ONLINE BIDDING SYSTEM

TAN ZHI ZHONG

UNIVERSITI TEKNIKAL MALAYSIA MELAKA

ONLINE BIDDING SYSTEM

TAN ZHI ZHONG

This report is submitted in partial fulfillment of the requirements for the Bachelor of [Computer Science (Software Development)] with Honours.

FACULTY OF INFORMATION AND COMMUNICATION TECHNOLOGY
UNIVERSITI TEKNIKAL MALAYSIA MELAKA

2021

DECLARATION

I hereby declare that this project report entitled

[ONLINE BIDDING SYSTEM]

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

STUDENT : _____TAN ZHI ZHONG_____ Date : 9/9/2021

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 (Software Development)] with Honours.

SUPERVISOR : _____ Date : 9/9/2021

([Ts. Dr. Lizawati Salahuddin])

DEDICATION

This report is dedicated to:

My beloved parents,

Tan Kheng Lee and Teng Cheng Sim.

My supervisor,

Ts. Dr. Lizawati Salahuddin.

And all of my friends.

Thank you for their encouragement and unconditional support.

ACKNOWLEDGEMENTS

Firstly, I would like to take this opportunity to express my deepest appreciation to my supervisor, Ts. Dr. Lizawati Salahuddin for giving her encouragement, guidance, support, and motivation throughout the whole project. Under her supervision, I acquired a lot of valuable knowledge and suggestion as well as the confidence to complete this project. Despite that, she is busy with her duties and job, she still managed to guide me along to achieve this project. Therefore, here I am to show my appreciation to her for teaching me patiently and I am grateful to have her as my supervisor.

Besides that, I would like to thank my fellow friends who always ready to help me whenever I needed them. In addition, my appreciation to them for assisted me and share a lot of good ideas that help to accomplish my project.

Finally, my deepest gratitude goes to my parent, Tan Kheng Lee and Teng Cheng Sim for supporting me mentally and financially throughout my entire studies at UTeM. Their endless support has extended to me throughout this degree study and my life in general.

ABSTRACT

Due to COVID-19, an online platform is becoming very important because people need to adapt to the new normal lifestyle. There is a lot of sellers that do not have a proper platform for them to sell their new product or second-hand item. If the seller does have a platform to sell their product but does not know if the customer is willing to pay the price they offer. Hence an online bidding system will be developed to overcome the problem facing by the seller and buyer. The agile development methodology is used in this project because it can reduce the risk of absolute project failures. This system will be developed using HTML, JavaScript, CSS, and PHP languages. By having an online bidding website, the seller can set a start price for their item and the buyer can bid for the item for the price they want. In this system, the authentication module will allow the system to record the users' personal information. This system also will display the information about the seller and the description of the item which is underbidding. The seller and buyer are allowed to chat using the conversation module. Buyers can leave feedback to the seller after they have successfully bided an item. This system can also generate various reports to the seller, staff, and admin. In conclusion, the proposed system will overcome a lot of problems faced by the seller and also provide a new way for the seller and also buyer to sell and buy some items online.

ABSTRAK

Oleh kerana COVID-19, platform dalam talian menjadi sangat penting kerana masyarakat perlu menyesuaikan diri dengan gaya hidup normal yang baru. Terdapat ramai penjual tidak mempunyai platform yang tepat bagi mereka menjual produk baru atau barang terpakai mereka. Sekiranya penjual mempunyai platform untuk menjual produk mereka tetapi mereka tidak tahu sama ada pelanggan bersedia membayar dengan harga yang mereka tawarkan. Justeru, sebuah sistem menawar akan dibuatkan untuk menyelesaikan masalah yang dihadapi oleh penjual dan pembeli. Metodologi Agile akan digunakan dalam projek ini kerana dapat mengurangkan risiko kegagalan projek. Sistem ini akan dikembangkan menggunakan bahasa HTML, JavaScript, CSS, dan PHP. Dengan mempunyai laman web penawaran dalam talian, penjual dapat menetapkan harga permulaan untuk barang mereka dan pembeli dapat menawar item tersebut dengan harga yang mereka mampu bayar. Dalam sistem ini, modul pengesahan akan membolehkan sistem merakam maklumat peribadi pengguna. Sistem ini juga akan memaparkan maklumat mengenai penjual dan perihalan barang yang sedang ditawar. Penjual dan pembeli dibenarkan berbual menggunakan modul perbualan. Pembeli boleh memberikan maklum balas kepada penjual setelah mereka berjaya menawar barang. Sistem ini juga dapat menghasilkan pelbagai laporan kepada penjual, kakitangan dan pentadbir. Sebagai kesimpulan, sistem yang dicadangkan akan mengatasi banyak masalah yang dihadapi oleh penjual dan juga menyediakan cara baru bagi penjual dan juga pembeli untuk menjual dan membeli barang secara atas talian.

TABLE OF CONTENTS

PAGE

LIST OF TABLES

PAGE

LIST OF FIGURES

PAGE

LIST OF ABBREVIATIONS

LIST OF ATTACHMENTS

PAGE

CHAPTER 1: INTRODUCTION

1.1 Introduction

Online shopping is now becoming a new trend of a lifestyle. Due to the pandemic which is COVID-19, people are not allowed to shop like they used to be. Then, they started to shop online. 3R which are reduced, reuse, and recycle is also becoming a trend now. People are recommended to sell items that they are no longer needed but which still functional instead of throwing them away. Some people also try to sell their collection such as a limited edition of a game or shoe online but did not know what is the price to be offered.

An online bidding system is designed to connect the seller and buyer to help them achieve their wants. The seller wanted to sell their item and the buyer got the item they wanted. This system will allow the seller to manage the item they wanted to sell such as item name, item condition, item description, item start price, and more. The buyer also can see the review and rating of the seller such as total followers, the total product offered, rating, and more. This system will allow the buyer to bid for an item by input the desired price they are willing to pay. As an example, the starting price is RM50, the buyer can bid it for RM55 and now the highest bidder is the buyer but when another buyer is willing to bid the item with RM60, then the highest bidder will change to who that has the highest bid price.

This system also allows the user to search for a particular item or a seller's name. The system will display the result which is similar to the search input by the user. Report generating also one of the functions of the system which will generate various reports to the seller, staff, and admin. The conversation module also one of the

methods to connect between the seller and the buyer which allows the buyer to ask something about the item being offered by the seller.

1.2 Problem Statement(s)

People need to sell their second-handed on social media which is difficult for most people. Social media is not an application designed for the user to sell their product so if the seller tries to sell something. Also, when a seller trying to sell a second-handed item or product, they do not know what is the price that is acceptable to the buyer. Seller also will need to face a lot of buyers that try to negotiate for a lower price which will consume a lot of energy and time. And if the seller responds to the buyer, they will need to wait for the buyer to respond. In social media, the buyer also does not know about the rating and review of the seller such as is it a real account or it is just a scam.

