LAJUBUY ONLINE SHOPPING E-COMMERCE

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LAJUBUY ONLINE SHOPPING E-COMMERCE

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This report is submitted in partial fulfillment of the requirements for the Bachelor of Computer Science in Database Management with Honours.

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FACULTY OF INFORMATION AND COMMUNICATION TECHNOLOGY
UNIVERSITI TEKNIKAL MALAYSIA MELAKA

2021

DECLARATION

I hereby declare that this project report entitled

LAJUBUY ONLINE SHOPPING E-COMMERCE

is written by me and is my own effort and that no part has been plagiarized without citations.

STUDENT : IQMAL RIZAL BIN IBRAHIM Date : 7 September 2021

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I hereby declare that I have read this project report and found this project report is sufficient in term of the scope and quality for the award of Bachelor of Computer Science (Database Management) with Honours.

SUPERVISOR : EN YAHYA BIN IBRAHIM Date : 7 September 2021

DEDICATION

Special thanks to my beloved parent that always support me to finish this report. They also give me a good motivation when I am struggling to do this report. I also dedicated this project to our almighty God for giving me strength, good health, and ease everything for me to complete all my task. I appreciate all the supports given.

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Finally, I would like to convey my heartfelt gratitude to those who have always supported me, whether directly or indirectly. All these things are very important to me. Thank you to everyone who has shown their support.

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ABSTRACT

This report described how the system was created and operates. Introduction, Project Methodology and Planning, Analysis, Design, Implementation, Testing, and Conclusion are the seven chapters in total. The issue definition and project aim will be covered in the first chapter. The second chapter will go through project approach and planning. This chapter illustrate the project schedules. The third chapter is an examination of the prior system and the system that will be built. While chapter four goes into further depth about the system's architecture, such as logical design, physical design, entity relational diagram, and data dictionary, to obtain a big picture. This chapter can serve as a guidance for students as they create a system with a systematic method and steps. Chapter five explains how the system will be implemented, such as what tools the student used to create the system. The testing portion will be presented in Chapter 6 to ensure that the project runs smoothly and without problems or errors. Finally, the last chapter summaries the whole project, including the system's strength and suggestions for improvement.

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ABSTRAK

Laporan ini menerangkan bagaimana sistem ini dibuat dan dikendalikan. Pengenalan, Metodologi dan Perancangan Projek, Analisis, Reka Bentuk, Pelaksanaan, Pengujian, dan Kesimpulan adalah tujuh bab secara keseluruhan. Definisi isu dan tujuan projek akan dibahas dalam bab pertama. Bab kedua akan melalui pendekatan dan perancangan projek. Bab ini menggambarkan jadual projek. Bab ketiga adalah pemeriksaan sistem sebelumnya dan sistem yang akan dibina. Sementara bab empat membahas lebih mendalam mengenai seni bina sistem, seperti reka bentuk logik, reka bentuk fizikal, rajah hubungan entiti, dan kamus data, untuk mendapatkan gambaran besar. Bab ini dapat dijadikan panduan bagi pelajar semasa mereka membuat sistem dengan kaedah dan langkah yang sistematik. Bab lima menerangkan bagaimana sistem akan dilaksanakan, seperti alat apa yang pelajar gunakan untuk membuat sistem. Bahagian pengujian akan dibentangkan dalam Bab 6 untuk memastikan bahawa projek berjalan lancar dan tanpa masalah atau kesalahan. Akhir sekali, bab terakhir merangkum keseluruhan projek, termasuk kekuatan sistem dan cadangan penambahbaikan.

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LIST OF ABBREVIATIONS

SDLC	-	System Development Life Cycle
DFD	-	Data Flow Diagram
GUI	-	Graphical User Interface
DDL	-	Data Definition Language
DML	-	Data Manipulate Language
ERD	-	Entity Relationship Diagram
RAM	-	Random Access Memory
CPU	-	Central Processor Unit
OS	-	Operating System

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CHAPTER 1: INTRODUCTION

1.1 Introduction

Normally, people buy product by going to the shop manually. As the disadvantage, people need to go different shop to buy different product on different category. Then people started to use e-commerce platform to go shopping. As the bad side of the current e-commerce platform is seller need to wait for payment made by the customer even the product has been received. Thus, LajuBUY is an online shopping platform to buy needed products in thousands of registered shops by doing only single payment checkout. LajuBUY does not hold the payment, but it is directly pay to the seller after order have been done.

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1.2 Problem Statement

There are some problems identified:

- Difficult for user to find needed products in one shop by manual shopping.
- Take times to receive the payment from current e-commerce platform as it holds the money in the company.
- Sellers calculate the sales by manually. Error in calculation may occur.

1.3 Objective

This project embarks on the following objectives:

- To easier the customer finds the need products in one platform that have thousands of shops.
- To pass the payment directly to the seller after the order have been done.
- To help seller calculate the month sales by graph appropriately

1.4 Scope

i. Modules to be developed:

- Register Module (User & Seller)
- Login Module
- Update Account Details Module
- Manage Address Module
- Add to Cart Module
- Payment Module
- Order Tracking Module
- Manage Product Module
- Sales Report Module
- Manage Seller Order Module
- Rating and Comment Module

ii. Target User

- User Customer
- User Seller

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1.5 Project Significance

LajuBUY Online Shopping is designed to help customer go on shopping their needs in quick time and the seller to increase the advertising products and sales. It is a web-based system because it interacts with many users and using the online payment. The important on building this system is on business logic and rules.

1.6 Expected Output

- Output 1: Display all registered products
- Output 2: Display the detail of the product with the price
- Output 3: Add to cart function
- Output 4: Display all product in cart
- Output 5: Checkout for payment
- Output 6: Display tracking for the completed order
- Output 7: Rating and comment

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1.7 Conclusion

This chapter provides a high-level overview of the system that will be created. This project's issue statements, aim, scope, and project importance are all included. The following chapter will go through project approach and planning.

CHAPTER 2: PROJECT METHODOLOGY AND PLANNING

2.1 Introduction

The database life cycle methodology approach is being utilized in this project to assure the system. The database life cycle is divided into five stages: planning, analysis, design, implementation, and maintenance. Each step has been accomplished, and the life cycle has progressed to the next stage.

2.2 Project Methodology

LajuBUY Online Shopping will be developed in Web Based with Laravel and MySQL database. To develop the system, System Development Life Cycle (SDLC) methodology is chosen as the methodology for this system.

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2.2.1 Methodology in Developing Mythology

1) **Planning**

In this phase, plan what tools will be used and outline the project's purpose. The target was then established as the fundamental criterion to be met by the system. All hardware and software requirements are also provided. Before beginning the project, make certain that everything is in order.

2) **Analysis**

During this stage, all information and problems are gathered. To examine the problem for the current system, an analysis was performed. Before beginning to construct a product or project, it is critical to have a solid grasp of the product.

3) **Design**

The requirements acquired after analysis are used as input in this phase, and the software architecture that will be used to accomplish system development is derived.

4) **Implementation**

After the design phase is completed, the implementation/coding step begins. The design of the software is converted into source code. During this phase, all software components are implemented.

5) **Testing/Maintenance**

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When the code is finished and the modules are deployed for testing, the testing process begins. During this phase, the developed software is carefully tested, and any faults discovered are documented and corrected. Following the deployment of a product in the production environment, maintenance of the product will be performed if a problem arises that needs to be resolved or if an enhancement is required shortly.

2.3 Project Schedule and Milestones

WEEK/ACTIVITY	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Proposal and submission														
Collect User Requirement and Planning														
Analyze problem and solution														
Design database														
Design interface														
Implementation - create system function														
Testing														
Final presentation														

Figure 2.1: Gantt Chart

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2.4 Conclusion

This chapter focuses on the project approach and planning that were employed during the system's development. It consists of the introduction of project methodology, software development methodology, and a project timeline with appropriate milestones. For the system development life cycle, the agile development methodology is employed (SDLC).

The project analysis will be explored in further depth in the following chapter. The study of the problem, potential improvements and solutions, non-functional requirements, functional requirements, and other requirements will all be covered.

CHAPTER 3: ANALYSIS

3.1 Introduction

This chapter will go over the process of collecting and evaluating data to confirm that the system can accurately solve the problems listed above, as well as that the system requirements are adequate and fulfillable. The data gathered will be analyzed using a flow chart, a context diagram, and a data flow diagram (DFD).

3.2 Problem Analysis

Problem analysis is the process of dissecting and meticulously studying an issue to understand how it arose and grew to its current proportions. An observation and research were conducted to comprehend and analyze the shortcomings of the current e-commerce platform system.

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3.3 The proposed improvements/solutions

The proposed system is LajuBUY Online Shopping System. This is a web-based system to let all people go online shopping to buy all the needed products. It will show all products that have been register. Besides, it is designed for the seller to get the payment directly. So, seller does not have to wait for the payment to be release by the customer.

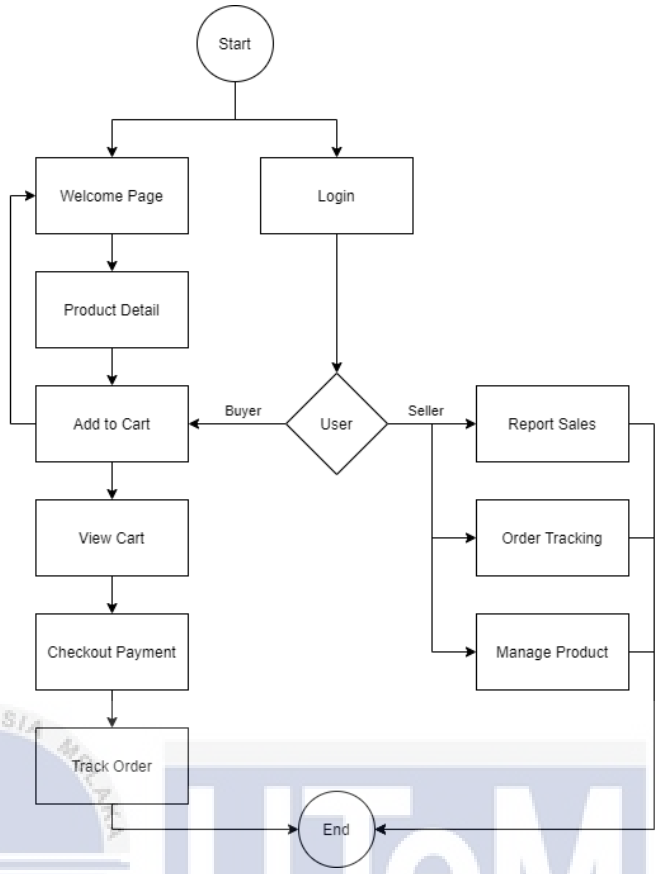

Figure 3.1: Flow Chart of LajuBUY Online Shopping

Figure 3.1 shows the flow of the LajuBUY Online Shopping. This diagram visualizes a process or workflow for the system.

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3.4 Requirement analysis of the to-be system

This section describes the requirement gathering of LajuBUY Online Shopping System to be developed which includes functional requirements, non-functional requirement, software requirement and hardware requirement.

3.4.1 Functional Requirement (Process Model)

The functional requirement of a system discusses the function of the system. A function is the behavior of expected inputs and desired outputs. Functional requirement shapes the design of a system. The functional requirement of this system includes Buyer User and Seller User.

i. Buyer User

- View All Displayed Product
- View Product Details
- Add to Cart
- View Cart
- Checkout Payment
- Track Order
- Rating and Comment

ii. Seller User

- View Sales Report
- View Order Tracking
- Manage Product

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3.4.1.1 Context Diagram

A context diagram is a top level also known as “Level 0” data flow diagram. It shows how the system will receive and send data to the external entities involved.

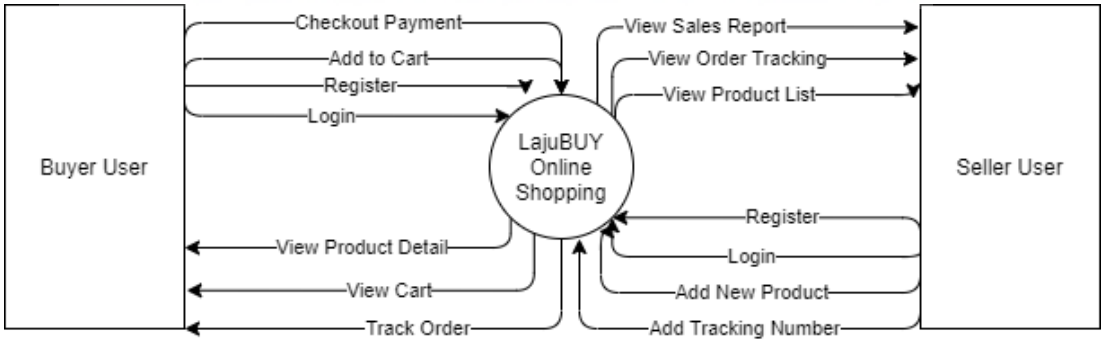

Figure 3.2: Context Diagram of LajuBUY Online Shopping

3.4.1.2 Data Flow Diagram

The Data Flow Diagram (DFD) is a graphical way for depicting the processes or activities that are carried out, as well as how data moves between each function. In

this project, a context diagram will be created initially to show the external entities involved as well as the data flows that begin and end in them. Following that, a DFD fragment is generated based on the project requirements to demonstrate how data flows via all processes, external entities, and data stores.

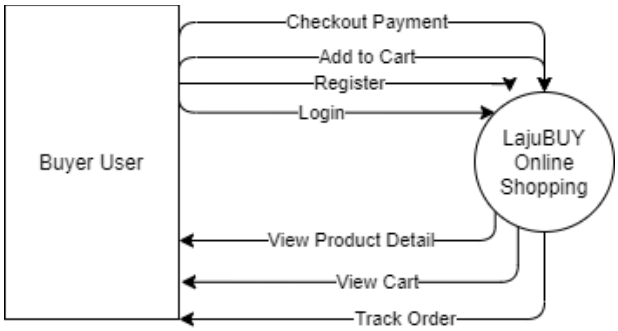

Figure 3.3: Level 0 of Buyer User Process

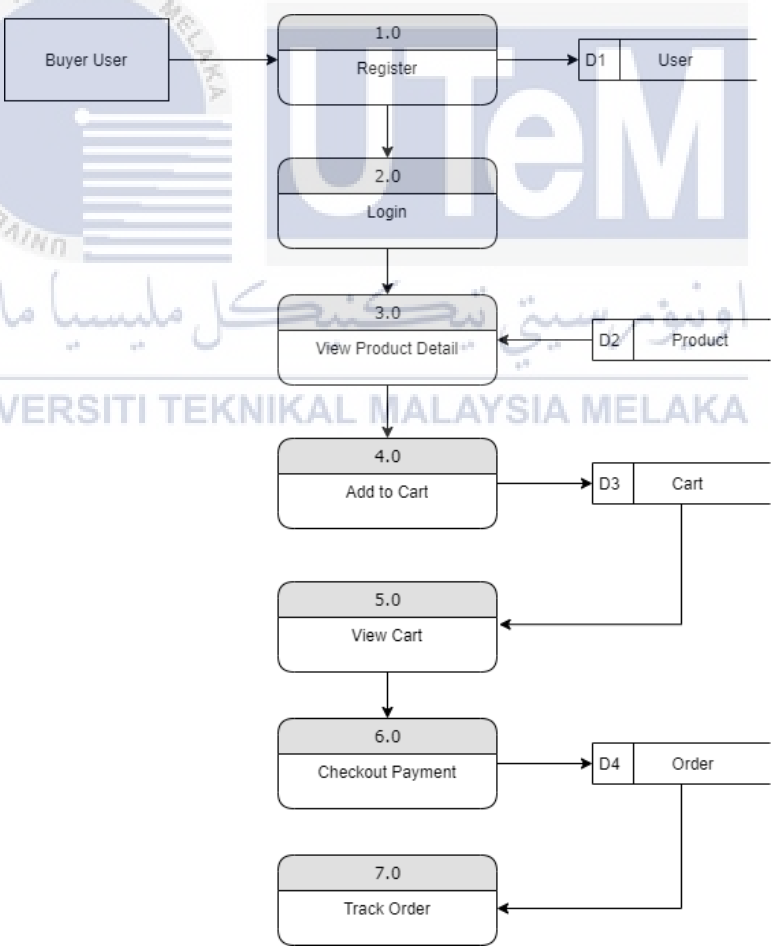

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Figure 3.4: Level 1 of Buyer User Process

