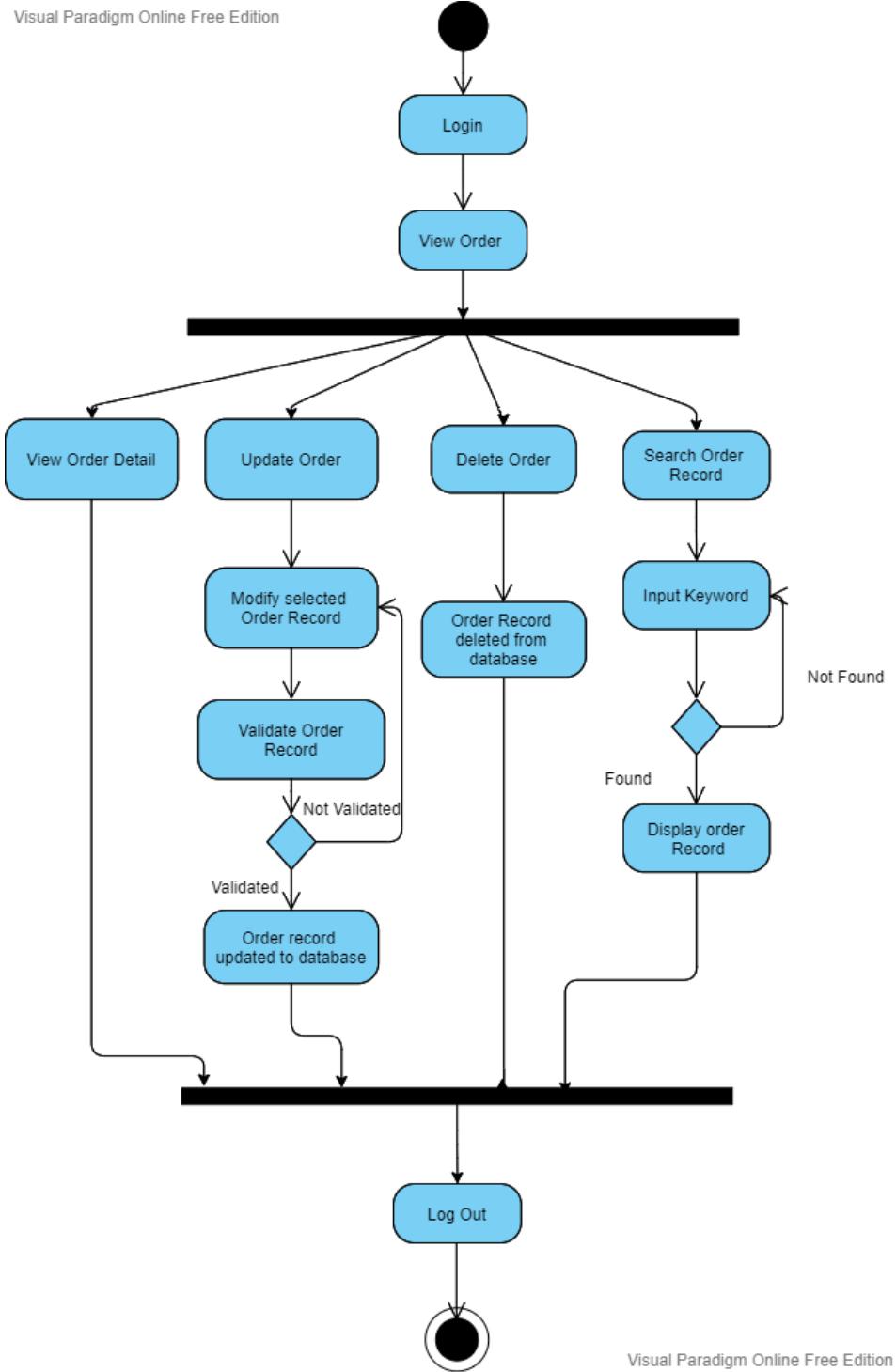


Figure 3.1.3.4Activity Diagram (Order)

## CHAPTER 3

Log in as the system admin. order records will first display to user. First choice of user is to view the order detail which is about the ordered product code and their quantity. Second choice is to update order, user modify selected order record, and the system will validate the modification. If it is not validated, user may modify again to correct format, else order records updated to the database. Next choice is deleting order function, user choose the order records that wish to delete, then the order selected will be removed from the database. Last function is search order records; user input the order keywords. If it is found, system display the order information, else it displays not found message.

## Customer Management

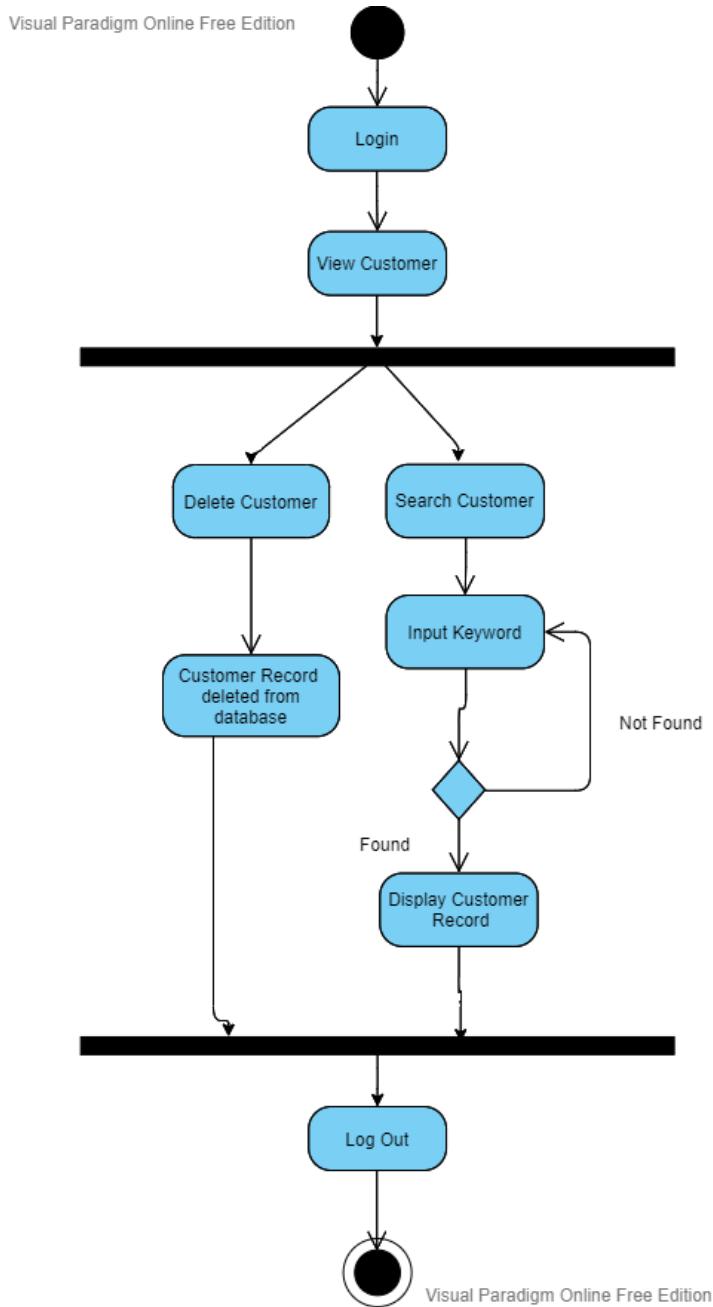


Figure 3.1.3.5 Activity Diagram (Customer)

Log in as the system admin. Customer records will first display to user. First choice of user is to delete customer function, user choose the customer that wish to delete, then the customer selected will be removed from the database. Last function is search customer records; user input the customer details keywords. If it is found, system display the employee details, else it displays not found message.

### Analytic generation

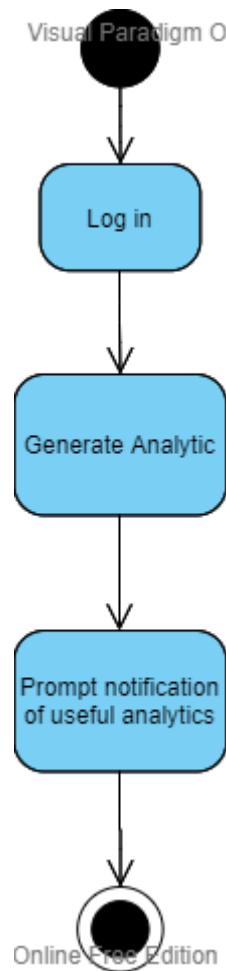


Figure 3.1.3.6 Activity Diagram (Analytic)

Log in as the system admin. User can choose to generate a useful analytic. Then the system will prompt the notification to the user for the useful analytic.

# CHAPTER 4: System Design

## 4.1 System Block Diagram

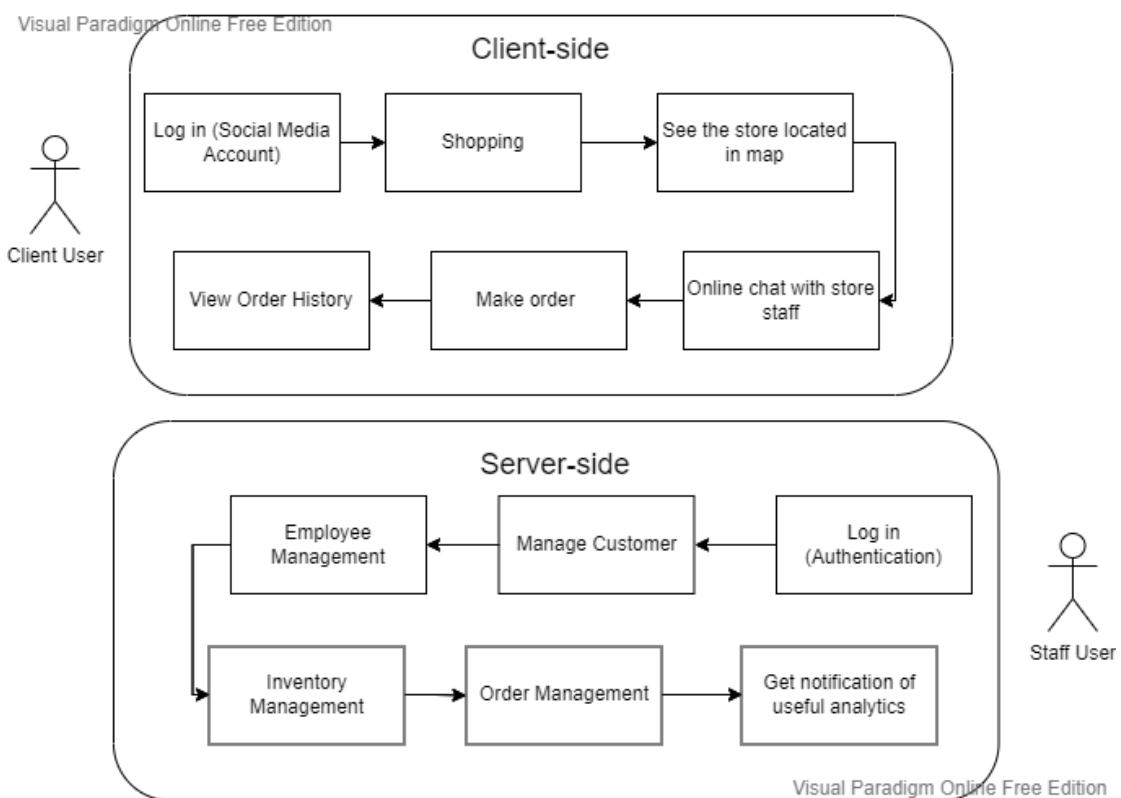


Figure 4.1 System block diagram

First, for the client side, client user can first log in to the website by using their Social Media account (Facebook). After they log in, client can proceed to shopping on the website. Client user may look for the physical store located on the map that embedded on the website home page. Client may contact customer service staff if they have any question about the products by using the right bottom corner online chat features. Client may add the product they wish to buy in shopping cart and proceed to make an order.

Next, for server-side, staff user may log in using their username and password. Like system admin have authority to done all of the server-side function. Customer Management included read customer information, update customer information, and delete customer. Employee Management include the operation such as read, update,

## CHAPTER 4

add, and delete employee information. Inventory Management included operation like read, add, update, and delete product inventory information. Order Management included read, update, and delete order information. Manager can manage customer information, read employee information, manage inventory, and manage order. Normal staff can only read their own profile information, manage customer, manage inventory details, and manage order. For every staff included manager and system admin can generate and prompt a notification a useful analytic about the HOTTEST sales and the analysis of total inventory.

## CHAPTER 4

### 4.2 ER Diagram

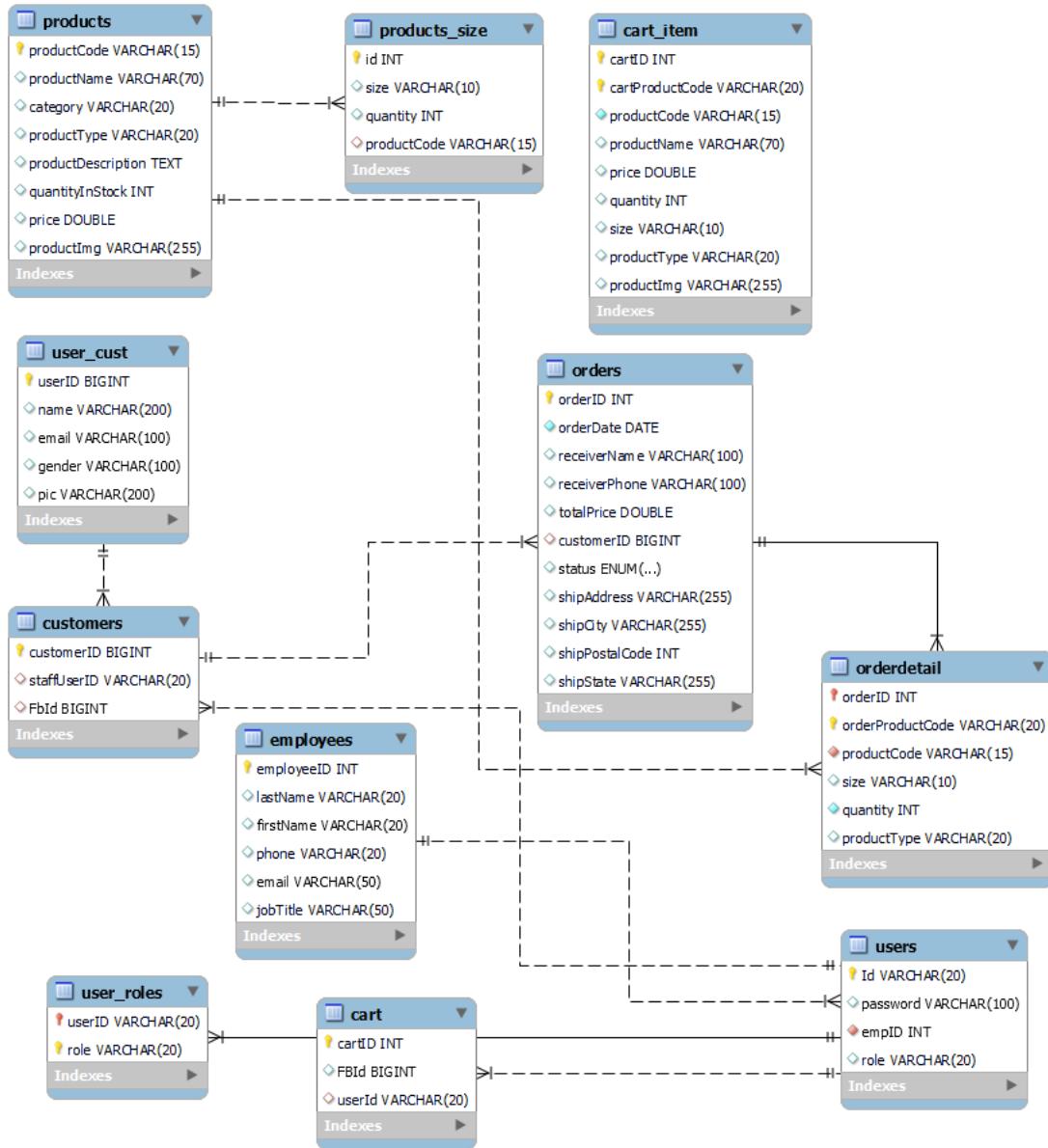


Figure 4.2 ER Diagram

Figure 4.2 shows the ER diagram of the BMS database. In this er diagram, it contains the user and user role table that stored the user id, password, and role of the user. In users table contains empID as the foreign key that linked to employee table. Next, the employee table is to store the data of the boutique store employee details. Product table stored the inventory product details of the boutique store while the product\_size table stores the quantity of product based on different sizes. After that, customer table store the details of the customer that make order through the client-side website. The order table that stored the order information of customer made, so it contains a foreign key customerID. The order detail table shows the product code together with the order id. Other than that, user\_cust table store the client user details that log in and place order in the website by using their social media accounts. Cart table store cart information for users, while cart\_item stores the product detail inside specific cart.

### 4.3 Class Diagram

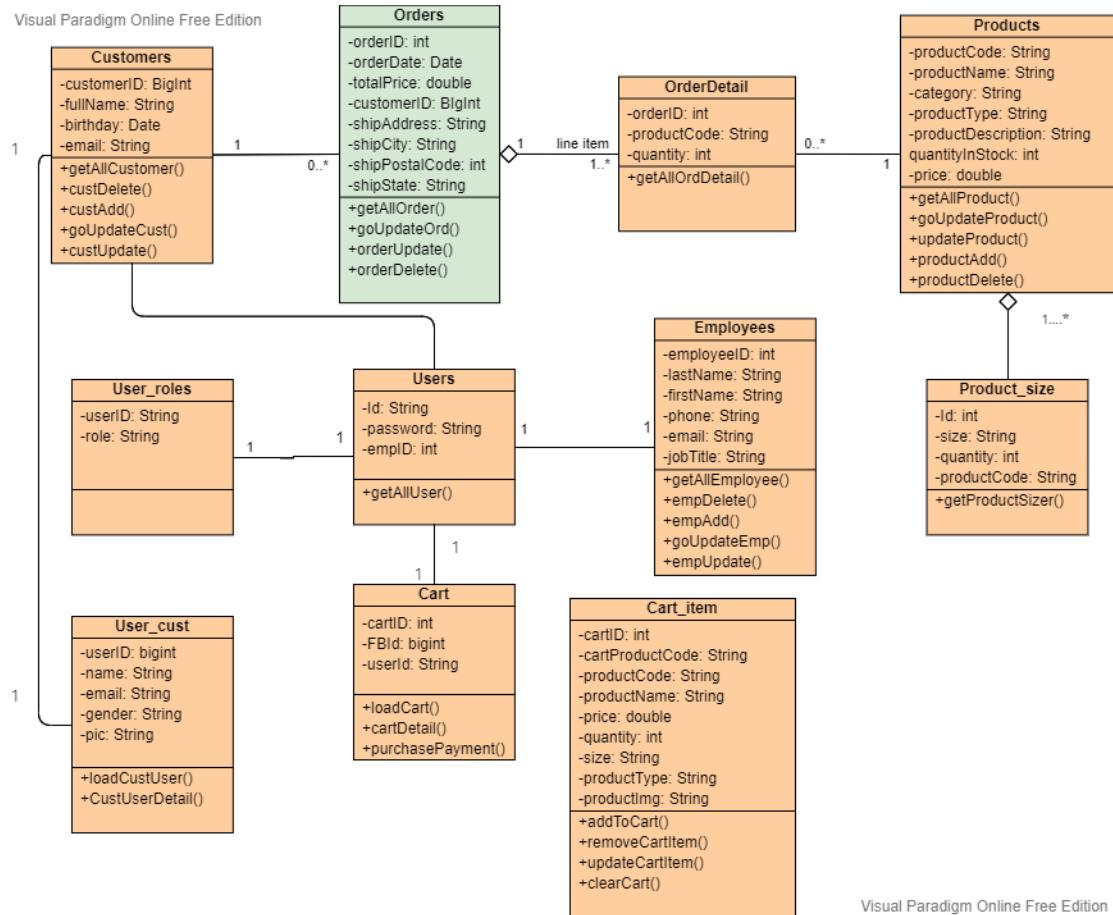


Figure 4.3 Class Diagram

Figure 3.2.4 above shows the class diagram of the server-side web application. In customer class, the attributes representative the customer details and the customer details data type. At the bottom of the customer class is the operation that should be used in the web application such as getAllCustomer, custDelete, custAdd, goUpdateCust, and custUpdate. In order class, the attributes representative the order information and the order attributes data type. At the bottom of the order class is the operation that should be used in the web application such as getAllOrder, orderDelete, goUpdateOrd, and orderUpdate. In order class, the attributes representative the order details and the order detail attribute data type. At the bottom of the order detail class is the operation that should be used in the web application such as getAllOrderDetail. Next, In product class, the attributes representative the product details and the product attributes data type. At the bottom of the product class is the operation that should be used in the web application such as getAllProduct, productDelete, productAdd, goUpdateProduct, and

## CHAPTER 4

updateProduct. Other than that, the employee class's attributes representative the employee information and the employee attributes data type. At the bottom of the employee class is the operation that should be used in the web application such as getAllEmployee, empDelete, goUpdateEmp, and empUpdate, empAdd. Next, in user and user role class show the attribute of the data and the getAllUser operation. Furthermore, user\_cust class attributes represented the customer user detail and operation of the class which are loadCustUser and CustUserDetail. Attributes in product\_size class represent the the quantity and size of specific product; the operation of this class is getProductSize. Attributes in cart class stores the cart of every user, the operation of this class is loadCart, cartDetail, and purchasePayment. Lastly, cart\_item attributes stores the cart item inside every user's cart, while the operation of this class is addToCart, removeCartItem, updateCartItem, clearCart.

## CHAPTER 4

### 4.4 Wireframe

#### Client Side

##### Login Page

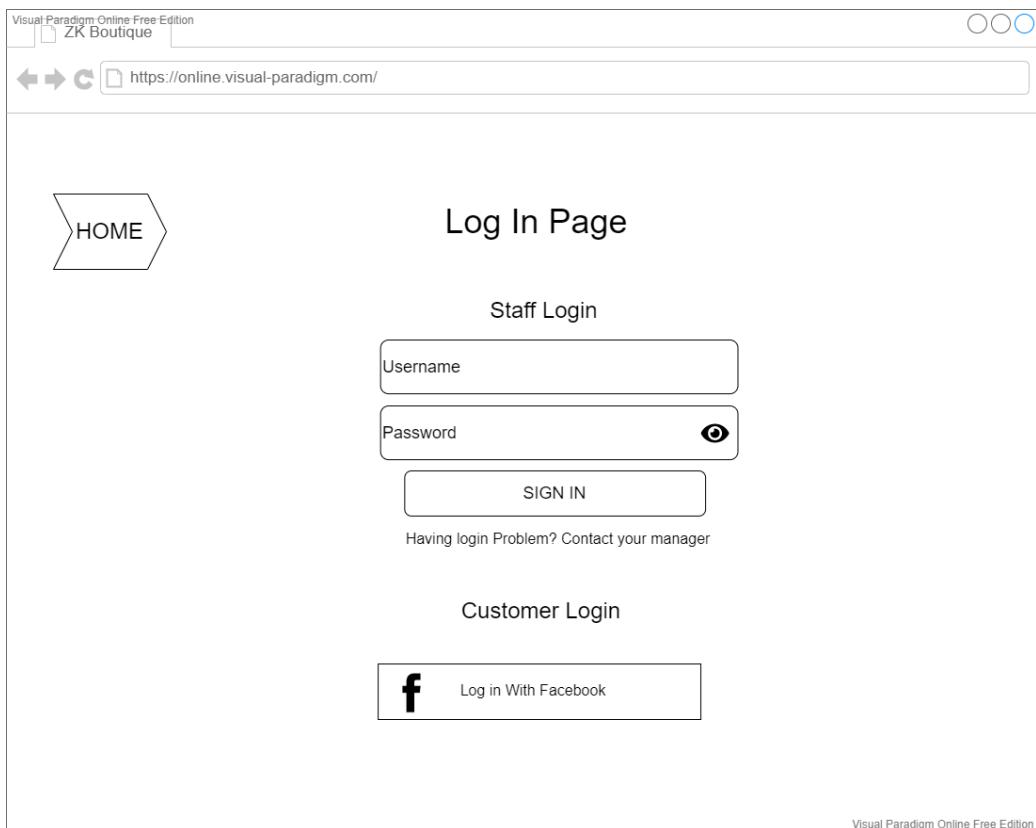


Figure 4.4.1 Wireframe (Log In)

## CHAPTER 4

### Home Page

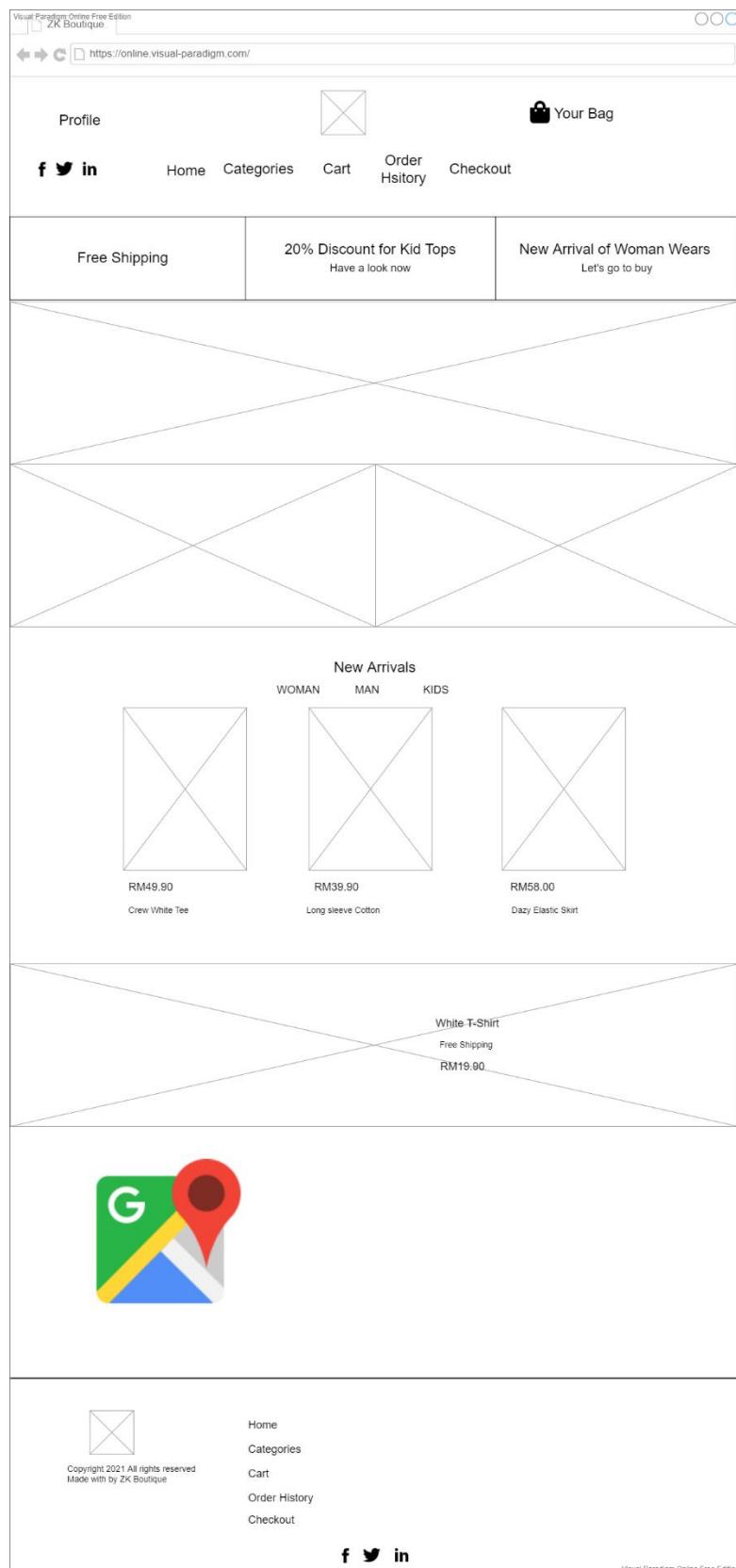


Figure 4.4.2 Wireframe (Home)