There are few popular auction and bidding website which is shopgoodwill.com, auctionmax.com, auctionzip.com, listia.com. The existing system cannot update the latest bid in real-time and will require the user to reload the website to update the current highest bid value. It also does not limit the maximum bid price as an example, you can input 999,999,999 in the bidding price field. Some website even accepts alphabetical character in the bidding price field. The existing system also allows the buyer to enter the bid value before they log in, but when they press enter, only then the system will redirect the buyer to log in. The existing system does not show the information of accounts such as history sold, success rate, refund rate, and more of the seller for the buyer to see if the account is real or fake.

1.3 Objective

- To design a solution that can help the seller to sell their second-handed or new item and also help the buyer to buy the item they want with the price they are willing to offer.
- To develop a web-based system as a platform for the seller and the buyer to sell and buy the second-handed or new item by using HTML, JavaScript, CSS, and PHP.
- To test the system for efficiency, reliability, and user satisfaction in terms of usability by the seller, buyer, system management staff, and system administrator.

1.4 Scope

1.4.1 Module to be developed

a) Authentication: allow the buyer, seller, and administrator to login into the system.

b) Item searching: allow the buyer, seller, and administrator to search for an item or a seller.

c) Item review: allow the buyer to see the detail of the item or product.

d) Transaction: allow the buyer to pay online.

e) Report generate: allow the seller and the administrator to generate various reports.

f) Feedback and Rating service: allow the buyer to leave a feedback and rating to the seller.

g) Conversation between seller and buyer: allow the buyer to ask anything about the item with the seller.

h) Bidding module: allow the buyer to bid a price to the item they are willing to bid for. It should also display the number of buyers involved, minimum bid price, maximum bid price, and more.

i) Update bidding price module: the system will update the bidding price in real-time.

j) Recommender: the system will recommend buyer a series of items that suit them.

k) Add to favourite module: allow the buyer to add the item to their favourite.

1.4.2 Target User

- Administrator
- Staff
- Seller
- Buyer

1.5 Project Significance (PC)

The development of the system is to make people more convenient because they can sell their unwanted but still functional items to those who wanted them. It also can help the buyer to buy an item at a price they willing to pay. The buyer also can ask the seller for more detailed information about the item through the system. Other buyers also can know the sold history of the seller to increase their confidence to buy from the seller.

1.6 Expected Output

The expected outcome is a website is properly developed based on the modules and the website able to solve the problem statements.

1.7 Conclusion

In this chapter, with the collaboration with my supervisor, Ts. Dr. Lizawati Salahuddin, we had our meeting and discussion whenever I needed her guidance. For any problem occurred, I will discuss it with my supervisor and try to find out the solution.

CHAPTER 2: LITERATURE REVIEW AND PROJECT METHODOLOGY

2.1 Introduction

This chapter is discussed about the literature review and the methodology being used by this project.

2.2 Facts and findings

An auction is an event wherein the bidder places competitive bids on an item or a service either in a closed or open format. Auctions are becoming famous because buyers and sellers believe that they are going to get a good deal buying or selling the item. After all, both parties earn their benefit. (BANTON, 2019). Generally speaking, an auction is an activity that the seller sells the item with a start price and the buyers can bid for the item at a higher price. The buyer with the highest bid price will get the item. (BANTON, 2019)

There are four types of auction, which is English Auction, Dutch Auction, First-price Sealed-bid Auction, and Second-price Sealed-bid Auction. The English auction is also known as an open outcry auction and is the most commonly used type today. It is an open ascending price auction where participants bid against each other, with each subsequent bid being higher than the previous bid. (Auction - Understanding How the Auction Process Works, 2020). This system will be used English Auction as the auction type.

Online auctions have effectively created a big portion of a marketplace where people can gather to buy, sell, trade, and check out the items. They're extremely popular, high-traffic venues where you can start selling your item or product almost

immediately, with no overhead or upfront costs, no sales staff or distributors, no website of your own, and no initial investment. (Wolinsky, n.d.)

There are few auction website that is currently available in Malaysia which is http://auctions.com.my/, which is an auction website for the property, https://bideefy.com.my/, which is an auction website for goods but there are very few items to bid, another website is https://www.best2bid.com/, which is a live auction website for collectibles and property.

Traditionally, an auction event will involve three parties which are the seller, buyer, and the auctioneers. For the website best2bid, they are using the traditional way in which the event is host by an auctioneer. The seller will need to send the item to the warehouse to be shown in the live session. On an online auction website, the participants can effectively place a bid using a computer or their smartphone on an anytime-anywhere basis. In an online auction, the transaction takes place online and the product moves from the seller directly to the buyer after the online transaction is completed. Online auction website facilitates buyers and sellers in a meeting, the listing of items for sale independent of physical location, exchanging information, interacting with each other, and ultimately completing transactions. It also offers significant convenience, allowing trading at all hours, and provides continually updated information and it allows buyers and sellers to trade directly, by bypassing traditional intermediaries and lowering costs for both parties. (SOMANI, BOBADE, & SHARMA, 2017)

The online auction has become more and more popular and familiar to everyone. One of the most successful online auction websites is eBay (https://www.ebay.com.my/). The website has 89.5 million active users in the first quarter of 2010 and increased to 162 million active users in the first quarter of 2016 and the number continues to increase to 187 million active users in the first quarters of 2021. (Sabanoglu, 2021) In the year 2019, there are a total of 1.3 billion listings on eBay and the number is continuing to increase. (Lin, 2021) The amount of gross merchandise volume in the first quarter for eBay is 27.5 billion US dollars. (Fast Facts, n.d.) This shows that eBay is currently the most successful online auction website.

There are pros and cons to online auctions. The pros are no noisy crowds because in an on-site auction, usually the event will be crowded by a lot of people. This crowd can definitely be loud, rude, and rowdy. With the help of online auctions, people will not have to deal with this type of atmosphere. Another pro is no constraint of schedule, for an on-site auction, every event is carried out based on a schedule so that the event went smoothly. Every auction will be held at a fixed time frame and location. Bidder will need to bound to the schedule so that they able to bid for the item they want. But through an online auction, even though the time is fixed but the time is longer even many auction websites operate on a 24/7 basis and the location is not fixed. So, the bidders have the freedom to bid on items whenever they desire. (Pros and Cons of Online Auction, 2018)

One of the cons about online auctions is fakes. The item description given on the website may not match with the actual item. Next, scam is also one of the cons of an online auction, in this case, the seller or the buyer or both may be fake. Due to this, the possibility that customer gets cheated by sellers and vice-versa is increased. Another con is overpaying, A lot of people are carried away in bidding contests that they tend to pay over the odds just to get the item that they want. (Chothani, Patel, Dekavadiya, & Patel, 2015)

2.3 Domain

The domain related to this project is E-Commerce. It is because this website can help the seller to sell their second-handed item at a flexible price which the price is bid by the buyer. The seller just needs to put a start price and the buyer can start bid for the item that they want.