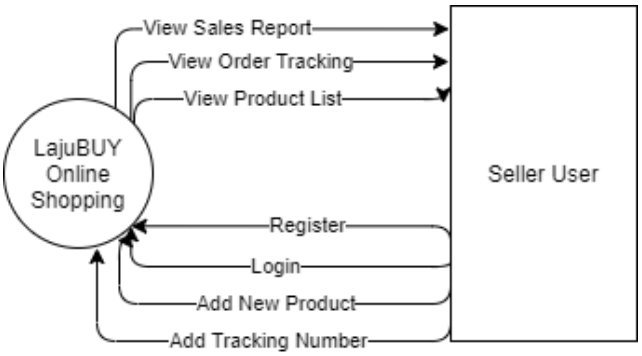

Figure 3.5: Level 0 of Seller User Process

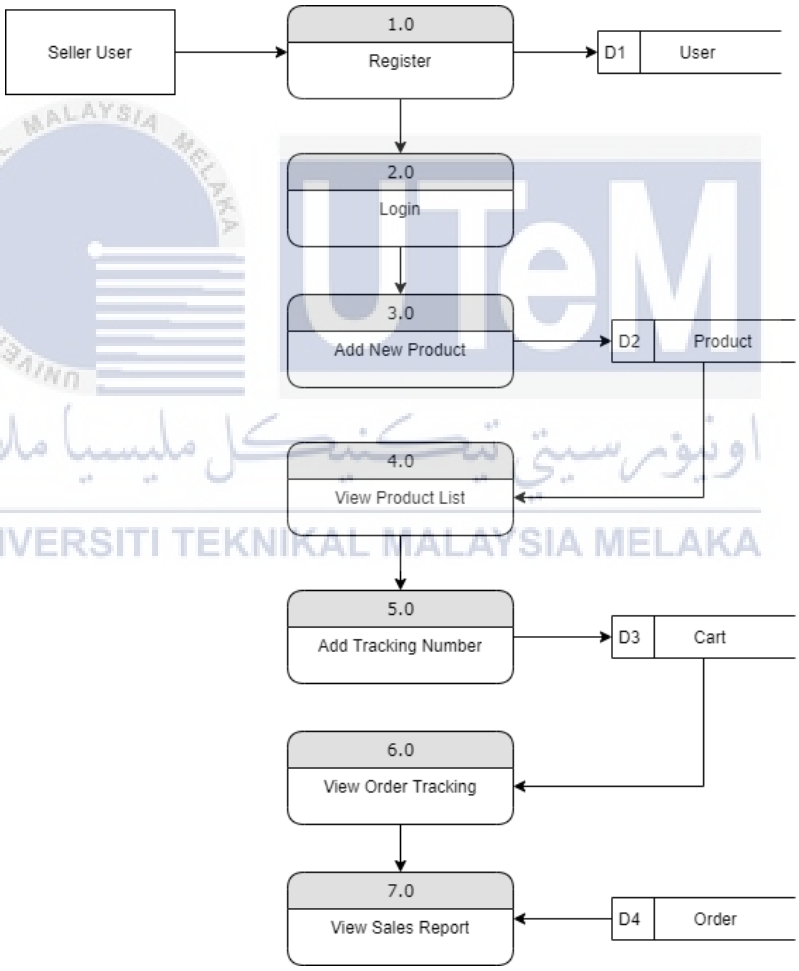

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Figure 3.6: Level 1 of Seller User Process

3.4.2 Non-functional Requirement

Non-functional requirement is a group of requirements that describes a variety of system characteristics to attain higher user satisfaction toward the system. Table 3.1 lists out all the non-functional requirements and its descriptions for the project.

Table 3.1: Non-Functional Requirement

Type	Requirement	Description
Coding Standards	System coding	The system is developed by using Laravel and MySQL.
Integrity	Data integrity	Data should always be consistent through the operation.
Security	Data security	The system will limit the information to be retrieved from users based on their roles
Usability		
Reusability	Reusability	The system has components that are shared through all roles such as shop page.

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3.4.3 Others Requirement

The requirements of database system development can be split into two categories, which includes the hardware requirements and software requirements. Software requirement defines the software that is used to develop the system while the hardware requirement describes the hardware used to run the software defined to build the system.

3.4.3.1 Software Requirement

Table 3.2 lists the requirements and specifications of software components, which have been used to develop LajuBUY Online Shopping.

Table 3.2: Software Component List in LajuBUY Online Shopping

No	Software Component Name	Function
1	Laragon	MySQL is used to store and retrieve data for the system
2	Visual Studio Code	Visual Code is used to develop the web application.
3	Microsoft Visio 2019	Visio is used to illustrate technical.
4	Microsoft Word 2019	Microsoft Word is applied to create the report documents for this report.
5	Windows 10	Windows 10 is an operating system that used as a platform to run all the programs required to create the system.

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3.4.3.2 Hardware Requirement

The list of hardware component that will be used in the LajuBUY Online Shopping is as shown in the Table 3.3.

Table 3.3: Hardware Requirement Used in LajuBUY Online Shopping

No	Hardware	Description
1	Illegear Laptop	To develop the application and to be used as a testing platform for the system

3.5 Conclusion

The context diagram depicts the system under study as a single high-level process before illustrating the system's interaction with its other elements. Meanwhile, the Data Flow Diagram describes each data flow in each function for various consumers. This advancement in data analysis aids in the simplification of the structure and meaning of data in the system. As a first stage, data analysis techniques can be used to extrapolate the intricacies of a real-world scenario into a comprehensible model that can be run on a computer and accessed by people. The design of the project will be detailed in the following chapter. The project design will be examined in further depth in the following chapter. Other needs will be covered, such as the database design, Entity Relationship Diagram (ERD), logical and physical design, and so on.

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CHAPTER 4: DESIGN

4.1 Introduction

Designing the system is one of the most important phases in system development because the output from this phase will affect all subsequent phases. The logical system design is the result of system analysis and will be developed into the physical system design, while the physical design is the details of the created system to solve the stated problems. Databases, schemes, processing specifications, input and output should be drawn up in this phase. This stage is also crucial because the data structure, control process, procedures and interfaces will also be determined.

There are many techniques that are used to design the system. Entity-relationship diagrams (ERD), business rules, data dictionary, data normalization, the selection of a suitable Database Management System (DBMS), and the creation of a Graphical User Interface (GUI) will be illustrated to design the system.

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4.2 Database Design

The design of the database is organizing the data according to the model of a database. The designer determines which data should be stored and how the elements of the data interrelate.

4.2.1 Conceptual Design

Conceptual database design is the first phase in database design methodology. The ER-Model is developed to portray the structure of the database. The entity relationship model (or ER model) is a way of graphically representing the logical

relationships of entities (or objects) to create a database. In this phase, we identify entity types, relationship types Identify and associate attributes with entity or relationship types. It also determines attribute domains, determine candidate and primary key attributes, and consider use of enhanced modelling concepts.

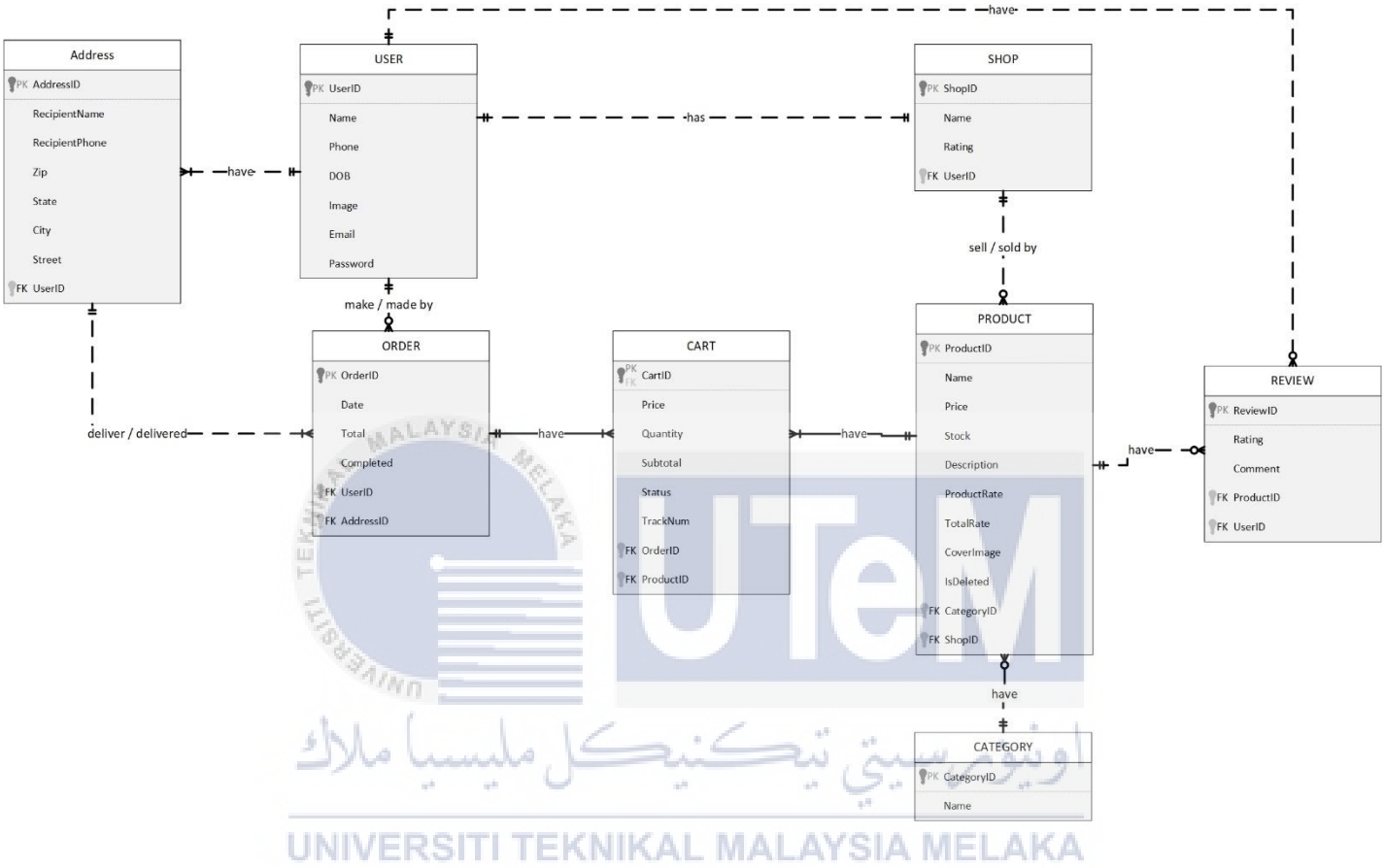

Figure 4.1: ERD LajuBUY Online Shopping

Table 4.1 is the LajuBUY Online Shopping's business rules that explains the relationship among each entity based on Figure 4.1.

Table 4.1 : LajuBUY Online Shopping's Business Rules

Business Rule	Description
1	A user has at least one address and one address is belonging to only one user.
2	A user can make zero or many orders and an order was made by only one user.
3	A user can have only one shop and one shop is belonging to only one user
4	An order has at least one cart and one cart is for only one order.
5	A cart only has one product and product can be into one or many carts.
6	A shop can sell zero or many products and one product was sold by one shop.
7	A category can have zero or many products and one product can have only one category.
8	A product can have zero or many reviews and one reviews is for only one product

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4.2.2 Logical Design

Table 4.2 – 4.8 shows the data dictionary of Smart Guided Tourism Mobile Application that contains attributes of each table and brief explanation on the data type, data constraint, reference table, the attribute’s description.

Table 4.2: Address Table

Attribute	Contents	Data Type	Unique	Required	PK/FK	FK Referenced Table
AddressID	Address ID	INT	UNIQUE	YES	PK	
RecipientName	Recipient Name	VARCHAR (255)				
RecipientPhone	Recipient Phone	VARCHAR (255)				
Zip	Zip	VARCHAR (255)				
State	State	VARCHAR (255)				
City	City	VARCHAR (255)				
Street	Street	VARCHAR (255)				
UserID	User ID	INT			FK	USER

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Table 4.3: User Table

Attribute	Contents	Data Type	Unique	Required	PK/FK	FK Referenced Table
UserID	User ID	INT	UNIQUE	YES	PK	
Name	User Name	VARCHAR (255)		YES		
Phone	User Phone	VARCHAR (255)		YES		
DOB	Date of Birth	DATE		YES		
Image	Profile Image	TEXT				
Email	User Email	VARCHAR (255)	UNIQUE	YES		
Password	Password	VARCHAR (255)		YES		

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Table 4.4: Shop Table

Attribute	Contents	Data Type	Unique	Required	PK/FK	FK Referenced Table
ShopID	Shop ID	INT	UNIQUE	YES	PK	
Name	Shop Name	VARCHAR (255)				
Rating	Shop Rating	INT				
UserID	User ID	INT		YES	FK	USER

Table 4.5: Order Table

Attribute	Contents	Data Type	Unique	Required	PK/FK	FK Referenced Table
OrderID	Order ID	INT	UNIQUE	YES	PK	
Date	Order Date	VARCHAR (255)				
Total	Total Order	DOUBLE (8,2)				
Completed	Check completed	BIT				
UserID	User ID	INT		YES	FK	USER

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Table 4.6: Cart Table

Attribute	Contents	Data Type	Unique	Required	PK/FK	FK Referenced Table
CartID	Cart ID	INT	UNIQUE	YES	PK	
Price	Product price	DOUBLE (8,2)				
Quantity	Product quantity	INT				
Subtotal	Cart Subtotal	DOUBLE (8,2)				
Status	Cart Status	VARCHAR (255)				
TrackNum	Tracking Number	VARCHAR (50)				
OrderID	Order ID	INT		YES	FK	ORDER
ProductID	Product ID	INT		YES	FK	PRODUCT

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Table 4.7: Product Table

Attribute	Contents	Data Type	Unique	Required	PK/FK	FK Referenced Table
ProductID	Product ID	INT	UNIQUE	YES	PK	
Name	Product Name	DOUBLE (8,2)				
Price	Product Price	DOUBLE (8,2)				
Stock	Product Stock	INT				
Description	Description	VARCHAR (255)				
ProductRate	Product Rate	DOUBLE (8,2)				
TotalRate	Total Rate	INT				
Image	Product Cover Image	TEXT				
IsDeleted	Check Deleted	BIT				
CategoryID	Category ID	INT		YES	FK	CATEGORY
ShopID	Shop ID	INT		YES	FK	SHOP

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Table 4.8: Category Table

Attribute	Contents	Data Type	Unique	Required	PK/FK	FK Referenced Table
CategoryID	Category ID	INT	UNIQUE	YES	PK	
Name	Category Name	VARCHAR (255)				

Table 4.9: Review Table

Attribute	Contents	Data Type	Unique	Required	PK/FK	FK Referenced Table
ReviewID	Review ID	INT	UNIQUE	YES	PK	
Rating	Star Rating	INT				
Comment	Comment	TEXT				
ProductID	Product ID	INT		YES	FK	PRODUCT
UserID	User ID	INT		YES	FK	USER

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4.2.3 Physical Design

In physical design, the Database Management System (DBMS) has been chosen. Usage of stored procedures, triggers, security of mechanism and database contingency of the designed system will be carried out. In the beginning, the right DBMS is chosen to develop the system. MySQL has been used for this system

because to ensure the compatibility with the application. Moreover, MySQL supports the wide range of database operations required by the system to function properly. With the reasons stated above, MySQL is easily the choice to develop the LajuBUY Online Shopping System.

4.2.3.1 Usage of Stored Procedures, Stored Functions and Trigger

Stored procedures and stored functions are used to perform tasks in database applications. They can increase performance and productivity while being easy to use too. Stored procedures can reduce redundant commands required to be repeatedly compiled hence making commands more efficient and faster to execute compared to usual commands.

4.2.3.1.1 Application of Stored Procedures

Stored procedures that applied in LajuBUY Online Shopping are stated as below:

1. Stored Procedure in Figure is used to insert new category in category table.
2. Store Procedure in Figure is used to insert new reviews in review table.

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4.2.3.1.2 Application of Triggers

Triggers that applied LajuBUY Online Shopping are stated as below:

1. Trigger in Figure is used to calculate the subtotal when product is added into the cart
2. Trigger in Figure is used to calculate the subtotal when product is updated from cart
3. Trigger in Figure is used to calculate the total orders and update the product stock
4. Trigger in Figure is used to calculate the total orders and update the product stock

5. Trigger in Figure is used to calculate the total orders and update the product stock
6. Trigger in Figure is used to create the shop for the new user after registration

4.3 Graphical User Interface (GUI) Design

Graphical User Interface design is the process of designing the aesthetics and user interaction of the system. The design often focuses on ease-of-use to ensure users can interact with the software easily and intuitively. Graphical user interface design consists of three designs which are navigation design, output design and input design.

4.3.1 Navigation Design

Navigation design is to design the system navigation and how the users can navigate between the screens. Navigation can be image based and text based and is the act of moving from one screen to another. A good navigation design can enable users to spend minimal time to make the right interactions.