## CHAPTER 4

### Product Detail Page

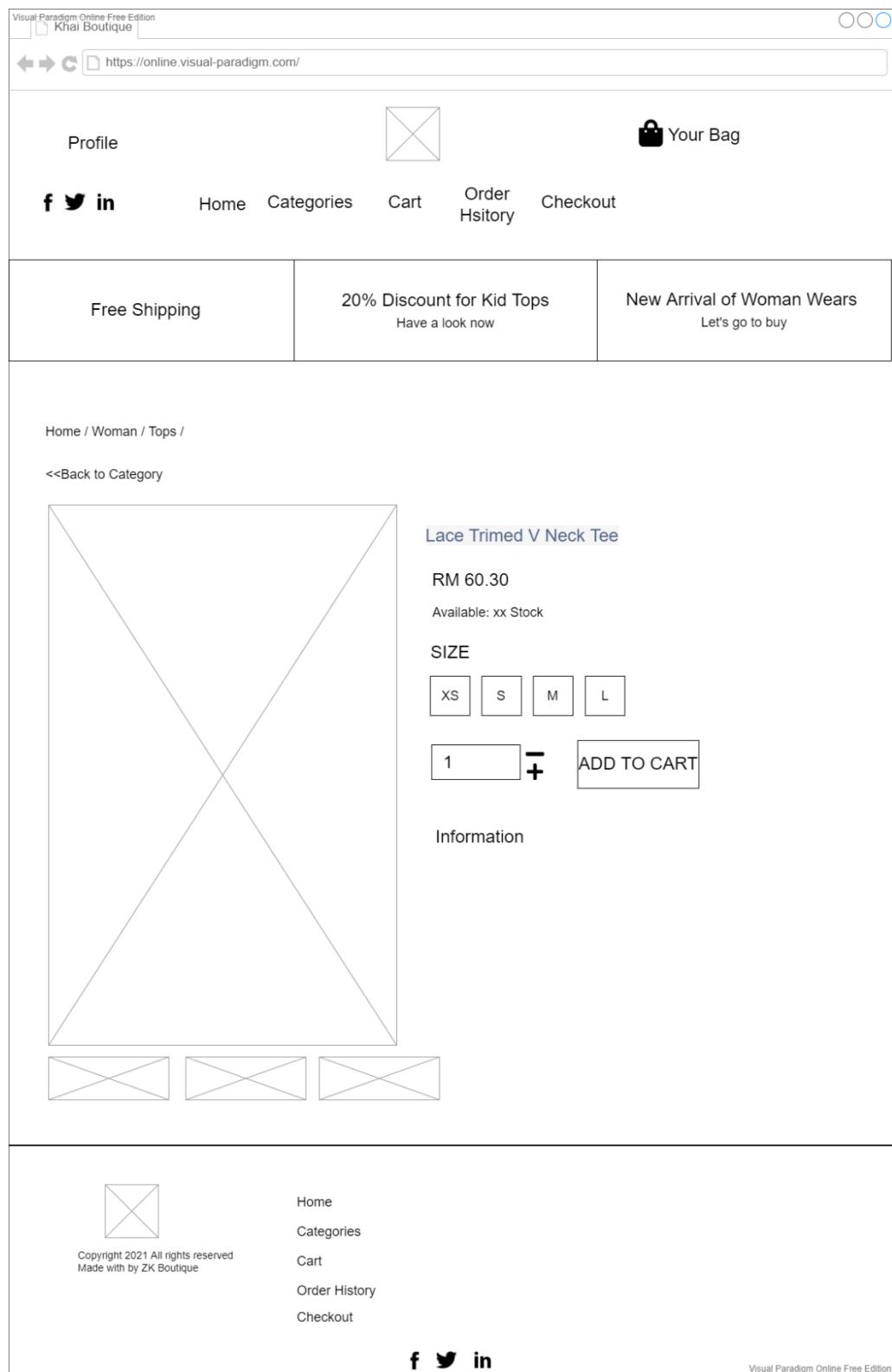


Figure 4.4.3 Wireframe (Product Detail)

## CHAPTER 4

### Cart Page

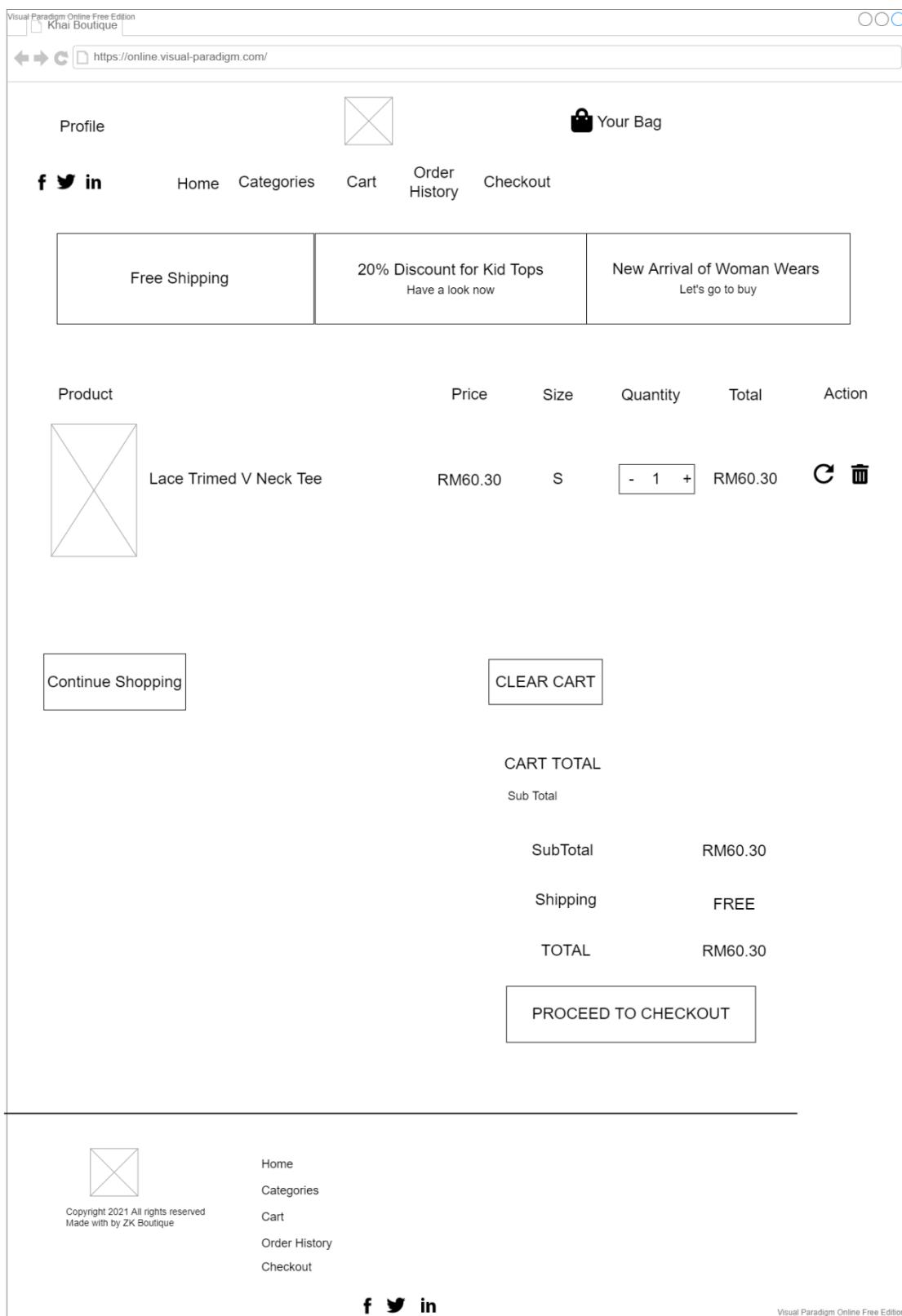


Figure 4.4.4 Wireframe (Cart)

## CHAPTER 4

### Checkout Page

The wireframe shows a checkout page for 'Khai Boutique'. At the top, there's a header with a logo, a search bar containing 'https://online.visual-paradigm.com/', and navigation links for Profile, Your Bag, Home, Categories, Cart, Order History, and Checkout. Below the header are three promotional banners: 'Free Shipping', '20% Discount for Kid Tops (Have a look now)', and 'New Arrival of Woman Wears (Let's go to buy)'. The main form area is divided into two columns. The left column contains fields for NAME, ADDRESS, POSTCODE, CITY, STATE, and PHONE, each with an input box. The right column is titled 'YOUR ORDER' and shows a summary table:

| Product                | Total   |
|------------------------|---------|
| Lace Trimed V Neck Tee | RM60.30 |
| SubTotal               | RM60.30 |
| Shipping               | FREE    |
| TOTAL                  | RM60.30 |

A 'PLACE ORDER' button is located at the bottom of this column. At the very bottom, there's a footer with a logo, links to Home, Categories, Cart, Order History, and Checkout, social media icons for Facebook, Twitter, and LinkedIn, and copyright information: 'Copyright 2021 All rights reserved Made with by ZK Boutique'.

Figure 4.4.5 Wireframe (Checkout)

## CHAPTER 4

### Order History Page

The wireframe shows the Order History page for 'Khai Boutique'. At the top, there's a header with the site name, a navigation bar with links for Profile, Home, Categories, Cart, Order History (which is the active tab), and Checkout, along with social media icons for Facebook, Twitter, and LinkedIn. Below the header is a promotional banner with three sections: 'Free Shipping', '20% Discount for Kid Tops', and 'New Arrival of Woman Wears'. The main content area is titled 'Order' and displays a table with one row of data. The table columns are: OrderID, OrderDate, Receiver Name, Receiver Phone, Status, Ship Address, Ship City, Ship Postal Code, Ship State, and Total Price. The data row corresponds to an order with OrderID 101, placed on 2022-04-03 by David, with a total price of RM141.70. Below this is a section titled 'Order Detail' which lists the product information for the item in the order. The footer contains a logo, copyright information, and links to other pages: Home, Categories, Cart, Order History, and Checkout. It also includes social media icons and a note about being made with ZK Boutique.

| OrderID | OrderDate  | Receiver Name | Receiver Phone | Status     | Ship Address                       | Ship City | Ship Postal Code | Ship State | Total Price |
|---------|------------|---------------|----------------|------------|------------------------------------|-----------|------------------|------------|-------------|
| 101     | 2022-04-03 | David         | 0123524162     | In Process | 123,jalan<br>lokong, taman<br>satu | Puchong   | 10253            | Selangor   | RM141.70    |

| Product | OrderID | Size | Quantity | Product Type | Price   |
|---------|---------|------|----------|--------------|---------|
|         | 101     | S    | 1        | Tops         | RM60.30 |

Copyright 2021 All rights reserved  
Made with ZK Boutique

Home  
Categories  
Cart  
Order History  
Checkout

[f](#) [t](#) [in](#)

Visual Paradigm Online Free Edition

Figure 4.4.6 Wireframe (Order History)

## CHAPTER 4

### Server Side

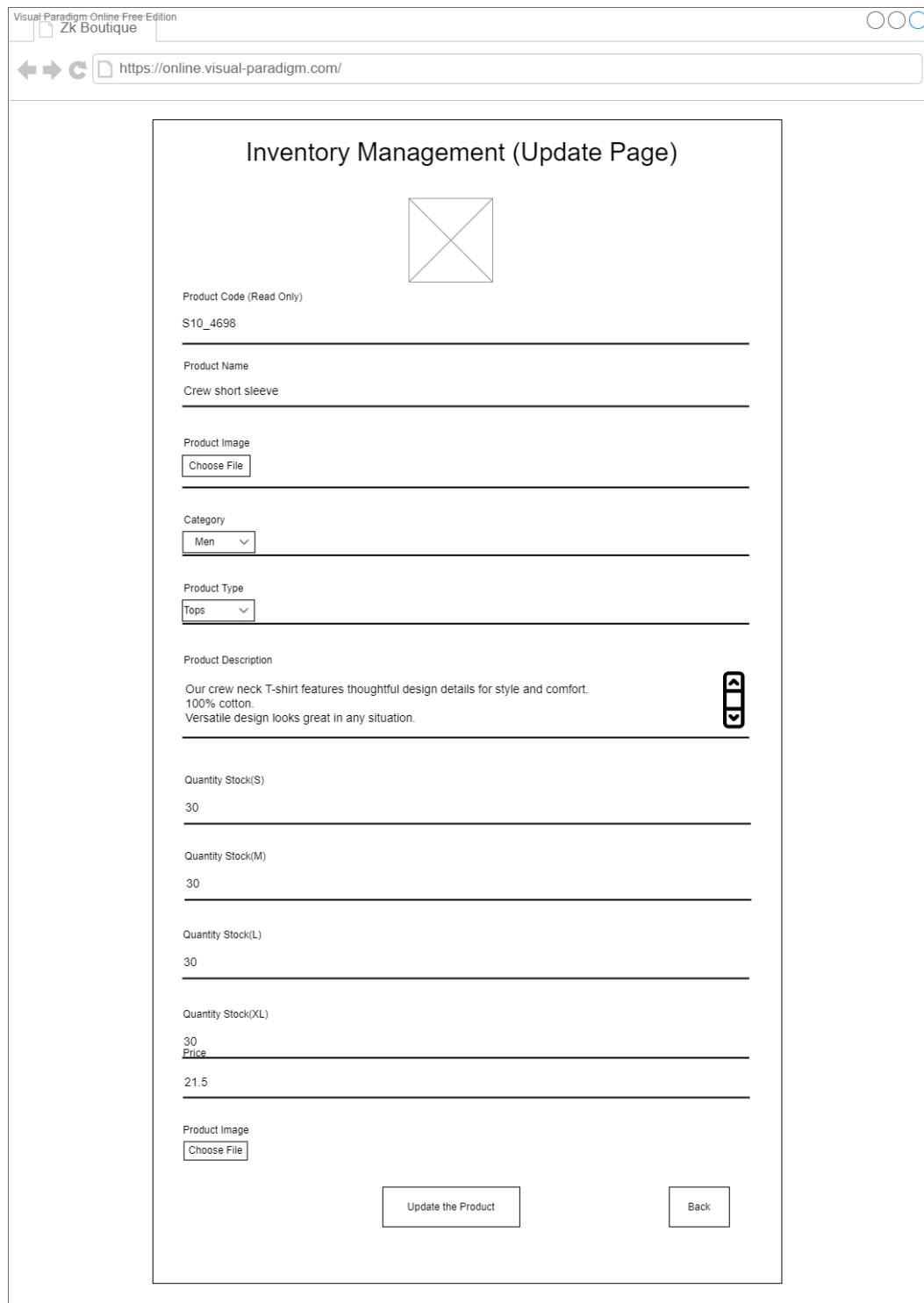
#### Inventory Management Page

| Inventory            | Inventory Management |  |          |             |   |               |       | Anlytic | Home | Add New Product |
|----------------------|----------------------|--|----------|-------------|---|---------------|-------|---------|------|-----------------|
|                      | ProductCode          | ProductName                                  | Category | ProductType | ProductDescription  | QuantityStock | Price |         |      |                 |
| Inventory Management | S10_4698             | Crew Short Sleeve                            | Men      | Tops        | Our crew neck T-shirt features thoughtful design details for style and comfort. 100% cotton. Versatile design looks great in any situation. Perfectly balanced proportions for a slimming silhouette. Cuffs and hem created with an advanced overlock hemming technique that makes the seams less conspicuous. Everything from the shoulder angles to armhole shape and sleeve position were designed to complement the body. | 121           | 21.5  |         |      |                 |
| Employee Management  | S10_4757             | Waterfall Collar Double Breasted Trench Coat | Women    | Outwear     | Style: Casual Color: Redwood Pattern: Plain Length: Knee Length Season: Spring/Fall Type: Pea Coat Details: Double Button, Pocket Fit Type: Regular Fit Neckline: Waterfall Sleeve Length: Long Sleeve Sleeve Type: Regular Sleeve  | 120           | 88.7  |         |      |                 |

Figure 4.4.7 Wireframe (Inventory)

## CHAPTER 4

### Inventory Management Update Page



The wireframe shows a web browser interface for updating product information. At the top, there's a header bar with the text "Visual Paradigm Online Free Edition" and "ZK Boutique". Below the header is a navigation bar with icons for back, forward, and search, and the URL "https://online.visual-paradigm.com/". The main content area has a title "Inventory Management (Update Page)" and a large square placeholder for a product image with an 'X' through it. The form fields include:

- Product Code (Read Only)**: S10\_4698
- Product Name**: Crew short sleeve
- Product Image**: A "Choose File" button
- Category**: A dropdown menu showing "Men" with a selected indicator
- Product Type**: A dropdown menu showing "Tops" with a selected indicator
- Product Description**: A text area containing:

Our crew neck T-shirt features thoughtful design details for style and comfort.  
100% cotton.  
Versatile design looks great in any situation.

A small icon with three arrows pointing right is positioned to the right of the text area.
- Quantity Stock(S)**: 30
- Quantity Stock(M)**: 30
- Quantity Stock(L)**: 30
- Quantity Stock(XL)**: 30
- Price**: 21.5
- Product Image**: A "Choose File" button

At the bottom, there are two buttons: "Update the Product" and "Back".

Figure 4.4.8 Wireframe (Inventory Update)

## CHAPTER 4

### Employee Management Page

The wireframe shows a web browser window for 'Khai Boutique' with the URL 'https://online.visual-paradigm.com/'. The main content is titled 'Employee Management'. On the left, there's a sidebar with links: 'Inventory Management', 'Employee Management', 'Customer Management', and 'Order Management'. Below these are a search input field and a 'Search' button. The main area displays a table of employees:

| Employee ID | Last Name | First Name | Phone       | Email                | Job Title    | Action |
|-------------|-----------|------------|-------------|----------------------|--------------|--------|
| 10001       | Murphy    | Diane      | 0119938226  | diane@gmail.com      | System Admin |        |
| 10002       | Patterson | Mary       | 0123427946  | mpatternso@gmail.com | Manager      |        |
| 10003       | Firrelli  | Jeff       | 0197583947  | jfirrelli@gmail.com  | Manager      |        |
| 10004       | Patterson | William    | 0149182647  | wpatterson@gmail.com | Staff        |        |
| 10005       | Bondur    | Geerad     | 01128374859 | gbondur@gmail.com    | Staff        |        |
| 10006       | Bow       | Anthony    | 0187261546  | abow@gmail.com       | Staff        |        |
| 10007       | Jennings  | Leslie     | 0167281644  | ljennigns@gmail.com  | Staff        |        |

Figure 4.4.9 Wireframe (Employee)

### Employee Management Update Page

The wireframe shows a web browser window for 'ZK Boutique' with the URL 'https://online.visual-paradigm.com/'. The main content is titled 'Employee Management (Update Page)'. The page contains a form with fields for Employee ID (Read Only), Last Name, First Name, Phone, Email, and Job Title. There are also 'Update the Employee' and 'Back' buttons at the bottom.

Employee ID (Read Only)  
10001

Last Name  
Murphy

First Name  
Diane

Phone  
011993827

Email  
dianegmail.com

Job Title  
System Admin

Update the Employee      Back

Figure 4.4.10 Wireframe (Employee Update)

## CHAPTER 5

### Customer Management Page

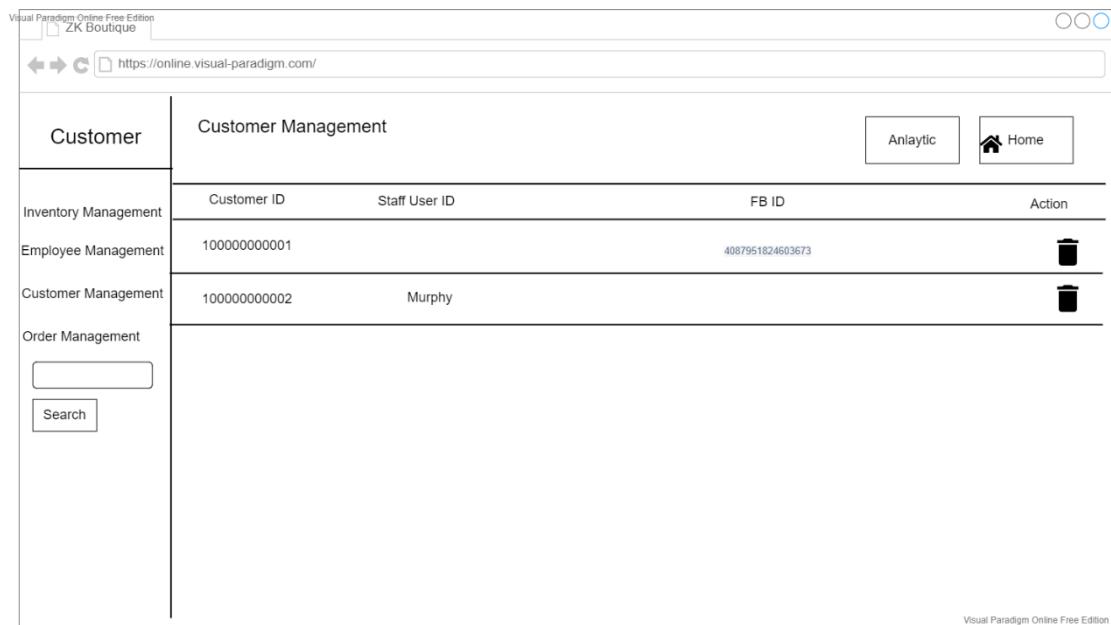


Figure 4.4.11 Wireframe (Customer)

### Order Management Page (Order List)

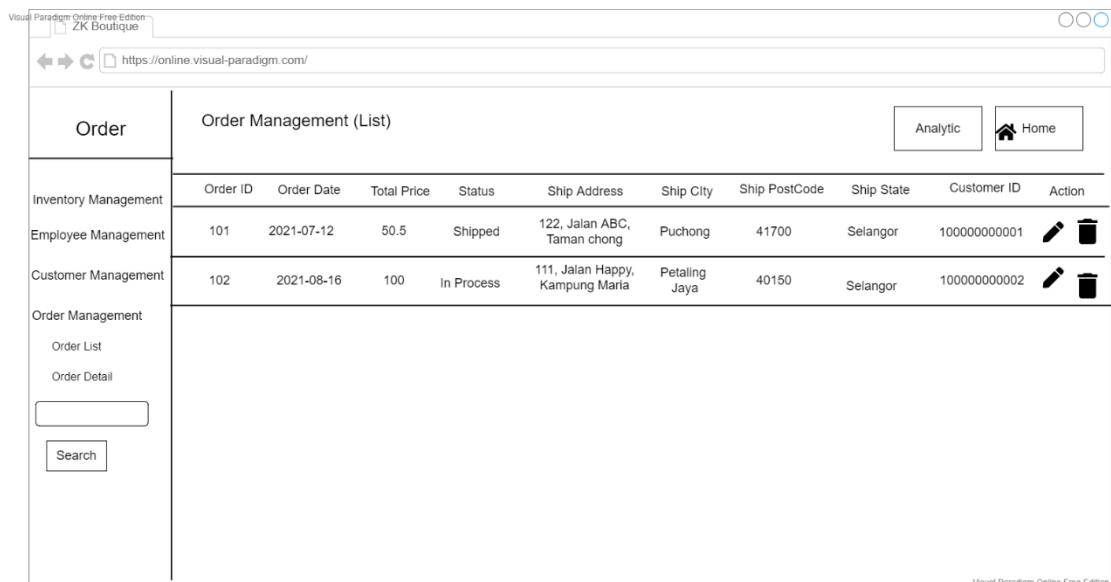


Figure 4.4.12 Wireframe (Order List)

## CHAPTER 5

### Order Management Page (Order Detail)

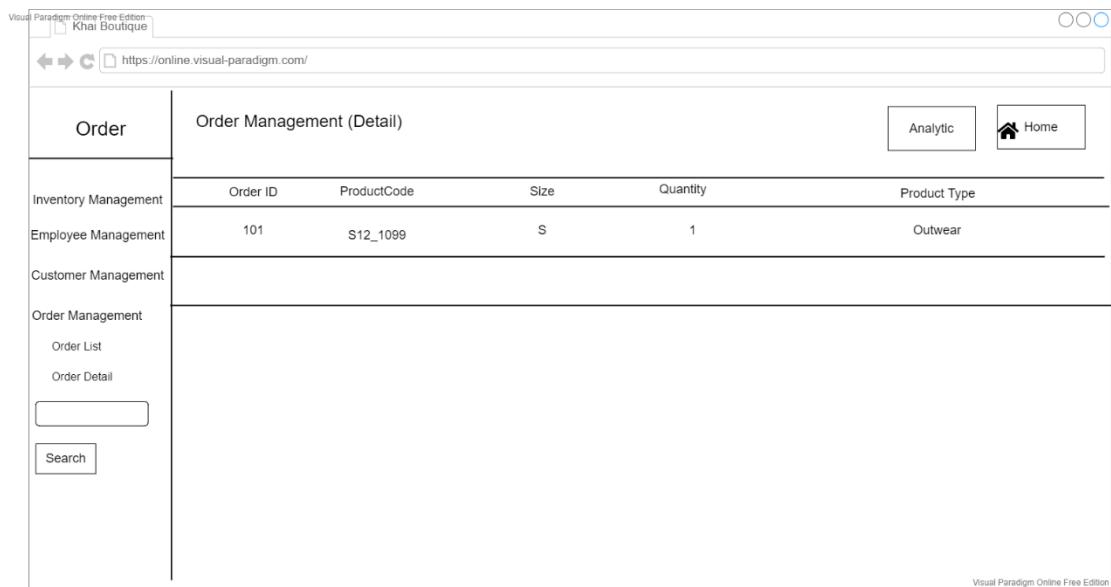


Figure 4.4.13 Wireframe (Order Detail)

### Analytic Page

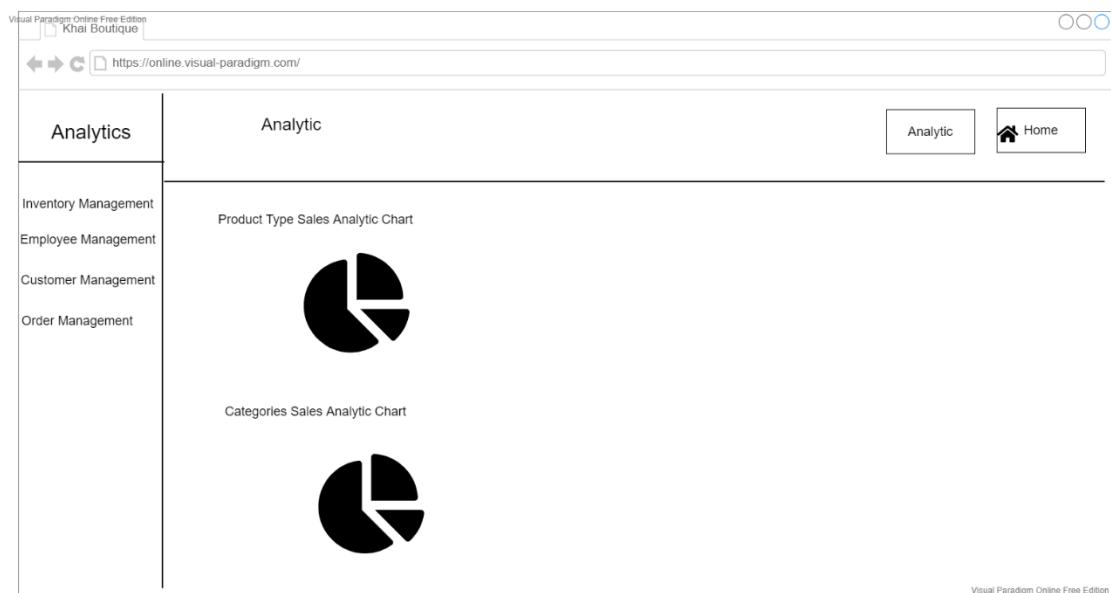
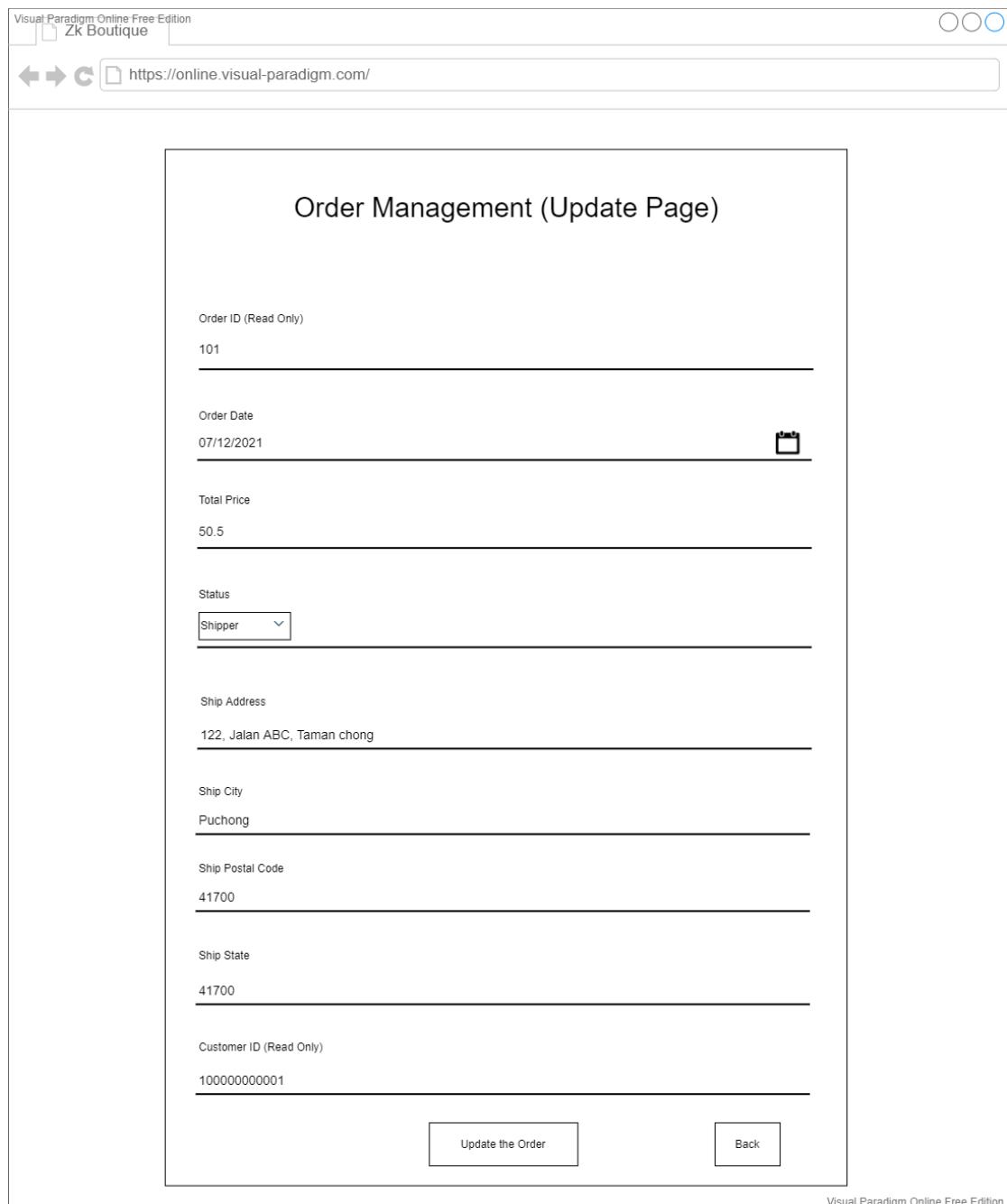


Figure 4.4.14 Wireframe (Analytic)

## CHAPTER 5

### Order Management Update Page



The wireframe shows a web browser window with the URL <https://online.visual-paradigm.com/>. The main content area is titled "Order Management (Update Page)". It contains the following fields:

- Order ID (Read Only): 101
- Order Date: 07/12/2021
- Total Price: 50.5
- Status: Shipper (dropdown menu)
- Ship Address: 122, Jalan ABC, Taman chong
- Ship City: Puchong
- Ship Postal Code: 41700
- Ship State: 41700
- Customer ID (Read Only): 100000000001

At the bottom are two buttons: "Update the Order" and "Back".