2.3.1 Existing System

The existing system has made the auction process easier but at the same time, some problem is timed bid can be trouble sometimes.

A problem that will arise when an online auction extends over a long period, say one week or ten days, is that bidders who have an urgent need of the item on auction are forced to wait until the very end of the auction to get the item. For example,

if the item on auction is a raw material, its delivery at the end of the auction might be too late for the production schedule of a bidder. (Amitava & Atul, 2003)

Some existing auction website is not very user-friendly, there is no limitation in the input field, for example, the bid price field in WebStore (https://www.webstore.com/) does not limit the input of user you can enter the alphabetic character in the bid price field shown as figure below.

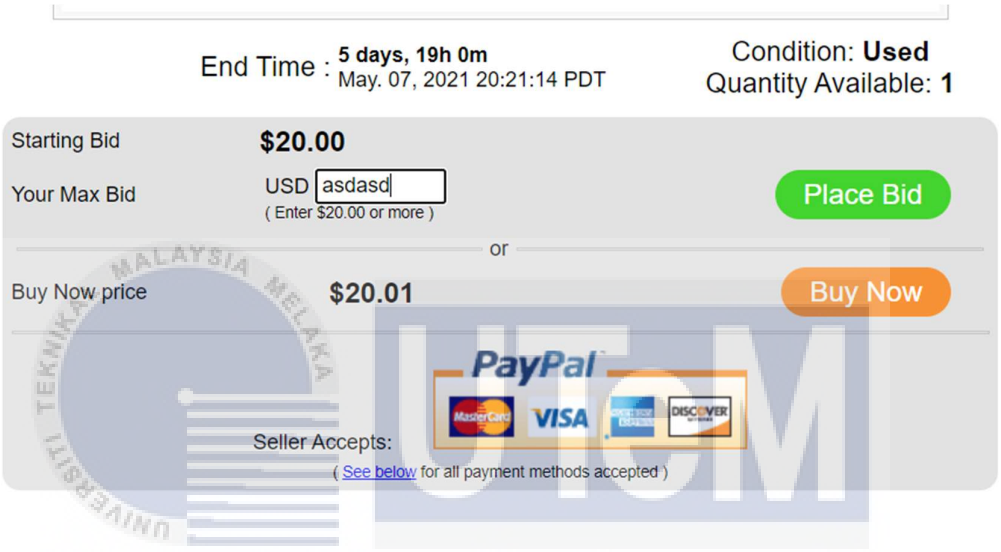


Figure 2.1: Screenshot of bid price field in WebStore website

Some existing auction website is only able to auction for one type of item example AuctionGuru (https://auctionguru.com.my/), AuctionList (http://www.auctionlist.com.my/), PropertyAuctionHouse (http://auctions.com.my/), LelongTips (https://www.lelongtips.com.my/), and more. These auction websites only able to let the user bid on property as shown below.

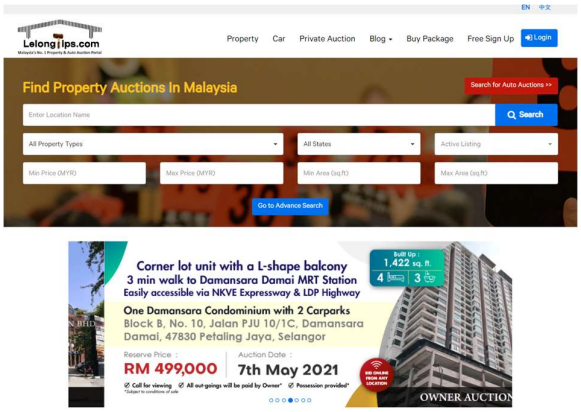


Figure 2.2: Screenshot of the main page of LelongList.com

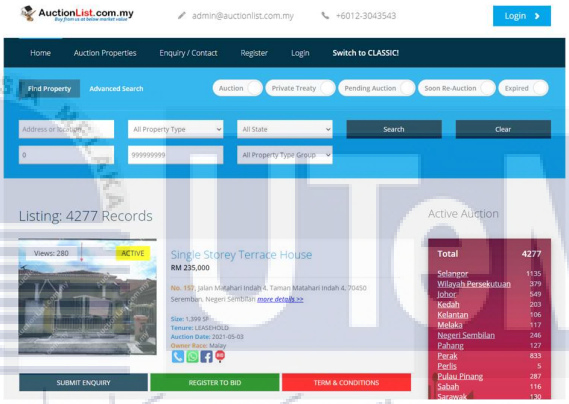


Figure 2.3: Screenshot of the main page of AuctionList.com

The next problem is some existing auction websites do not have many items on their website such as Bideefy (https://bideefy.com.my/). And the website does not have a proper page to display the available auction. Many details are not user-friendly, the user does not know where should be press and where can the user press.

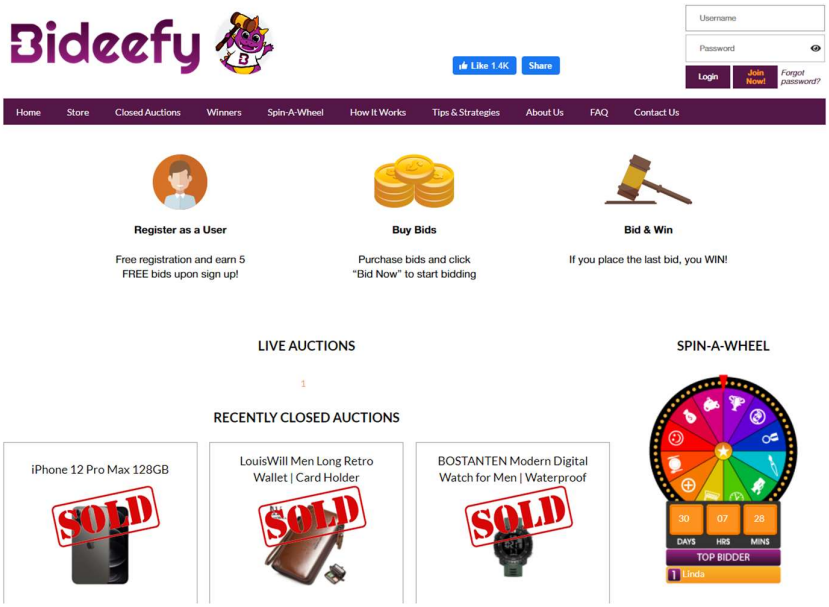


Figure 2.4: Screenshot of the main page of Bideefy.com

The study made by scientists from Carnegie Mellon University found many fraud schemes from the historical auction data using data mining techniques and other accomplices. One of the most current fraud schemes is that the bidders are making false identities or accounts to increase the sale price. (Byron & Anne , 2006).

Table 2.1 Table of comparison between current system and system developed

	Existing System	System Developed
Real-time update of the bid price	No	Yes
Form validation in the bid price field	No	Yes
Easy and clear navigation	No	Yes
Many different types of item to bid	Limited	Variety categories

Display the detail and information of the item	Not very clear, some item is already unavailable but still listed as able to bid	Only items that available to be bid will be displayed.