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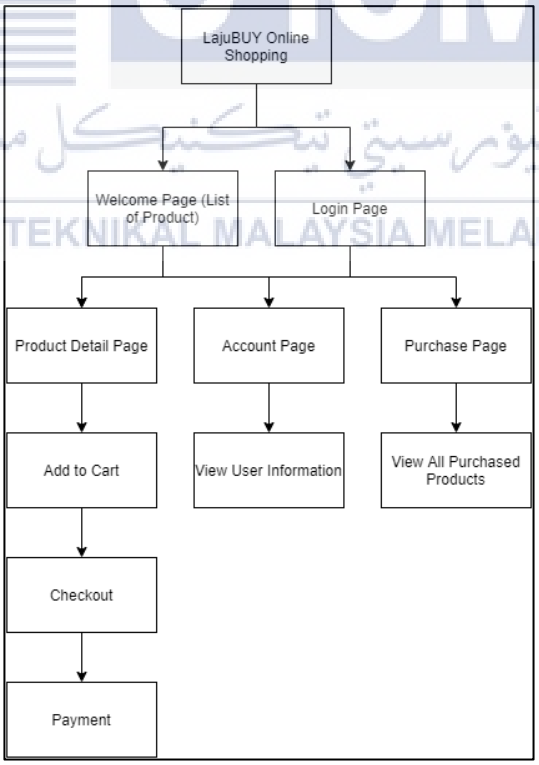

Figure 4.2: Main Part of the Navigation Design for User

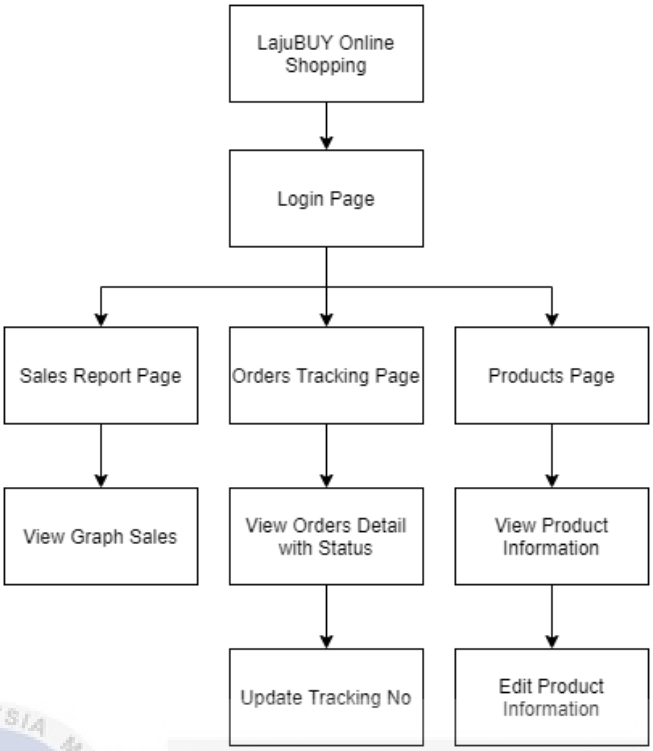

Figure 4.3: Main Part of the Navigation Design for Seller

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4.3.2 Input Design

The input design is the process of designing inputs for the user. It should be user friendly and straightforward. It also should validate the input of users by using the right input controls and feedback design.

i. Welcome Page

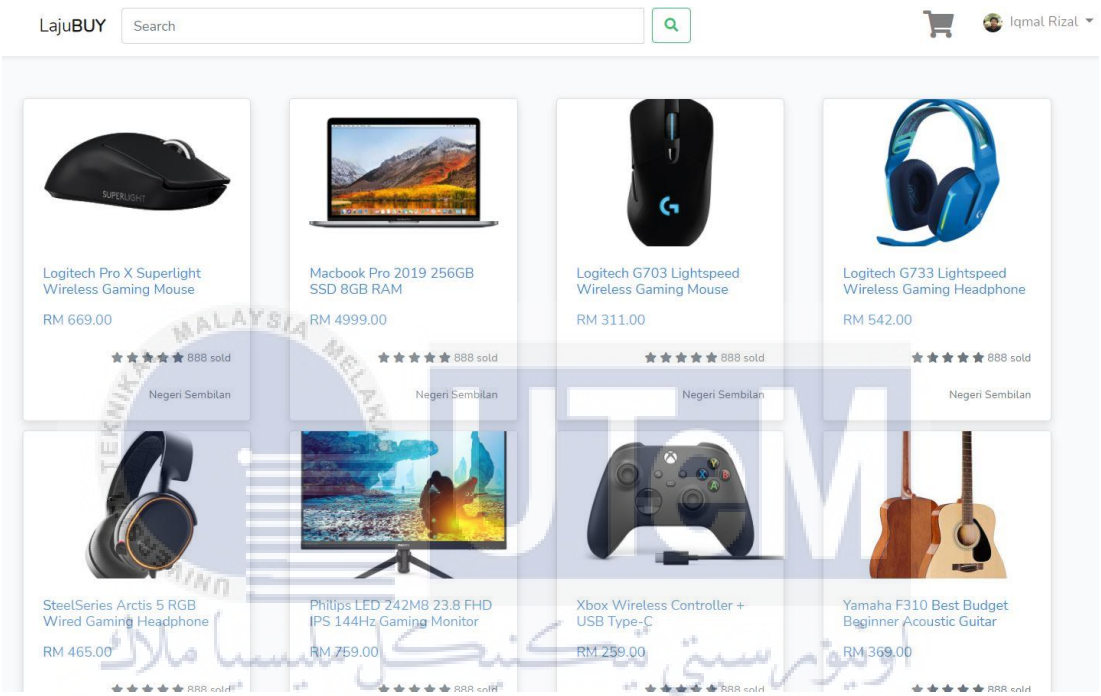

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Figure 4.4: Welcome Page

Figure shows welcome page that display all the products sell in LajuBUY.

ii. Register Screen

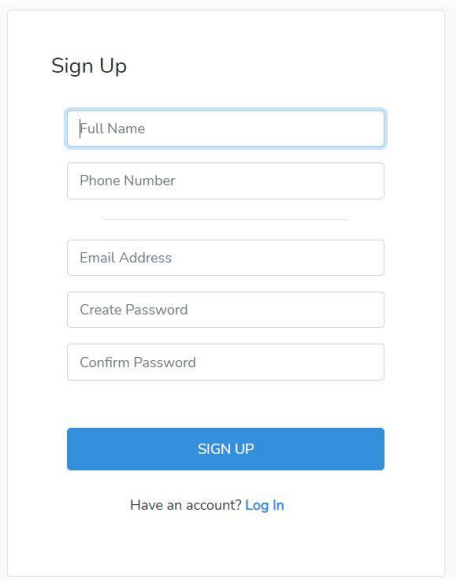

Figure 4.5: Register Page

iii. Login Screen

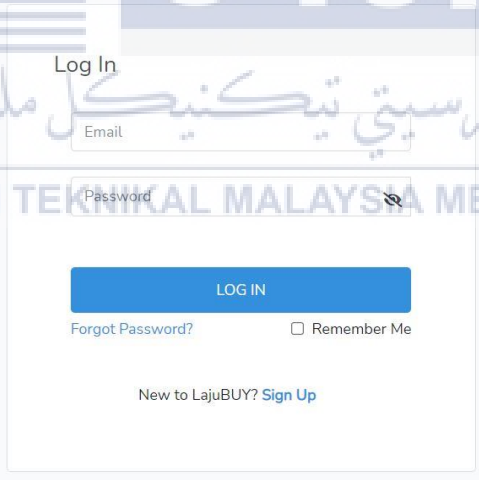

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Figure 4.6: Login Page

Figure shows form of the login page. Email and password are the attributes being use for authentication.

iv. Product Detail

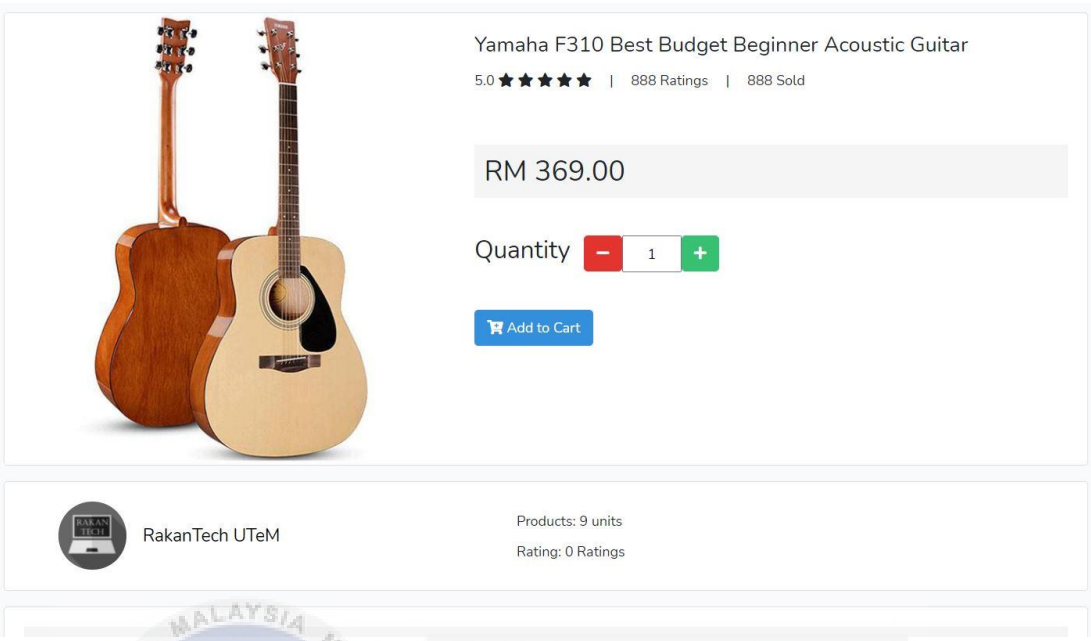

Figure 4.7: Product Detail

Figure shows the detail of the product when user click on its image. Displaying all information such as name, price, stock, and shop name.

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v. Add to Cart

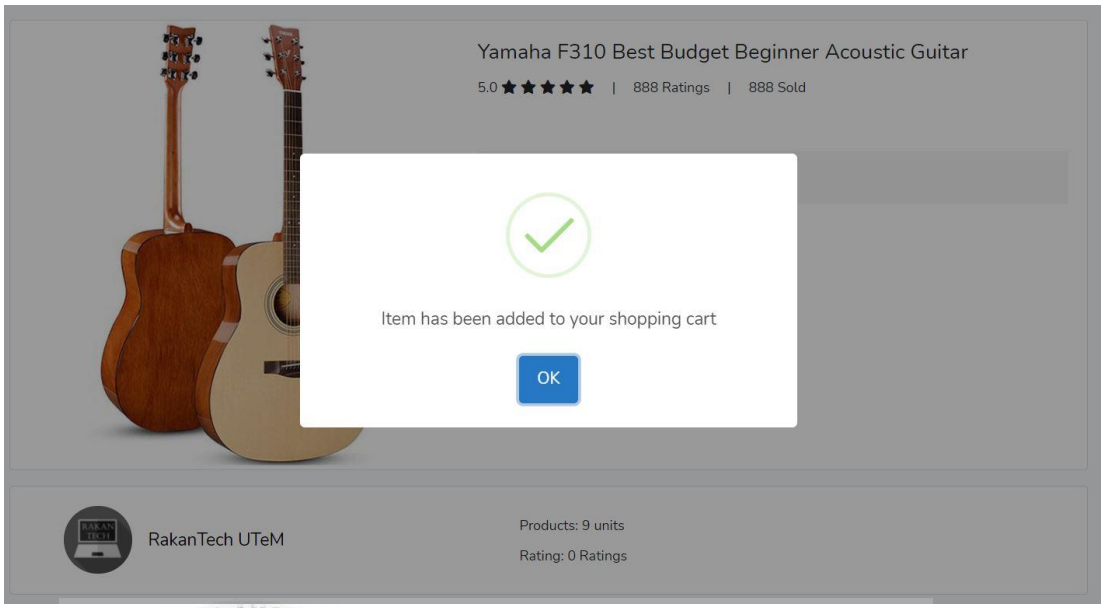

Figure 4.8: Add to Cart

Figure shows alert message when user add to cart the products.

vi. Cart and Checkout

Figure 4.9: Cart and Checkout

Figure shows product that has been add into the current session cart. Displaying all the product with its price and total price.

vii. Purchased Product Tracking

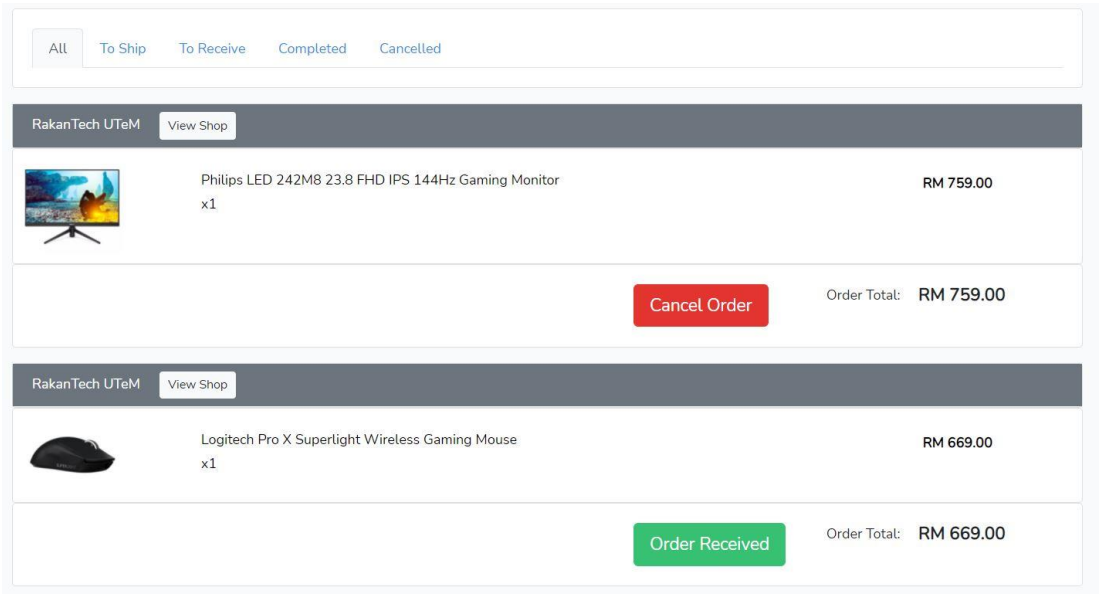

Figure 4.10: Purchased Product Tracking

Figure shows completed orders by showing the status of the orders and ship tracking

viii. Account Details

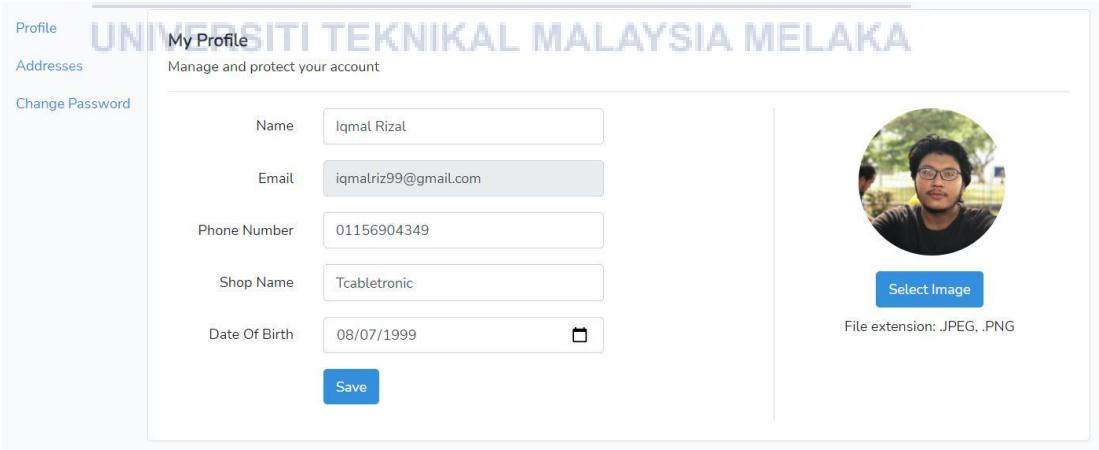

Figure 4.11: Account Details

Figure shows information about the current logged in user. Displaying the information such as, name, email, phone number, shop name, date of birth and profile image. These are editable except email.

ix. List of Address

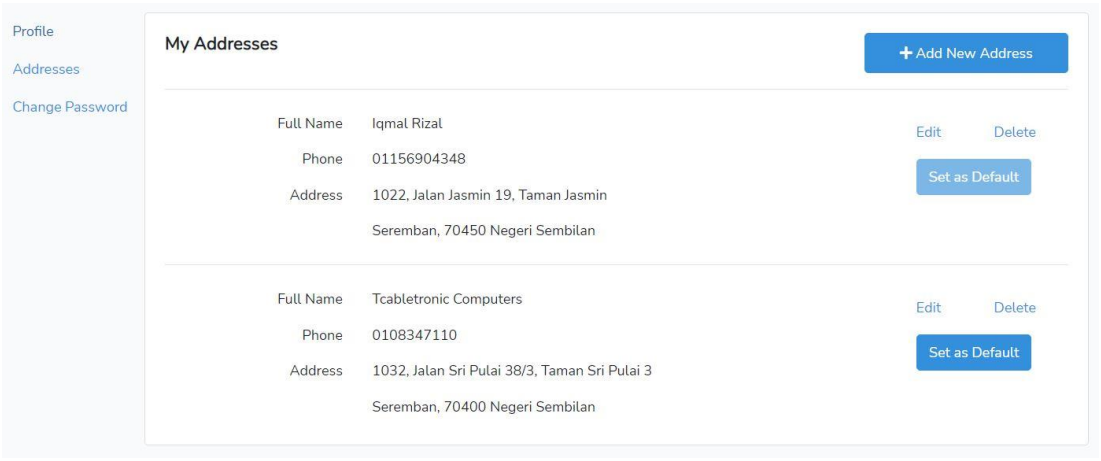

Figure 4.12: List of Address

Figure shows the list of address.