Figure 4.4.15 Wireframe (Order Update)

## CHAPTER 5: System Implementation

### 5.1 Hardware Setup

The hardware involved in this project is computer. Computer issued for the process of whole web application including both client-side and server-side. The cost of the hardware (Laptop) is RM4200.

| Description      | Specifications       |
|------------------|----------------------|
| Model            | Asus ZenBook 13      |
| Processor        | Intel Core i5-10210U |
| Operating System | Windows 10           |
| Graphic          | NVIDIA GeForce MX250 |
| Memory           | 8GB RAM              |
| Storage          | 512GB SSD            |

Table 5.1 Specifications of laptop

### 5.2 Software Setup

The software involved in this project are Visual Studio Code, MySQL, Google Cloud SQL, Google Cloud, Express JS, Node.JS, Facebook for developer, Stripe, Google Chart, Tawk.to, and Google Map. Visual Studio Code worked as integrated development environment (IDE); this is a very popular among all of the editors. User friendliness and extension marketplace attracted most of the developer to develop their software by using this IDE. MySQL is the powerful database with high availability. MySQL's strong feature is its consistent availability; businesses that use it may expect round-the-clock uptime [6]. MySQL has a number of cluster servers and master-slave replication setups that allow for fast failover and continuous access. Google Cloud worked as the cloud platform to deploy our web apps to cloud and become a real website. Express JS and Node.JS work together to develop the backend server-side of a web application. Next, Facebook for developer allowed user to build their own software or

## CHAPTER 5

application with Facebook SDK. I used Facebook SDK to come out an entry for user to login with their Facebook account. Stripe is a payment service provider that allows businesses to accept a variety of payment methods, including credit cards and buy now, pay later options. Stripe allowed users to place order and make payment by using their credit card in this web application. Other than that, Google chart applied in generating useful analytic that show the sales of overall product. Tawk.to is applied in client side of web application, client uses can talk to customer service by clicking the round button at the bottom right of every web page. Google Map is to show the physical store of the boutique store in map.

|                  | Description  |
|------------------|--|
| Operating System | Windows 10 HOME  |
| Development Tool | Visual Studio Code<br>MySQL<br>Google Cloud SQL<br>Google Cloud<br>Express JS<br>Node<br>Facebook for developer<br>Stripe<br>Google Chart<br>Tawk.to<br>Google Map |

Table 5.2 Specifications of Software

### 5.3 Setting and Configuration

In visual studio code, to start the web application is by typing **nodemon app** to start the node server.

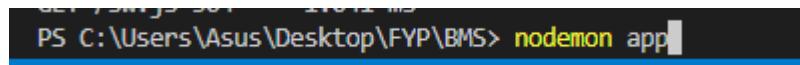


Figure 5.3.1 Start the node web application

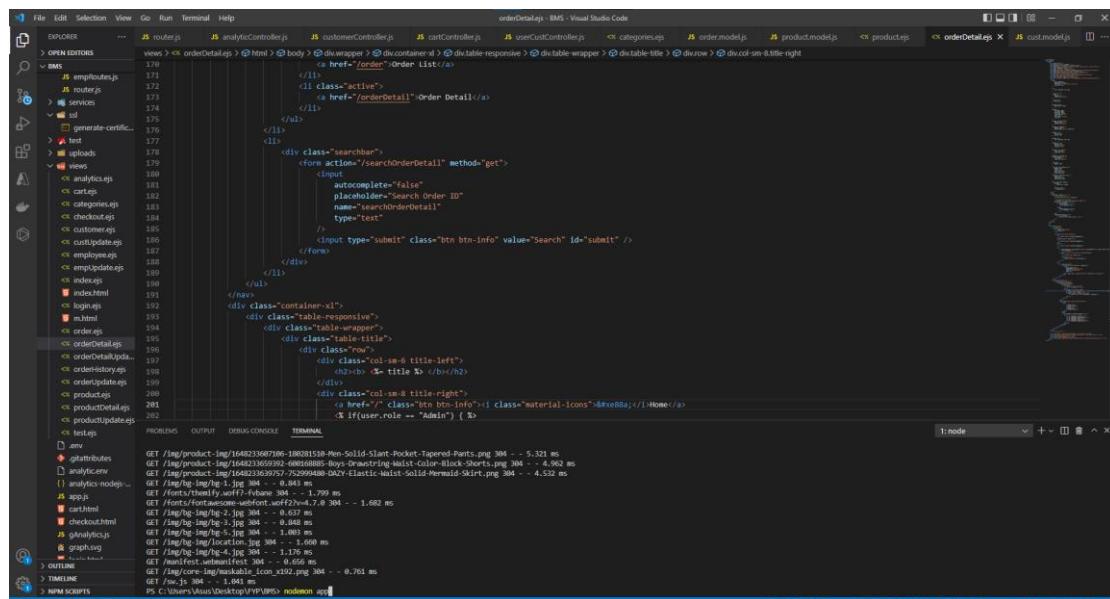


Figure 5.3.2 Screen shot of Visual Studio Code IDE

Before importing the Facebook SDK in web application, the setting of the web application in Facebook developer has to done. By done the setting in developer Facebook website, Facebook API will retrieve the user's profile picture, name, ID, and email.

## CHAPTER 5

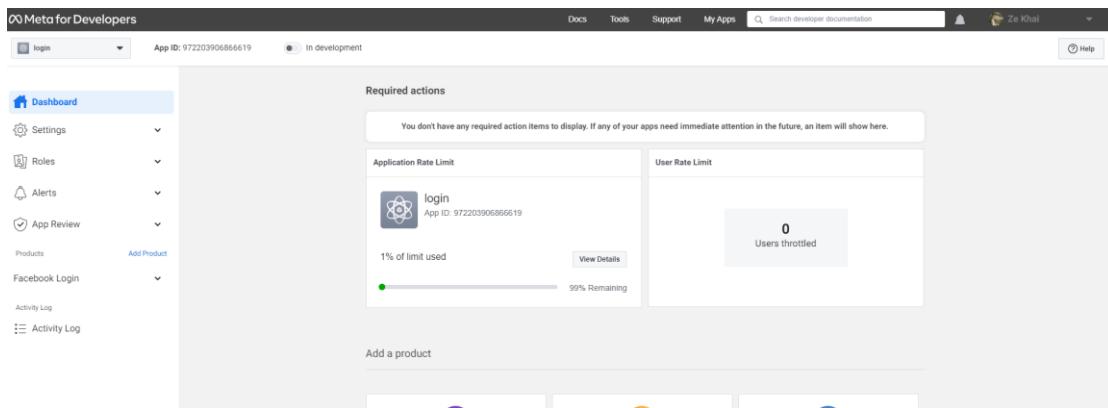


Figure 5.3.3 Dashboard of Facebook Developer

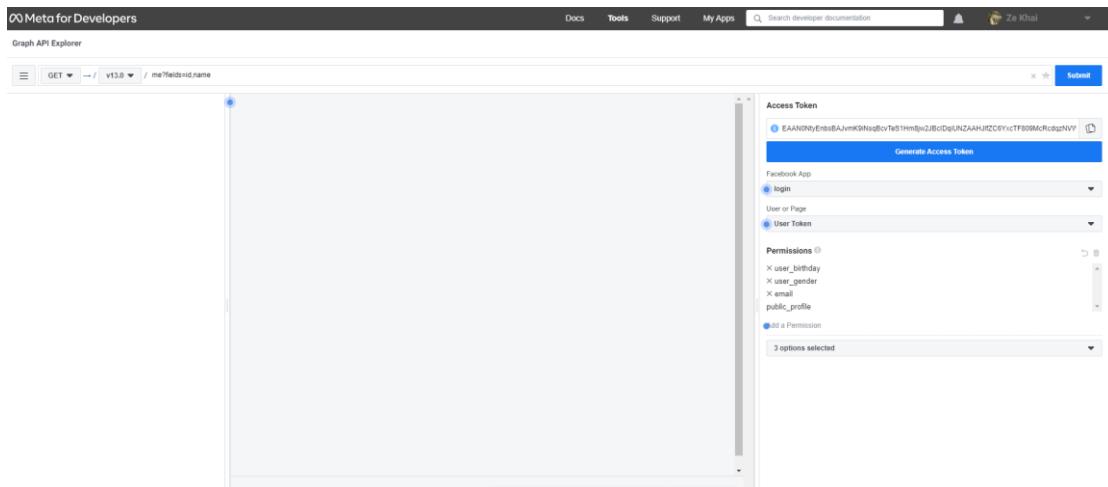


Figure 5.3.4 Graph API Explorer

Next, is the tawk.to API is imported in an easy way. By importing few lines of code, then the tawk.to will appear in web application. Customer Service can be performed through this API. Staff user can receive client user message immediately and help client user to answer their doubt and solve their problems.

## CHAPTER 5

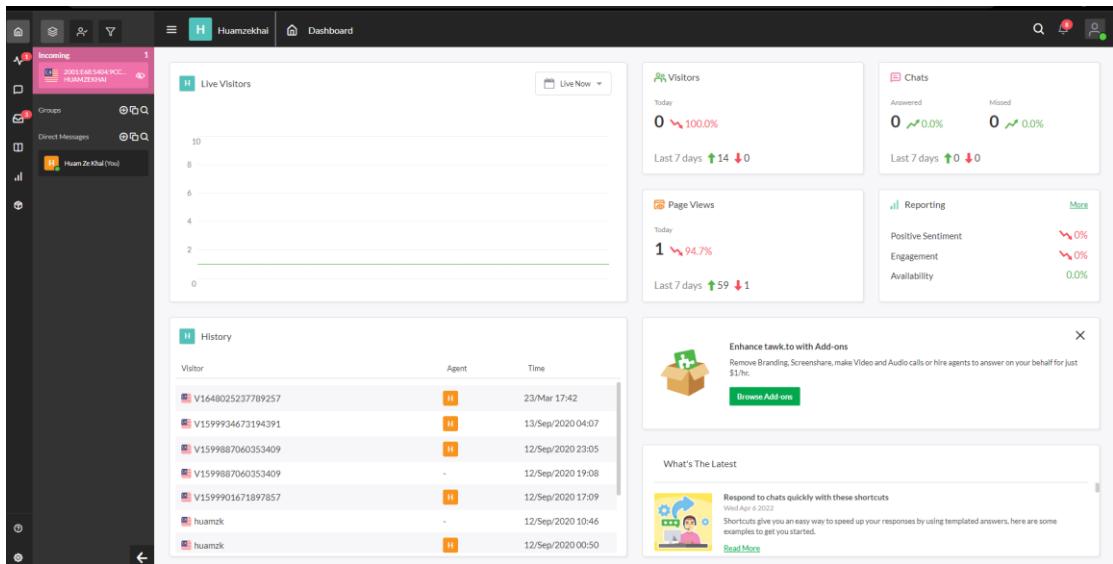


Figure 5.3.5 Dashboard of tawk.to

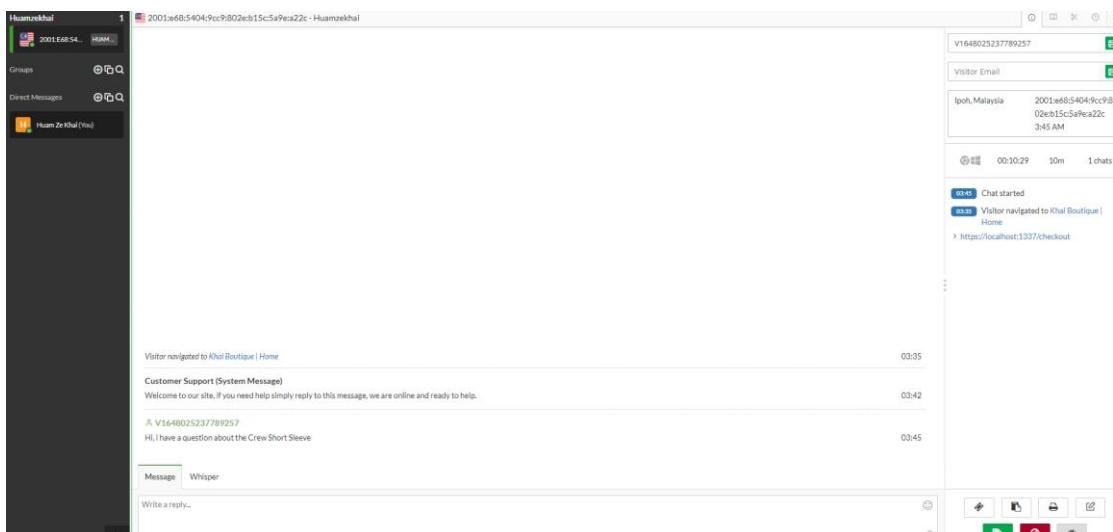
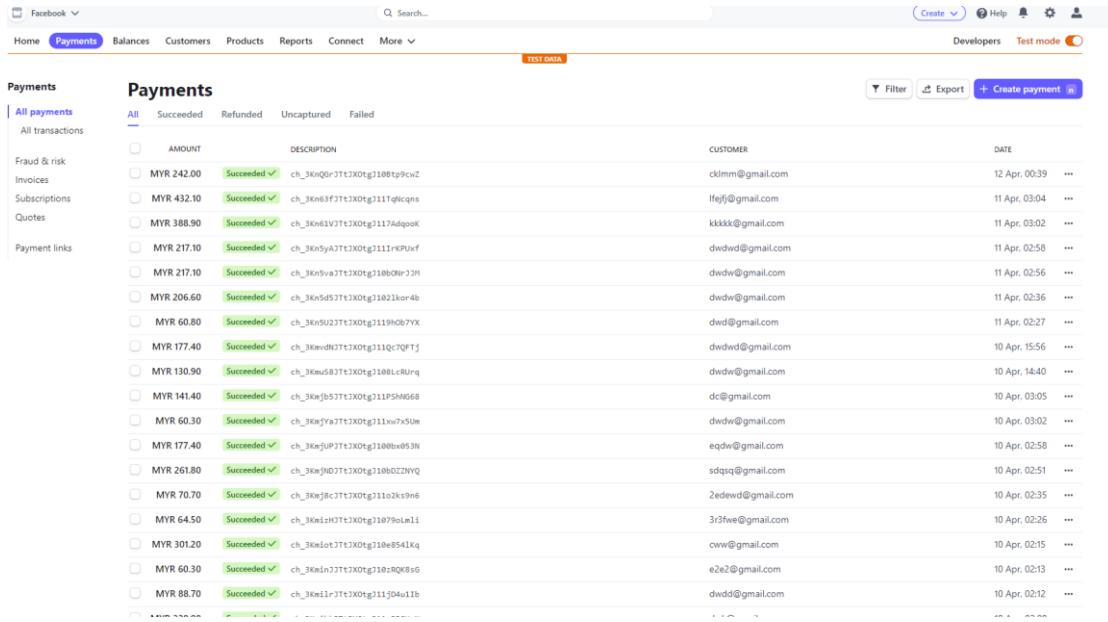


Figure 5.3.6 Chatting with client user

Other than that, Stripe accept payment from client user who made order in website by using their credit card. Details about the payer will show in details for website owner references.

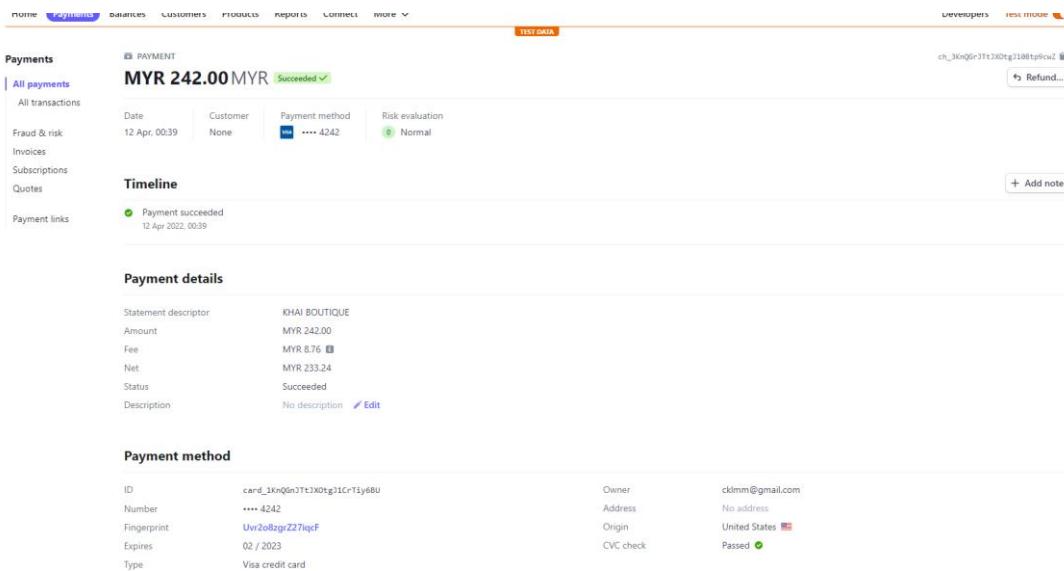
## CHAPTER 5



The screenshot shows the Stripe Payments interface. At the top, there's a navigation bar with links for Home, Payments (which is selected), Balances, Customers, Products, Reports, Connect, More, and a search bar. On the right side of the header are buttons for Create, Help, Developers, and Test mode.

The main area is titled "Payments" and shows a table of transaction details. The columns are: All, Succeeded, Refunded, Uncaptured, Failed, AMOUNT, DESCRIPTION, CUSTOMER, and DATE. There are 29 entries listed, all of which are marked as "Succeeded". The descriptions begin with "ch\_3k...". The customers' emails are listed next to their names, and the dates range from April 11 to April 12, 2022.

Figure 5.3.7 Payment received through Stripe



This screenshot shows the detailed view of a single payment transaction. At the top, it displays the payment amount as "MYR 242.00 MYR" with a green "Succeeded" status. Below this, there are sections for "Timeline" (listing a "Payment succeeded" event) and "Payment details" (showing the statement descriptor as "KHAI BOUTIQUE", amount as "MYR 242.00", and status as "Succeeded").

The "Payment method" section provides specific details about the card used: ID (card\_1knQnJt3X0tgj1cTiy8B0), Number (\*\*\*\*4242), Fingerprint (Ur2oBzgrZ227iqF), Expires (02 / 2023), and Type (Visa credit card). It also lists the card owner as "cklmim@gmail.com" with no address, from the United States, and a passed CVC check.

Figure 5.3.8 Payment Details

## CHAPTER 5

### 5.4 System Operation

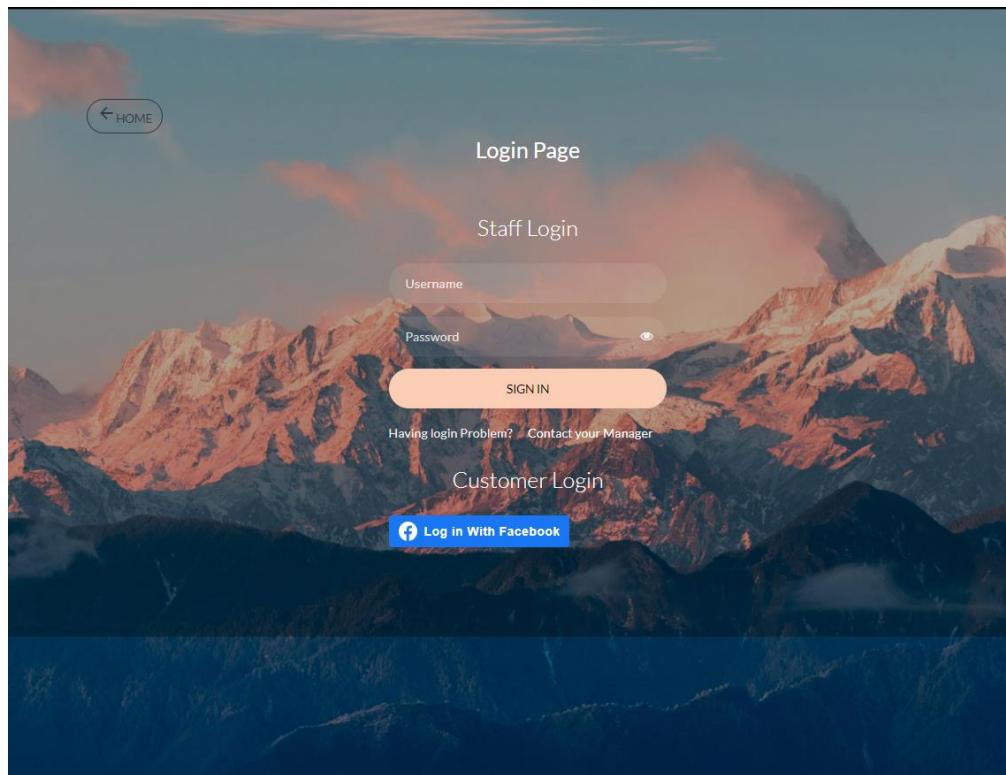


Figure 5.4.1 Login Page

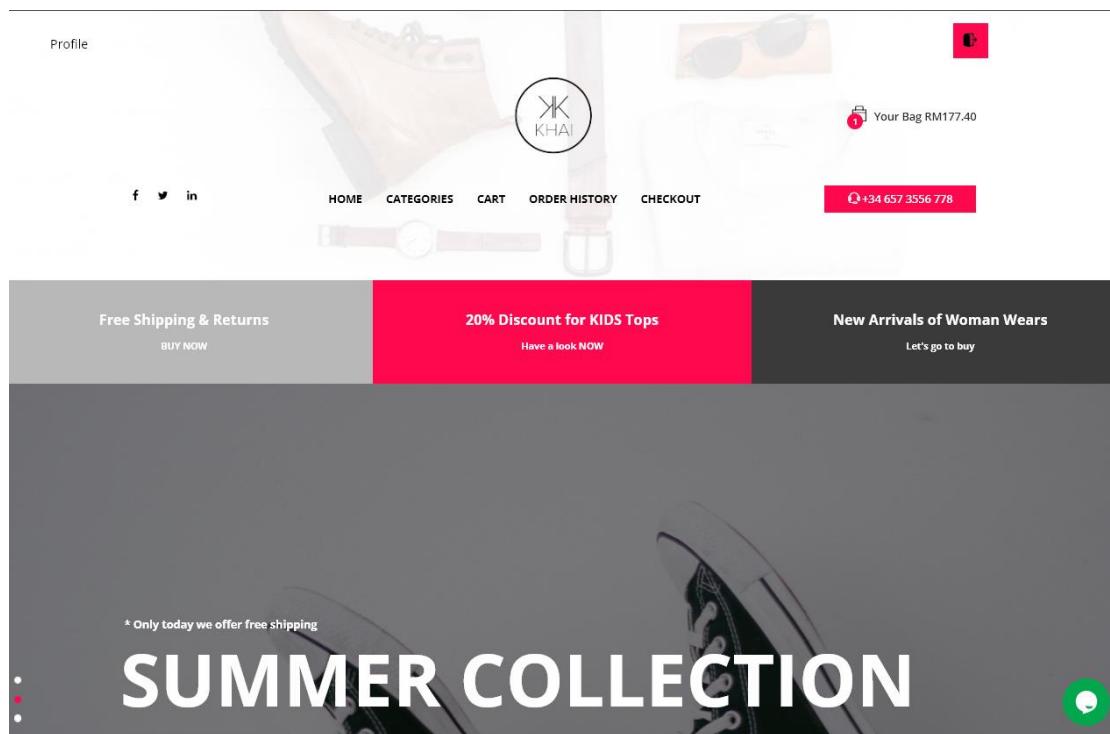


Figure 5.4.2 Client User Logged in page

## CHAPTER 5

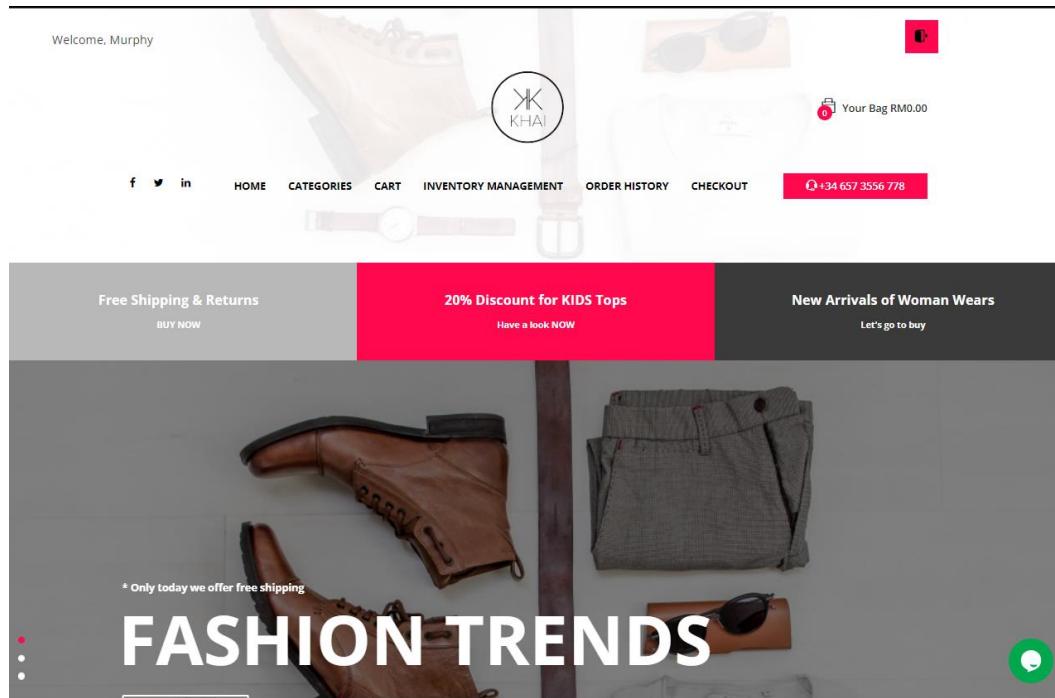


Figure 5.4.3 Staff User Logged in page

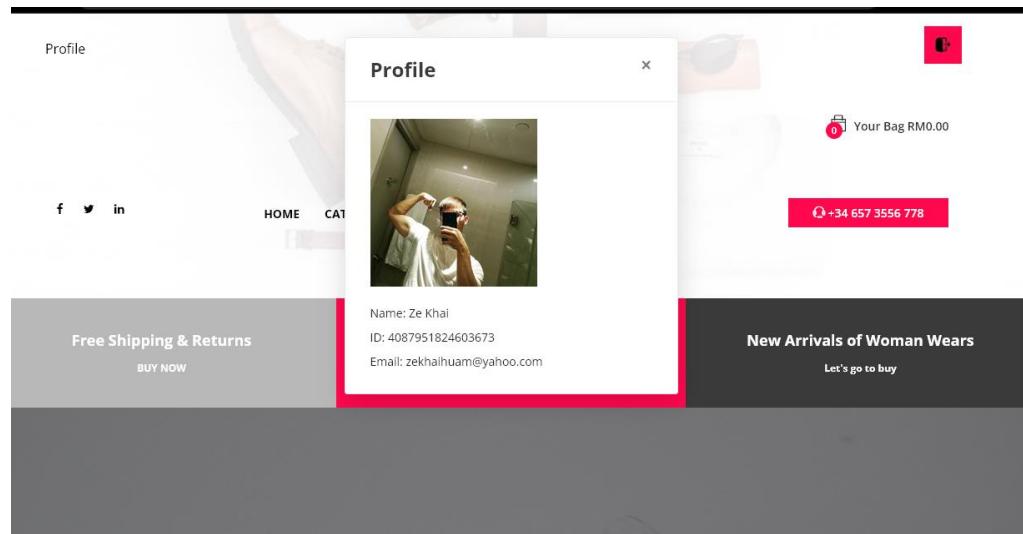


Figure 5.4.3 Client User clicked "Profile" at top left corner

There are some differences between staff user log in and client user log in. Client user log in using their social media account while staff user log in using their user ID and password. The home page is different as well, client user would not view the inventory management option at the top bar while staff user would. Client user can see their social media details by clicking the top left corner "Profile" . Staff user will only show

## CHAPTER 5

welcome, xxx, “xxx” represent user id of staff. At the home page, user can filter the new arrival part with the category “Woman, Man, and Kids”. After that, user scroll down will see the discounted white t shirt product, and the physical store location in google map. There is a button at bottom right corner which linked to customer service using tawk.to API, user can talk to customer service when they faced any doubt or problem.