2.3.2 Technique

One of the techniques that can be used to overcome the problem of the existing system is to restrict the input of alphabetic characters in the bid price field. The bid price should only allow the input of numerical characters.

Another solution is to design the website with multiple categories available for the user to bid. And the website should be able to display every available auction easily on a page.

The website also needs to give respond to the user when they press something on the website. And need to make sure everything that can interact with the user is easily identified.

2.4 Project Methodology

In software development, agile practices involve the discovering of requirements and come out with solutions through the collaborative effort of self-organizing and cross-functional teams and their customers. It supports adaptive planning, evolutionary development, early delivery, and continual improvement, and it encourages flexible responses to change. (Agile software development, 2021). The agile development methodology is chosen as the methodology of this project because it has lower cost compared to other methodology, it also has competitive advantages by catching defects and making changes throughout the development process, instead of at the end, and also it speeds up the time spent on evaluations since each evaluation is only on a small part of the whole project. (What is Agile Methodology? and Why Do We Use It?, 2016).

There are some deliverables in agile methodology which are the product vision statement, product roadmap, product backlog, release plan, sprint backlog, and the increment. A product vision statement is a summary that articulates the goals of the system. A product roadmap is the high-level view of the requirement needed to achieve the product vision. A product backlog is a full list of what is needed in the system which is ordered by priority. A release plan is a timetable for the release of the system. The sprint backlog is the user requirement, goals, and tasks linked to the current sprint. The increment is the working product functionality that is presented to the stakeholder at the end of the sprint and could potentially be given to the customer. (Muslihat, 2021)

The agile technique is one of the techniques to create and respond to a change, it is a way to dealing with an uncertain and turbulent environment. Online Bidding System has selected Scrum Framework as the framework of the system. Scrum is one of the agile frameworks that used to implement the ideas behind agile software development. It compromises five values which are commitment, courage, focus, openness, and respect. Its goals are to deliver, develop, and sustain complex products through accountability, collaboration, and iterative progress. The thing that distinguishes Scrum from other agile methodologies is the roles, events, and artifacts. (Muslihat, 2021)

There are three scrum team roles such as product owner, development team, and scrum master. A product owner is the stakeholder and also the voice of the customer. A development team is a group of professionals who deliver the product which consists of developers, programmers, designers, and more. Scrum master is the organized servant-leader who ensure the understanding and execution of scrum is followed. (Muslihat, 2021)

The five Scrum events are sprint, sprint planning, daily scrum, sprint review, and sprint retrospective. Sprint is the iterative time frame where a goal is accomplished. The time frame will not exceed one calendar month and is consistent throughout the development process. Scrum planning is the process where the entire scrum team gets together at the beginning of every sprint to plan for the upcoming sprint. The daily scrum is a 15 minutes time frame meeting held at the same time, every day of the sprint, where the previous day's achievements are discussed, as well as the expectations for the following sprint. Sprint review is an informal meeting held at the end of every sprint where the scrum team presents their increment to the stakeholders and discusses the feedback. The sprint retrospective is the meeting where the scrum team reflects on the proceedings of the previous sprint and establishes improvements for the next sprint. (Muslihat, 2021)

There are two types of scrum artifacts which are the product backlog and the sprint backlog. The product backlog is managed by the Product Owner, it is where all the requirements needed for a viable product are listed in order of priority. Including all features, functions, requirements, enhancements, and fixes that authorize any changes to be made to the product in future releases. The sprint backlog is a list of the tasks and requirements that need to be accomplished during the next sprint. Sometimes accompanied by a scrum task board, which is used to visualize the progress of the tasks in the current sprint, and any changes that are made in a 'To Do, Doing, and Done' format. (Muslihat, 2021)

The reason I choose agile methodology and scrum as the framework is because we can respond to change by following a plan. Changes are a reality in software development, with the agile methodology the project plan can be flexible enough to change as the situation demand. And agile methodology also required the project team

to work closely and communicate with the customer frequently. By frequent communication, the team will understand what the stakeholder or the customer wants.

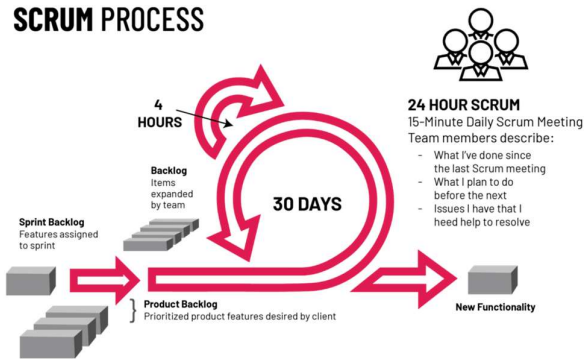


Figure 2.5 The Agile Methodology – Scrum Framework (WHAT IS AGILE? WHAT IS SCRUM?, n.d.)

2.5 Project Requirements

2.5.1 Software Requirement

- Windows 10 Home Edition 64-bit
    - Used as the operating system to develop the system
- XAMPP Server
    - Used as the server and the database server of the system
- Visual Studio Code
    - Used as the environment for programming
- Google Chrome
    - Used to test the website while connected to the server
- Microsoft Word Professional Plus 2019

- Used for documentation

2.5.2 Hardware Requirement

- Laptop
  - Requirement
    - Intel or AMD processor with 64-bit support
    - Intel Graphic 610 or equivalent
    - 4GB system memory (RAM) or above
    - 4GB of free disk space or above
  - Used as a device to develop the system
- External Hard Disk
  - Used as a backup and the storage of the system.

2.5.3 Other Requirement

- Active internet connection
  - Used to debug and information searching purpose.

2.6 Project Schedule and Milestones

◢ **SPRINT 1**	**15 days**	**Mon 22/3/21**	**Wed 7/4/21**
Authentication	5 days	Mon 22/3/21	Fri 26/3/21
Item searching	5 days	Sat 27/3/21	Wed 31/3/21
Item review	5 days	Thu 1/4/21	Wed 7/4/21
◢ **SPRINT 2**	**15 days**	**Thu 8/4/21**	**Mon 26/4/21**
Transaction	5 days	Thu 8/4/21	Wed 14/4/21
Report Generate	5 days	Thu 15/4/21	Tue 20/4/21
Feedback and Rating service	5 days	Wed 21/4/21	Mon 26/4/21
◢ **SPRINT 3**	**15 days**	**Tue 27/4/21**	**Mon 17/5/21**
Conversation	5 days	Tue 27/4/21	Mon 3/5/21
Bidding	5 days	Tue 4/5/21	Mon 10/5/21
Update bidding price	5 days	Tue 11/5/21	Mon 17/5/21
◢ **SPRINT 4**	**10 days?**	**Tue 18/5/21**	**Mon 31/5/21**
Recommender	5 days	Tue 18/5/21	Mon 24/5/21
Add to favorite	5 days	Tue 25/5/21	Mon 31/5/21
FINAL TOUCH UP	5 days	Tue 1/6/21	Mon 7/6/21

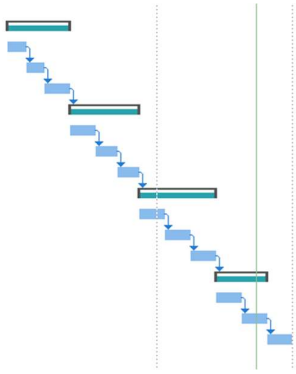


Figure 2.6: Project Schedule and Milestones

2.7 Conclusion

In this chapter, we are focusing on discussing the methodology being used in this project which is Agile Development Methodology. It advocates adaptive planning, evolutionary development, early delivery, and continual improvement, and it encourages flexible responses to changes. Scrum Framework is chosen to be used which paintings on one function of the overall function paintings at a time.