x. Change Password

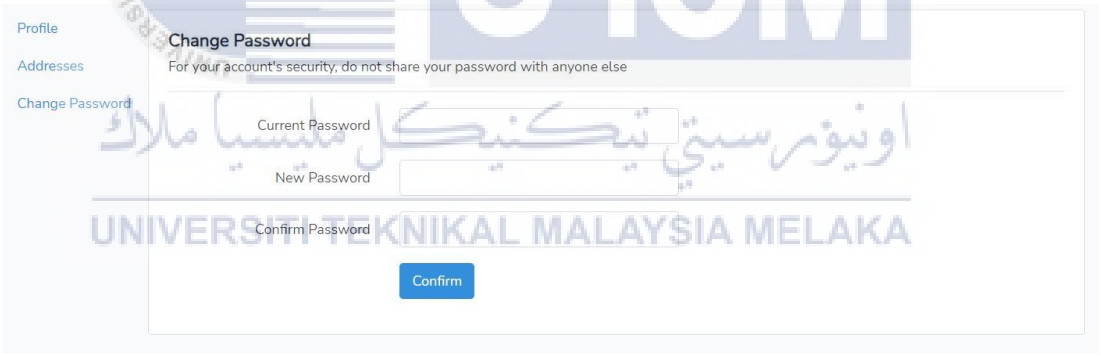

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Figure 4.13: Change Password

Figure shows form to change the current password.

xi. List of Product

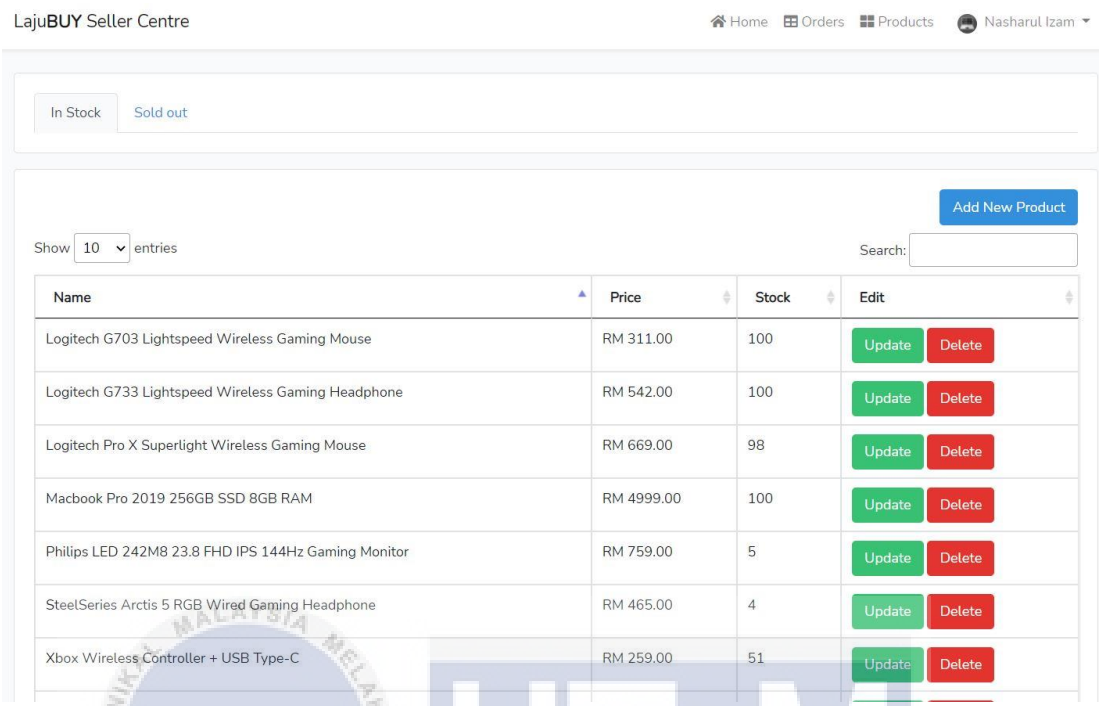

Figure 4.14: List of Product

Figure shows list of products by logged in seller. Displaying the information of product such as name, price, and stock. It is categorized in stock and sold out.

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xii. Add New Product

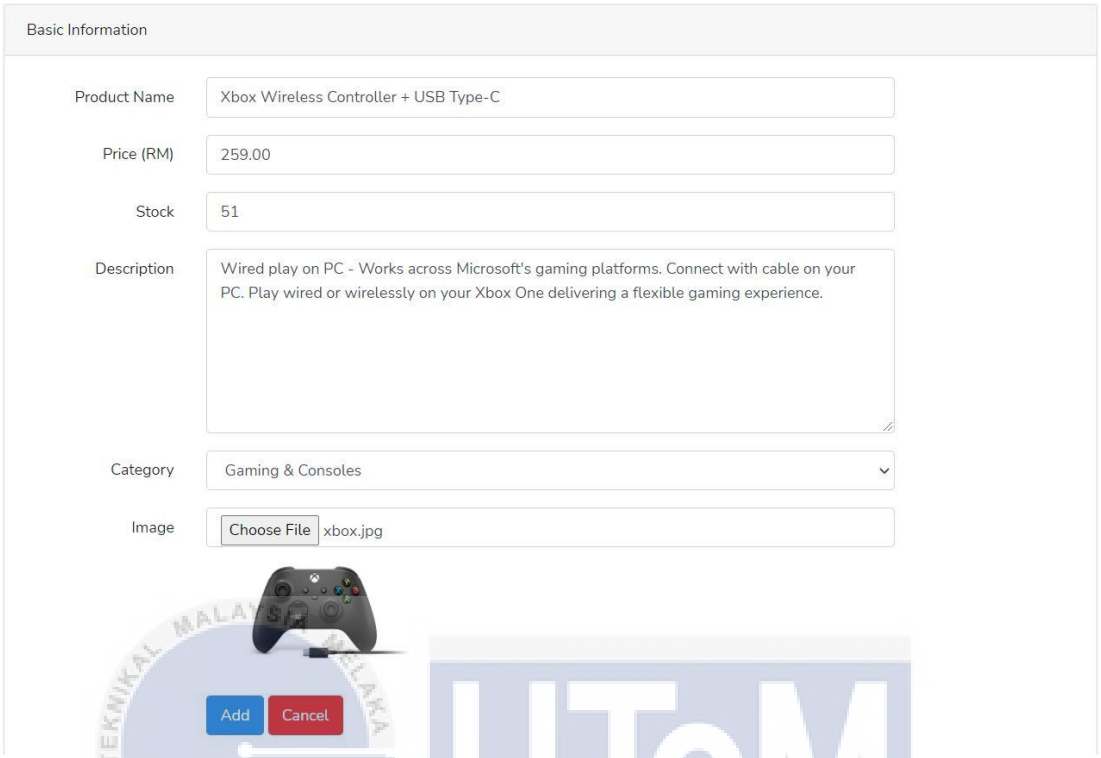

Figure 4.15: Add New Product

Figure shows form to add new product. Information like product name, price, stock, description, category, and image are required.

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xiii. Seller Orders Tracking

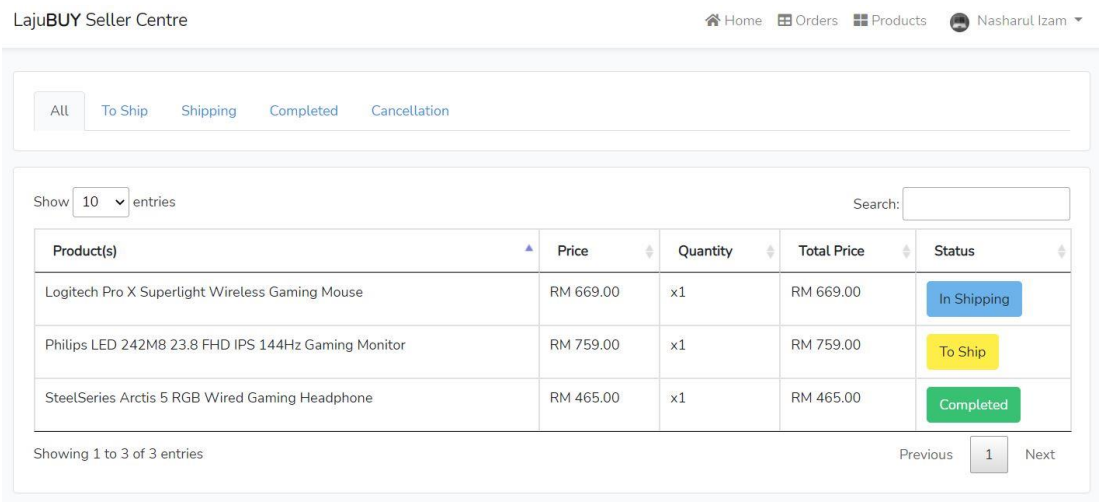

Figure 4.16: Orders Tracking

Figure shows order status tracking by the seller. It is categorized by their status.

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xiv. Tracking Order Detail

Figure 4.17: Tracking Order Detail

Figure shows the detail of order tracking

xv. Seller Sales Report

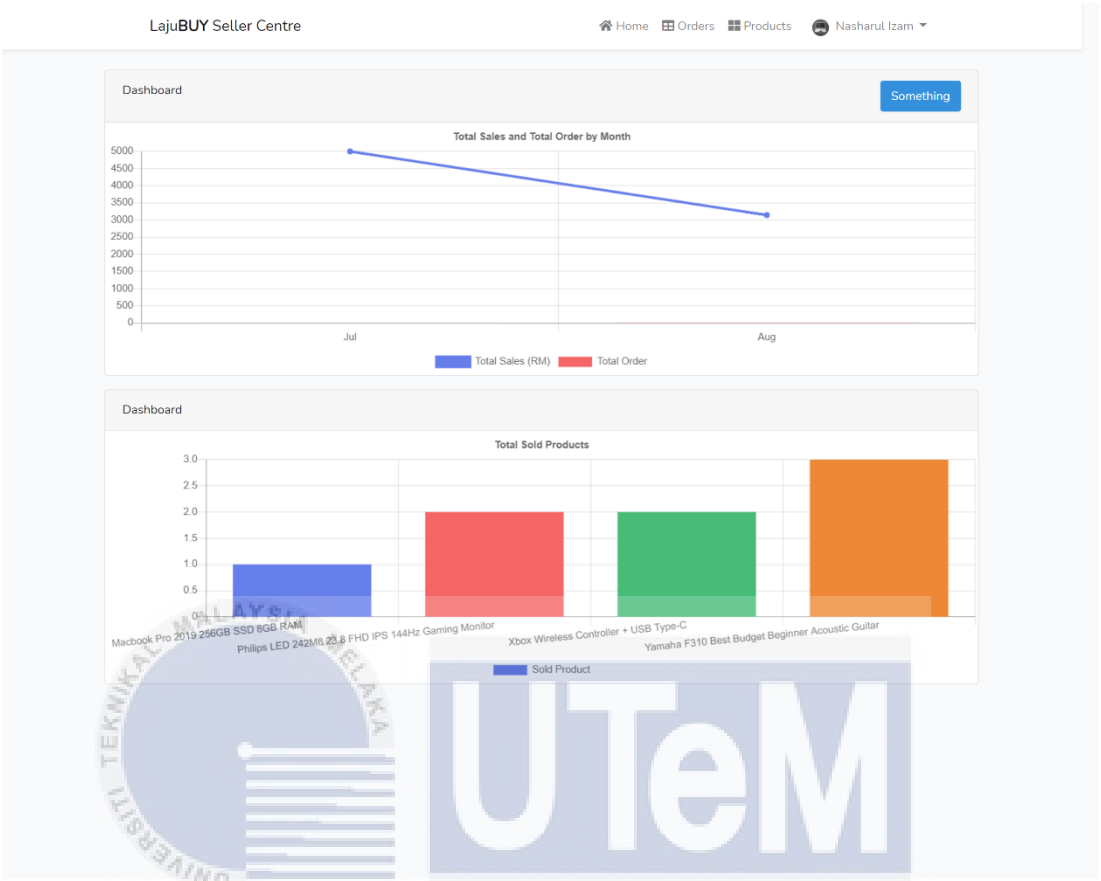

Figure 4.18: Seller Sales Report

Figure shows seller sales report by using the bar and line graph

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xvi. Rating and Comment

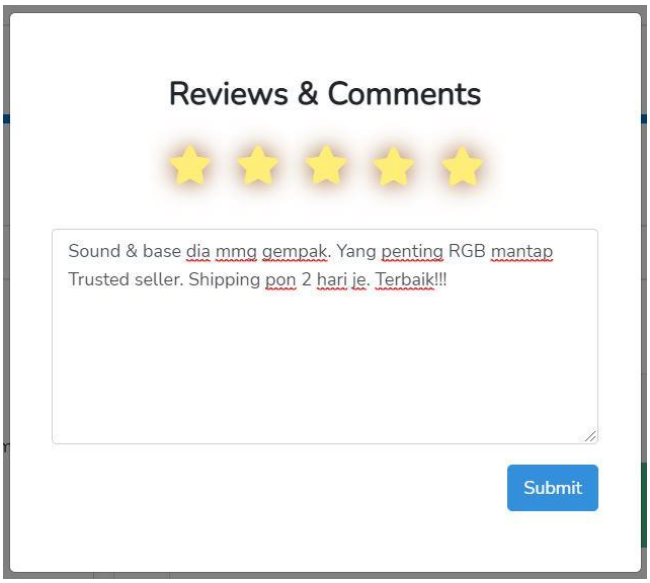

Figure 4.19: Reviews and Comments

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Figure 4.20: Product Ratings

Figures shows the reviews and comments made by user buyer after have received the order.

4.4 Conclusion

In conclusion, this chapter has discussed the project design, which includes the selection of DBMS for the Physical Design, Business Rules for the Conceptual Design, Entity Relationship Diagram, Data Dictionary and Normalization for the Logical Design, and the Graphical User Interface (GUI) Design. The output from this phase will be used at next few phases which are implementation, testing and maintenance.

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CHAPTER 5: IMPLEMENTATION

5.1 Introduction

In this chapter, the main task is to successfully implement the database that has been designed earlier. The database installation and configuration procedure will be shown. MySQL is installed on Windows 10 while Data Definition Language (DDL) and Data Manipulation Language (DML) are also implemented in this phase

5.2 Software Development Environment Setup

In LajuBUY Online Shopping, the software development environment must be set up before developing the website. The project consists of two main components which includes the Web Server with Laragon and HeidiSQL and Laravel as the PHP framework.

5.2.1 Installation Step for Laragon

Step 1: Download Laragon. Go to download page and choose the version based on your needs.