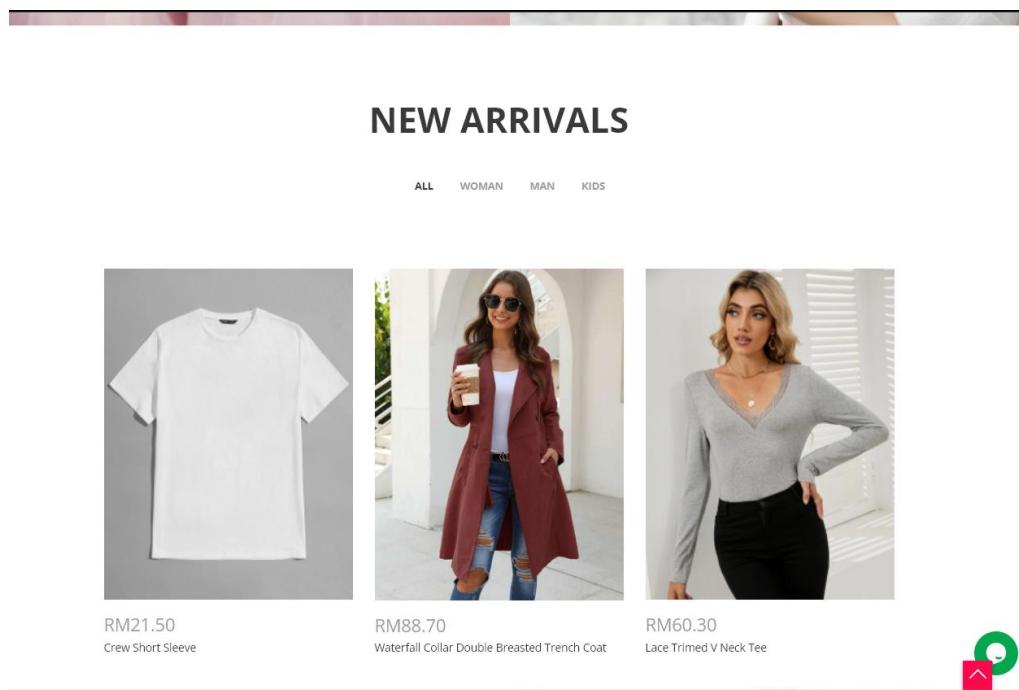


Figure 5.4.4 Home page New Arrivals part

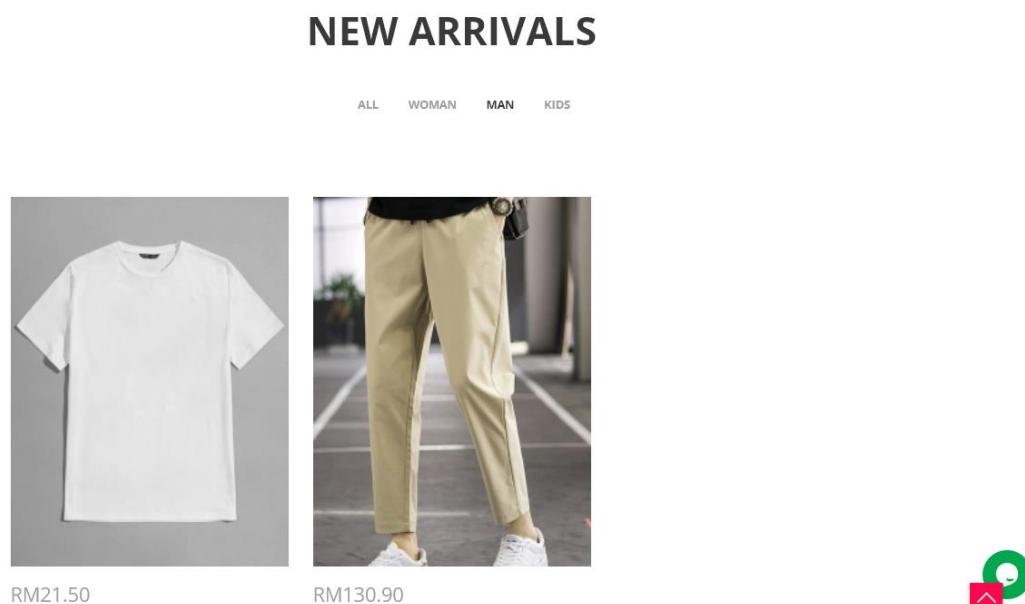


Figure 5.4.5 Filter Man product in New Arrival

## CHAPTER 5



Figure 5.4.6 Discounted product

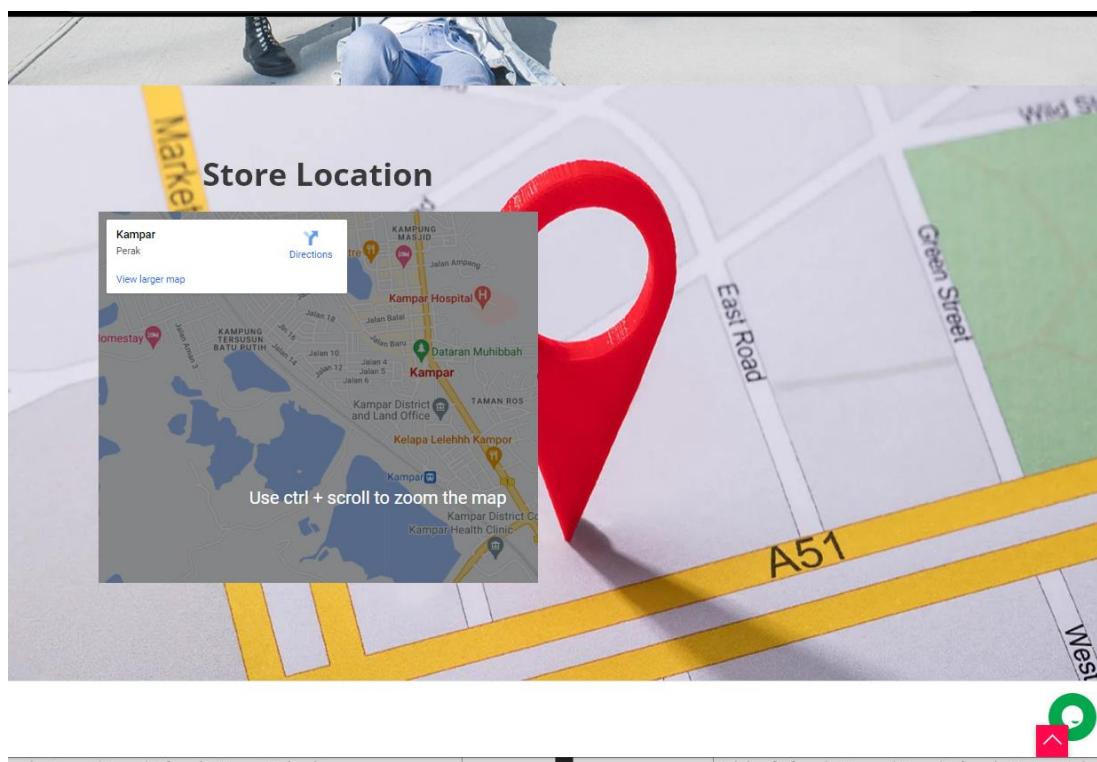


Figure 5.4.7 Physical store location

## CHAPTER 5

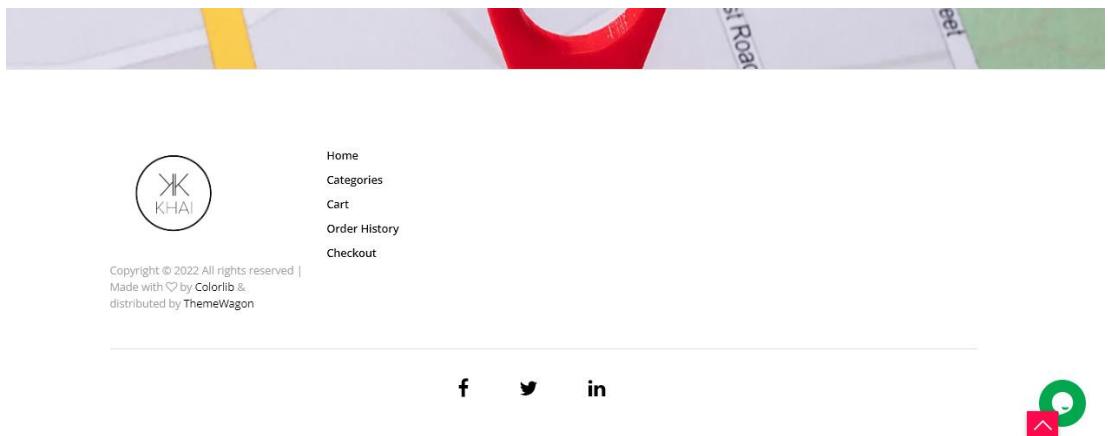


Figure 5.4.8-Footer of the page

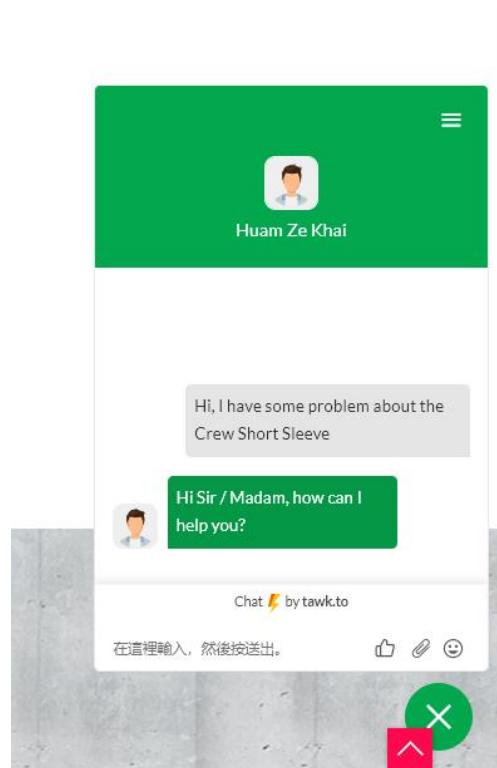


Figure 5.4.9 Tawk.to Customer Service

Next, is the Categories page, categories page fist will show all the product. Left side of categories page is the filter of the product. The filter included “Woman wear, Man wear, Kids”. Inside these 3 filters there are some sub filters which are “Outwear, Tops, Bottoms, Accessories”. User can filter up the product as they wish, to shorten the time of finding products. User can proceed to product detail page to see the details of the product.

## CHAPTER 5

**Free Shipping & Returns**

[BUY NOW](#)

**20% Discount for KIDS Tops**

[Have a look NOW](#)

**New Arrivals of Woman Wear**

[Let's go to buy](#)

**Catagories**

- [All Product](#)
- [Woman Wear](#)
  - OutWear
  - Tops
  - Bottoms
  - Accessories
- [Man Wear](#)
  - OutWear
  - Tops
  - Bottoms
  - Accessories
- [Kids](#)
  - OutWear
  - Tops
  - Bottoms



RM 21.5  
Crew Short Sleeve



RM 88.7  
Waterfall Collar Double Breasted Trench Coat



RM 60.3  
Lace Trimmed V Neck Tee



RM 88.7  
Waterfall Collar Double Breasted Trench Coat



RM 60.3  
Lace Trimmed V Neck Tee



RM 60.3  
Lace Trimmed V Neck Tee

Figure 5.4.10 Categories Page

**Catagories**

- [All Product](#)
- [Woman Wear](#)
  - OutWear
  - Tops
  - Bottoms
  - Accessories
- [Man Wear](#)
  - OutWear
  - Tops
  - Bottoms
  - Accessories
- [Kids](#)
  - OutWear
  - Tops
  - Bottoms



RM 88.7  
Waterfall Collar Double Breasted Trench Coat



RM 60.3  
Lace Trimmed V Neck Tee



RM 70.7  
DAZY Elastic Waist Solid Mermaid Skirt



Figure 5.4.11 Filter Women Wear

## CHAPTER 5



The screenshot shows a sidebar menu under 'Categories'. Under 'Woman Wear', 'OutWear' is selected (indicated by a red square). Other options include 'Tops', 'Bottoms', and 'Accessories'. To the right is a product thumbnail of a woman in a maroon coat, with the price 'RM 88.7' and the product name 'Waterfall Collar Double Breasted Trench Coat'. A watermark 'We Are H' is visible in the bottom right corner.

Catagories

All Product

Woman Wear

OutWear

Tops

Bottoms

Accessories

Man Wear

OutWear

Tops

Bottoms

Accessories

Kids

OutWear

Tops

RM 88.7

Waterfall Collar Double Breasted Trench Coat

We Are H

Figure 5.4.11 Filter Outwear in Women Wear

The screenshot shows a similar sidebar menu. Under 'Woman Wear', 'OutWear' is selected. A large circular overlay with a plus sign is placed over the product thumbnail. Below the thumbnail, the price 'RM 88.7' and product name 'Waterfall Collar Double Breasted Trench Coat' are visible. A watermark 'We Are H' is visible in the bottom right corner.

Catagories

All Product

Woman Wear

OutWear

Tops

Bottoms

Accessories

Man Wear

OutWear

Tops

Bottoms

Accessories

RM 88.7

Waterfall Collar Double Breasted Trench Coat

We Are H

Figure 5.4.12 Direct to product detail page

## CHAPTER 5

Next, user can click to the product and direct to the product detail page, user can view the product information, sizes, and the quantity stock available in this page. If user wish to add the product that product type is not Accessories into shopping cart, user have to choose the size of the product, else website will prompt user to choose the size. After choosing the size and quantity of the product, the product is now able to add into the cart.

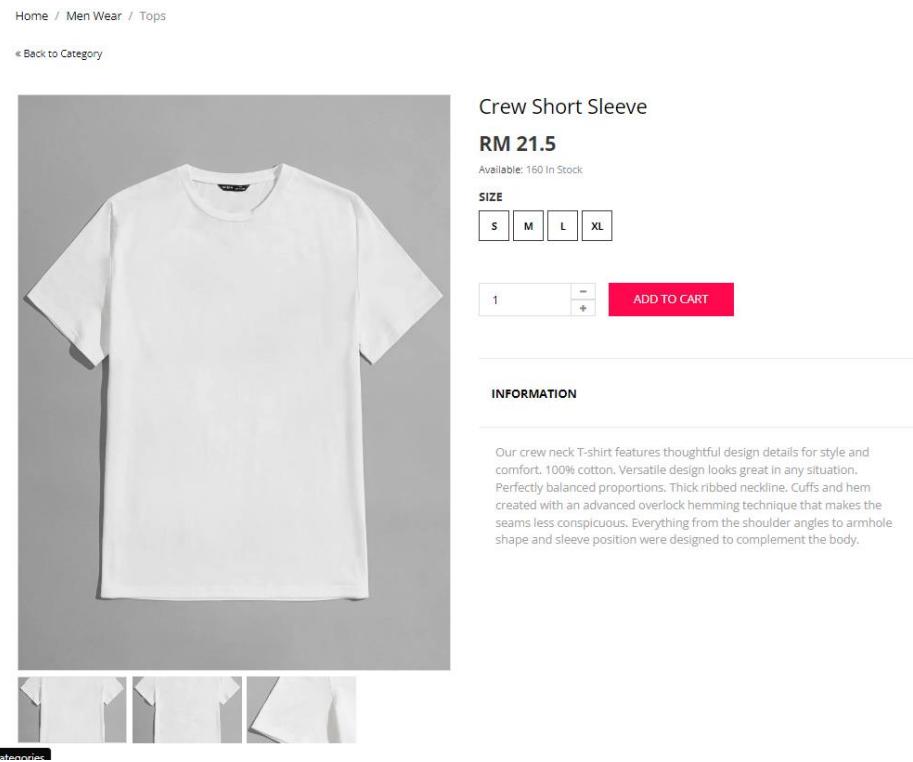


Figure 5.4.13 Product Detail page

## CHAPTER 5

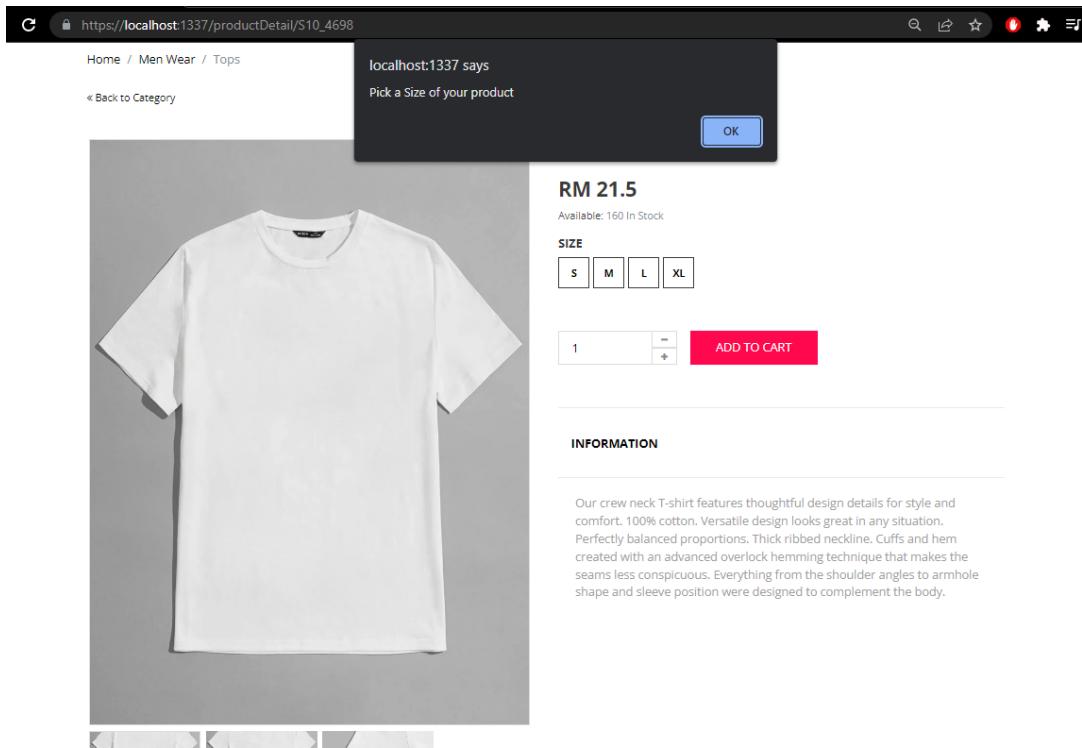


Figure 5.4.14 Validation of product size

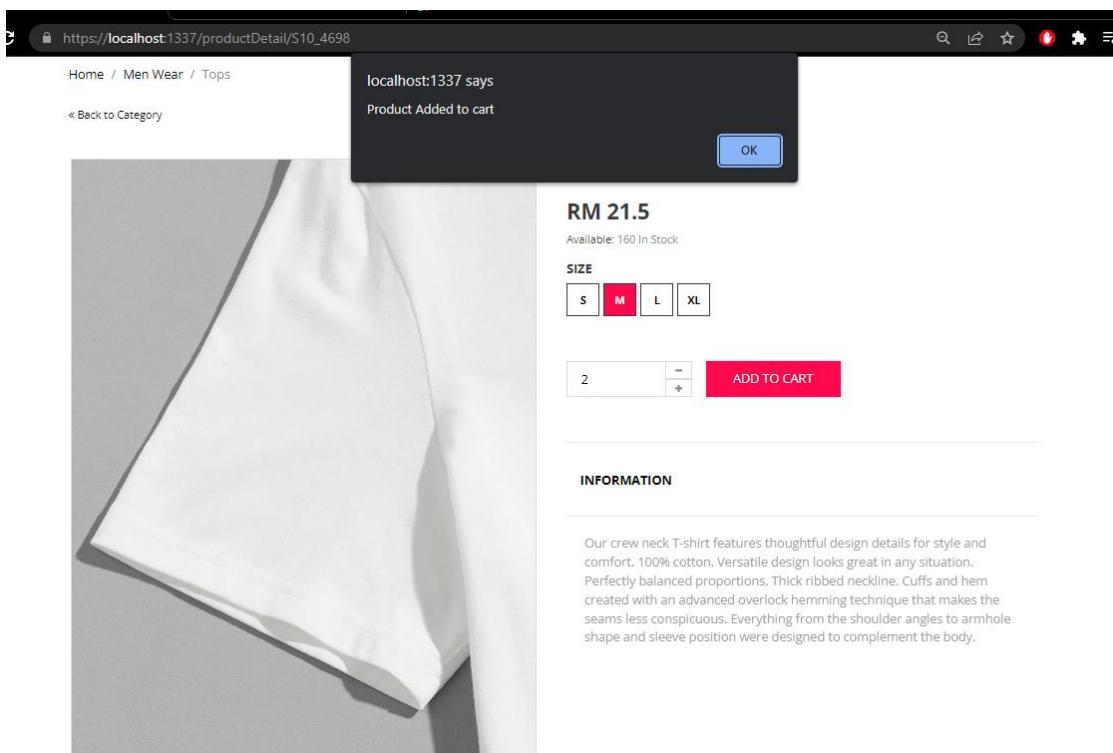
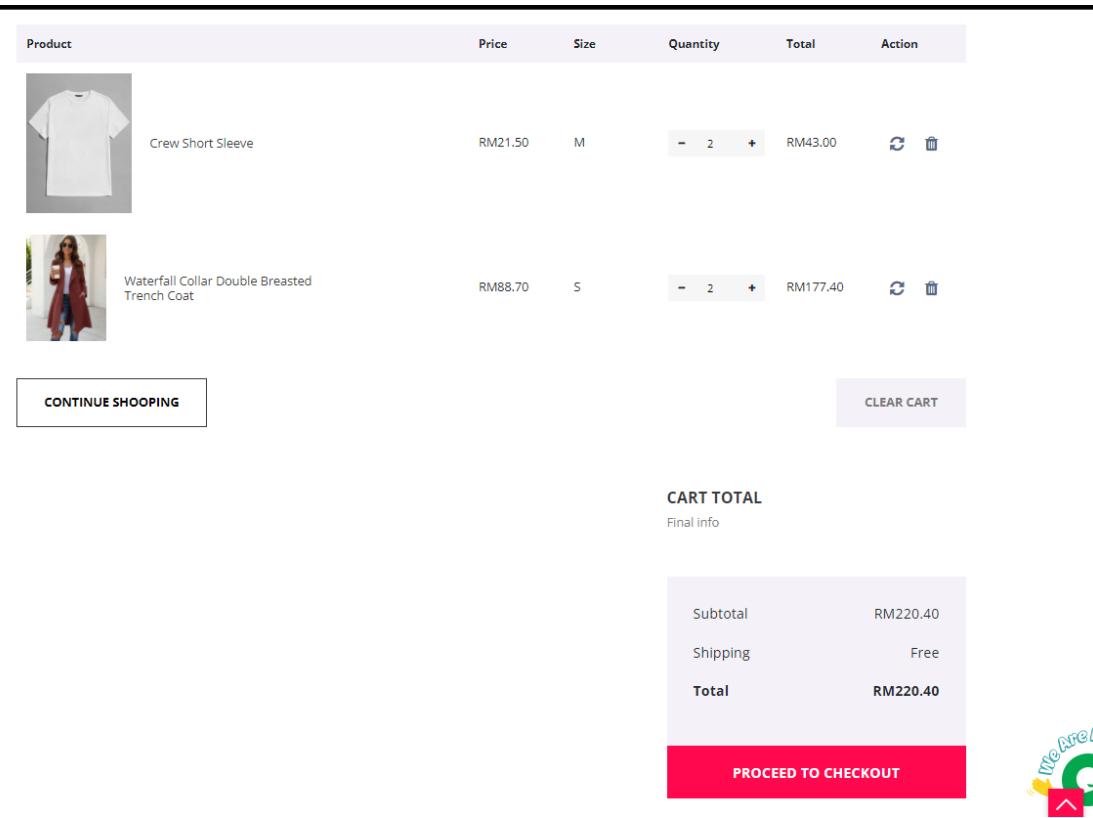


Figure 5.4.15 Product successfully added into cart

## CHAPTER 5

After product is successfully added into shopping cart, user can see the product that added into cart at cart page. User can update the product quantity in cart by add or deduct the quantity and click refresh  button at Action column, then the cart will update at the time. If user wish to remove the product from the cart, user can click the trash icon  button to remove specific product. There is a “Clear Cart” button below of cart table, this button will clear all of the product that inside the cart. “Continue Shopping” button will redirect users to Categories page. Other than that, At the “Cart Total” area shows the total amount of the products inside the cart. When User confirmed the product, they wish to buy, proceed to checkout page by clicking the “Proceed to Checkout” button at below of Cart Total area.



| Product  | Price   | Size | Quantity | Total    | Action  |
|--|---------|------|----------|----------|---|
|  Crew Short Sleeve                             | RM21.50 | M    | - 2 +    | RM43.00  |       |
|  Waterfall Collar Double Breasted Trench Coat | RM88.70 | S    | - 2 +    | RM177.40 |   |