CHAPTER 3: ANALYSIS

3.1 Introduction

This chapter is discussed about the problem analysis and the requirement analysis of the system to be developed.

3.2 Problem Analysis

3.2.1 Main Flow Chart

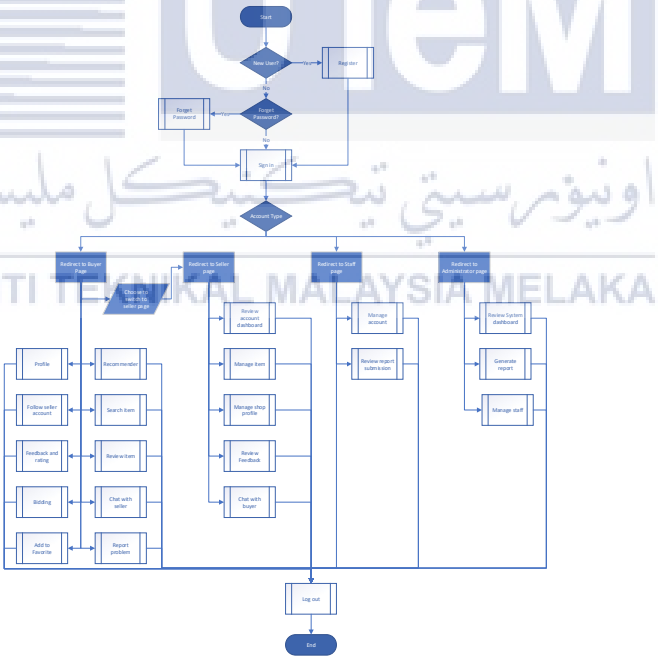


Figure 3.1: Main flow chart of the system

Figure 3.1 shows the main business flow of the system. There are three types of users which is buyer/seller, staff, and admin. Each type of account has a different use case.

3.2.2 Register Module

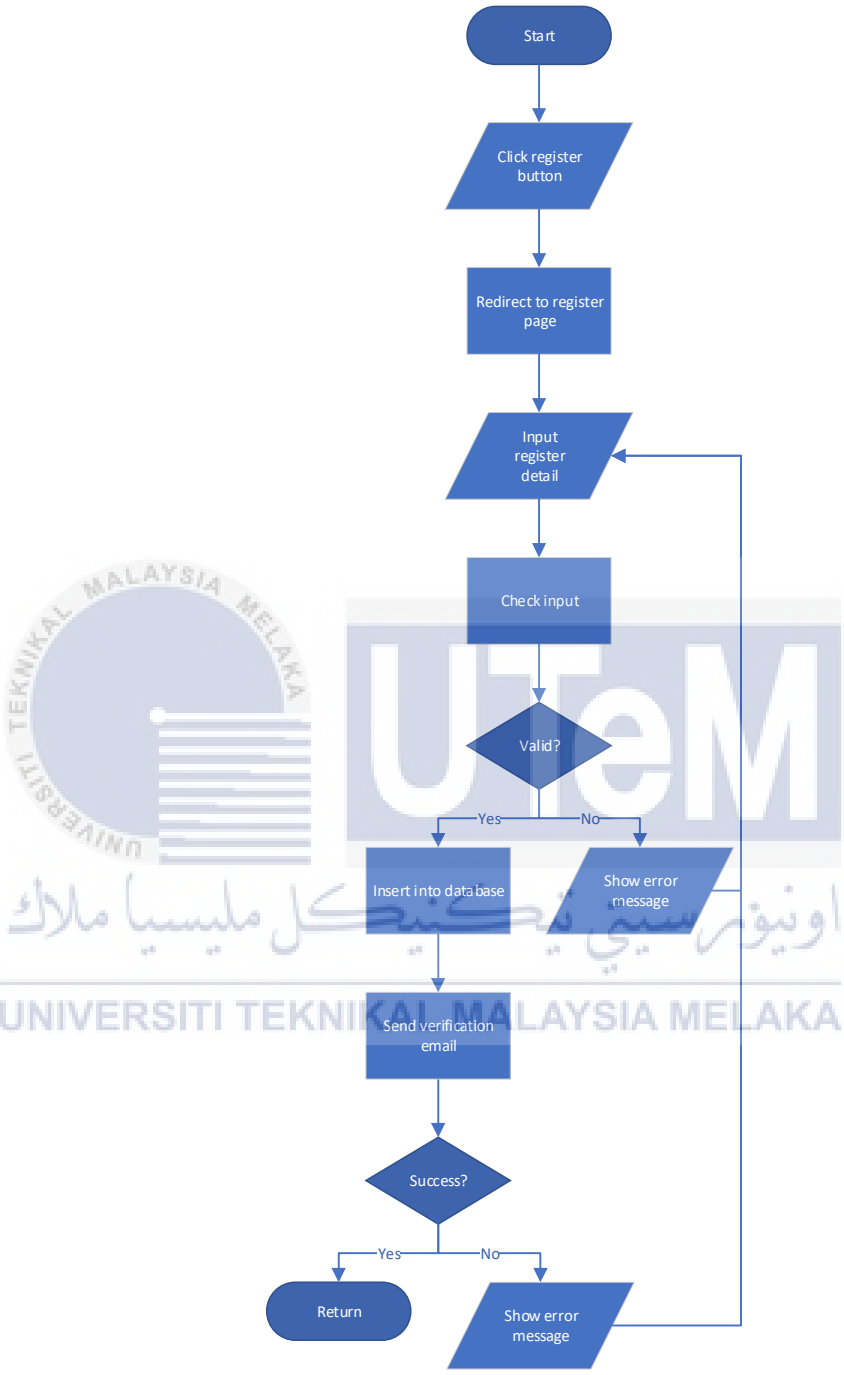


Figure 3.2: Flow chart for register function

Figure 3.2 shows the process of registration. When the user register for an account, they need to fill out the registration form and click the submit button. Then the system will check whether if the form is filled, if not, the system will display an

error message to inform the user that the form is not filled, but if yes, the system will then check for the password, whether the password meets the requirement and also whether the confirm password is the same as password. If no, the system will display an error message while if yes, the system continues to check whether the username, email, or phone number already exists in the database. If yes, the system will display an error message to the user and tell the user to use another username, email, or phone number while if not, the system will register the account to the database and send an email to the email registered for the user to activate their account.