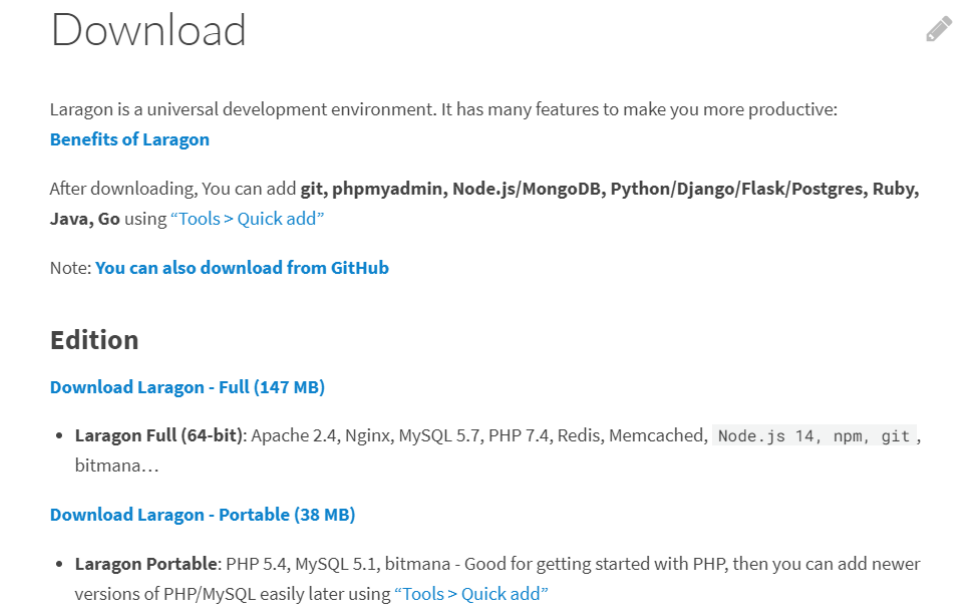

Figure 5.1: Download page

Step 2: Install Laragon. Choose the language to use during the installation

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Figure 5.2: Choose Language

Step 3: Choose the additional features to be add. Tick all as default

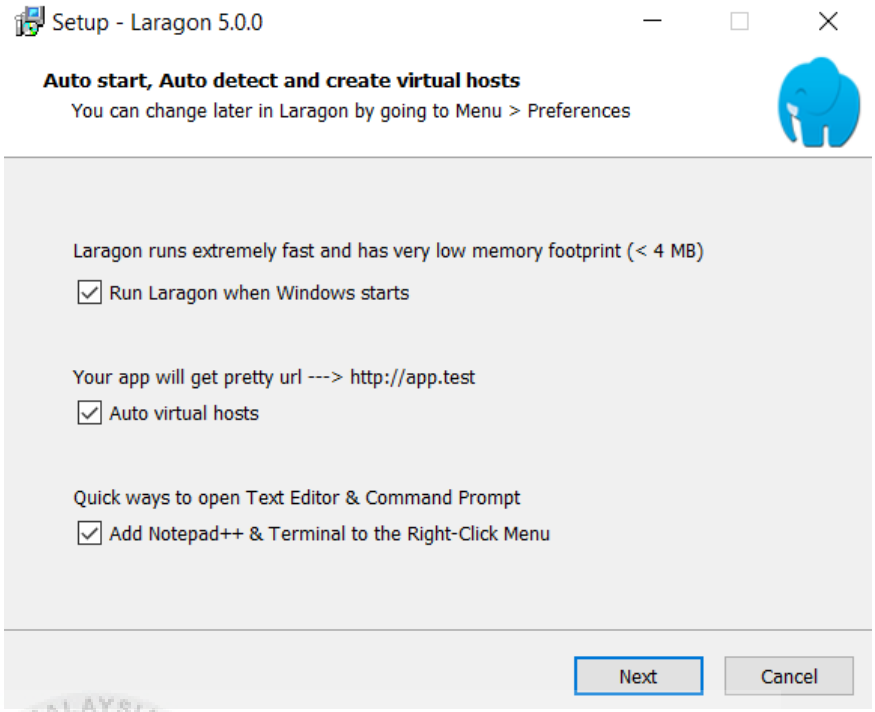

Figure 5.3: Choose Laragon features

Step 4: Click install to begin the installation

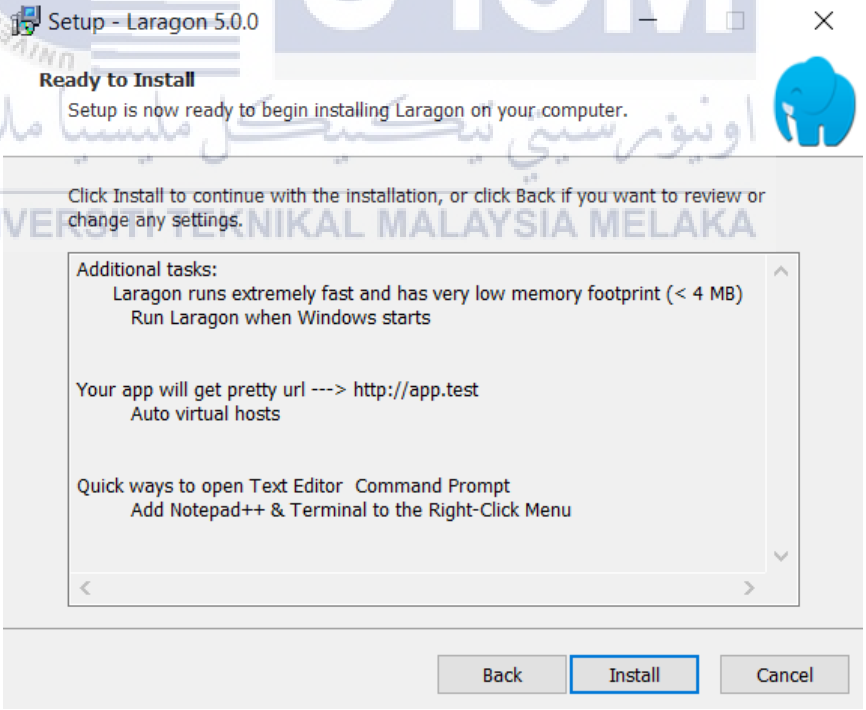

Figure 5.4: Begin installation

Step 5: Run the Laragon

Figure 5.5: Laragon Main Menu

Step 6: Click Start All to connect all connections and click the Database

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Figure 5.6: Start all connection and database

Step 7: Connect to the database server

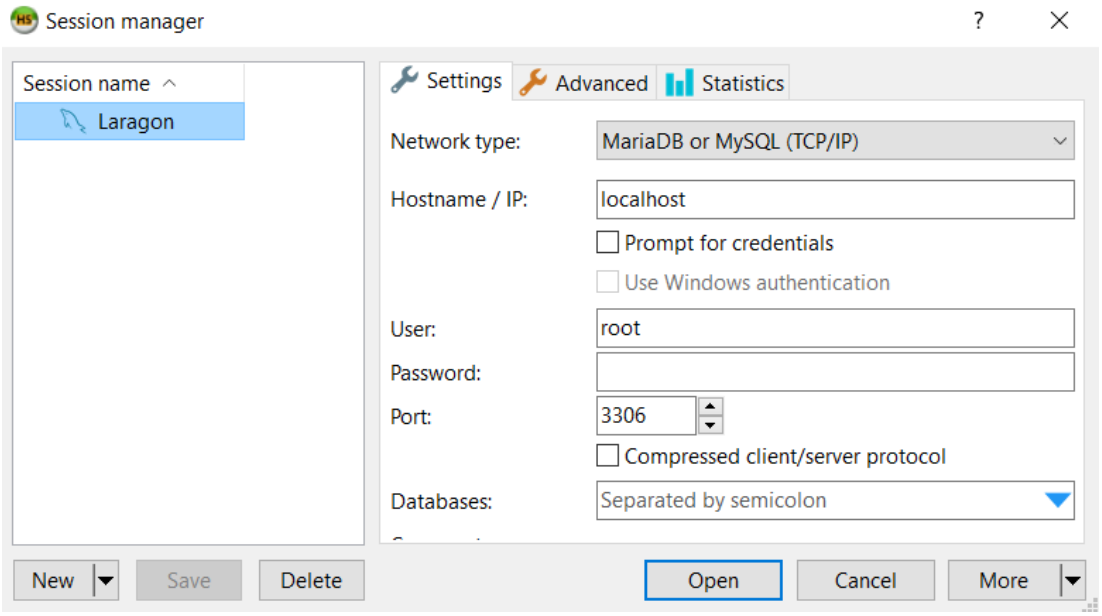

Figure 5.7: Login into HeidiSQL

Step 8: The database is ready to be use

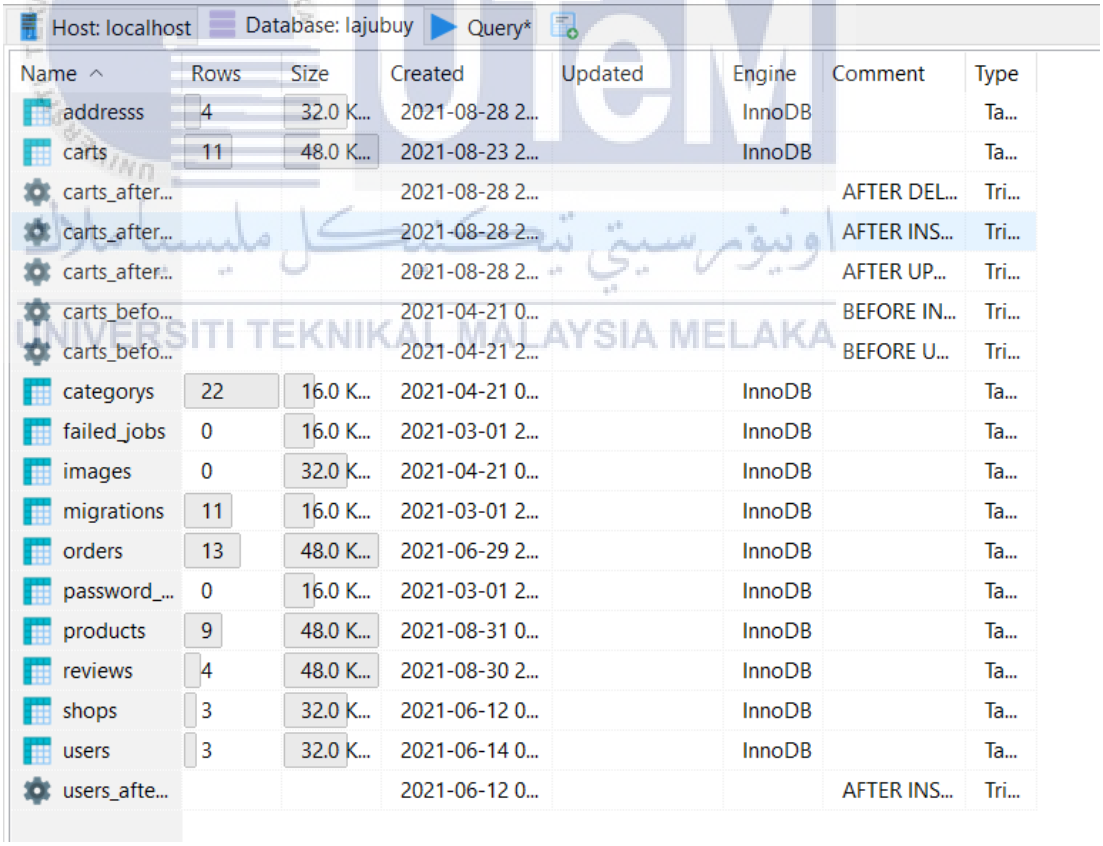

Figure 5.8: LajuBUY Database

5.3 Database Implementation

In database implementation phase, database is used to run the database queries, which included simple query, complex query, aggregate function, stored procedure, and triggers in the system. The purpose of the queries is to insert, update, delete, retrieve, validate, and verify the information in database.

5.3.1 Data Definition Language (DDL)

Data Definition Language (DDL) is referring to the SQL command that creates and manipulates the table in a relational database. DDL statement is able used to create, alter, and drop the object from database that is including tables, procedures, functions, and triggers for LajuBUY Online Shopping.

In this system, it consists of eight tables such as user, shop, address, order, cart, products, category, and review. Figure 5.15 until Figure 5.19 will present DDL to create table by using SQL command.

```
CREATE TABLE `users` (
  `id` BIGINT(20) UNSIGNED NOT NULL AUTO_INCREMENT,
  `name` VARCHAR(255) NULL DEFAULT NULL COLLATE 'utf8mb4_unicode_ci',
  `phone` VARCHAR(255) NULL DEFAULT NULL COLLATE 'utf8mb4_unicode_ci',
  `dob` DATE NULL DEFAULT NULL,
  `image` TEXT NULL COLLATE 'utf8mb4_unicode_ci',
  `email` VARCHAR(255) NULL DEFAULT NULL COLLATE 'utf8mb4_unicode_ci',
  `email_verified_at` TIMESTAMP NULL DEFAULT NULL,
  `password` VARCHAR(255) NULL DEFAULT NULL COLLATE 'utf8mb4_unicode_ci',
  `remember_token` VARCHAR(100) NULL DEFAULT NULL COLLATE 'utf8mb4_unicode_ci',
  `created_at` TIMESTAMP NULL DEFAULT NULL,
  `updated_at` TIMESTAMP NULL DEFAULT NULL,
  PRIMARY KEY (`id`),
  UNIQUE INDEX `users_email_unique` (`email`)
)
```

Figure 5.9: DDL Create User Table

```
CREATE TABLE `shops` (
    `id` BIGINT(20) UNSIGNED NOT NULL AUTO_INCREMENT,
    `sname` VARCHAR(255) NULL DEFAULT NULL COLLATE 'utf8mb4_unicode_ci',
    `rating` INT(11) NULL DEFAULT NULL,
    `userid` BIGINT(20) UNSIGNED NULL DEFAULT NULL,
    `created_at` TIMESTAMP NULL DEFAULT NULL,
    `updated_at` TIMESTAMP NULL DEFAULT NULL,
    PRIMARY KEY (`id`),
    INDEX `shops_userid_foreign` (`userid`),
    CONSTRAINT `shops_userid_foreign` FOREIGN KEY (`userid`) REFERENCES `users` (`id`)
)
```

Figure 5.10: DDL Create Shops Table

```
CREATE TABLE `addresss` (
    `id` BIGINT(20) UNSIGNED NOT NULL AUTO_INCREMENT,
    `aname` VARCHAR(50) NULL DEFAULT NULL COLLATE 'utf8mb4_unicode_ci',
    `aphone` VARCHAR(50) NULL DEFAULT NULL COLLATE 'utf8mb4_unicode_ci',
    `zip` VARCHAR(255) NULL DEFAULT NULL COLLATE 'utf8mb4_unicode_ci',
    `state` VARCHAR(255) NULL DEFAULT NULL COLLATE 'utf8mb4_unicode_ci',
    `city` VARCHAR(255) NULL DEFAULT NULL COLLATE 'utf8mb4_unicode_ci',
    `street` VARCHAR(255) NULL DEFAULT NULL COLLATE 'utf8mb4_unicode_ci',
    `default` TINYINT(4) NULL DEFAULT NULL,
    `shopadd` TINYINT(4) NULL DEFAULT NULL,
    `userid` BIGINT(20) UNSIGNED NULL DEFAULT NULL,
    `created_at` TIMESTAMP NULL DEFAULT NULL,
    `updated_at` TIMESTAMP NULL DEFAULT NULL,
    PRIMARY KEY (`id`),
    INDEX `addresss_userid_foreign` (`userid`),
    CONSTRAINT `addresss_userid_foreign` FOREIGN KEY (`userid`) REFERENCES `users` (`id`)
)
```

Figure 5.11: DDL Create Address Table

```
CREATE TABLE `orders` (
    `id` BIGINT(20) UNSIGNED NOT NULL AUTO_INCREMENT,
    `date` DATE NULL DEFAULT NULL,
    `total` DOUBLE(8,2) NULL DEFAULT NULL,
    `completed` TINYINT(4) NULL DEFAULT NULL,
    `userid` BIGINT(20) UNSIGNED NULL DEFAULT NULL,
    `addressid` BIGINT(20) UNSIGNED NULL DEFAULT NULL,
    `created_at` TIMESTAMP NULL DEFAULT NULL,
    `updated_at` TIMESTAMP NULL DEFAULT NULL,
    PRIMARY KEY (`id`),
    INDEX `orders_userid_foreign` (`userid`),
    INDEX `orders_addressid_foreign` (`addressid`),
    CONSTRAINT `orders_addressid_foreign` FOREIGN KEY (`addressid`) REFERENCES `addresss` (`id`),
    CONSTRAINT `orders_userid_foreign` FOREIGN KEY (`userid`) REFERENCES `users` (`id`)
)
```

Figure 5.12: DDL Create Order Table

```
CREATE TABLE `carts` (
    `id` BIGINT(20) UNSIGNED NOT NULL AUTO_INCREMENT,
    `orderid` BIGINT(20) UNSIGNED NULL DEFAULT NULL,
    `productid` BIGINT(20) UNSIGNED NULL DEFAULT NULL,
    `price` DOUBLE(8,2) NULL DEFAULT NULL,
    `quantity` INT(11) NULL DEFAULT NULL,
    `subtotal` DOUBLE(8,2) NULL DEFAULT NULL,
    `status` VARCHAR(50) NULL DEFAULT NULL COLLATE 'utf8mb4_unicode_ci',
    `tracknum` VARCHAR(50) NULL DEFAULT NULL COLLATE 'utf8mb4_unicode_ci',
    `created_at` TIMESTAMP NULL DEFAULT NULL,
    `updated_at` TIMESTAMP NULL DEFAULT NULL,
    PRIMARY KEY (`id`),
    INDEX `carts_orderid_foreign` (`orderid`),
    INDEX `carts_productid_foreign` (`productid`),
    CONSTRAINT `carts_orderid_foreign` FOREIGN KEY (`orderid`) REFERENCES `orders` (`id`),
    CONSTRAINT `carts_productid_foreign` FOREIGN KEY (`productid`) REFERENCES `products` (`id`)
)
```