**CART TOTAL**  
Final info

|              |                 |
|--------------|-----------------|
| Subtotal     | RM220.40        |
| Shipping     | Free            |
| <b>Total</b> | <b>RM220.40</b> |

**PROCEED TO CHECKOUT**



Figure 5.4.16 Cart Page

## CHAPTER 5

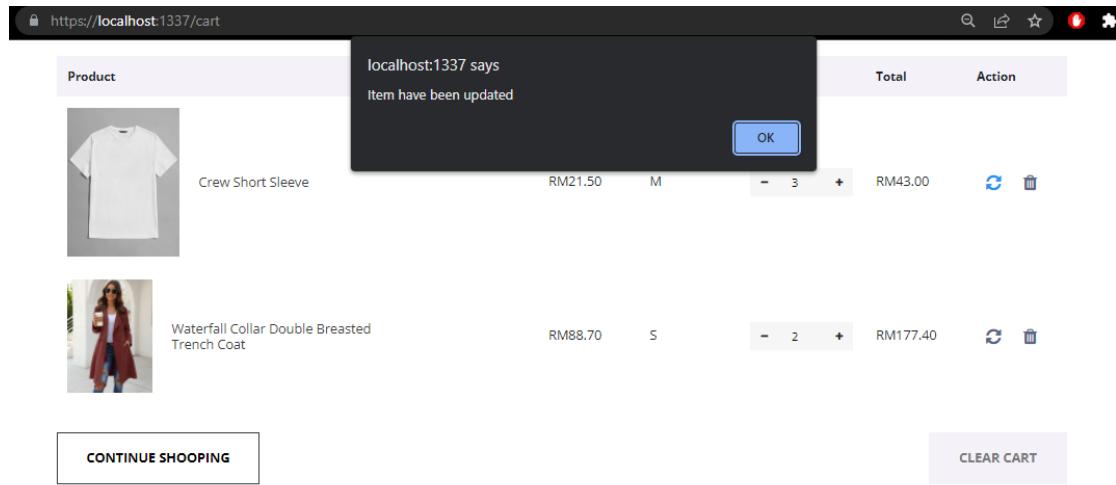


Figure 5.4.17 Update product quantity in cart page

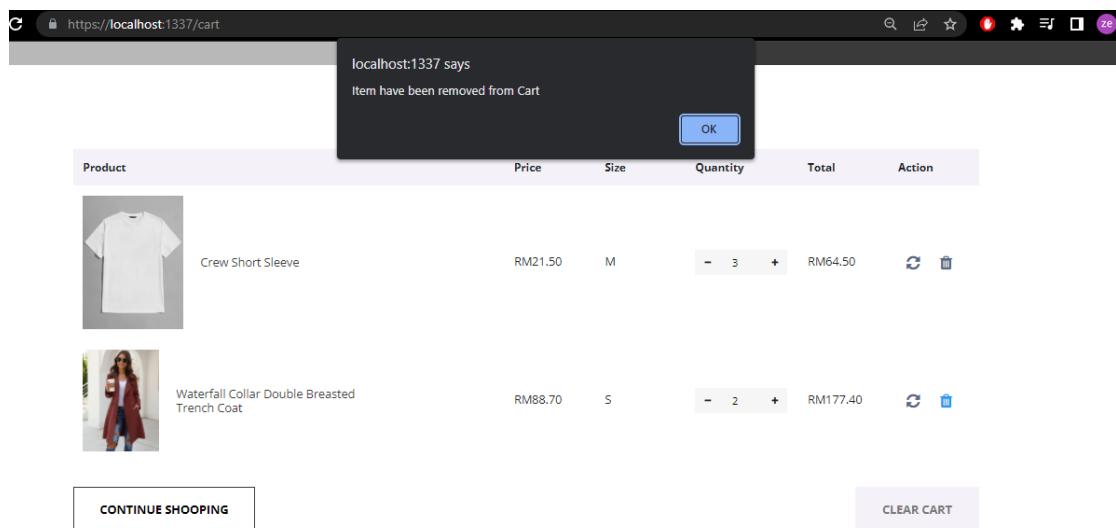


Figure 5.4.18 Remove product from cart

## CHAPTER 5

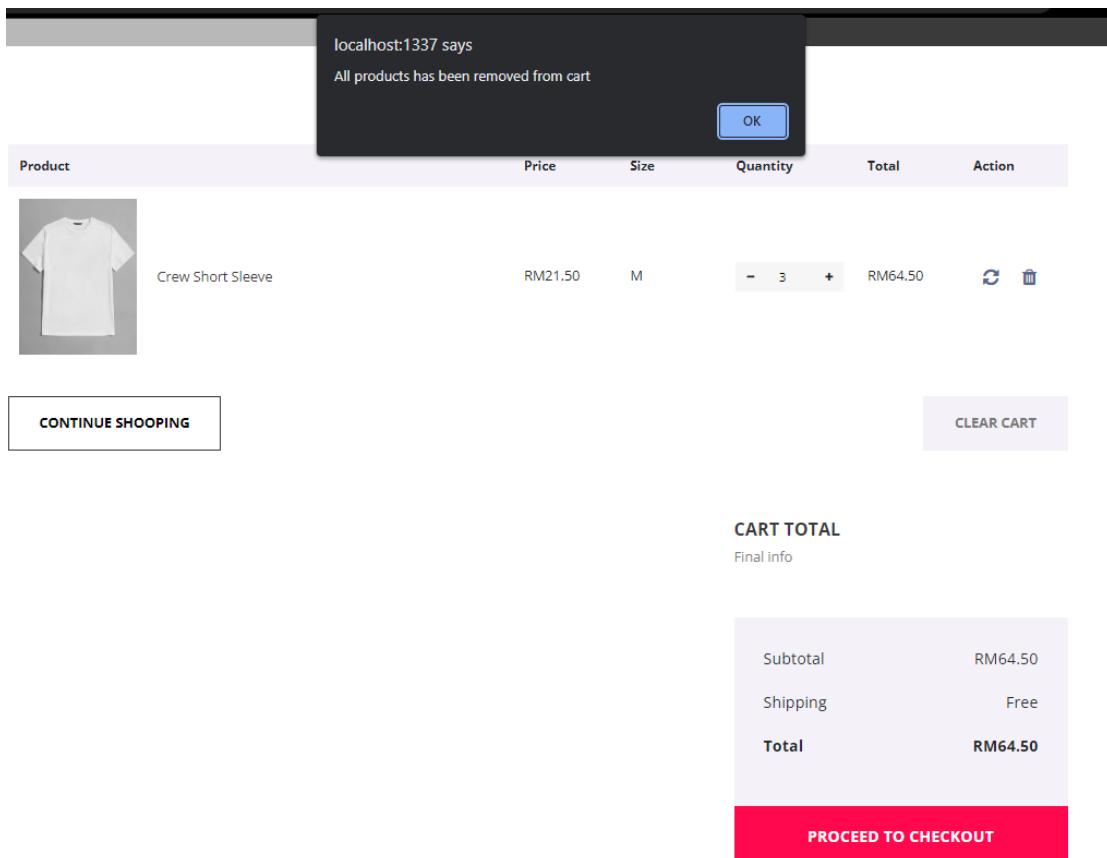


Figure 5.4.19 Clear Cart



No Product In cart, Shop now !!!

Figure 5.4.20 After product in cart is cleared

## CHAPTER 5

After the user confirm with their cart product, user may proceed to checkout and place their order. In the checkout page, left hand side required user to fill in their details such as Name, Address, Postal Code, City, State, and phone number. Right hand side is the order details to let user double confirm their order. If user didn't fill in all the details, website will prompt user to fill in all the fields. After filling in all the fields and click place order, system (Stripe API) will request user to input the payment details such as email, credit card number, card expires date and CVC. After user make the payment, system will prompt purchase successfully, order placed. Once the payment is made successfully, the cart item will be cleared automatically. Staff user can check the payment details in Stripe website dashboard.

NAME\*

ADDRESS\*

POSTCODE\*

TOWN/CITY\*

STATE\*

Perak

PHONE NO\*

YOUR ORDER

The Details

| PRODUCT                    | TOTAL    |
|----------------------------|----------|
| CREW SHORT SLEEVE X 2      | RM43.00  |
| LACE TRIMED V NECK TEE X 1 | RM60.30  |
| SUBTOTAL                   | RM103.30 |
| SHIPPING                   | FREE     |
| TOTAL                      | RM103.30 |

PLACE ORDER

Figure 5.4.21 Checkout Page

## CHAPTER 5

A screenshot of a web browser showing a checkout form. On the left, there are input fields for NAME, ADDRESS, POSTCODE, TOWN/CITY, STATE, and PHONE NO. A modal dialog box is centered over the form, displaying the message "localhost:1337 says Please Fill up ALL Fields" with an "OK" button. To the right of the modal is a summary table of the order items:

| PRODUCT                    | TOTAL    |
|----------------------------|----------|
| CREW SHORT SLEEVE X 2      | RM43.00  |
| LACE TRIMED V NECK TEE X 1 | RM60.30  |
| SUBTOTAL                   | RM103.30 |
| SHIPPING                   | FREE     |
| TOTAL                      | RM103.30 |

At the bottom right of the page is a large "PLACE ORDER" button.

Figure 5.4.22 Required field validation

A screenshot of a web browser showing a checkout form. The same set of input fields (NAME, ADDRESS, POSTCODE, TOWN/CITY, STATE, PHONE NO) is present on the left. A modal dialog box is overlaid in the center, containing fields for "Email" (with placeholder "Email"), "Card number", "MM / YY", and "CVC". Below these fields is a blue "Pay MYR RM103.30" button. To the right of the modal is the same order summary table as in Figure 5.4.22. At the bottom right is a large "PLACE ORDER" button.

Figure 5.4.23 Input payment details (Stripe)

## CHAPTER 5

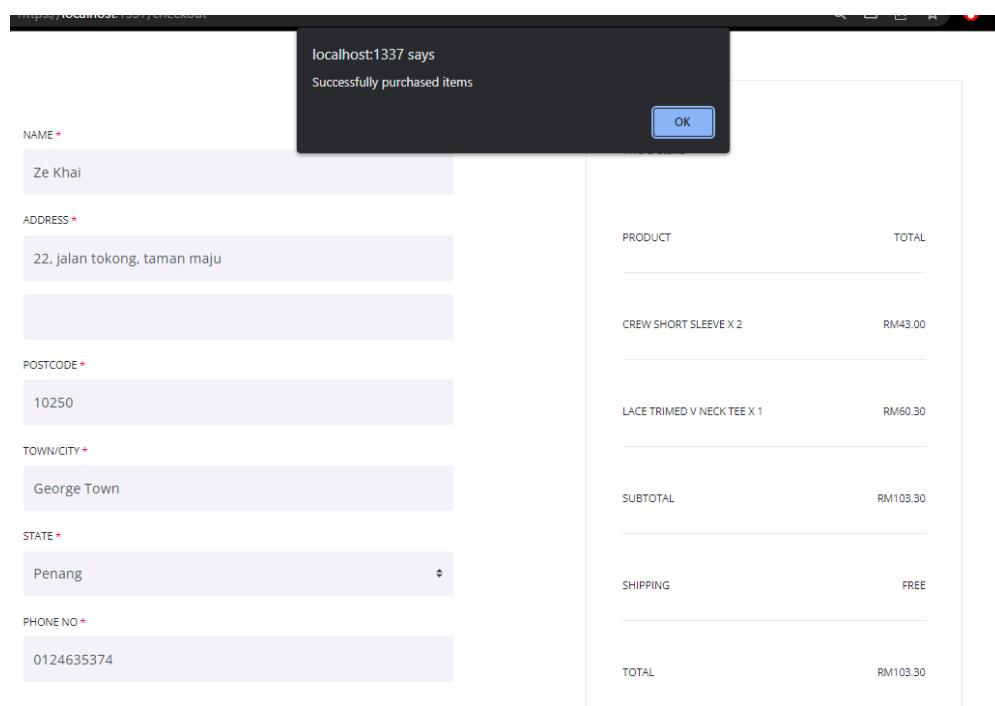
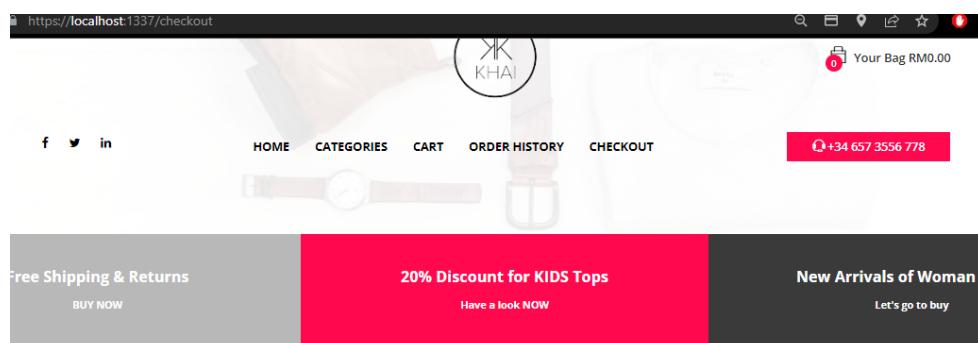


Figure 5.4.24 Purchase Successfully



No Product In cart, Shop now !!!

Figure 5.4.25 Items in cart clear automatically when payment done

## CHAPTER 5

The screenshot shows the Stripe Payments dashboard. At the top, there's a navigation bar with links for Home, Payments (which is highlighted in blue), Balances, Customers, Products, Reports, Connect, More, Developers, and Test mode (which is turned on). Below the navigation is a search bar and a 'Create' button. A 'TEST DATA' button is also visible.

The main content area displays a payment summary: **MYR 103.30 MYR** (Succeeded ✓). To the right of the amount is a small icon and the ID **ch\_3Ko5h1JtJX0tgJ11Nt0199N**. Below the summary, there are sections for 'Timeline' (listing a single event: 'Payment succeeded' on 13 Apr 2022, 20:53) and 'Payment details'. The 'Payment details' section contains the following information:

|                      |                                       |
|----------------------|---------------------------------------|
| Statement descriptor | KHAI BOUTIQUE                         |
| Amount               | MYR 103.30                            |
| Fee                  | MYR 4.35 ⓘ                            |
| Net                  | MYR 98.95                             |
| Status               | Succeeded                             |
| Description          | No description ⓘ <a href="#">Edit</a> |

Below the payment details is a 'Payment method' section, which shows the card used: **ID: card\_1Ko5gxJtJX0tgJ1DskhZ1YV**, **Number: \*\*\*\* 4242**, **Owner: dwdw@gmail.com**, and **Address: No address**.

Figure 5.4.26 Stripe Dashboard to check payment details

Next, user can check the order history after the order has been placed. There are two sections in order history page, first section is order and second section is order detail. Order section shows the order ID, order date, receiver name, receiver phone, status of order (Shipped, In Process, and Cancelled), ship address, ship city, ship postal code, ship state, and the total price of order. Order details section shows the items with respective order ID, the details included product image, product name, order ID, Size, quantity, product type, and price of the product.

## CHAPTER 5

The screenshot shows a web browser window with three tabs open: 'Khai Boutique | Order History', 'tawk.to | Chat', and 'Payments - Facebook - Stripe'. The main content area displays an order history page for 'Khai Boutique'. At the top, there are navigation links for 'HOME', 'CATEGORIES', 'CART', 'ORDER HISTORY', and 'CHECKOUT', along with a phone number '+34 657 3556 778'. Below the navigation is a banner with three sections: 'Free Shipping & Returns' (Buy Now), '20% Discount for KIDS Tops' (Have a look NOW), and 'New Arrivals of Woman Wears' (Let's go to buy). The main table lists three orders:

| Order ID | Order Date | Receiver Name | Receiver Phone | Status     | Ship Address   | Ship City   | Ship Postal Code | Ship State | TOTAL PRICE |
|----------|------------|---------------|----------------|------------|--|-------------|------------------|------------|-------------|
| 118      | 2022-04-10 | Ze khai Huam  | 017342536253   | In Process | 137, jalan pulasan, kampung jambu 34000 Taiping, Perak | TAIPING     | 34000            | Perak      | RM141.40    |
| 126      | 2022-04-11 | Ze khai Huam  | 012435276483   | In Process | 45, jalan pulasan, kampungwf wdf                       | TAIPING     | 10250            | Kedah      | RM432.10    |
| 128      | 2022-04-13 | Ze Khai       | 0124635374     | In Process | 22, jalan tokong, taman maju                           | George Town | 10250            | Penang     | RM103.30    |

Figure 5.4.27 Order section in Order History Page

The screenshot shows the 'Order Detail' section of the order history page. It lists four items purchased in order 128:

| Product                              | Order ID | Size | Quantity | Product Type | Price    |
|--------------------------------------|----------|------|----------|--------------|----------|
| Crew Short Sleeve                    | 128      | M    | 2        | Tops         | RM21.50  |
| Men Solid Slant Pocket Tapered Pants | 128      | M    | 1        | Tops         | RM130.90 |
| Lace Trimed V Neck Tee               | 118      | M    | 2        | Bottoms      | RM60.30  |
| DAZY Elastic Waist Solid Mermaid     | 126      | M    | 1        | Bottoms      | RM70.70  |

Figure 5.4.28 Order Detail section in Order History Page

## CHAPTER 5

Next is the part for the staff user. Once staff user logged in to the website by their user ID and password, staff user will see their user ID beside the “Welcome, ”, and there is one extra entry for staff user which is “Inventory Management”. Once user enter inventory management page, it will redirect to the page that only staff user is allowed to access. There is a side bar in the web page which options included inventory management, employee management, customer management, and order management. At the header bar is the page name, which is Inventory Management, Analytics button, home button and Add New Product Button. Inventory Management Page shows all of product details in database. Attributes of records included product code, product name, category, product type, product description, quantity in stock and price. Quantity in stock in this page is the sum of the size available in stock. The action column with  icon redirect to the update page for respective product record, and  icon is to delete the respective product records. When user click Add New Product button will show a modal to allow user input new product detail to add. There is validation in process of adding product, user is required to fill up all of the required details. In adding product process, user can choose the quantity stock for every size of product. If user didn't have this size of product, just leave it blank. When user click  icon to remove product record, system will prompt a modal to confirm the action. After user confirm the action, the product record will be removed from the database. There is a search box at the side bar, user can input the keyword of the product name, then system will search the product records that include the keyword.

\*\*Normal Staff user is not able to Edit product record, while manager user and admin user are allowed to do so.

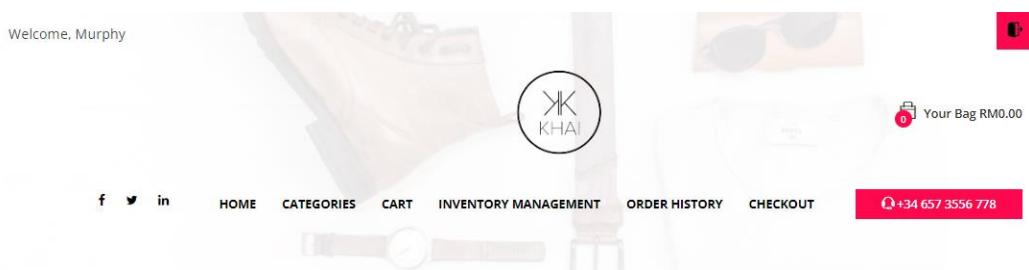


Figure 5.4.29 Extra entry for staff user

## CHAPTER 5

| Inventory Management |  |          |             |  | Quantity Stock | Price | Action |
|----------------------|--|----------|-------------|--|----------------|-------|--------|
| ProductCode          | ProductName                                  | Category | ProductType | ProductDescription   |                |       |        |
| S10_4698             | Crew Short Sleeve                            | Men      | Tops        | Our crew neck T-shirt features thoughtful design details for style and comfort. 100% cotton. Versatile design looks great in any situation. Perfectly balanced proportions. Thick ribbed neckline. Cuffs and hem created with an advanced overlock hemming technique that makes the seams less conspicuous. Everything from the shoulder angles to armhole shape and sleeve position were designed to complement the body. | 160            | 21.5  |        |
| S10_4757             | Waterfall Collar Double Breasted French Coat | Women    | Outwear     | Style: Casual Color: Redwood Pattern Type: Plain Length: Knee Length Season: Spring/Fall Type: Pea Coat Details: Double Button, Pocket Fit Type: Regular Fit Neckline: Waterfall Sleeve Length: Long Sleeve Sleeve Type: Regular Sleeve  | 120            | 88.7  |        |
| S10_4962             | Lace Trimed V Neck Tee                       | Women    | Tops        | Style: Casual Color: Black Pattern Type: Plain Length: Regular Season: Summer Details: Contrast Lace Fit Type: Regular Fit Neckline: V neck Sleeve Length: Short Sleeve Sleeve Type: Regular Sleeve Sheer: No Placket Type: Pullovers  | 150            | 60.3  |        |
| S11_1234             | Men Solid Slant Pocket Tapered Pants         | Men      | Bottoms     | Style: Casual Color: Black Pattern Type: Plain Length: Long Season: Spring/Summer/Fall Type: Tapered/Carrot Details: Pocket Fit Type: Regular Fit Waist Line: Natural Sheer: No Closure Type: Zipper Fly Material: Cotton Composition: 66.6% Cotton, 30.5% Nylon, 2.9% Spandex Fabric: Non-Stretch Care Instructions: Machine wash or professional dry clean   | 200            | 130.9 |        |
| S12_1099             | Men Letter Graphic Bomber Jacket Without Tee | Men      | Outwear     | Style: Preppy Color: Black Pattern Type: Letter Length: Regular Season: Spring/Fall Type: Bomber Details: Zipper Fit Type: Regular Fit Neckline: Baseball Collar Sleeve Length: Long Sleeve Sleeve Type: Regular Sleeve Sheer: No Placket: Zipper Body: Lined Material: Polyester  | 110            | 150.6 |        |

Figure 5.4.30 Inventory Management page

**Inventory Management**

**Add Product**

| ProductCode | ProductName                                    | Category | Product Description  | Quantity Stock (XS) | Quantity Stock (S) | Quantity Stock (M) | Quantity Stock (L) | Quantity Stock (XL) | Price |
|-------------|--|----------|--|---------------------|--------------------|--------------------|--------------------|---------------------|-------|
| S10_4698    | Crew Short Sleeve                              | Men      | Our crew neck T-shirt features thoughtful design details for style and comfort. 100% cotton. Versatile design looks great in any situation. Perfectly balanced proportions. Thick ribbed neckline. Cuffs and hem created with an advanced overlock hemming technique that makes the seams less conspicuous. Everything from the shoulder angles to armhole shape and sleeve position were designed to complement the body. | 160                 | 21.5               |                    |                    |                     |       |
| S10_4757    | Waterfall Collar Double Breasted French Coat   | Women    | Style: Casual Color: Redwood Pattern Type: Plain Length: Knee Length Season: Spring/Fall Type: Pea Coat Details: Double Button, Pocket Fit Type: Regular Fit Neckline: Waterfall Sleeve Length: Long Sleeve Sleeve Type: Regular Sleeve  | 120                 | 88.7               |                    |                    |                     |       |
| S10_4962    | Lace Trimed V Neck Tee                         | Women    | Style: Casual Color: Black Pattern Type: Plain Length: Regular Season: Summer Details: Contrast Lace Fit Type: Regular Fit Neckline: V neck Sleeve Length: Short Sleeve Sleeve Type: Regular Sleeve Sheer: No Placket Type: Pullovers  | 150                 | 60.3               |                    |                    |                     |       |
| S11_1234    | Men Solid Slant Pocket Tapered Pants           | Men      | Style: Casual Color: Black Pattern Type: Plain Length: Long Season: Spring/Summer/Fall Type: Tapered/Carrot Details: Pocket Fit Type: Regular Fit Waist Line: Natural Sheer: No Closure Type: Zipper Fly Material: Cotton Composition: 66.6% Cotton, 30.5% Nylon, 2.9% Spandex Fabric: Non-Stretch Care Instructions: Machine wash or professional dry clean   | 200                 | 130.9              |                    |                    |                     |       |
| S12_1099    | Men Letter Graphic Bomber Jacket Without Tee   | Men      | Style: Preppy Color: Black Pattern Type: Letter Length: Regular Season: Spring/Fall Type: Bomber Details: Zipper Fit Type: Regular Fit Neckline: Baseball Collar Sleeve Length: Long Sleeve Sleeve Type: Regular Sleeve Sheer: No Placket: Zipper Body: Lined Material: Polyester  | 110                 | 150.6              |                    |                    |                     |       |
| S12_1108    | DAZY Elastic Waist Solid Mermaid Skirt         | Women    | Style: Plain Length: Long Season: Ruffle Hem Details: Pocket Fit Type: No Closure Type: Zipper Fly Material: Cotton, 30.5% Nylon, 2.9% Spandex Machine wash or professional dry clean  | 190                 | 70.7               |                    |                    |                     |       |
| S12_1666    | Hello Kitty and Friends 2pcs Cartoon Hair Clip | Women    | Material: Acrylic  | 100                 | 10.5               |                    |                    |                     |       |
| S12_2823    | Boys Drawstring Waist Color Block Shorts       | Kids     | Item Type: Colorblock Season: Drawstring Fit Type: Regular Fit Waist Material: Drawstring Waist Material: Polyester  | 112                 | 40.3               |                    |                    |                     |       |

**Product Code:**

**Product Name:**

**Category:**

**Product Type:**

**Product Description:**

**Quantity Stock (XS):**

**Quantity Stock (S):**

**Quantity Stock (M):**

**Quantity Stock (L):**

**Quantity Stock (XL):**

**Price:**

**Cancel** **Add**

Polyester Composition: 100% Polyester

Figure 5.4.31 Add product modal

## CHAPTER 5

### Add Product

Product Code

Product Name ! Please fill out this field.

Category ---Select---

Product Type ---Select---

Figure 5.4.32 Add product Validation

|          |  |       |   |   |     |       |  |  |
|----------|--|-------|---|---|-----|-------|--|--|
| S10_4757 | Waterfall Collar Double Breasted Trench Coat | Women | Style: Casual Color: Redwood Pattern Type: Plain Length: Knee Length Details: Double Button, Pocket Fit Sleeve Length: Long Sleeve Sleeve |   | 120 | 88.7  |  |  |
| S10_4962 | Lace Trimed V Neck Tee                       | Women | Are you sure you want to delete these Records?<br><small>This action cannot be undone.</small>  |   | 150 | 60.3  |  |  |
| S11_1234 | Men Solid Slant Pocket Tapered Pants         | Men   | Cancel  | Delete  | 200 | 130.9 |  |  |
| S12_1099 | Men Letter Graphic Bomber Jacket Without Tee | Men   | Outwear   | Style: Preppy Color: Black Pattern Type: Letter Length: Regular Season: Spring/Fall Type: Bomber Details: Zipper Fit Type: Regular Fit Neckline: Baseball Collar Sleeve Length: Long Sleeve Sleeve Type: Regular Sleeve Sheer: No Placket: Zipper Body: Lined Material: Polyester | 110 | 150.6 |  |  |

Figure 5.4.33 Confirmation of deleting records

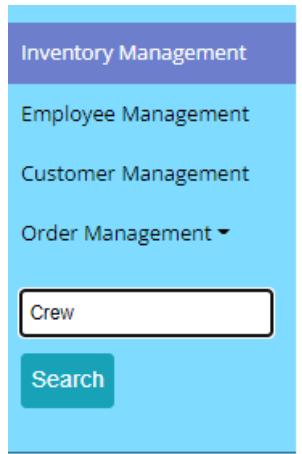


Figure 5.4.34 Search bar input “Crew” keyword

## CHAPTER 5

The screenshot shows a web-based inventory management system. On the left, there's a sidebar with a blue header 'Inventory' and a dark blue footer. The sidebar contains links for 'Inventory Management', 'Employee Management', 'Customer Management', and 'Order Management'. Below these is a search bar with placeholder 'Search Product Name' and a 'Search' button. The main area has a dark blue header with the title 'Inventory Management' and icons for 'Analytics', 'Home', and 'Add New Product'. The main content area is a table with columns: ProductCode, ProductName, Category, ProductType, ProductDescription, QuantityStock, Price, and Action. A single row is shown, representing a product with code S10\_4698, name 'Crew Short Sleeve', category 'Men', type 'Tops', and a detailed description about its design. The quantity is 160, price is 21.5, and the action column contains edit and delete icons.