3.2.3 Log in Module

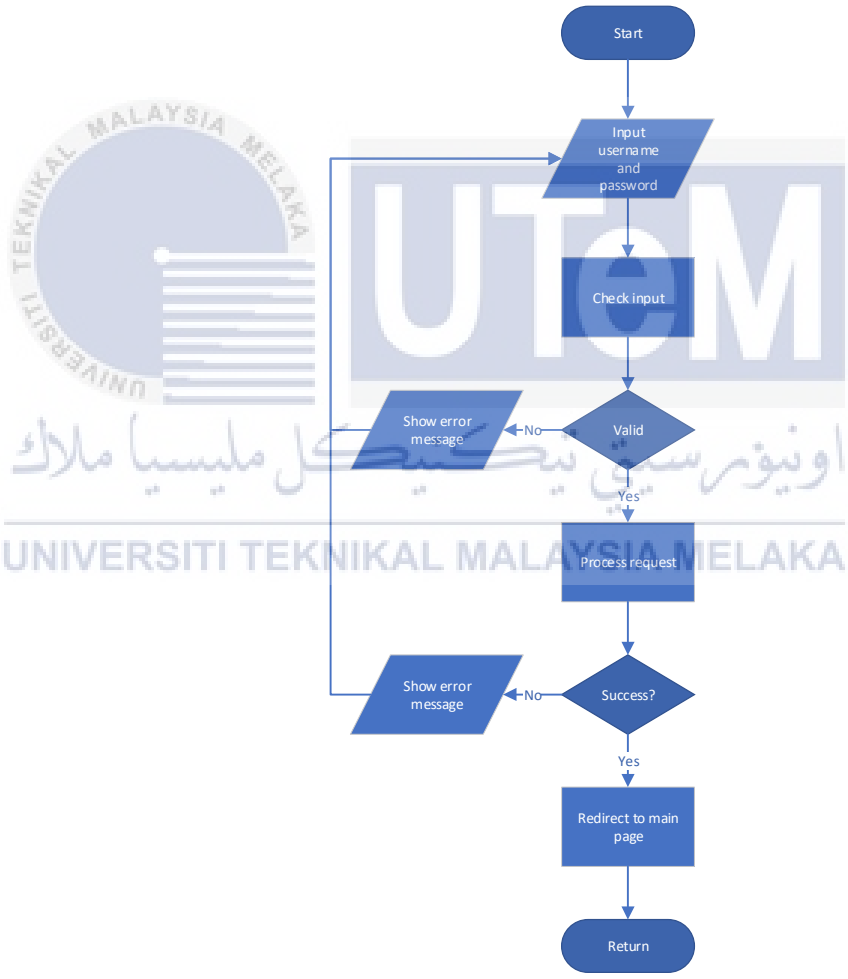


Figure 3.3: Flow chart for the login function

Figure 3.3 shows the process of login of the system. First, the user needs to enter the username and the password. Then when the user clicks the login, the system

will check whether the username field and the password field are filled, if not, the system will display an error message while if yes, the system will continue to check whether the username exists in the system. If no, the system will display an error message while if yes, the system will continue to check the password and whether the account is active, if the account password is wrong or the account is not yet active, the system will display an error message while both conditions are not valid then the system will redirect the user to the main page.

3.2.4 View Item Module

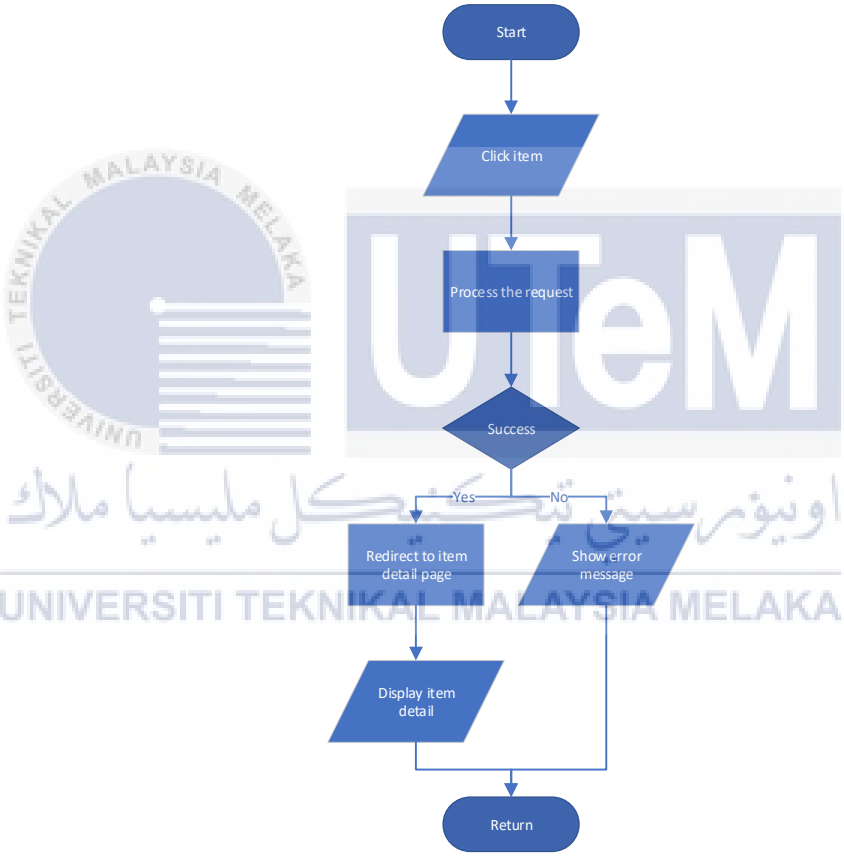


Figure 3.4: Flow chart for view item function

Figure 3.4 displays the process while the user wants to see the detail of an item. The user will first click the item and the system will check whether the item exists in the system if yes then redirect to the item detail page and display the detail of the item while if not system will display an error message.