Figure 5.13: DDL Create Cart Table

```
CREATE TABLE `products` (
    `id` BIGINT(20) UNSIGNED NOT NULL AUTO_INCREMENT,
    `name` VARCHAR(255) NULL DEFAULT NULL COLLATE 'utf8mb4_unicode_ci',
    `price` DOUBLE(8,2) NULL DEFAULT NULL,
    `stock` INT(11) NULL DEFAULT NULL,
    `sold` INT(11) NULL DEFAULT NULL,
    `description` TEXT NULL COLLATE 'utf8mb4_unicode_ci',
    `productrate` DOUBLE(3,1) NULL DEFAULT NULL,
    `totalrate` INT(11) NULL DEFAULT NULL,
    `image` TEXT NULL COLLATE 'utf8mb4_unicode_ci',
    `isdeleted` TINYINT(1) NULL DEFAULT NULL,
    `categoryid` BIGINT(20) UNSIGNED NULL DEFAULT NULL,
    `shopid` BIGINT(20) UNSIGNED NULL DEFAULT NULL,
    `created_at` TIMESTAMP NULL DEFAULT NULL,
    `updated_at` TIMESTAMP NULL DEFAULT NULL,
    PRIMARY KEY (`id`),
    INDEX `products_categoryid_foreign` (`categoryid`),
    INDEX `products_shopid_foreign` (`shopid`),
    CONSTRAINT `products_categoryid_foreign` FOREIGN KEY (`categoryid`) REFERENCES `categorys` (`id`),
    CONSTRAINT `products_shopid_foreign` FOREIGN KEY (`shopid`) REFERENCES `shops` (`id`)
)
```

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Figure 5.14: DDL Create Product Table

```
CREATE TABLE `categorys` (
    `id` BIGINT(20) UNSIGNED NOT NULL AUTO_INCREMENT,
    `name` VARCHAR(255) NULL DEFAULT NULL COLLATE 'utf8mb4_unicode_ci',
    PRIMARY KEY (`id`)
)
```

Figure 5.15: DDL Create Category Table

```
CREATE TABLE `reviews` (
   `id` BIGINT(20) UNSIGNED NOT NULL AUTO_INCREMENT,
   `comment` TEXT NULL COLLATE 'utf8mb4_unicode_ci',
   `rating` INT(11) NULL DEFAULT NULL,
   `userid` BIGINT(20) UNSIGNED NULL DEFAULT NULL,
   `productid` BIGINT(20) UNSIGNED NULL DEFAULT NULL,
   `created_at` TIMESTAMP NULL DEFAULT NULL,
   `updated_at` TIMESTAMP NULL DEFAULT NULL,
   PRIMARY KEY (`id`),
   INDEX `reviews_userid_foreign` (`userid`),
   INDEX `reviews_productid_foreign` (`productid`),
   CONSTRAINT `reviews_productid_foreign` FOREIGN KEY (`productid`) REFERENCES `products` (`id`),
   CONSTRAINT `reviews_userid_foreign` FOREIGN KEY (`userid`) REFERENCES `users` (`id`)
)
```

Figure 5.16: DDL Create Review Table

5.3.2 Stored Procedures

```
CREATE PROCEDURE `insert_category`(
   IN `varname` VARCHAR(50)
)
LANGUAGE SQL
NOT DETERMINISTIC
CONTAINS SQL
SQL SECURITY DEFINER
COMMENT ''
BEGIN
 insert into categorys (name) values (varname)
END
```

Figure 5.17: Stored Procedure in Category Table

Figure shows the insertion new rows in category table.