Figure 5.4.35 Output of search “Crew”

When user click icon it redirects to Inventory Management Update page. User can edit the product details in this page, but user is not allowed to leave empty for all of the fields. User can add the product image at the last field of the page. Else there will be no picture showing in this page. After user done editing the product detail, user may click the “Update the product” button at the end of the page, while the back button will redirect back to the inventory management page.

## CHAPTER 5

### Inventory Management (Update Page)



Product Code (Read Only)  
S10\_4698

Product Name  
Crew Short Sleeve

Category  
Men

Product Type  
Tops

Product Description  
Our crew neck T-shirt features thoughtful design details for style and comfort.  
100% cotton.  
Versatile design looks great in any situation.  
Perfectly balanced proportions.  
Thick ribbed neckline.

Quantity Stock (S)  
30

Quantity Stock (M)  
45

Quantity Stock (L)  
46

Quantity Stock (XL)  
39

Price  
21.5

Product Image  
 No file chosen

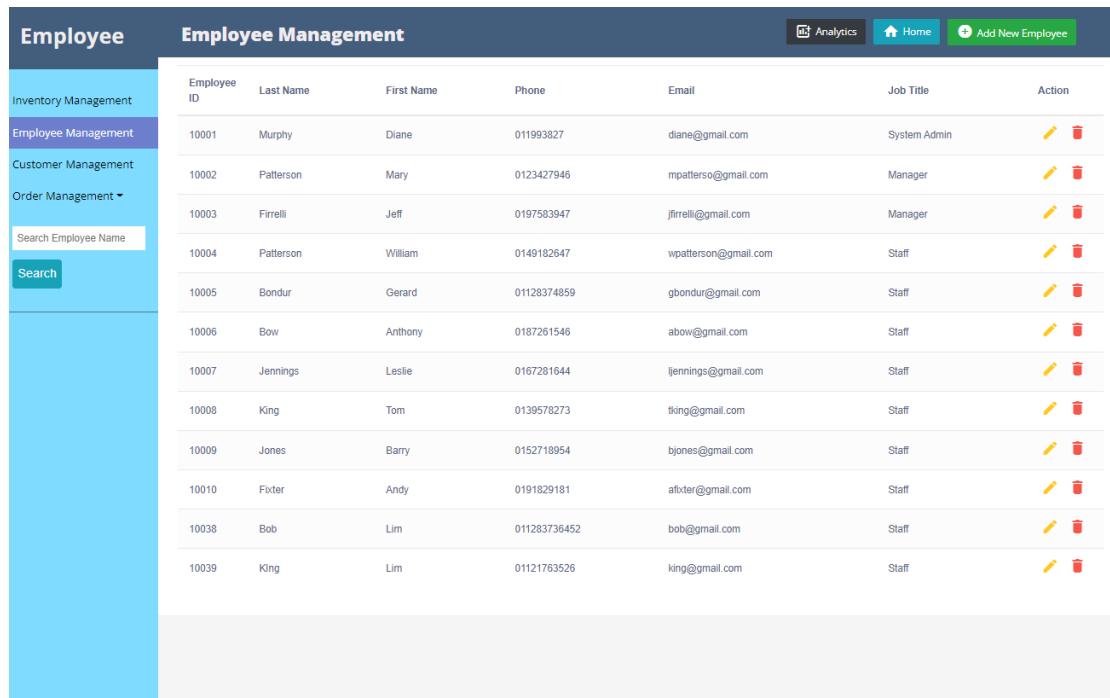
Figure 5.4.34 Inventory Management update page

## CHAPTER 5

Employee Management shows all of the employee records which included the attributes such as Employee ID, last name, first name, phone, email, and job title. The add new employee button is located at the top header bar with green color. There is also a search box for user to search the employee records by simply input the employee first or last name. When creating new employee records, user should input a user ID and password as an account for new created employee. Therefore, new employee can log in using their user ID and password as how staff user log in.

icon is redirect user to the update employee details page, while icon is to remove employee records. Remove employee record will also show the confirmation for the action.

\*\*Normal Staff user is not able to see all of the employee records, Manager user allowed to view all employee records only, while Admin user is allowed to view, add, update, and delete the employee records.



| Employee Management |           |            |              |                      |              |   |
|---------------------|-----------|------------|--------------|----------------------|--------------|---|
| Employee ID         | Last Name | First Name | Phone        | Email                | Job Title    | Action  |
| 10001               | Murphy    | Diane      | 011993827    | diane@gmail.com      | System Admin |   |
| 10002               | Patterson | Mary       | 0123427946   | mpatterso@gmail.com  | Manager      |   |
| 10003               | Firrelli  | Jeff       | 0197583947   | jfirrelli@gmail.com  | Manager      |   |
| 10004               | Patterson | William    | 0149182647   | wpatterson@gmail.com | Staff        |   |
| 10005               | Bondur    | Gerard     | 01128374859  | gbondur@gmail.com    | Staff        |   |
| 10006               | Bow       | Anthony    | 0187261546   | abow@gmail.com       | Staff        |   |
| 10007               | Jennings  | Leslie     | 0167281644   | ljennings@gmail.com  | Staff        |   |
| 10008               | King      | Tom        | 0139578273   | tking@gmail.com      | Staff        |   |
| 10009               | Jones     | Barry      | 0152718954   | bjones@gmail.com     | Staff        |   |
| 10010               | Fixter    | Andy       | 0191829181   | afxter@gmail.com     | Staff        |   |
| 10038               | Bob       | Lim        | 011283736452 | bob@gmail.com        | Staff        |   |
| 10039               | King      | Lim        | 01121763526  | king@gmail.com       | Staff        |   |

Figure 5.4.35 Employee Management

## CHAPTER 5

The screenshot shows a modal dialog titled "Add Employee". On the left, there is a vertical list of employee names: Diane, Mary, Jeff, William, Gerard, Anthony, Leslie, Tom, Barry, Andy, and Lim. To the right of this list are input fields for a new employee. The fields include "User ID" (empty), "Password" (empty, with a note "Please fill out this field." in a tooltip), "Last Name" (empty), "First Name" (empty), "Phone" (empty), "Email" (empty), and a "Job Title" dropdown menu set to "--Select--". At the bottom right of the dialog are "Cancel" and "Add" buttons.

Figure 5.4.36 Add Employee

This screenshot is identical to Figure 5.4.36, but the "Password" field now contains a single character, triggering a validation error. A yellow tooltip bubble appears over the field with the text "Please fill out this field." The rest of the form and background list of employees remain the same.

Figure 5.4.37 Add Employee Validation

## CHAPTER 5

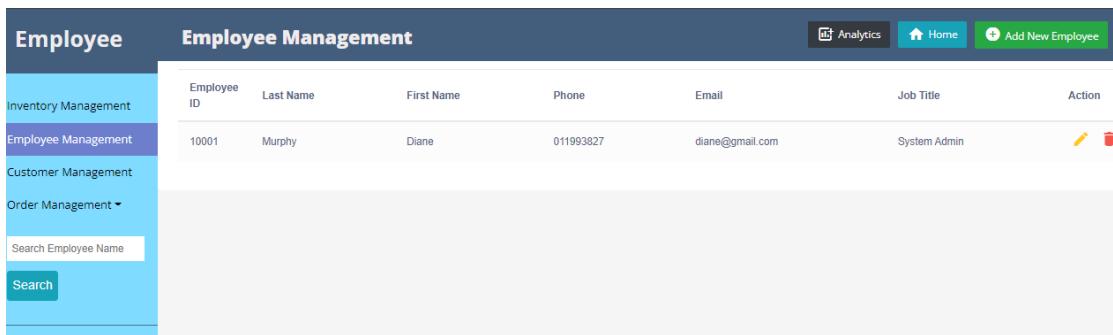


Figure 5.4.38 Search Employee By input “Dia” keyword

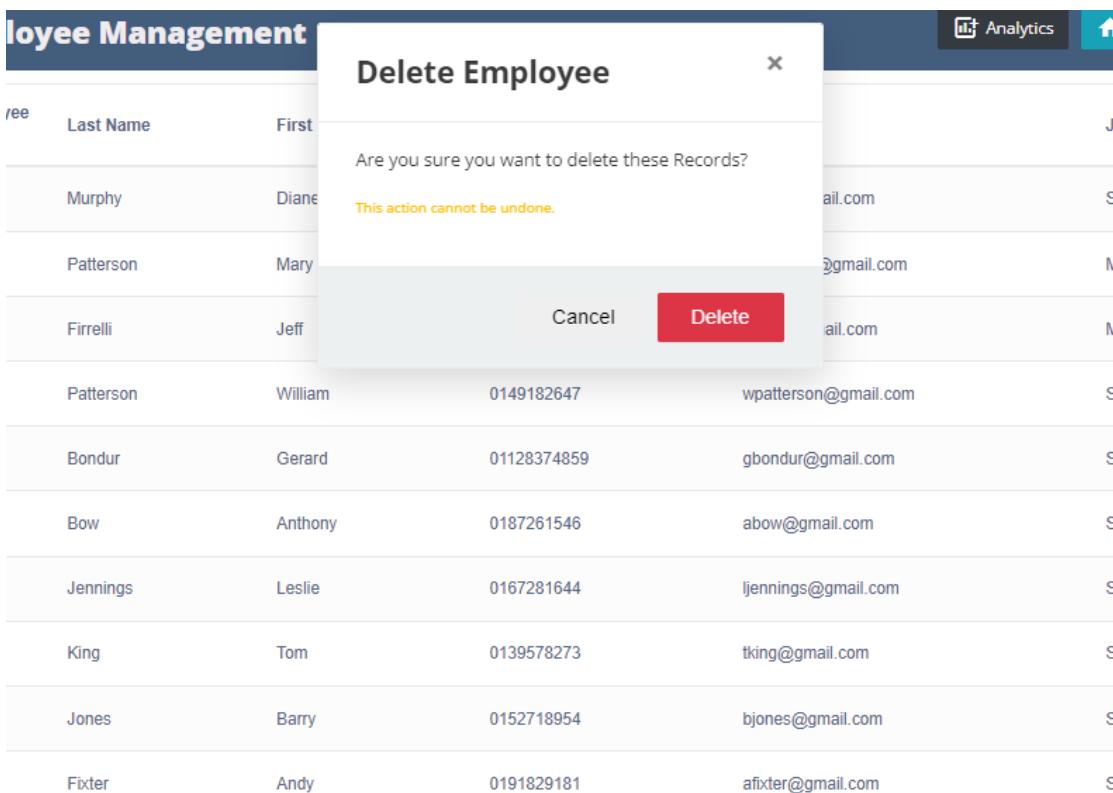


Figure 5.4.39 Confirmation of deleting employee record

## CHAPTER 5

When user click  icon of respective record it redirects to Employee Management Update page. User can edit the employee details in this page, but user is not allowed to leave empty for all of the fields. After user done editing the employee detail, user may click the “Update the Employee” button at the end of the page, while the back button will redirect back to the employee management page.

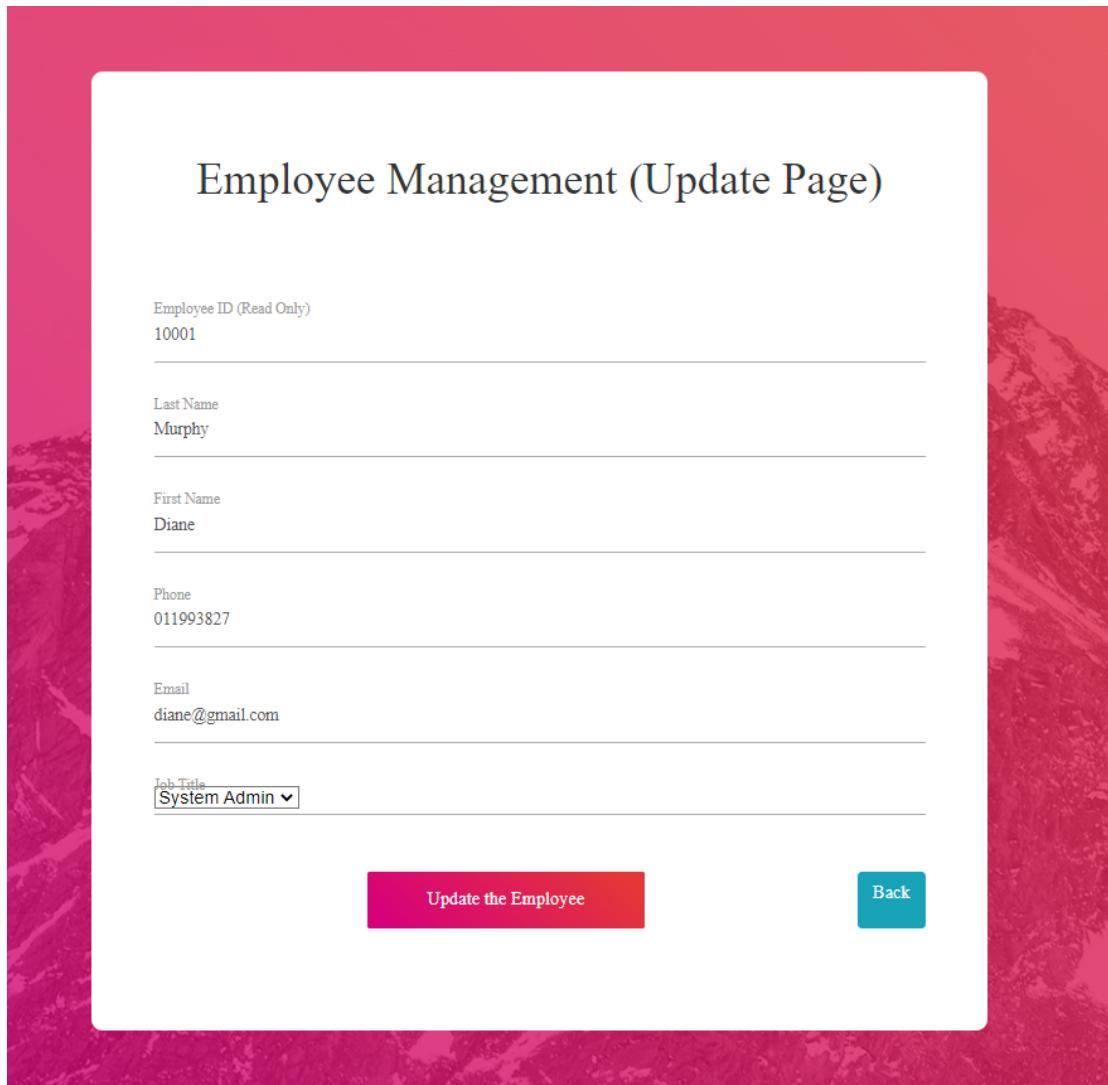


Figure 5.4.40 Employee Management update page

## CHAPTER 5

Next is the Customer Management part, this page shows all the customer records that made order in Khai Boutique website. Attributes included Customer ID, Staff user ID, and FB ID. Since there are two types of customers which are staff and client. Therefore, staff user ID is for staff user and FB ID is for client user. Staff user ID and FB ID, one of them should not be null. Staff user is not able to add customer manually and edit customer detail. Hence, there are only two actions can be performed which are search

by Customer ID and Delete customer.  There is confirmation when user which to delete the records.

\*\* Normal Staff user is allowed to view and search customer records, while admin and manager user is allowed to delete and view the customer records.

| Customer Management |               |                  |  |
|---------------------|---------------|------------------|--|
| Customer ID         | Staff User ID | FB ID            | Action   |
| 100000000001        |               |                  |  |
| 100000000002        |               |                  |  |
| 100000000003        |               |                  |  |
| 100000000004        |               |                  |  |
| 100000000005        |               |                  |  |
| 100000000012        |               | 4087951824603673 |  |
| 100000000013        | Murphy        |                  |  |

Figure 5.4.41 Customer Management Page

| Customer Management |               |       |   |
|---------------------|---------------|-------|---|
| Customer ID         | Staff User ID | FB ID | Action  |
| 100000000013        | Murphy        |       |  |

Figure 5.4.42 Search by input “13” keyword Customer ID

## CHAPTER 5

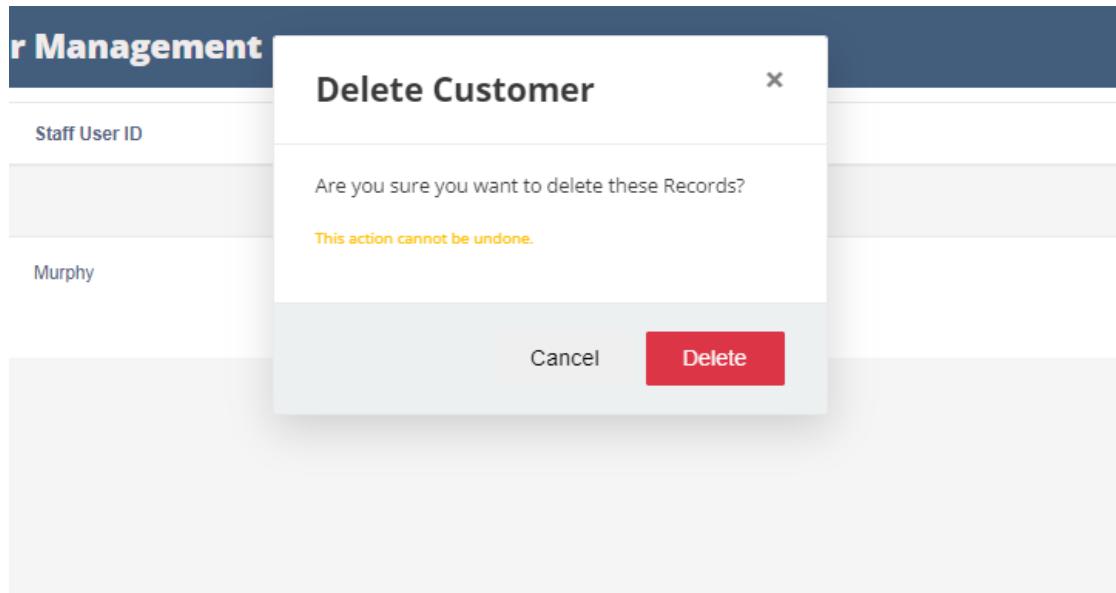


Figure 5.4.43 Confirmation of deleting customer records

## CHAPTER 5

After that is Order Management (List) page, this page shows the details of the order such as order ID, receiver name, receiver phone, order date, total price, status, ship address, ship city, ship postal code, ship state, and customer ID. User is not able to add

order manually.  icon is redirect user to the update order, while  icon is to remove order records. Remove order record will also show the confirmation for the action. User can search the order by inputting order ID in the search box at the side bar.

\*\* All of the staff user can perform the actions mentioned above

| Order                | Order Management (List) |               |                |            |             |            |  |             |               |            |  Analytics |  Home  |
|----------------------|-------------------------|---------------|----------------|------------|-------------|------------|--|-------------|---------------|------------|---|---|
|                      | Order ID                | Receiver Name | Receiver Phone | Order Date | Total Price | Status     | Ship Address   | Ship City   | Ship PostCode | Ship State | Customer ID   | Action  |
| Inventory Management | 118                     | Ze khai Huam  | 017342536253   | 2022-04-10 | 141.4       | In Process | 137, jalan pulasan, kampung jambu 34000 Taiping, Perak | TAIPING     | 34000         | Perak      | 100000000012  |       |
| Employee Management  | 119                     | Ze khai Huam  | 012121234321   | 2022-04-10 | 130.9       | In Process | 137, jalan pulasan, kampung jambu 34000 Taiping, Perak | TAIPING     | 34000         | Perak      | 100000000013  |       |
| Customer Management  | 126                     | Ze khai Huam  | 012435276483   | 2022-04-11 | 432.1       | In Process | 45, jalan pulasan, kampungunwf vdf                     | TAIPING     | 10250         | Kedah      | 100000000012  |    |
| Order Management ▾   | 128                     | Ze Khai       | 0124635374     | 2022-04-13 | 103.3       | In Process | 22, jalan tokong, taman maju                           | George Town | 10250         | Penang     | 100000000012  |   |
| Order List           |                         |               |                |            |             |            |  |             |               |            |   |   |
| Order Detail         |                         |               |                |            |             |            |  |             |               |            |   |   |
| Search Order ID      |                         |               |                |            |             |            |  |             |               |            |   |   |
| Search               |                         |               |                |            |             |            |  |             |               |            |   |   |

Figure 5.4.44 Order Management (List) Page

| Order                | Order Management (List) |               |                |            |             |            |  |           |               |            |  Analytics |  Home  |
|----------------------|-------------------------|---------------|----------------|------------|-------------|------------|--|-----------|---------------|------------|---|---|
|                      | Order ID                | Receiver Name | Receiver Phone | Order Date | Total Price | Status     | Ship Address   | Ship City | Ship PostCode | Ship State | Customer ID   | Action  |
| Inventory Management | 118                     | Ze khai Huam  | 017342536253   | 2022-04-10 | 141.4       | In Process | 137, jalan pulasan, kampung jambu 34000 Taiping, Perak | TAIPING   | 34000         | Perak      | 100000000012  |   |
| Employee Management  |                         |               |                |            |             |            |  |           |               |            |   |   |
| Customer Management  |                         |               |                |            |             |            |  |           |               |            |   |   |
| Order Management ▾   |                         |               |                |            |             |            |  |           |               |            |   |   |
| Order List           |                         |               |                |            |             |            |  |           |               |            |   |   |
| Order Detail         |                         |               |                |            |             |            |  |           |               |            |   |   |
| Search Order ID      |                         |               |                |            |             |            |  |           |               |            |   |   |
| Search               |                         |               |                |            |             |            |  |           |               |            |   |   |

Figure 5.4.45 Search by input “18” keyword Order ID

## CHAPTER 5

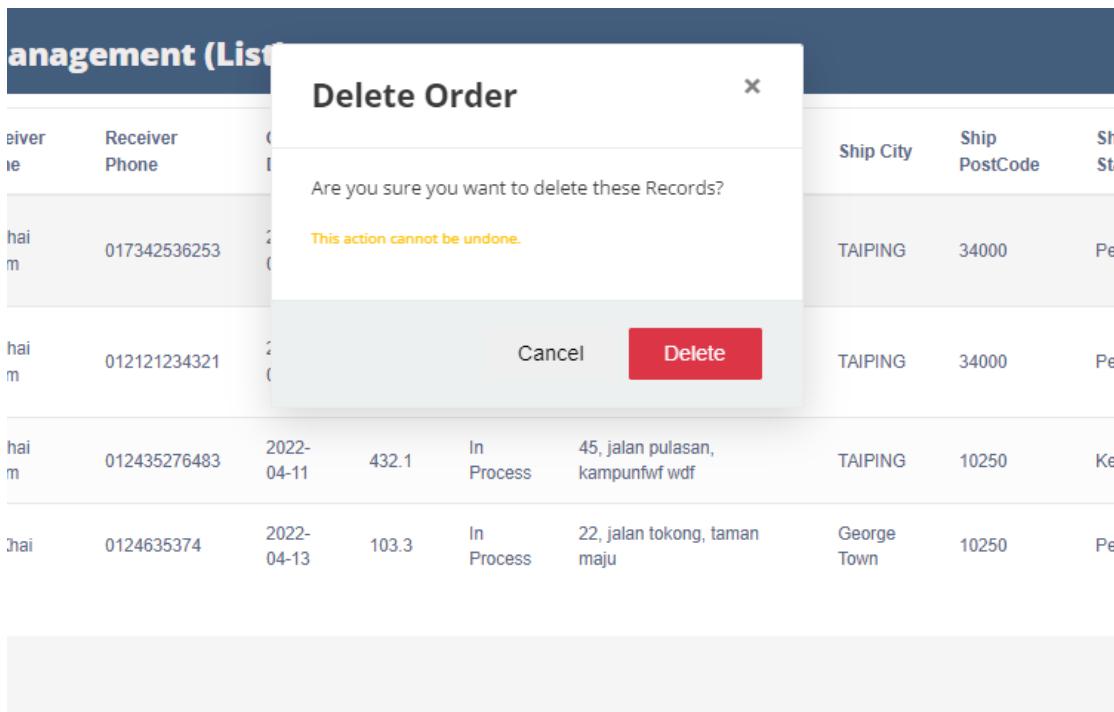


Figure 5.4.46 Confirmation of deleting order action

When user click icon of respective record it redirects to Order Management Update page. User can edit the order details such as status, ship address, ship city, ship postal code and ship state in this page others than these fields is read only data, but user is not allowed to leave empty for all of the fields. After user done editing the order detail, user may click the “Update the Order” button at the end of the page, while the back button will redirect back to the Order Management (List) page. Those details that can be edit is to solve the problem when client user key the wrong address or some delivery details.

## CHAPTER 5

### Order Management (Update Page)

---

Order ID (Read Only)  
119

---

Receiver Name  
Ze khai Huam

---

Receiver Phone  
012121234321

---

Order Date (Read Only)  
04/10/2022

---

Total Price (Read Only)  
130.9

---

Status  
In Process ▾

---

Ship Address  
137, jalan pulasan, kampung jambu 34000 Taiping, Perak

---

Ship City  
TAIPING

---

Ship Postal Code  
34000

---

Ship State  
Perak

---

Customer ID (Read Only)  
100000000013

---

[Update the Order](#)

[Back](#)

Figure 5.4.47 Order Management Update Page

## CHAPTER 5

Next is order detail which also a part of order management. User is not allowed to make any modification in this page. This page shows the order detail of respective order such as order ID, product code, size, quantity, and product type.

The screenshot shows a web-based application interface. On the left, there is a vertical sidebar with a dark blue header labeled 'Order' and a light blue footer. The sidebar contains links: 'Inventory Management', 'Employee Management', 'Customer Management', 'Order Management +', 'Order List', 'Order Detail', 'Search Order ID', and a 'Search' button. The main content area has a dark blue header bar with the title 'Order Management (Detail)' and two buttons: 'Analytics' and 'Home'. Below the header is a table with the following data:

| Order ID | Product Code | Size | Quantity | Product Type |
|----------|--------------|------|----------|--------------|
| 118      | S12_1108     | M    | 2        | Bottoms      |
| 119      | S11_1234     | XL   | 1        | Bottoms      |
| 120      | S11_1234     | M    | 1        | Bottoms      |
| 120      | S12_1099     | M    | 1        | Outwear      |
| 120      | S12_1099     | S    | 1        | Outwear      |
| 120      | S10_4698     | M    | 2        | Tops         |
| 120      | S10_4962     | M    | 1        | Tops         |

Figure 5.4.48 Order Management (Detail) Page

Lastly is generating useful analytics. By click the Analytics button at the header bar. Once user click in the analytics, system will prompt user a notification about the Highest Sales product type by concluding the order detail product in database. There are two types of analytics will be shown in this page which include “Product Type Sales Analytics Chart” and “Categories Sales Analytics Chart”. Product type sales analytics is built based on the sales of product type (Tops, Outwear, Bottoms, Accessories), while Categories sales analytics is build based on the sales of product category (Woman, Man, and Kid).