3.2.5 Bidding Module

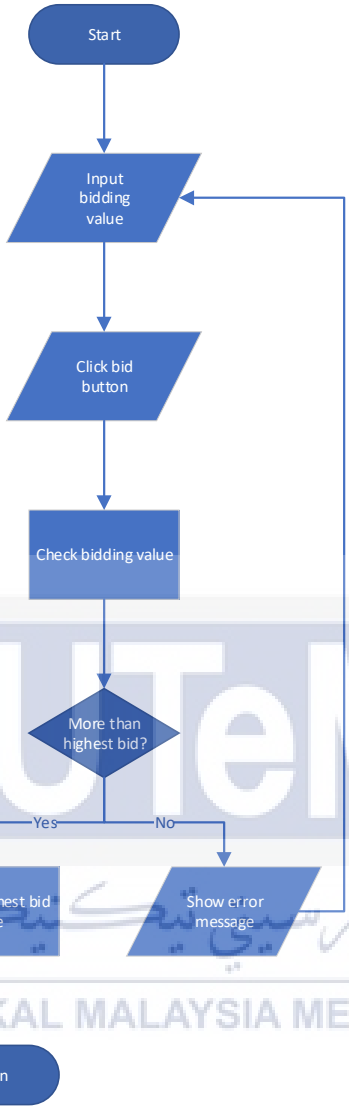


Figure 3.5: Flow chart for bidding function

Figure 3.5 displays the process of bidding function. The user needs to input a valid bid price and press the bid button. The system will then process the request and update it to the database. If the price input is lower than the current bid price, the system will display an error message.

3.2.6 Forget Password Module

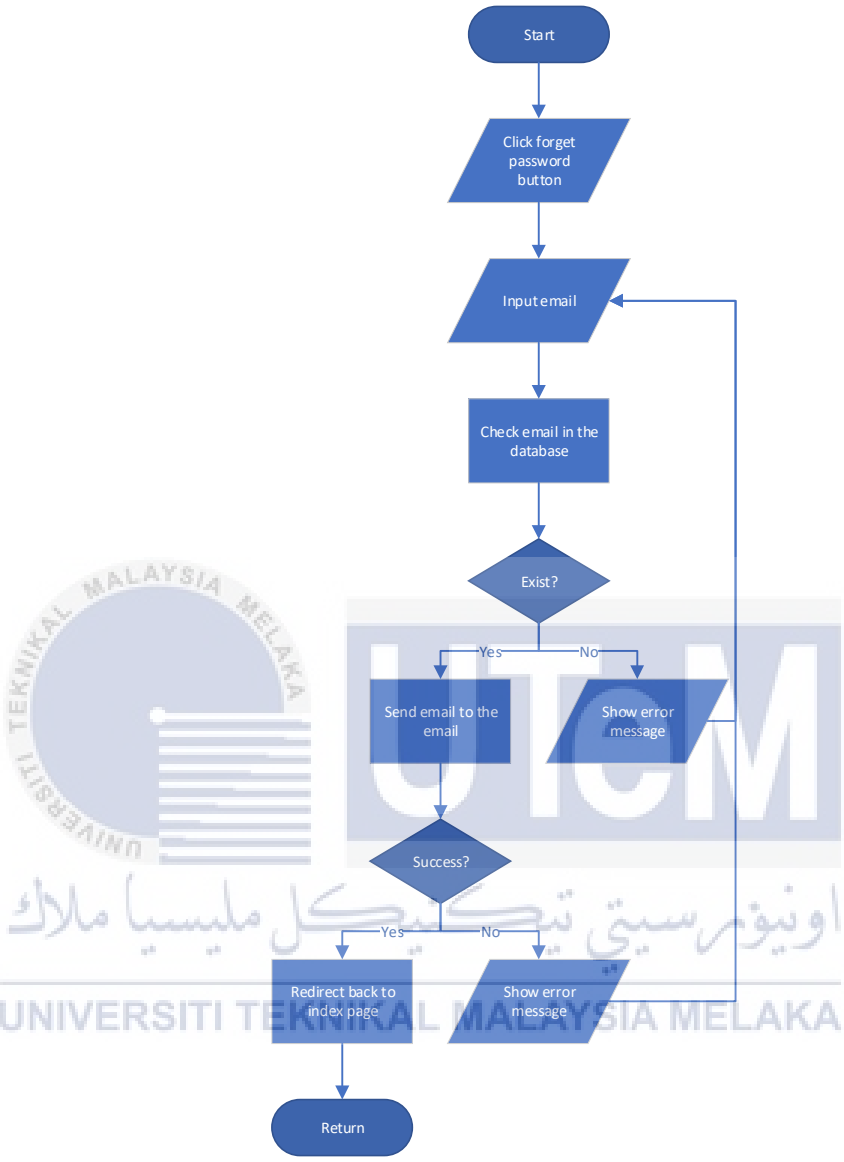


Figure 3.6: Flow chart for forget password function

Figure 3.6 displays the process for forget password function. The user will need to enter the email registered and press the reset now button. The system will then check whether the email exists in the system if the email exists in the system, then the system will send an email to the email address input while if not system will display an error message. In the email sent, the system has provided a link for the user to reset their password.

3.2.7 Profile Module

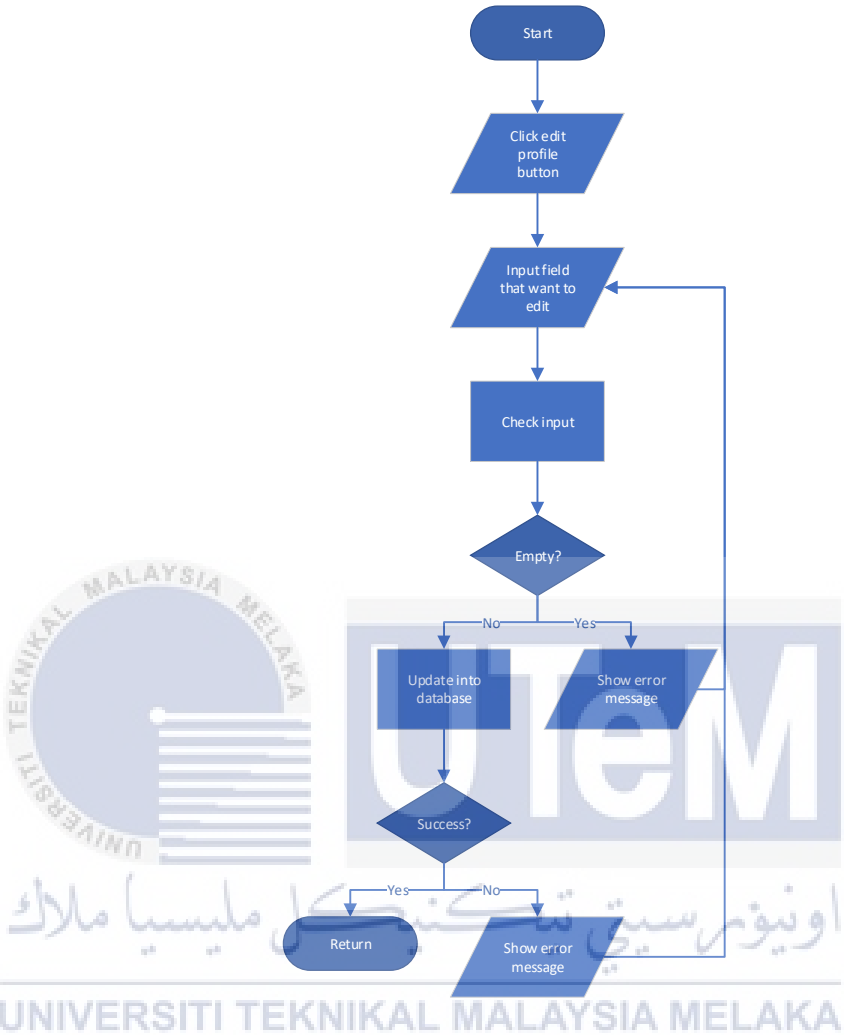


Figure 3.7: Flow chart for profile function

Figure 3.7 displays the profile function of the system. User can see the profile at the same time they also can edit their profile. After they press the edit profile button, they will require to input the new name or phone number, after they press the save now button, the system will validate the input whether is it empty if not the system will check whether the phone number exists in the system. If not the system will save the new personal information into the database.