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```
CREATE PROCEDURE `insert_review`(
   IN `varcomment` TEXT,
   IN `varrating` INT,
   IN `varuserid` BIGINT,
   IN `varproductid` BIGINT
)
LANGUAGE SQL
NOT DETERMINISTIC
CONTAINS SQL
SQL SECURITY DEFINER
COMMENT ''
BEGIN
   insert into reviews (comment, rating, userid, productid) values (varcomment, varrating, varuserid, varproductid);
END
```

Figure 5.18: Stored Procedure in Review Table

Figure shows insertion new rows in review table.

5.3.3 Triggers

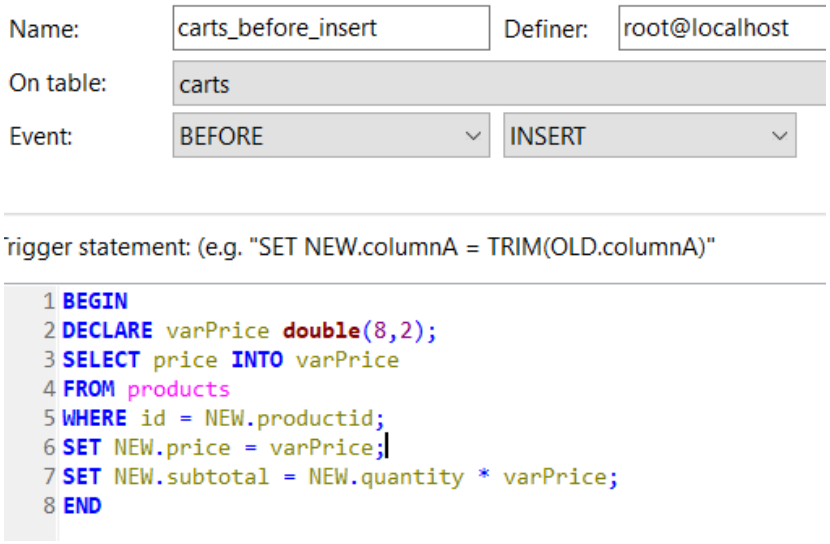

Figure 5.19: Before Insert in Cart Table

Figure shows the trigger that is used to calculate the subtotal price in each of cart.

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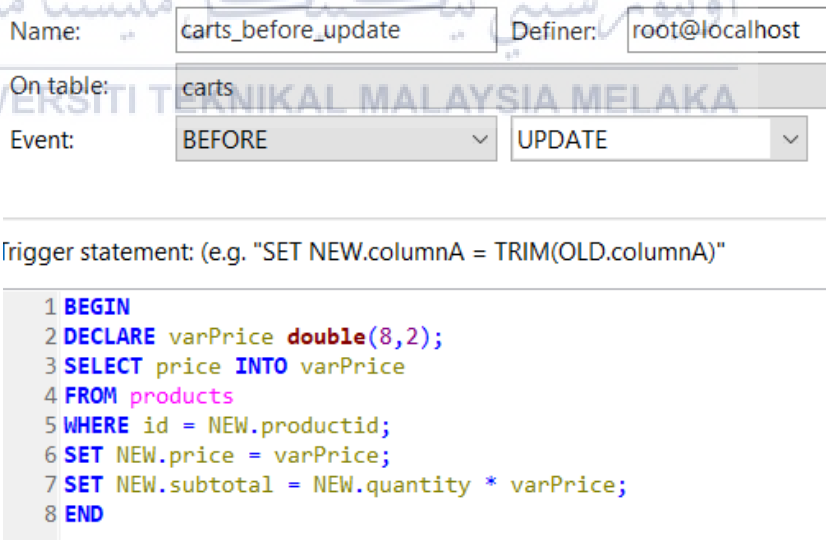

Figure 5.20: Before Update in Cart Table

Figure shows the trigger that is used to calculate the subtotal price in each of cart.

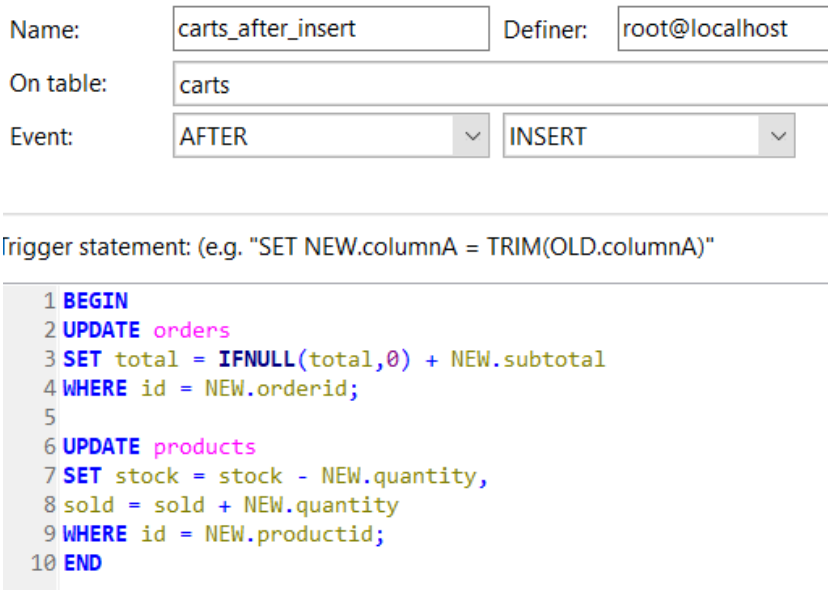

Figure 5.21: After Insert in Cart Table

Figure shows the trigger that is used to calculate the total price in each of order. It also updates the stock in the product table.

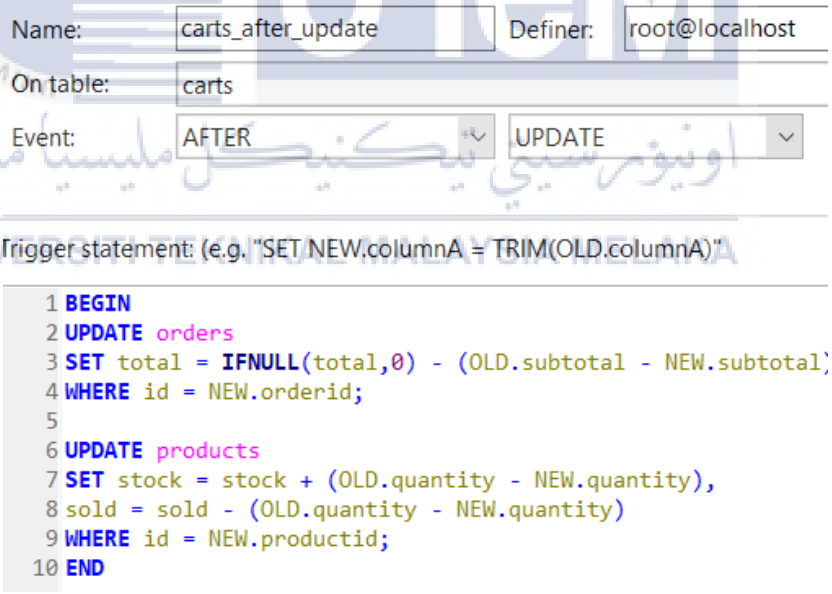

Figure 5.22: After Update in Cart Table

Figure shows the trigger that is used to calculate the total price in each of order. It also updates the stock in the product table.

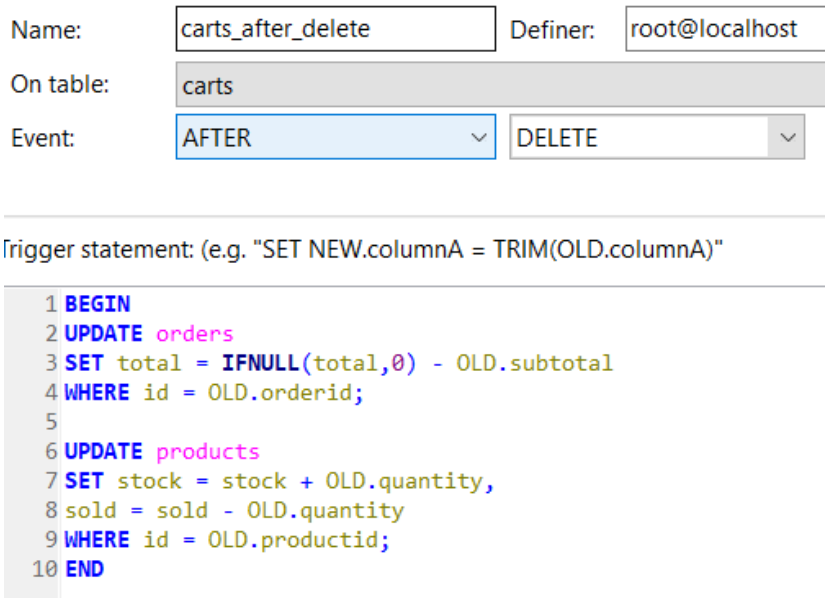

Figure 5.23: After Delete in Cart Table

Figure shows the trigger that is used to calculate the total price in each of order. It also updates the stock in the product table.

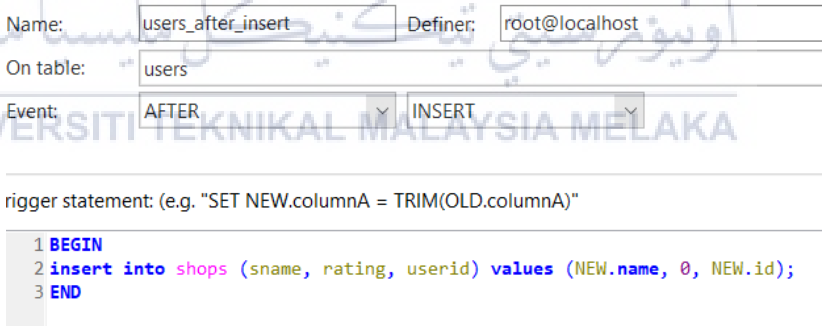

Figure 5.24: After Insert in User Table

Figure shows the trigger that is used to initiate of creation shop for the new user registered.

5.4 Conclusion

In this chapter, details about the development of LajuBUY Online Shopping system have been explained. The setup for the software development environment, which includes the approaches to install Laragon on 64-bit Windows has been shown. The development of system flow, which includes the Data Definition Language (DDL), Data Manipulation Language (DML), stored procedures, and triggers are also shown in this phase. Next chapter will be discussed about project testing.

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CHAPTER 6: TESTING

6.1 Introduction

The testing phase of the methodology that mentioned in chapter two will be discussed in this chapter. This testing documentation include the test plan which is the initial study of testing on this system, test organization, test environment, test schedule, test strategy, test design that contains two type of testing such as test description and test data as well as test result and analysis. Test environment consists of hardware and software that is used to test this system. Furthermore, test strategy remains critical on this testing phase because it is leading the methods of testing to be used.

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6.2 Test Plan

Test plan is a document portraying the approach, scope, resource, and calendar of planned test exercises. It distinguishes among others test items, the highlights to be tried, the testing assignments, who will do each undertaking, level of analyzer autonomy, the test condition, the test structure systems, and section and leave criteria to be utilized, and the method of reasoning for their choice, and any dangers requiring possibility arranging. It is a report of the test planning process.

6.2.1 Test Organization

In this project, the test organization consists of developer and tester. Scopes that are going to tested include functional requirement and non-functional requirement. Tester and developer both work together to find defect and bugs of the application, every failure and error of the outcome in the system will be recorded and fixed.

Table 6.1: Roles and Responsibilities of Organization

Roles	Responsibilities
Developer, Tester	- Identify the requirement from clients - Define the testing activities - To read all the documents and understand what needs to be tested - Prepare the test plan, test environment, test schedule, test description, test data and test result and analysis - Find bugs and defect of the system - Fix error and defect of the system

6.2.2 Test Environment

Test environment comprises of components that help test execution with software, hardware and network configuration which can connect more than two components that setup by developer. Test environment design must copy the creation condition to reveal any condition or arrangement related issues. Table presents the hardware components that being use during this development. On the other hand, Table shows the programs and software computer which setup the system and configuration of database.

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Table 6.2: Test Environment of Hardware Components

Environment Specification	Description
Model	Illegear Laguna SE
Processor	Intel i7-9750H
Display	15.6-inch
Storage	500GB
RAM	16GB

Table 6.3: Test Environment of Software

Environment Specification	Description
Database	MySQL (HeidiSQL)
Web Server	Laragon
Operating System	Windows 10
Development Tools	Visual Studio Code
Documentation	Microsoft Word 365

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6.2.3 Test Schedule

A test schedule is timetable for software testing that incorporates the testing steps or undertakings, the objective begins and finish dates, and duties. It ought to likewise depict how the test will be evaluated, followed, and affirmed. In table states the activity, testing description, date of start and date of finish as well as the duration that have been taken during this testing.

Table 6.4: Test Schedule in LajuBUY Online Shopping

Activities	Description	Start Date	End Date	Duration
Security Testing	Security testing is a sort of programming testing that means to reveal vulnerabilities of the framework and verify that its information and assets are shielded from potential interlopers or unauthorized user.	23/8/2021	27/8/2021	5 days
Functionality Testing	Functionality Testing is characterized as a sort of testing which checks that each capacity of the product application works in conformance with the requirement specification.	23/8/2021	27/8/2021	5 days

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6.3 Test Strategy

Test Strategy has four types of testing including black box testing, white box testing, bottom-up testing, and top-down testing. Black box testing, otherwise called Behavioral Testing, is a software testing approach in which the internal structure, design or implementation of the things being tested is not known to the tester. This testing basically is used to test the functional requirements compare to non-functional requirements. On the other hand, white box testing that known as Code-Based Testing or Structural Testing is software testing approach that is selected by tester to practice paths through the programming language and determines the appropriate outputs from the input resources. Moreover, bottom-up testing tests each segment at lower progressive system is tested separately and after that the segments that depend upon these segments are tested. At the same time, top-down testing is a coordination testing system utilized to recreate the conduct of the lower-level modules that are not yet integrated. However, this project only covers the black box testing techniques such as equivalence testing and boundary value analysis.

6.3.1 Classes of Test

There are two types of test class that is implemented for this testing process in LajuBUY Online Shopping.

i. Functionality Testing

This testing will check that each capacity of the product system works in conformance with the requirement specification.

ii. Security Testing

This testing is aimed to reveal vulnerabilities of the system and verify that its information and assets are shielded from potential unauthorized user.

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6.4 Test Design

Test designs are described to create and write test suites for testing a software. Purpose of the test design is to make sure that the requirements given are met that is parallel with what the client need and want. There are two parts of test design which are test description and test data.

6.4.1 Test Description

Test description will explain the test case identification, type of testing, pre-condition, test requirements, step procedure in each test case identification and expected output result are designed and documented in every module test case.

Table to Table shows the modules that are tested to obtain the possible expected result.

Table 6.5: Test Description of Register Module

Test ID	A001		
Module Name	Register Module		
Description	Register new user to the system		
Test Case ID	Test Case	Procedures	Expected Result
A001_01	Sign Up button is clicked without filling in the full name field	Click on Sign Up button without filling in the full name field	‘Please fill out this field’ message shows up to the user
A001_02	Sign Up button is clicked without filling in the phone number field	Click on Sign Up button without fillingin the phone number field	‘Please fill out this field’ message shows up to the user
A001_03	Sign Up button is clicked without	Click on Sign Up button without	‘Please fill out this field’ message

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	filling in the email address field	fillingin the email address field	shows up to the user
A001_04	Sign Up button is clicked after filling in the email field	Click on Sign Up button afterfilling in the email field	'Please include an @ in the email address' message shows upto the user
A001_05	Sign Up button is clicked without filling in the password field	Click on Sign Up button without fillingin the password field	'Please fill out this field' message shows up to the user
A001_06	Sign Up button is clicked after filling in the password field	Click on Sign Up button afterfilling in the password field	'Password must be least 8 characters' messageshows up to the user
A001_07	Sign Up button is clicked without filling in the confirm password field	Click on Sign Up button without fillingin the confirmpassword field	'Please fill out this field' message shows up to the user
A001_08	Sign Up button is clicked after filling in the confirm password field	Click on Sign Up button afterfilling in the confirm password field	'Confirm password does not match with password' message shows up to theuser

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Table 6.6: Test Description of Login Module

Test ID	A002		
Module Name	Login Module		
Description	User login to the system		
Test Case ID	Test Case	Procedures	Expected Result
A002_01	Log In button is clicked without filling in the email address field	Click on Log In button without fillingin the email address field	'Please fill out this field' message shows up to the user
A002_02	Log In button is clicked after filling in the email field	Click on Log In button after filling in the email address field	'Please include an @ in the email address' message shows upto the user
A002_03	Log In button is clicked without filling in the password field	Click on Log In button without fillingin the password field	'Please fill out this field' message shows up to the user
A002_04	Eye icon is clicked after filling in the password field	Click on Eye icon after filling in the password field	The password will visible
A002_05	Log In button is clicked with filling all the fields	Click on Log In button withfilling all the fields	User will redirect to home page

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Table 6.7: Test Description of Update Account Module

Test ID	B001		
Module Name	Update Account Modules		
Description	User update the account details		
Test Case ID	Test Case	Procedures	Expected Result
B001_01	Save button is clicked without filling in the name field	Click on Save button without fillingin the name field	'Please fill out this field' message shows up to the user
B001_02	Save button is clicked without filling in the phone numberfield	Click on Save button without fillingin the phone number field	'Please fill out this field' message shows up to the user
B001_03	Save button is clicked without filling in the shop namefield	Click on Save button without fillingin the shop name field	'Please fill out this field' message shows up to the user
B001_04	Save button is clicked without filling in the date of birthfield	Click on Save button without fillingin the date of birth field	'Please fill out this field' message shows up to the user
B001_05	Save button is clicked with filling all the fields	Click on Save button withfilling all the fields	'Profile Updated' message shows up to the user

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Table 6.8: Test Description of Manage Address Module

Test ID	B002		
Module Name	Manage Address Module		
Description	User manage the addresses		
Test Case ID	Test Case	Procedures	Expected Result
B002_01	Add New Address button is clicked	Click on Add New Address button	New Address Modal shows up
B002_02	Submit button is clicked without filling in the name field	Click on Submit button without fillingin the name field	'Please fill out this field' message shows up to the user
B002_04	Submit button is clicked without filling in the phone numberfield	Click on Submit button without fillingin the phone number field	'Please fill out this field' message shows up to the user
B002_05	Submit button is clicked without filling in the postal code field	Click on Submit button without fillingin the postal code field	'Please fill out this field' message shows up to the user
B002_05	Submit button is clicked without filling in the state field	Click on Submit button without fillingin the state field	'Please fill out this field' message shows up to the user
B002_06	Submit button is clicked without filling in the city field	Click on Submit button without fillingin the city field	'Please fill out this field' message shows up to the user
B002_07	Submit button is clicked without filling in the street field	Click on Submit button without fillingin the street field	'Please fill out this field' message shows up to the user

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B002_07	Submit button is clicked with filling all the fields	Click on Submit button withfilling all the fields	Modal dismiss and new address shows up
B002_08	Edit button is clicked	Click on Edit button	Modal Edit Address shows up
B002_09	Delete button is clicked	Click on Delete button	'Are you sure to delete' message shows up to the user
B002_10	Set as Default button is clicked	Click on Set as Default button	The address will mark as Default with green badge
B002_11	Set as Pickup button is clicked	Click on Set as Pickup button	The address will mark as Pickup with red badge

Table 6.9: Test Description of Add to Cart Module

Test ID	C001		
Module Name	Add to Cart Module		
Description	User add product into the cart		
Test Case ID	Test Case	Procedures	Expected Result
C001_01	Home Page is being redirect after user login	Redirect to Home Page after user login	All registered product that currently have stock is shown up
C001_02	Link for each of product is clicked	Click on link for each of product	Product detail is shown up
C001_03	Green plus button is clicked for quantity input	Click on green plus button for quantity input	The quantity added by 1 until it reaches the

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			maximum number of stocks
C001_04	Red minus button is clicked for quantity input	Click on red minus button for quantity input	The quantity subtracts by 1 until minimum value which is 1
C001_05	Add to Cart button is clicked	Click on Add to Cart Button	'Item has been added to your shopping cart' message shown up. Cart icon badge number will add by 1
C001_06	Cart icon button is clicked	Click on cart icon button	User will redirect to shopping cart that contain products which have been added and the total orders
C001_07	Red minus button is clicked for quantity input	Click on red minus button for quantity input	The quantity subtracts by 1 until it is deleted from the cart
C001_08	Green plus button is clicked for quantity input	Click on green plus button for quantity input	The quantity added by 1 until it reaches the maximum number of stocks
C001_09	Delete button is clicked	Click on the delete button	Products will remove from the cart

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C001_10	Checkout button is clicked	Click on the checkout button	User will redirect to checkout and payment page

Table 6.10: Test Description of Payment Module

Test ID	C002		
Module Name	Payment Module		
Description	User make payment and select shipping address		
Test Case ID	Test Case	Procedures	Expected Result
C002_01	Change Address button is clicked	Click on Change Address button	Display all the address that have been added and user can choose the address by using radio button
C002_02	Manage Address button is clicked	Click on Manage Address button	User will redirect to address page to manage the address
C002_03	Place Order button is clicked	Click on Place Order button	'The order has been paid' message shown up. User will redirect to purchase history page

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Table 6.11: Test Description of Order Tracking Module

Test ID	D001		
Module Name	Order Tracking Module		
Description	User track the order shipping		
Test Case ID	Test Case	Procedures	Expected Result
D001_01	All tab button is clicked	Click on All tab button	Display all the order that have been made
D001_02	To Ship tab button is clicked	Click on To Ship tab button	Display all the order that have status ‘To Ship’
D001_03	To Receive tab button is clicked	Click on To Receive tab button	Display all the order that have status ‘To Receive’
D001_04	Completed tab button is clicked	Click on Completed tab button	Display all the order that have status ‘Completed’
D001_05	Order link is clicked	Click on the one of the orders that have been made	Display the status of the order, tracking number with the tracking and product that have been ordered with the price.
D001_06	Green Order Received button is clicked	Click on Green Order Received button	‘Are you sure?’ message shows up to the user. Change the order status ‘To Rate’. Review and Comment modal is shown up

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D001_07	Blue Buy Again button is clicked	Click on Blue Buy Again button	User will redirect to the corresponding product page

Table 6.12: Test Description of of Manage Order Seller Module

Test ID	D002		
Module Name	Manage Order Seller Module		
Description	Seller update the tracking number and track all the orders		
Test Case ID	Test Case	Procedures	Expected Result
D002_01	All tab button is clicked	Click on All tab button	Display all the order that have been made by customer
D002_02	To Ship tab button is clicked	Click on To Ship tab button	Display all the order that have status ‘To Ship’
D002_03	Shipping tab button is clicked	Click on Shipping tab button	Display all the order that currently in shipping
D002_04	Completed tab button is clicked	Click on Completed tab button	Display all the order that have status ‘Completed’
D002_05	Status button which is ‘To Ship’, ‘Shipping’, and ‘Completed’ is clicked	Click on Status button which is ‘To Ship’, ‘Shipping’, and ‘Completed’	Display the status of the order, tracking number with the tracking and product that have been ordered with the price.

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D002_06	Submit button is clicked without filling the tracking number field	Click on submit button without filling the tracking number field	'Please fill out this field' message shows up to the user
D002_07	Submit button is clicked with filling the tracking number field	Click on submit button with filling the tracking number field	Display the tracking number that were submitted with the tracking path. The status of order change to 'To Receive'

Table 6.13: Test Description of Rating and Comment Module

Test ID	E001		
Module Name	Rating and Comment Module		
Description	User make a reviews and write the comment for purchased product		
Test Case ID	Test Case	Procedures	Expected Result
E001_01	Submit button is clicked without selecting any stars	Click on Submit button without selecting any stars	Submit button is disabled until user select any stars
E001_02	Submit button is clicked without filling the comment field	Click on Submit button without filling the comment field	'Are you sure?' message shows up to the user. Change the order status 'To Rate'.
E001_03	Submit button is clicked with filling all the field	Click on Submit button with filling all the field	'Thanks for your review!' message shows up to the user. Change the

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			order status to ‘Completed’.

Table 6.14: Test Description of Manage Product Module

Test ID	F001		
Module Name	Manage Product Module		
Description	Seller manage the product by add, edit and delete		
Test Case ID	Test Case	Procedures	Expected Result
F001_01	In Stock tab button is clicked	Click on In Stock tab button	Display all product that is currently in stock
F001_02	Sold Out tab button is clicked	Click on Sold Out tab button	Display all product that is currently out of stock
F001_03	Blue Add New Product button is clicked	Click on Blue Add New Product button	Seller will redirect to product registration form
F001_04	Add button is clicked without filling the product name field	Click on Add button without filling the product name field	‘Please fill out this field’ message shows up to the user
F001_05	Add button is clicked without filling the price field	Click on Add button without filling the price field	‘Please fill out this field’ message shows up to the user
F001_06	Add button is clicked without filling the stock field	Click on Add button without filling the stock field	‘Please fill out this field’ message shows up to the user

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F001_07	Add button is clicked without filling the description field	Click on Add button without filling the description field	'Please fill out this field' message shows up to the user
F001_08	Add button is clicked without selecting the category field	Click on Add button without selecting the category field	'Please fill out this field' message shows up to the user
F001_09	Add button is clicked without filling the image field	Click on Add button without filling the image field	'Please fill out this field' message shows up to the user
F001_10	Add button is clicked with filling all the field	Click on Add button with filling all the field	'Product has been added successfully' message shows up
F001_11	Update button is clicked	Click on Update button	Seller will redirect to product update form
F001_12	Delete button is clicked	Click on Delete button	'Ae re you sure? message shows up. Product will be remove

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Table 6.15: Test Description of Sales Report Module

Test ID	G001		
Module Name	Sales Report Module		
Description	Seller will be shown the sales graph and sold product graph		
Test Case ID	Test Case	Procedures	Expected Result

E001_01	Home button is clicked as the home page	Click on home button as the home page	Display Total Sales by Month, Total Order by Month and Total Sold Products

6.4.2 Test Data

To ensure the task of test description in Table, test data is important to study every expected result that shows in Table. Test data for another test description will be shown in Table until Table.

Table 6.16: Test Data of Register Module

Test ID	A001
Module Name	Register Module
Test Case ID	A001_01
Test Case	Sign Up button is clicked without filling in the full name field
Input Field	Test Data
Incident	Empty full name field
Test Case ID	A001_02
Test Case	Sign Up button is clicked without filling in the phone number field