\*\* Only Admin user can generate these analytics

## CHAPTER 5

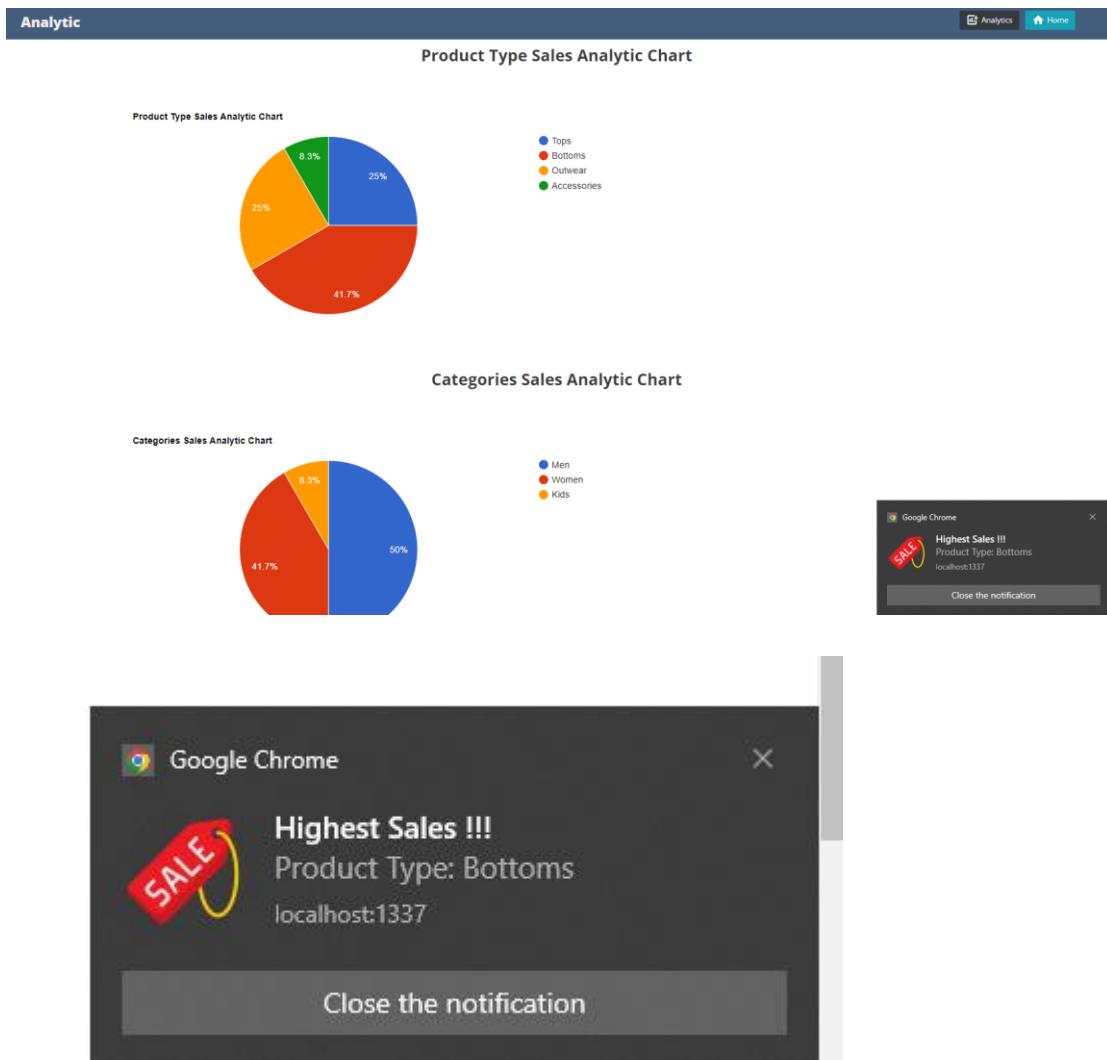


Figure 5.4.49 Analytics and Notification

## Chapter 6: System Evaluation and Discussion

### 6.1 System Testing

| No | Test Case               | Function Name                      | Inputs   | Expected Output                     | Actual Output                        | Action / Remarks   |
|----|-------------------------|------------------------------------|--|-------------------------------------|--------------------------------------|--|
| 1  | Login                   | checkUserLogin()<br>loadCustUser() | Staff user: userID and password<br>Client user: Facebook account | Successful access home page         | Able to access to Home Page          | Staff user: Have an employee account to login<br>Client user: Have a Facebook account to login |
| 2  | View Product on website | readProductInCategories()          | Click “Categories” to categories page                            | Success loads all the product       | All product shows in categories page | Product items exist in database  |
| 3  | Add Product to cart     | addToCart()                        | Add Product to cart  | Successful add product into cart    | Product added to cart                | Select a product to add, choose size of product if product type is not Accessories             |
| 4  | View Cart Item          | loadCart()                         | Click “Cart” to cart page  | Successful shows items in cart      | Item in cart shows correctly         | Click Cart entry to view cart item   |
| 5  | Remove Cart Item        | removeCartItem()                   | Click the trash icon at the cart item row that wish to remove    | Item removed from cart successfully | Cart Item chosen has removed         | Choose the item that wish to delete, and click the trash icon of that rows                     |

## Chapter 6

|    |                                    |   |   |  |  |  |
|----|------------------------------------|---|---|--|--|--|
| 6  | Update Cart Item                   | updateCartItem()                                | Click the refresh icon at the cart item row that wish to update | Item updated from cart successfully  | Cart Item chosen has updated                                 | Choose the item that wish to update, and click the refresh icon of that rows |
| 7  | Clear Cart                         | clearCartItem()                                 | Click “Clear Cart” button                                       | All item removed from cart successfully  | All cart item has been removed                               | Users wish to clear all item in cart, Click “Clear Cart” button.             |
| 8  | Place Order                        | purchasePayment()                               | Key in delivery details, then pay via credit/ debit card.       | Order placed successfully  | Order has been placed  | Fill in the delivery details, then make payment by credit/ debit card.       |
| 9  | View Order History                 | getOrderHistory()                               | Click “Order History”   | Order History shows order history correctly                                    | Order History correctly shows order history that made before | Click “Order History” at header bar  |
| 10 | Categories Page product filter     | Data-filter                                     | Select the category that wish to filter up                      | Shows the product correctly with the selected filter                           | Product shown correctly with the selected filter             | Choose the type / category that wish to filter.                              |
| 11 | User role for Access authorization | checkUser()<br>staffNotAllowed()<br>adminOnly() | Employee role   | Pages that with access authorization limited user with no permission to access | Successfully limit the user without authorization to access  | Log in with different account have different authorization                   |

## Chapter 6

|    |                               |                    |  |  |   |  |
|----|-------------------------------|--------------------|--|--|---|--|
| 12 | View Inventory products       | readProductList()  | Click “Inventory Management” at side bar     | Successful shows all products detail                         | All products detail in inventory database shown | Click “Inventory Management” at side bar     |
| 13 | Go to update page (Inventory) | goUpdateProduct()  | Click “Edit” icon of specific product’s row  | Successful redirect to update page of the product            | Redirected to update page of the product        | Click “Edit” icon of chosen product.         |
| 14 | Update Product                | updateProduct()    | Modify the product details                   | Product details update successfully                          | Product details updated                         | Edit the product details that wish to modify |
| 15 | Add product                   | addProduct()       | Input new product details                    | Product added successfully                                   | Product added and showed in inventory page      | Key in all the required product details.     |
| 16 | Delete product                | deleteProduct()    | Click “Trash” icon of specific product’s row | Successful delete product from database                      | Product deleted from database                   | Click “Trash” icon of chosen product.        |
| 17 | Search product                | searchProduct()    | Input the keyword of product name            | Successful shows the products that include the keyword shown | Products that include the keyword shown         | Input the keyword of product name            |
| 18 | View Employees                | readEmployeeList() | Click “Employee Management” at side bar      | Successful shows all employees detail                        | All employees detail in employee database shown | Click “Employee Management” at side bar      |

## Chapter 6

|    |                              |                    |  |   |   |  |
|----|------------------------------|--------------------|--|---|---|--|
| 19 | Go to update page (Employee) | goUpdateEmp()      | Click “Edit” icon of specific employee’s row   | Successful redirect to update page of the employee      | Redirected to update page of the employee       | Click “Edit” icon of chosen employee.          |
| 20 | Update Employee              | updateEmp()        | Modify the employee details                    | Employee details update successfully                    | Employee details updated                        | Edit the employee details that wish to modify  |
| 21 | Add employee                 | addEmployee()      | Input new employee details                     | Employee added successfully                             | Employee added and showed in employee page      | Key in all the required employee details.      |
| 22 | Delete employee              | deleteEmployee()   | Click “Trash” icon of specific employee’s row  | Successful delete employee from database                | Employee deleted from database                  | Click “Trash” icon of chosen employee.         |
| 23 | Search Employee              | searchEmployee()   | Input the keyword of employee first/ last name | Successful shows the employees that include the keyword | Employees that include the keyword shown        | Input the keyword of employee first/ last name |
| 24 | View Customers               | readCustomerList() | Click “Customer Management” at side bar        | Successful shows all customers detail                   | All customers detail in customer database shown | Click “Customer Management” at side bar        |
| 25 | Delete customer              | deleteCust()       | Click “Trash” icon of specific customer’s row  | Successful delete customer from database                | Customer deleted from database                  | Click “Trash” icon of chosen customer.         |

## Chapter 6

|    |                                |                      |   |   |  |   |
|----|--------------------------------|----------------------|---|---|--|---|
| 26 | Search Customer                | searchCustomer()     | Input the keyword of customer ID              | Successful shows the customers that include the keyword | Customers that include the keyword shown         | Input the keyword of customer ID              |
| 27 | View Order                     | readOrderList()      | Click “Order Management (List)” at side bar   | Successful shows all orders                             | All orders in order database shown               | Click “Order Management (List)” at side bar   |
| 28 | Go to update page (Order List) | goUpdateOrder()      | Click “Edit” icon of specific order’s row     | Successful redirect to update page of the order         | Redirected to update page of the order           | Click “Edit” icon of chosen order.            |
| 29 | Update Order                   | updateOrder()        | Modify the order information                  | Order update successfully                               | Order information updated                        | Edit the order that wish to modify            |
| 30 | Delete order                   | deleteOrder()        | Click “Trash” icon of specific order’s row    | Successful delete order from database                   | Order deleted from database                      | Click “Trash” icon of chosen order.           |
| 31 | Search Order                   | searchOrderList()    | Input the keyword of order ID                 | Successful shows the orders that include the keyword    | Orders that include the keyword shown            | Input the keyword of order ID.                |
| 32 | View Order product detail      | getOrderDetailList() | Click “Order Management (Detail)” at side bar | Successful shows all order details                      | All orders detail in order detail database shown | Click “Order Management (Detail)” at side bar |

|    |                     |                     |                                       |  |   |                                       |
|----|---------------------|---------------------|---------------------------------------|--|---|---------------------------------------|
| 33 | Search Order detail | searchOrderDetail() | Input the keyword of order ID         | Successful shows the order details that include the keyword                  | Order details that include the keyword shown                    | Input the keyword of order ID.        |
| 34 | Generate Analytic   | getSalesAnalytic()  | Click “Analytic” button at header bar | Product Type sales analytics and Category sales analytics shows successfully | Product Type sales analytics and Category sales analytics shown | Click “Analytic” button at header bar |

Table 6.1 System Testing

## 6.2 Analysis of Survey Result

There is total 25 respondents joined this survey on the evaluation of boutique management system performance. This survey included four sections which are respondent's details, experience towards User Interface (UI), experience toward overall Functionalities, and experience toward overall Functionalities (Boutique Management System). Through this survey, the performance of web application functionalities will be revealed. Respondents answer the survey question after they gone through the web application. The analysis of respondents' answers is shown below.

### Section 1: Respondent's details

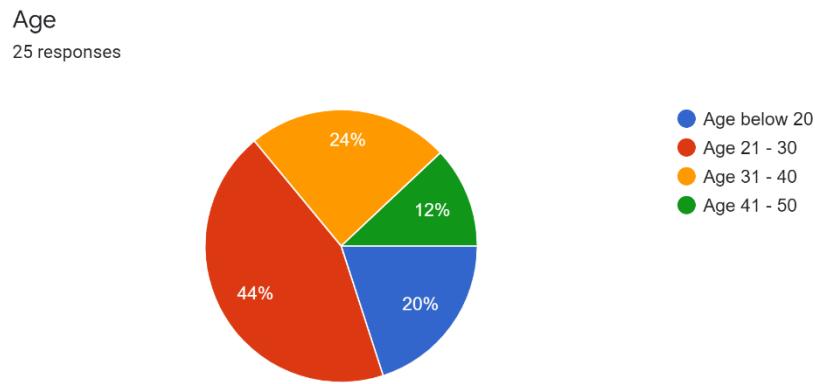


Figure 6.2.1 Age

Figure 6.2.1 shows the respondents' age distribution in chart. 44% of respondents' age are in range 21-30 years old, while 24% of respondents' age are in range 31-40 years old. 20% of respondents' age are below 20 years old. 12% of respondents' age are in range 41-50 years old.

## Chapter 6

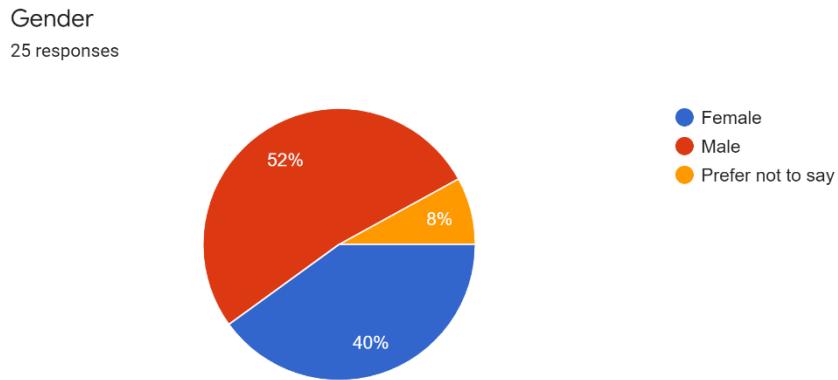


Figure 6.2.2 Gender

Figure 6.2.2 shows the gender distribution of respondents. 52% of respondents is Male, 40% is Female, and 8% of respondents prefer not to mention about their gender.

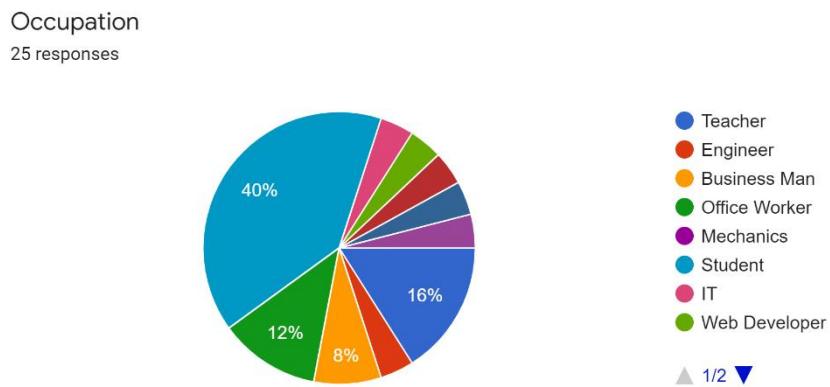


Figure 6.2.3 Occupation

Figure 6.2.3 shows the Occupation distribution chart of all respondents. 40% of respondents are student, 16% of respondents are Teacher, 12% of respondents are Office Worker, 8% of respondents are Business Man. Other than that, there are few more 4 % of respondents for occupation in IT, Web Developer, Engineer, Retired, Unemployed and prefer not to say.

## Section 2: Experience towards User Interface (UI)

Do you have any past experience on using E-commerce website ?  
25 responses

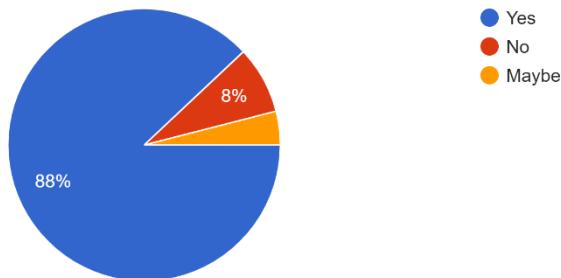


Figure 6.2.4 Past Experience 1

Figure 6.2.4 shows there are 88% of respondents have past experience on using E-commerce website, while 8% of respondents are not. 4% of respondents maybe have past experience on using E-commerce website.

Do you have any past experience on using Online Management System for store?  
25 responses

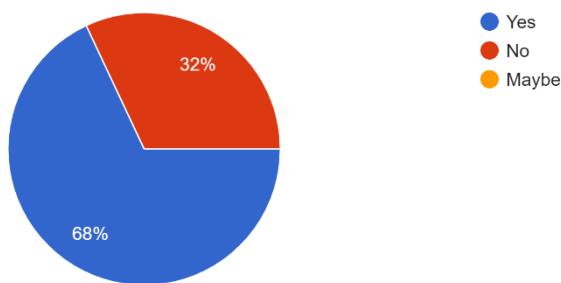


Figure 6.2.5 Past Experience 2

Figure 6.2.5 shows there are 68% of respondents have past experience on using Online Management System for store, while 32% of respondents are not.

## Chapter 6

How do you feel about overall Client user side Web Application design (E-commerce) ?  
25 responses

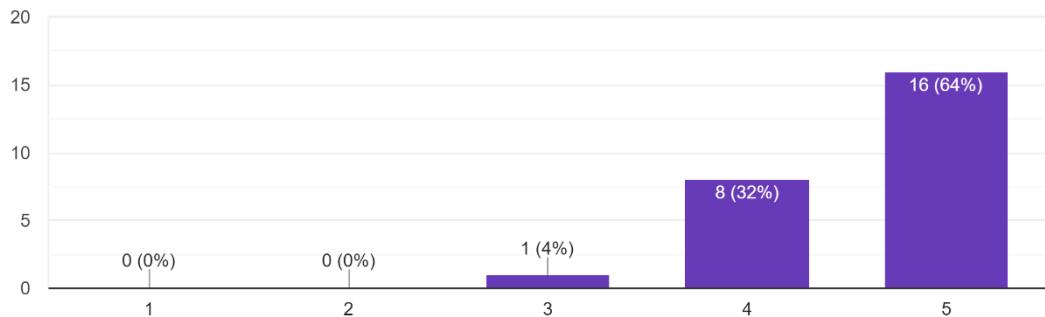


Figure 6.2.6 Overall design 1

Figure 6.2.6 shows the distribution of respondents' feeling about overall client user side web application design (E-commerce). 64% of respondents feels very satisfied on overall client user side web application design, 32% feel satisfied on it, and 4% of respondents feel neutral on this.

How do you feel about overall Staff user side Web Application design (Boutique Management System) ?  
25 responses

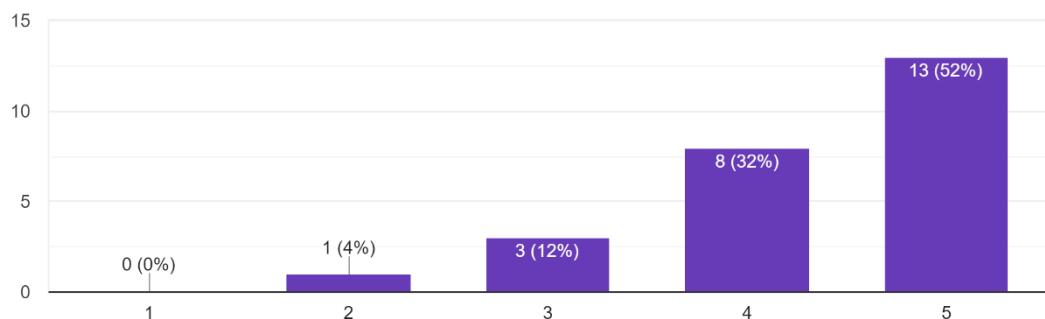


Figure 6.2.7 Overall design 2

Figure 6.2.7 shows the distribution of respondents' feeling about overall Staff user side Web Application design (Boutique Management System). 52% of respondents feels very satisfied on overall client user side web application design, 32% feel satisfied on it, 12% of respondents feel neutral, and 4% of respondents feel unsatisfied.

## Chapter 6

How do you feel about the web application user friendliness ?  
25 responses

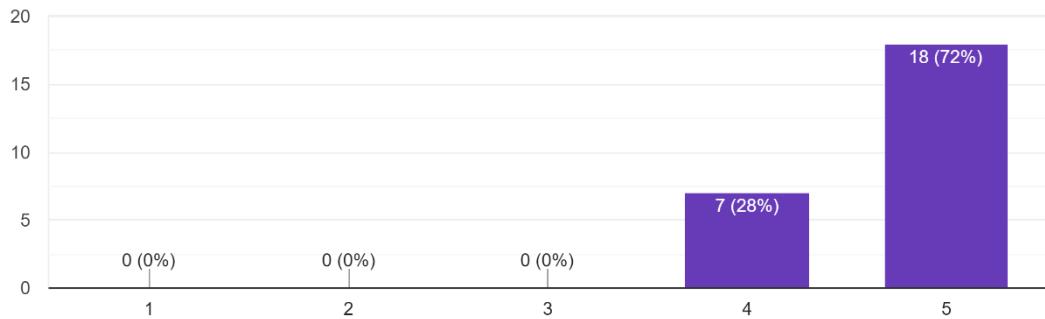


Figure 6.2.8 User friendliness

Figure 6.2.8 shows the distribution of respondents' feeling about the web application user friendliness. 72% of respondents feel it is very user-friendly, and 28% feel this web application is user-friendly.

Do you think of the animation and image on Home Page and Categories Page is attractive?  
25 responses

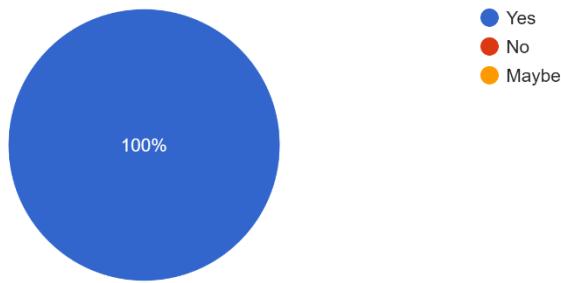


Figure 6.2.9 Animation and image

Figure 6.2.9 shows the distribution of respondents' answer on "Do you think of the animation and image on Home Page and Categories Page is attractive?". 100% of respondents thinks that animation and image on Home Page and Categories Page is attractive.

## Chapter 6

Is there any feedback / recommendation for improvements of the web application design? if no, please leave a "-"  
25 responses

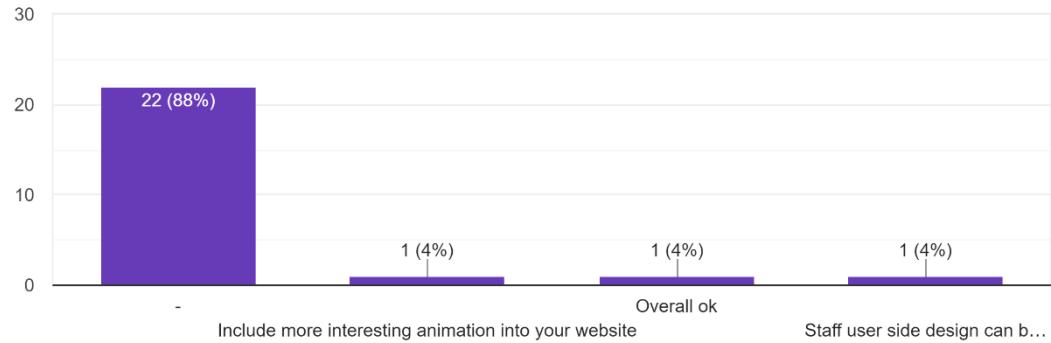


Figure 6.2.10 Feedback/recommendation

Figure 6.2.10 shows the distribution of respondents' answer on "Is there any feedback / recommendation for improvements of the web application design? if no, please leave a " - ". 88% of respondents answered a " - ", 4% of respondents said, "Include more interesting animation into your website". Another 4% of respondents said, "Overall ok", and another 4% said, "Staff user side design can be improved".

### Section 3: Experience toward overall Functionalities (E-commerce Boutique store)

Does the New Arrival filter (Woman, Man, Kid) show correct result?  
25 responses

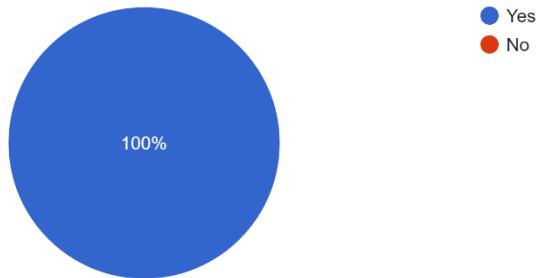


Figure 6.2.11 New Arrival filter

Figure 6.2.11 shows the survey result of question “Does the New Arrival filter (Woman, Man, Kid) show correct result?”. 100% of respondents answer “Yes”.

Does the store locator (Google Maps) is helpful to you?  
25 responses

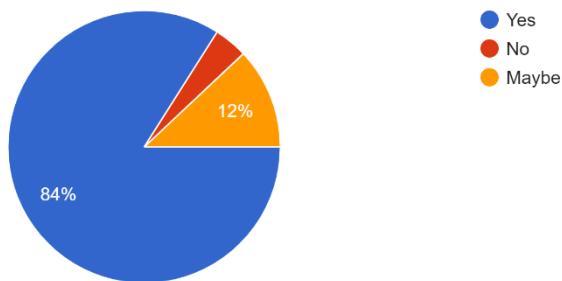


Figure 6.2.12 Store locator

Figure 6.2.12 shows the survey result of question “Does the store locator (Google Maps) is helpful to you?”. 84% of respondents answered “Yes”, 12% of respondents answered “No”, and 4% of respondents answered “Maybe”.

## Chapter 6

Are you able to talk to the staff by using customer service function (Bottom right corner Button)  
25 responses

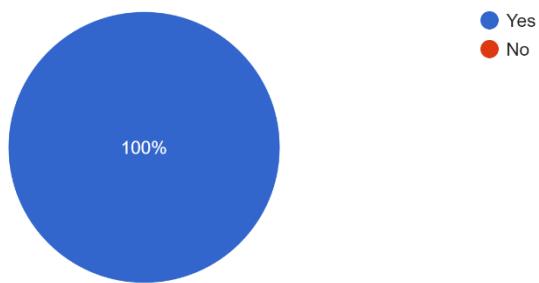


Figure 6.2.13 Customer service

Figure 6.2.13 shows the survey result of question “Are you able to talk to the staff by using customer service function (Bottom right corner Button)”. 100% of respondents answer “Yes”.

Does the "Profile" (Top Left corner) shows correct details of your Facebook Account ?  
25 responses

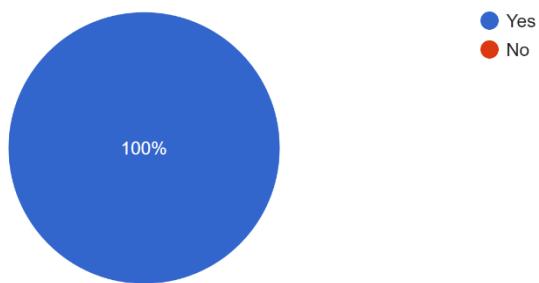


Figure 6.2.14" Profile" button

Figure 6.2.14 shows the survey result of question “Does the "Profile" (Top Left corner) shows correct details of your Facebook Account ?”. 100% of respondents answer “Yes”.

## Chapter 6

Does products can be added to cart successfully and shows in cart page as well as header cart ?  
25 responses

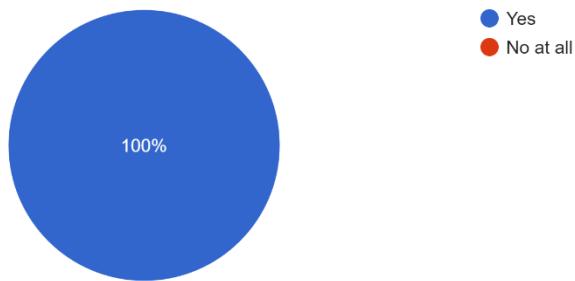


Figure 6.2.15 Add product into cart

Figure 6.2.15 shows the survey result of question “Does products can be added to cart successfully and shows in cart page as well as header cart ?”. 100% of respondents answer “Yes”.

Are you satisfied with the functionalities provides in CART page (Update cart item, remove item, clear cart)  
25 responses

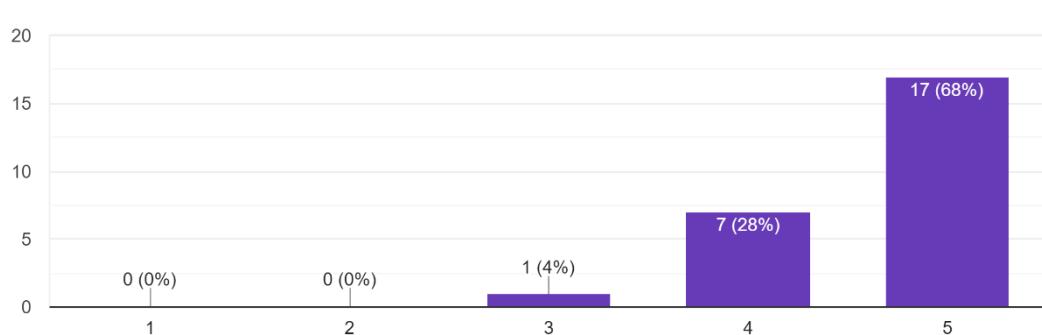


Figure 6.2.16 Satisfaction of cart functions

Figure 6.2.16 shows the distribution of respondents’ satisfaction with the functionalities provides in CART page (Update cart item, remove item, clear cart). 68% of respondents feels very satisfied, 28% feel satisfied on it, and 4% of respondents feel neutral on this.

## Chapter 6

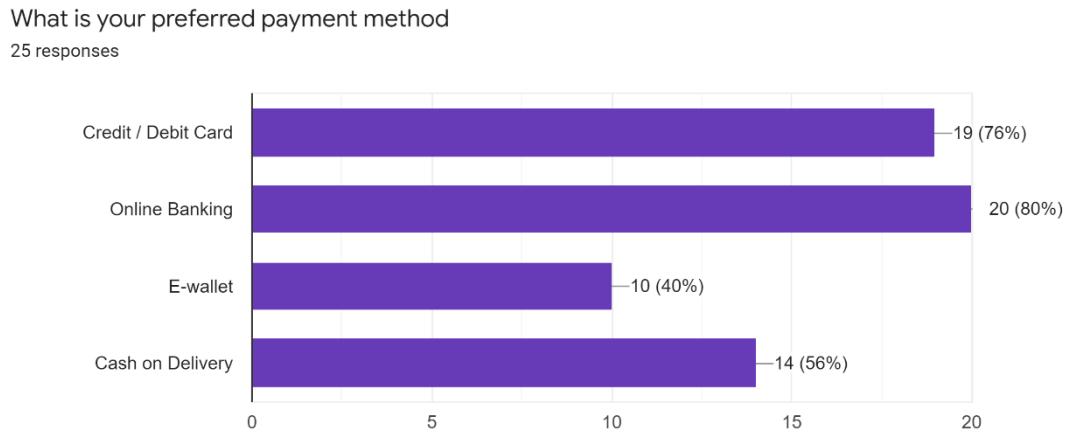


Figure 6.2.17 Preferred payment method

Figure 6.2.17 shows the distribution of respondents' preferred payment method. 80% of respondents preferred Online banking, 76% of respondents preferred credit/ debit card to make payment, 56% of respondents preferred Cash on Delivery, and 40% of respondents preferred E-wallet payment.

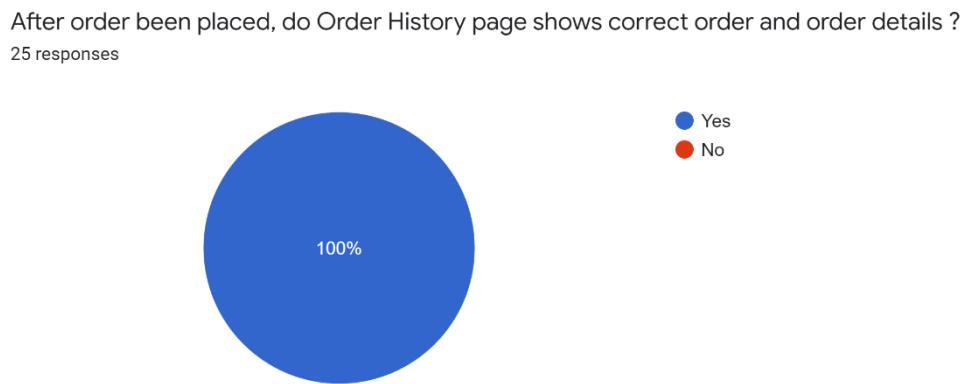


Figure 6.2.18 Order history display

Figure 6.2.18 shows the survey result of question "After order been placed, do Order History page show correct order and order details ?". 100% of respondents answer "Yes".

#### Section 4: Experience toward overall Functionalities (Boutique Management System)

Does the web application success to limit the access permission for different staff user role ?  
(Admin, Manager, Staff). If not, please describe which role  
25 responses

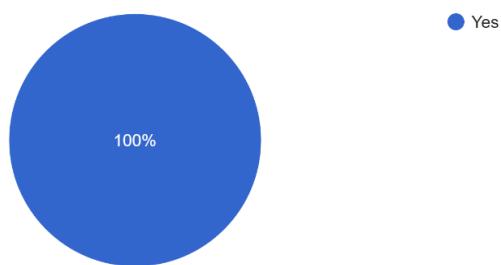


Figure 6.2.19 User authorization

Figure 6.2.19 shows the survey result of question “Does the web application success to limit the access permission for different staff user role ? (Admin, Manager, Staff). If not, please describe which role”. 100% of respondents answer “Yes”.

Does the CRUD (Create, Read, Update, Delete) and Search functions of INVENTORY MANAGEMENT work correctly? If yes, select "Everyt...". If not, select the checkbox which has problem.  
25 responses

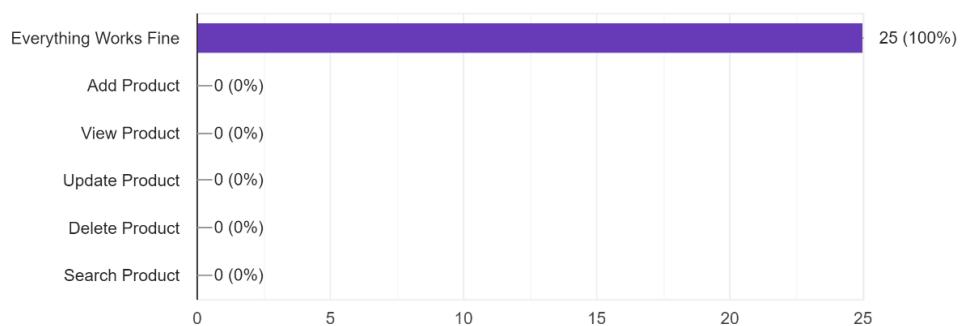


Figure 6.2.20 Functionalities of Inventory Management

Figure 6.2.20 shows the survey result of question “Does the CRUD (Create, Read, Update, Delete) and Search functions of INVENTORY MANAGEMENT work correctly? If yes, select "Everything Works Fine". If not, select the checkbox which has problem.”. 100% of respondents answered, “Everything Works Fine”.

## Chapter 6

Does the CRUD (Create, Read, Update, Delete) and Search functions of EMPLOYEE MANAGEMENT work correctly? If yes, select "Everything Works Fine". If not, select the checkbox which has problem.  
25 responses

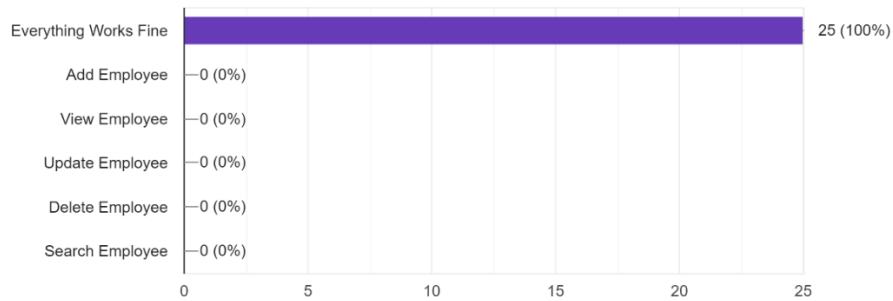


Figure 6.2.21 Functionalities of Employee Management

Figure 6.2.21 shows the survey result of question “Does the CRUD (Create, Read, Update, Delete) and Search functions of EMPLOYEE MANAGEMENT work correctly? If yes, select "Everything Works Fine". If not, select the checkbox which has problem.”. 100% of respondents answered, “Everything Works Fine”.

Does the Read, Update, Delete, and Search functions of ORDER MANAGEMENT work correctly? If yes, select "Everything Works Fine". If not, select the checkbox which has problem.  
25 responses

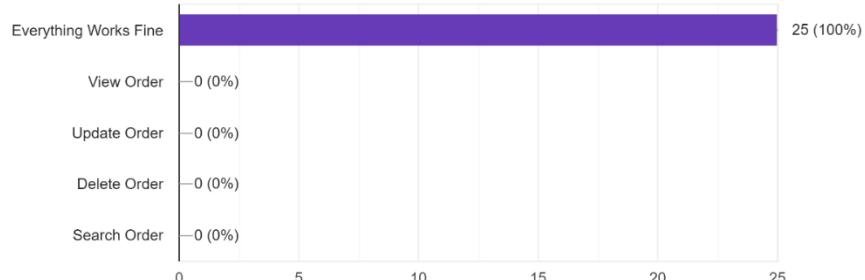


Figure 6.2.22 Functionalities of Order Management

Figure 6.2.22 shows the survey result of question “Does the Read, Update, Delete, and Search functions of ORDER MANAGEMENT work correctly? If yes, select "Everything Works Fine". If not, select the checkbox which has problem.”. 100% of respondents answered, “Everything Works Fine”.

## Chapter 6

Does the Read, Delete, and Search functions of CUSTOMER MANAGEMENT work correctly ? If yes, select "Everything Works Fine". If not, choose the checkbox which has problem.  
25 responses

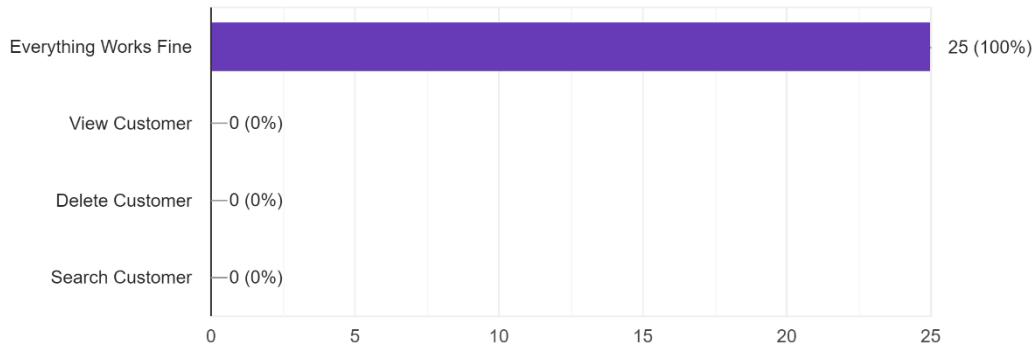


Figure 6.2.23 Functionalities of Customer Management

Figure 6.2.23 shows the survey result of question “Does the Read, Delete, and Search functions of CUSTOMER MANAGEMENT work correctly ? If yes, select "Everything Works Fine". If not, choose the checkbox which has problem”. 100% of respondents answered, “Everything Works Fine”.

Does analytic of sales is useful and informative ? Please rate the satisfaction.  
25 responses

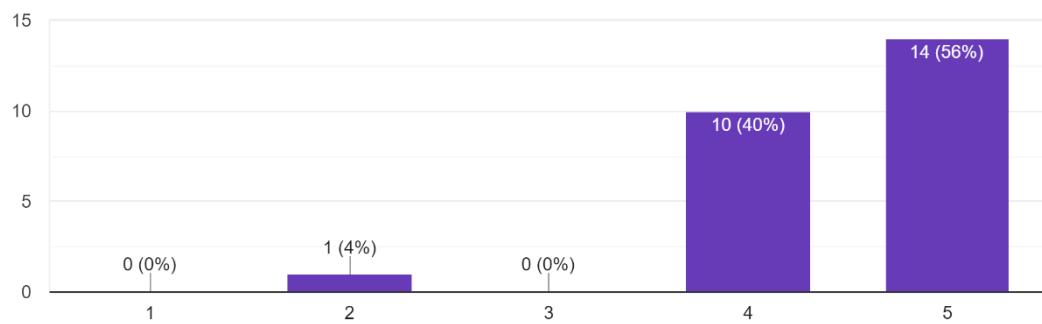


Figure 6.2.24 Satisfaction of analytic

Figure 6.2.24 shows the distribution of respondents' satisfaction on usefulness and informative of analytic of sales. 56% of respondents feels very satisfied, 40% feel satisfied on it, and 4% of respondents feel unsatisfied on this.

## Chapter 6

Prompt notification of Best Sales when analytic generated, are you satisfied with this function ?  
25 responses

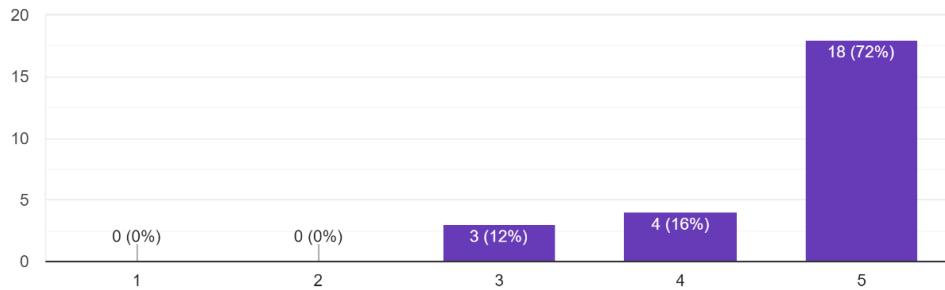


Figure 6.2.25 Satisfaction of notification prompt

Figure 6.2.25 shows the distribution of respondents' satisfaction on prompt notification of Best Sales when analytic generated. 72% of respondents feels very satisfied, 16% feel satisfied, and 12% of respondents feel neutral.

Towards Prompt notification of Best Sales when analytic generated, leave some recommendation for further improvement. If not, please leave a "-"  
25 responses

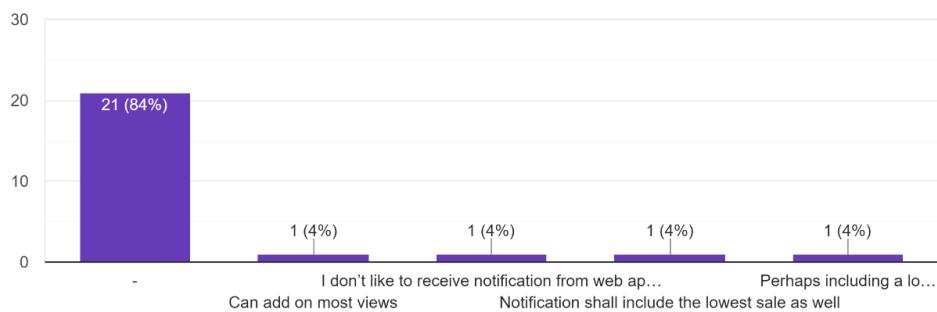


Figure 6.2.26 Comments on prompt notification

Figure 6.2.26 shows the distribution of respondents' answer on "Towards Prompt notification of Best Sales when analytic generated, leave some recommendation for further improvement. If not, please leave a " - ". 84% of respondents answered a " - ", 4% of respondents said, "Can add on most views". Another 4% of respondents said, "I don't like to receive notification from web application", another 4% said, "Notification shall include the lowest sale as well", and another 4% said, "Perhaps including a lowest sale will do".

## Chapter 6

On the scale of 1-10, how is the overall web application? Is the functions in application useful to you?  
25 responses

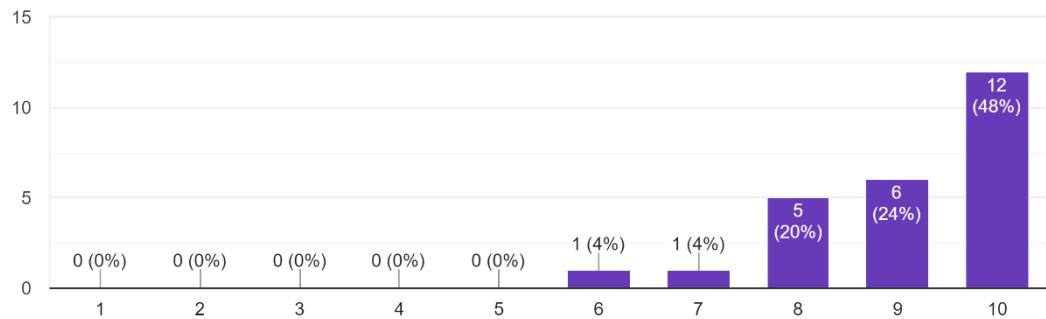


Figure 6.2.27 Overall web application marking

Figure 6.2.27 shows the marks distribution of the overall web application in range 1-10. 48% of respondents give 10 marks for this web application, 24% of respondents give 9 marks for this web application, 20% of respondents give 8 marks, 4% of respondents give 7 marks and another 4% of respondents give 6 marks.

### **6.3 Project Challenge**

When project is about to start deployment, encountered some issues when deploying. These issues included, finding a good and free cloud web app service, finding free database, and payment API. The reason to cause these few issues is free version products always come with lot of limitations compare to paid products. But in the end, I decided to use Google Cloud to deploy my web application, Google Cloud SQL worked as my database, and Stripe as the payment API. I also included lot of API in my project in order to make my web application more interesting and improve usefulness such as Facebook login API, Tawk.to API, and Google Map API. I spent times to learn the way to apply them into my web application.

Other than that, I did spent times on researching and configuring the notification engine and generating analytics of sales. Since these functions should be very useful, so I made a lot of research about these two functions and tried my best to make this web application to be better. Another challenges that I faced is response speed of generating analytics. In the process of generating analytic of sales, it might take some time to generate it, I tried to improve my code and it is still an issue in my web application.

#### **6.4 Objective Evaluation**

First objective of this project (Boutique Management System) is to build a progressive web application that allows the management of the product inventory and providing useful analytics and notification to the users. This objective is achieved successfully, boutique management system is able to management the product inventory through online. Not only the management of inventory, as well as order management, customer management, and employee management are available in this web application. The system allowed user to generate useful and informative analytic to provide user a summary of total sales. Two types of analytic are provided by system which are product type sales analytics and category sales analytics. Analytic comes with notification of the best sales product type.

Next, second objective is to implement the computerization of the clothes inventory and sales. Computerization of clothes inventory is successfully implemented in boutique management system. Since the inventory management system is able to stores the products' inventory / quantity in stock by summing all sizes of specific products and allowed user to update the product quantity for specific size. Computerization of sales is provided when user generate analytic, summary of sales is shown in analytics.

Last objective is to reduce the pen paperwork involved. Paperwork is tedious and bored progress; boutique management system did eliminate the paperwork involved in management. Everything can be conducted through online management system. Boutique management not only provide inventory management, but also provide function of customer management, employee management, and order management. User can conduct their business fully through online.

### **6.5 Concluding Remark**

First part of this chapter is 6.1 System Testing, system testing is conducted using practice of black box testing. A table is generated which included attributes of Test cases, function name, inputs, expected output, actual output, and action / remarks. Every function is working properly and correctly. Next, the second part of this chapter which is 6.2 analysis of survey result. This survey on the performance of boutique management systems received 25 responses in total. The respondent's details, experience with the User Interface (UI), experience with overall functionalities, and experience with overall functionalities were all included in this survey (Boutique Management System). The performance of web application functionalities is exposed through this survey. The performance and functionalities are working fine and correctly. Furthermore, is third part of this chapter, 6.3 project challenge. This section stated the challenges faced in developing process, some of the challenge already been resolved but some of them are still an issue. The next part of this chapter is 6.4 objective evaluation. The objectives of this project are all achieved by this boutique management system.

## Chapter 7: Conclusion and Recommendation

### 7.1 Conclusion

The proposed project is a boutique management system web application, and the purpose of the development of this web application is to improve management of store product inventory, include notification engine, and provide staff user a useful analytic about the overall data. With the notification engine embedded in the system, the user can easily pay attention on the analytics that pop up in notification form. The objectives stated will solve the problem of lack of smartness on Inventory management system, and lack of notification engine and useful analytics.

After I reviewed some of the boutique store website such as Uniqlo, Giordano, and Padini. I found the motivation of proposing this project. I will utilize the pros and cons that I learned from their website and apply in proposed project. The motivation of developing this project is inconvenience might be caused to users and user deserved more convenience way to manage their online store inventory system and website. Therefore, as the based on this motivation, I am going to develop a progressive web application that allows good management of the product inventory and providing useful analytics and notification to the users.

In client-side, client user can shop and make order through the website, and client user can use the features provided on the client-side web application to improve their shopping experience. In server-side, store staff user can have a good management system to manage not only their product inventory, but also employees, customers, and orders. Staff user can receive a useful analytic about the overall data such as sales, customers growth, and etc.

In conclusion, the project is done in and tested by group of users which is the respondents that participated into survey. The functionalities of whole web application work fine and perform in expected.

## 7.2 Recommendation

Although the project is completed and work as expected, but there is still room for improvement. For example, survey result shows that the overall design of staff user side (Server-side) is not satisfying users. Therefore, the UI design for staff user side to perform management can be improved such as include some interesting image, animation, and colorful design. Other than that, the survey result shown that the most preferred payment is Online Banking. The web application only allows user pay by credit/ debit card. Therefore, the web application can add more payment method for user to purchase and place their order. Increasing the diversity of payment method may attract more user with different preferred payment method. Moreover, the sales analytics can be improved as well. One of the respondents said that the analytics can be improved by including more types of analytics view and shows the lowest sales as well.

## REFERENCES

*Note: Please note the hanging indent for each reference makes the alphabetical sequence more obvious.*

- [1] R. Bee and A. Aleem, “SALES AND INVENTORY MANAGEMENT SYSTEM,” 2013. [Online]. Available: [http://utpedia.utp.edu.my/13591/1/Rahmet%20Bee\\_13743.pdf](http://utpedia.utp.edu.my/13591/1/Rahmet%20Bee_13743.pdf)
- [2] T. Capan, “Why the Hell Would I Use Node.js? a Case-by-Case Tutorial,” *Toptal Engineering Blog*, 2013. <https://www.toptal.com/nodejs/why-the-hell-would-i-use-node-js>
- [3] N. Sohail and T. H. Sheikh, “(PDF) A Study of Inventory Management System Case Study,” *ResearchGate*, 2018. [https://www.researchgate.net/publication/327793184\\_A\\_Study\\_of\\_Inventory\\_Management\\_System\\_Case\\_Stud](https://www.researchgate.net/publication/327793184_A_Study_of_Inventory_Management_System_Case_Stud)
- [4] SquareEditorial Team, “Inventory Management 101: How to Manage Small Business Inventory,” *Square*, 2021. <https://squareup.com/us/en/townsquare/how-to-do-effective-inventory-management-for-small-business>
- [5] F. Wei and Q. Zhang, “Design and Implementation of Online Shopping System Based on B/S Model,” *MATEC Web of Conferences*, vol. 246, p. 03033, 2018, doi: 10.1051/matecconf/201824603033.
- [6] R. B., “What is MySQL: MySQL Explained for Beginners,” *Hostinger Tutorials*, Dec. 14, 2018. <https://www.hostinger.com/tutorials/what-is-mysql>
- [7] “What is the Agile SDLC? Beginner’s Guide,” *monday.com Blog*, Sep. 30, 2020. <https://monday.com/blog/rnd/agilesdlc/#:~:text=The%20Agile%20SDLC%20development%20method> (accessed Apr. 18, 2022).
- [8] ExisTek, “SDLC Models Explained: Agile, Waterfall, V-Shaped, Iterative, Spiral | Existek Blog,” *Existek.com*, Apr. 25, 2018. <https://existek.com/blog/sdlc-models/>
- [9] “UNIQLO,” *UNIQLO*. <https://www.uniqlo.com/my/en/>
- [10] “Padini.com: Online Shopping Malaysia - Fashion, Shoes, Bags & Accessories for Women, Men and Kids,” *Padini.com*, 2019. <https://www.padini.com/>
- [11] “Shop Quality,Casual and Fashion Clothing For Men,Women | GIORDANO,” *www.giordano.com*. <https://www.giordano.com/MY/en-US/>

**APPENDIX A**

**FINAL YEAR PROJECT WEEKLY REPORT**  
*(Project II)*

|   |                           |
|---|---------------------------|
| <b>Trimester, Year:</b> Trimester 3, Year 3           | <b>Study week no.:</b> 14 |
| <b>Student Name &amp; ID:</b> Huam Ze Khai 18ACB04017 |                           |
| <b>Supervisor:</b> Ts Sun Teik Heng                   |                           |
| <b>Project Title:</b> Boutique Management System      |                           |

**1. WORK DONE**

[Please write the details of the work done in the last fortnight.]

Database

Server-side:

Inventory Management CRUD operation

Employee Management CRUD operation

Customer Management CRUD operation

Order Management CRUD operation

Authentication

Useful analytics

Notification engine

Completeness of overall data and format

Client-side:

Log in page

Log in by Social Media platform

Some User interface

Complete User interface

Make order

Store Locator

Online chatting

View Order History

**2. WORK TO BE DONE****3. PROBLEMS ENCOUNTERED**

Lack of knowledge about developing a real website

**4. SELF EVALUATION OF THE PROGRESS**

Learned a lot of knowledges and lessons about web development through this progress

Improve time management

Increase productivity is a must

## APPENDIX

|  |
|--|
|  |
|--|

*SunTeikHeng*  
\_\_\_\_\_  
Supervisor's signature

  
\_\_\_\_\_  
Student's signature

## Poster

**Boutique Management System**

The poster is titled "Boutique Management System". It features five main sections: "INTRODUCTION", "METHODOLOGY", "RESULTS", "DISCUSSION", and "CONCLUSION". Each section contains text and a corresponding illustration. The "INTRODUCTION" section includes a hat icon. The "METHODOLOGY" section includes heart-shaped glasses and a jacket icon. The "RESULTS" section includes a handbag icon. The "DISCUSSION" section includes a skirt icon. The "CONCLUSION" section includes a woman icon.

**INTRODUCTION**

Boutique Management System is a progressive web application for both clients and staff users. It provides staffs user a management system for store inventory, employees, orders, and customers. With embedded notification engine, generate useful analytics to the user based on overall data. It provides an e-commerce platform for client users to let users shop and buy clothes on this website store.

**METHODOLOGY**

Boutique Management System web application front end design developed by using HTML5, CSS and JavaScript. For the server-side backend is developed by using Node.js and MySQL database. Agile methodology is applied as development process which includes requirement gathering phase, planning & designing phase, development phase, testing phase and evaluation phase.

**RESULTS**

A progressive web application which allows a good management of store product inventory will be built. It provides useful analytics and notification engine to the users. It implements computerization of the clothes inventory and sales and reduce pen paperwork involved.

**DISCUSSION**

Covid-19 pandemic hits our country, government has then implemented Movement Control Restriction (MCO) to prevent further spread of the virus. Therefore, the project will provide solution for seller which is a "Boutique Management System". The system is to build a progressive web application that allows the management of the product inventory and providing useful analytics and notifications to the users.

**CONCLUSION**

Boutique Management System web application provides an online platform to the user which reduces the physical work such as going to physical inventory to count the product stock. The seller can manage all the work through this web application. Useful analytics helps sellers to make decisions for the future. With embed, notification engine ensures the attention of user about the important information.

## PLAGIARISM CHECK RESULT

The screenshot shows a Turnitin Originality Report. At the top, it displays the URL [https://www.turnitin.com/newreport\\_classic.asp?lang=en\\_us&oid=1814371318&ft=1&bypass\\_cv=1](https://www.turnitin.com/newreport_classic.asp?lang=en_us&oid=1814371318&ft=1&bypass_cv=1). Below this, the title "Turnitin Originality Report" is shown. The report was processed on 20-Apr-2022 at 00:04 +08, with an ID of 1814371318, a word count of 10999, and submitted by FYP2\_Report By Ze Khai HUAM.

The main interface includes a "Document Viewer" header and a "Similarity Index" section which shows 4%. A "Similarity by Source" table indicates that 3% of the text came from Internet Sources, 2% from Publications, and N/A from Student Papers.

The report lists various matches, all of which are from the "eprints.utar.edu.my" website, with similarity percentages ranging from <1% to 1%. The sources listed include:

- <1% match (Internet from 07-Jul-2020) <http://eprints.utar.edu.my>
- <1% match (Internet from 27-Jul-2021) <http://eprints.utar.edu.my>
- <1% match (Internet from 27-Jul-2021) <http://eprints.utar.edu.my>
- <1% match (Internet from 14-Jan-2022) <http://eprints.utar.edu.my>
- <1% match (Internet from 14-Nov-2020) <http://eprints.utar.edu.my>
- <1% match (Internet from 15-Apr-2020) <http://eprints.utar.edu.my>
- <1% match (Internet from 27-Jul-2021) <http://eprints.utar.edu.my>
- <1% match () Schaeffer, Jürgen. "Scaling point based aquifer data for developing regional groundwater models: application to the Gippsland groundwater system". 2008
- <1% match () Alpoim, R., Bell, E., et al. "Report of the Working Group for the Bay of Biscay and the Iberian waters Ecoregion (WGBIE)", Centro Oceanográfico de A Coruña, 2016
- <1% match (Internet from 25-Aug-2018) <https://zenodo.org/record/1400873/export/cs>

## FYP 2 CHECKLIST

|  |
|--|
|  |
|  |

A-2

Bachelor of Information Systems (Honours) Information Systems Engineering  
Faculty of Information and Communication Technology (Kampar Campus), UTAR