Input Field	Test Data
Incident	Empty phone number field
Test Case ID	A001_03
Test Case	Sign Up button is clicked without filling in the email address field
Input Field	Test Data

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Incident	Empty email address field
Test Case ID	A001_04
Test Case	Sign Up button is clicked after filling in the email field
Input Field	Test Data
Email Address	iqmalriz
Incident	Email address must include '@'
Test Case ID	A001_05
Test Case	Sign Up button is clicked without filling in the password field
Input Field	Test Data
Incident	Empty password field
Test Case ID	A001_06
Test Case	Sign Up button is clicked after filling in the password field
Input Field	Test Data
Incident	Empty full name field
Test Case ID	A001_07
Test Case	Sign Up button is clicked without filling in the confirm password field
Input Field	Test Data
Incident	Password must contain 8 characters
Test Case ID	A001_08
Test Case	Sign Up button is clicked after filling in the confirm password field
Input Field	Test Data
Incident	Confirm password does not match with password

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Table 6.17: Test Data of Login Module

Test ID	A002
Module Name	Login Module
Test Case ID	A002_01
Test Case	Log In button is clicked without filling in the email address field
Input Field	Test Data
Incident	Empty email address field
Test Case ID	A002_02
Test Case	Log In button is clicked after filling in the email field
Input Field	Test Data
Email Address	iqmalriz
Incident	Email address must include '@'
Test Case ID	A002_03
Test Case	Log In button is clicked without filling in the password field
Input Field	Test Data
Incident	Empty password field
Test Case ID	A002_04
Test Case	Eye icon is clicked after filling in the password field
Input Field	Test Data
Incident	NULL
Test Case ID	A002_05
Test Case	Log In button is clicked with filling all the fields
Input Field	Test Data
Email Address	iqmalriz99@gmail.com
Password	@Password123

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Table 6.18: Test Data of Update Account Module

Test ID	B001
Module Name	Update Account Modules
Test Case ID	B001_01
Test Case	Save button is clicked without filling in the name field
Input Field	Test Data
Incident	Empty full name field
Test Case ID	B001_02
Test Case	Save button is clicked without filling in the phone number field
Input Field	Test Data
Email Address	iqmalriz
Incident	Empty phone number field
Test Case ID	B001_03
Test Case	Save button is clicked without filling in the shop name field
Input Field	Test Data
Incident	Empty shop name field
Test Case ID	B001_04
Test Case	Save button is clicked without filling in the date of birth field
Input Field	Test Data
Incident	Empty date of birth field
Test Case ID	B001_05
Test Case	Save button is clicked with filling all the fields
Input Field	Test Data
Full Name	Iqmal Rizal
Phone Number	01156904348
Shop Name	Tcabletronic
Date of Birth	08/07/1999

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Table 6.19: Test Data of Manage Address Module

Test ID	B002
Module Name	Manage Address Module
Test Case ID	B002_01
Test Case	Add New Address button is clicked
Input Field	Test Data
Incident	NULL
Test Case ID	B002_02
Test Case	Submit button is clicked without filling in the name field
Input Field	Test Data
Incident	Empty full name field
Test Case ID	B002_03
Test Case	Submit button is clicked without filling in the phone number field
Input Field	Test Data
Incident	Empty phone number field
Test Case ID	B002_04
Test Case	Submit button is clicked without filling in the postal code field
Input Field	Test Data
Incident	Empty postal code field
Test Case ID	B002_05
Test Case	Submit button is clicked without filling in the state field
Input Field	Test Data
Incident	Empty state field
Test Case ID	B002_06

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Test Case	Submit button is clicked without filling in the city field
Input Field	Test Data
Incident	Empty city field
Test Case ID	B002_07
Test Case	Submit button is clicked without filling in the street field
Input Field	Test Data
Incident	Empty street field
Test Case ID	B002_08
Test Case	Submit button is clicked with filling all the fields
Input Field	Test Data
Full Name	Iqmal Rizal
Phone Number	01156904348
Postal Code	70450
State	Negeri Sembilan
City	Seremban
Street	Jalan Jasmin 19, Taman Jasmin
Test Case ID	B002_09
Test Case	Edit button is clicked
Input Field	Test Data
Incident	NULL
Test Case ID	B002_10
Test Case	Delete button is clicked
Input Field	Test Data
Incident	NULL
Test Case ID	B002_11
Test Case	Set as Default button is clicked
Input Field	Test Data
Default	1

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Test Case ID	B002_12
Test Case	Set as Pickup button is clicked
Input Field	Test Data
Pickup	1

Table 6.20: Test Data of Add to Cart Module

Test ID	C001
Module Name	Add to Cart Module
Test Case ID	C001_01
Test Case	Home Page is being redirect after user login
Input Field	Test Data
Incident	NULL
Test Case ID	C001_02
Test Case	Link for each of product is clicked
Input Field	Test Data
Incident	NULL
Test Case ID	C001_03
Test Case	Green plus button is clicked for quantity input
Input Field	Test Data
Quantity	+1
Test Case ID	C001_04
Test Case	Red minus button is clicked for quantity input
Input Field	Test Data
Quantity	-1
Test Case ID	C001_05

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Test Case	Add to Cart button is clicked
Input Field	Test Data
Product ID	13
Quantity	1
Test Case ID	C001_06
Test Case	Cart icon button is clicked
Input Field	Test Data
Incident	NULL
Test Case ID	C001_07
Test Case	Red minus button is clicked for quantity input
Input Field	Test Data
Product ID	13
Quantity	-1
Test Case ID	C001_08
Test Case	Green plus button is clicked for quantity input
Input Field	Test Data
Product ID	13
Quantity	1
Test Case ID	C001_09
Test Case	Delete button is clicked
Input Field	Test Data
Product ID	13
Test Case ID	C001_10
Test Case	Checkout button is clicked
Input Field	Test Data
Incident	NULL

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Table 6.21: Test Data of Payment Module

Test ID	C002
Module Name	Payment Module
Test Case ID	C002_01
Test Case	Change Address button is clicked
Input Field	Test Data
Incident	NULL
Test Case ID	C002_02
Test Case	Manage Address button is clicked
Input Field	Test Data
Incident	NULL
Test Case ID	C002_03
Test Case	Place Order button is clicked
Input Field	Test Data
Order ID	23
Address ID	1

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Table 6.22: Test Data of Order Tracking Module

Test ID	D001
Module Name	Order Tracking Module
Test Case ID	D001_01
Test Case	All tab button is clicked
Input Field	Test Data
Incident	NULL
Test Case ID	D001_02
Test Case	To Ship tab button is clicked

Input Field	Test Data
Incident	NULL
Test Case ID	D001_03
Test Case	To Receive tab button is clicked
Input Field	Test Data
Incident	NULL
Test Case ID	D001_04
Test Case	Completed tab button is clicked
Input Field	Test Data
Incident	NULL
Test Case ID	D001_05
Test Case	Order link is clicked
Input Field	Test Data
Incident	NULL
Test Case ID	D001_06
Test Case	Green Order Received button is clicked
Input Field	Test Data
Incident	NULL
Test Case ID	D001_07
Test Case	Blue Buy Again button is clicked
Input Field	Test Data
Incident	NULL

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Table 6.23: Test Data of Manage Order Seller Module

Test ID	D002
Module Name	Manage Order Seller Module

Test Case ID	D002_01
Test Case	All tab button is clicked
Input Field	Test Data
Incident	NULL
Test Case ID	D002_02
Test Case	To Ship tab button is clicked
Input Field	Test Data
Incident	NULL
Test Case ID	D002_03
Test Case	Shipping tab button is clicked
Input Field	Test Data
Incident	NULL
Test Case ID	D002_04
Test Case	Completed tab button is clicked
Input Field	Test Data
Incident	NULL
Test Case ID	D002_05
Test Case	Status button which is 'To Ship', 'Shipping', and 'Completed' is clicked
Input Field	Test Data
Incident	NULL
Test Case ID	D002_06
Test Case	Submit button is clicked without filling the tracking number field
Input Field	Test Data
Incident	Empty Tracking Number field

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Test Case ID	D002_07
Test Case	Submit button is clicked with filling the tracking number field
Input Field	Test Data
Tracking Number	PL763899298594

Table 6.24: Test Data of Rating and Comment Module

Test ID	E001
Module Name	Rating and Comment Module
Test Case ID	E001_01
Test Case	Submit button is clicked without selecting any stars
Input Field	Test Data
Incident	Empty star field
Test Case ID	E001_02
Test Case	Submit button is clicked without filling the comment field
Input Field	Test Data
Incident	Empty comment field
Test Case ID	E001_03
Test Case	Submit button is clicked with filling all the field
Input Field	Test Data
Rating	5
Comment	Padu bossku. Nasib baik bukan scammer. Trusted seller

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Table 6.25: Test Data of Manage Product Module

Test ID	F001
Module Name	Manage Product Module
Test Case ID	F001_01
Test Case	In Stock tab button is clicked
Input Field	Test Data
Incident	NULL
Test Case ID	F001_02
Test Case	Sold Out tab button is clicked
Input Field	Test Data
Incident	NULL
Test Case ID	F001_03
Test Case	Blue Add New Product button is clicked
Input Field	Test Data
Incident	NULL
Test Case ID	F001_04
Test Case	Add button is clicked without filling the product name field
Input Field	Test Data
Incident	Empty product name field
Test Case ID	F001_05
Test Case	Add button is clicked without filling the price field
Input Field	Test Data
Incident	Empty price field
Test Case ID	F001_06
Test Case	Add button is clicked without filling the stock field
Input Field	Test Data

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Incident	Empty stock field
Test Case ID	F001_07
Test Case	Add button is clicked without filling the description field
Input Field	Test Data
Incident	Empty description field
Test Case ID	F001_08
Test Case	Add button is clicked without selecting the category field
Input Field	Test Data
Incident	Empty category field
Test Case ID	F001_09
Test Case	Add button is clicked without filling the image field
Input Field	Test Data
Incident	Empty image field
Test Case ID	F001_10
Test Case	Add button is clicked with filling all the field
Input Field	Test Data
Product Name	Yamaha F310 Best Budget Beginner Acoustic Guitar
Price	369.00
Stock	100
Description	The Yamaha F310 Acoustic Guitar is a fantastic entry level acoustic guitar that comprises of select tone woods and stable, reliable hardware to provide a great sounding and extremely playable acoustic guitar.
Image	f310.jpeg
Test Case ID	F001_11
Test Case	Update button is clicked
Input Field	Test Data
Product ID	15

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Test Case ID	F001_12
Test Case	Delete button is clicked
Input Field	Test Data
Product ID	15

Table 6.26: Test Data of Sales Report Module

Test ID	G001
Module Name	Sales Report Module
Test Case ID	G001_01
Test Case	Home button is clicked as the home page
Input Field	Test Data
Incident	NULL

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6.5 Test Result and Analysis

Test result remains critical to all testing because this testing is showing the actual result and compares the expected result that is tested in test description to get the status of this testing. Table 6.23 to Table 6.31 display the identification test case and actual result as well as the status whether it is passing or failure during implements this testing. The testing for Table 6.23 shows that all possible scenarios that can result for register new user. Thus, there are 9 test cases that being to analysis and all actual results in Table 6.21 have passed.

Table 6.27: Test Result of Register Module

Test ID	A001	
Module Name	Register Module	
Test Case ID	Actual Result	Status (Pass/Fail)
A001_01	'Please fill out this field' message shows up to the user	Pass
A001_02	'Please fill out this field' message shows up to the user	Pass
A001_03	'Please fill out this field' message shows up to the user	Pass
A001_04	'Please include an @ in the email address' message shows up to the user	Pass
A001_05	'Please fill out this field' message shows up to the user	Pass
A001_06	'Password must be least 8 characters' message shows up to the user	Pass
A001_07	'Please fill out this field' message shows up to the user	Pass
A001_08	'Confirm password does not match with password' message shows up to the user	Pass

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Table 6.28: Test Result of Login Module

Test ID	A002	
Module Name	Login Module	
Test Case ID	Actual Result	Status (Pass/Fail)
A002_01	'Please fill out this field' message shows up to the user	Pass
A002_02	'Please include an @ in the email address' message shows up to the user	Pass
A002_03	'Please fill out this field' message shows up to the user	Pass
A002_04	The password will visible	Pass
A002_05	User will redirect to home page	Pass

Table 6.29: Test Result of Update Account Module

Test ID	B001	
Module Name	Update Account Module	
Test Case ID	Actual Result	Status (Pass/Fail)
B001_01	'Please fill out this field' message shows up to the user	Pass
B001_02	'Please fill out this field' message shows up to the user	Pass
B001_03	'Please fill out this field' message shows up to the user	Pass
B001_04	'Please fill out this field' message shows up to the user	Pass
B001_05	'Profile Updated' message shows up to the user	Pass

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Table 6.30: Test Result of Manage Address Module

Test ID	B002	
Module Name	Manage Address Module	
Test Case ID	Actual Result	Status (Pass/Fail)
B002_01	New Address Modal shows up	Pass
B002_02	'Please fill out this field' message shows up to the user	Pass
B002_03	'Please fill out this field' message shows up to the user	Pass
B002_04	'Please fill out this field' message shows up to the user	Pass
B002_05	'Profile Updated' message shows up to the user	Pass
B002_06	'Profile Updated' message shows up to the user	Pass
B002_07	'Profile Updated' message shows up to the user	Pass
B002_08	Modal dismiss and new address shows up	Pass
B002_09	Modal Edit Address shows up	Pass
B002_10	'Are you sure to delete' message shows up to the user	Pass
B002_11	The address will mark as Default with green badge	Pass
B002_12	The address will mark as Pickup with red badge	Pass

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Table 6.31: Test Result of Add to Cart Module

Test ID	C001	
Module Name	Add to Cart Module	
Test Case ID	Actual Result	Status (Pass/Fail)
C001_01	All registered product that currently have stock is shown up	Pass
C001_02	Product detail is shown up	Pass
C001_03	The quantity added by 1 until it reaches the maximum number of stocks	Pass
C001_04	The quantity subtracts by 1 until minimum value which is 1	Pass
C001_05	'Item has been added to your shopping cart' message shown up. Cart icon badge number will add by 1	Pass
C001_06	User will redirect to shopping cart that contain products which have been added and the total orders	Pass
C001_07	The quantity subtracts by 1 until it is deleted from the cart	Pass
C001_08	The quantity added by 1 until it reaches the maximum number of stocks	Pass
C001_09	Products will remove from the cart	Pass
C001_10	User will redirect to checkout and payment page	Pass

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Table 6.32: Test Result of Payment Module

Test ID	C002	
Module Name	Payment Module	
Test Case ID	Actual Result	Status (Pass/Fail)
C002_01	Display all the address that have been added and user can choose the address by using radio button	Pass
C002_02	User will redirect to address page to manage the address	Pass
C002_03	'The order has been paid' message shown up. User will redirect to purchase history page	Pass

Table 6.33: Test Result of Order Tracking Module

Test ID	D001	
Module Name	Order Tracking Module	
Test Case ID	Actual Result	Status (Pass/Fail)
D001_01	Display all the order that have been made	Pass
D001_02	Display all the order that have status 'To Ship'	Pass
D001_03	Display all the order that have status 'To Receive'	Pass
D001_04	Display all the order that have status 'Completed'	Pass
D001_05	Display the status of the order, tracking number with the tracking	Pass

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	and product that have been ordered with the price.	
D001_06	'Are you sure?' message shows up to the user. Change the order status 'To Rate'. Review and Comment modal is shown up	Pass
D001_07	User will redirect to the corresponding product page	Pass

Table 6.34: Test Result of Manage Order Seller Module

Test ID	D002	
Module Name	Manage Order Seller Module	
Test Case ID	Actual Result	Status (Pass/Fail)
D002_01	Display all the order that have been made by customer	Pass
D002_02	Display all the order that have status 'To Ship'	Pass
D002_03	Display all the order that currently in shipping	Pass
D002_04	Display all the order that have status 'Completed'	Pass
D002_05	Display the status of the order, tracking number with the tracking and product that have been ordered with the price.	Pass

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D002_06	'Please fill out this field' message shows up to the user	Pass
D002_07	Display the tracking number that were submitted with the tracking path. The status of order change to 'To Receive'	Pass

Table 6.35: Test Result of Rating and Comment Module

Test ID	E001	
Module Name	Rating and Comment Module	
Test Case ID	Actual Result	Status (Pass/Fail)
E001_01	Submit button is disabled until user select any stars	Pass
E001_02	'Are you sure?' message shows up to the user. Change the order status 'To Rate'.	Pass
E001_03	'Thanks for your review!' message shows up to the user. Change the order status to 'Completed'.	Pass

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Table 6.36: Test Result of Manage Product Module

Test ID	F001	
Module Name	Manage Product Module	
Test Case ID	Actual Result	Status (Pass/Fail)
F001_01	Display all product that is currently in stock	Pass

F001_02	Display all product that is currently out of stock	Pass
F001_03	Seller will redirect to product registration form	Pass
F001_04	'Please fill out this field' message shows up to the user	Pass
F001_05	'Please fill out this field' message shows up to the user	Pass
F001_06	'Please fill out this field' message shows up to the user	Pass
F001_07	'Please fill out this field' message shows up to the user	Pass
F001_08	'Please fill out this field' message shows up to the user	Pass
F001_09	'Please fill out this field' message shows up to the user	Pass
F001_10	'Product has been added successfully' message shows up	Pass
F001_11	Seller will redirect to product update form	Pass
F001_12	'Are you sure? message shows up. Product will be removed	Pass

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Table 6.37: Test Result of Sales Report Module

Test ID	G001	
Module Name	Sales Report Module	
Test Case ID	Actual Result	Status (Pass/Fail)
G001_01	Display Total Sales by Month, Total Order by Month and Total Sold Products	Pass

6.6 Conclusion

This chapter is to disclose the techniques used to confirm and approve the system and its functions. Test plan incorporates tests that look at changes done on the system. To evade creating a system that do not meet customers' requirements and demands, the test plan is used to inspect done in the system. Test organization will explain about the people responsible for this project which includes the developer. Test environment is the platform used to run the program and includes the hardware and software used to run the system throughout the testing duration. The test schedule is a timetable drawn up to organize each individual testing periods. The test strategy is the strategy used to test the system by using various methodologies to tackle two key areas of the system; in this case it is the functionality and security of the system. Meanwhile, the test description is the predicted possible outcomes that can emerge from the testing strategy highlighted above. At the same time, the test data is the data input into the system for testing purposes. Lastly, the test results and analysis are the collection of data from the tests conducted and the analysis of the collected data with the expected outcome and response.

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The next chapter will be discussing about the project conclusion and outcomes learned from this project.

CHAPTER 7: CONCLUSION

7.1 Introduction

This chapter will be discussing about the overall performance of LajuBUY Online Shopping System which will include of analysis on strength and weaknesses of the system and propositions on improvements according to the strength and weakness analysis. Furthermore, contribution of project will also define in this chapter as well.

7.2 Observation on Weakness and Strengths

Every system has their own strengths and weaknesses. The strengths and weaknesses of LajuBUY Online Shopping was illustrated in this section.

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7.2.1 Strengths

i. Accessibility

The customer can go shop 24 hours day and night, browse, and learn product wherever they go.

ii. Direct payment

The payment is directly pay to the seller after payment has been done by customer. No more pending payment from the ecommerce website.

iii. Increase consumer confidence

Reviews and comment from the other customer build up the confidence for us to shop.

iv. Important for online business

Everybody can sell and everything can be sell through this ecommerce.

7.2.2 Weakness

i. Limitation of communication

   Customer cannot communicate with seller to ask anything about the products or the order that have been done.

ii. Limitation of seller approval registration

   This system does not have approval on seller registration

iii. Limitation of cancelation order

   This system cannot cancel the current order due to direct payment to the seller.

7.3 Proposition for Improvement

LajuBUY Online Shopping has plenty of potential for improvement. Firstly, develop the chatting system to make the communication between customer and seller is endless. Customer can ask anything about the product or order. Next, to avoid scammer in seller, approval on seller registration should be develop. Business registration details (SSM) should be upload into the system to make it secure. Lastly, e-wallet should be developed to hold the payment until the product has been received by the customer.

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7.4 Project Contribution

LajuBUY Online Shopping is an ecommerce website like the others such as Shoppe and Lazada. It can be access 24 hours day and night and go shop in everywhere they go. Payment is directly pay to the seller after the payment from customer has been done. Thus, seller does not have to wait for pending payment. Reviews, ratings and comment can increase the customer confidence to go shop. Shop experience by other customer is important. Lastly, Ecommerce is important for online business because it is usable with everyone can sell and everything can be sell.

7.5 Conclusion

In conclusion, the objective and scope that was stated in Chapter 1 has been achieved. LajuBUY Online Shopping system has met all the objectives stated. System Development Life Cycle (SDLC) was chosen as methodology for development which includes planning, analysis, design, implementation, maintenance. Maintenance phase also was conducted to find the bugs and defect of the system. At the end, LajuBUY Online Shopping system are successful meet the non-functional and functional requirement. However, there are still some weaknesses existed in the system which needs to be improvised for future use. In the end, this system has been completed successfully and fulfilled the requirement of Bachelor of Computer Science (Database Management).

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