3.2.8 Follow Seller Module

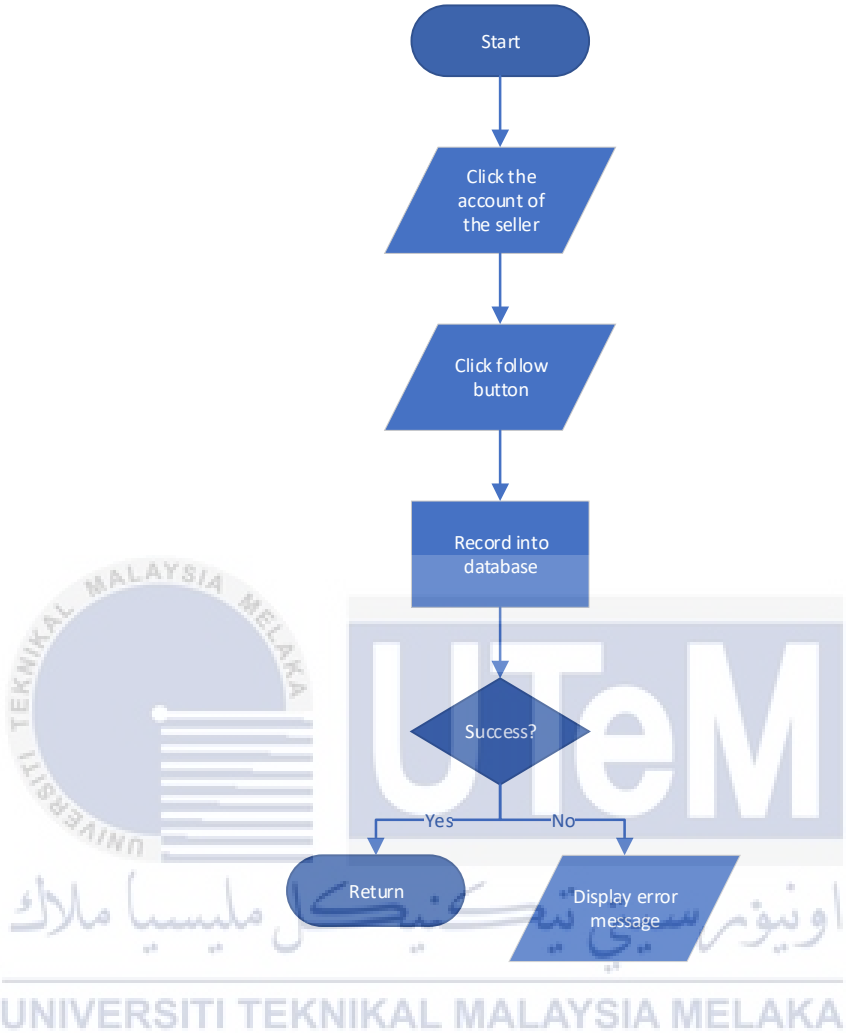


Figure 3.8: Flow chart for follow seller function

Figure 3.8 displays the follow seller process. The user just needs to press the follow button and then the system will record into the database.

3.2.9 Feedback and Rating Module

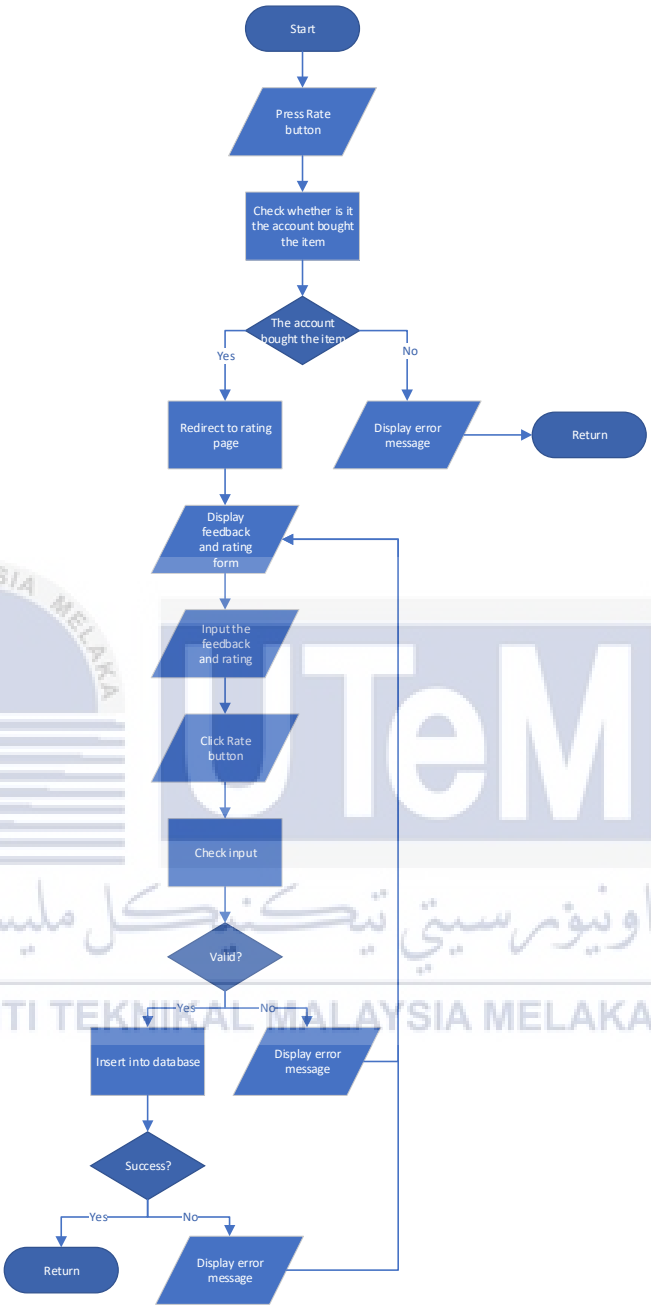


Figure 3.9: Flow chart for feedback and rating function

Figure 3.9 displays the feedback and rating process. Firstly, the system will check whether the item is successfully bid by the user then the user can input their rating and feedback. After that system will check whether the input is valid if the input is valid then the system will record the feedback and the rating into the database.

3.2.10 Add to Favourite Module

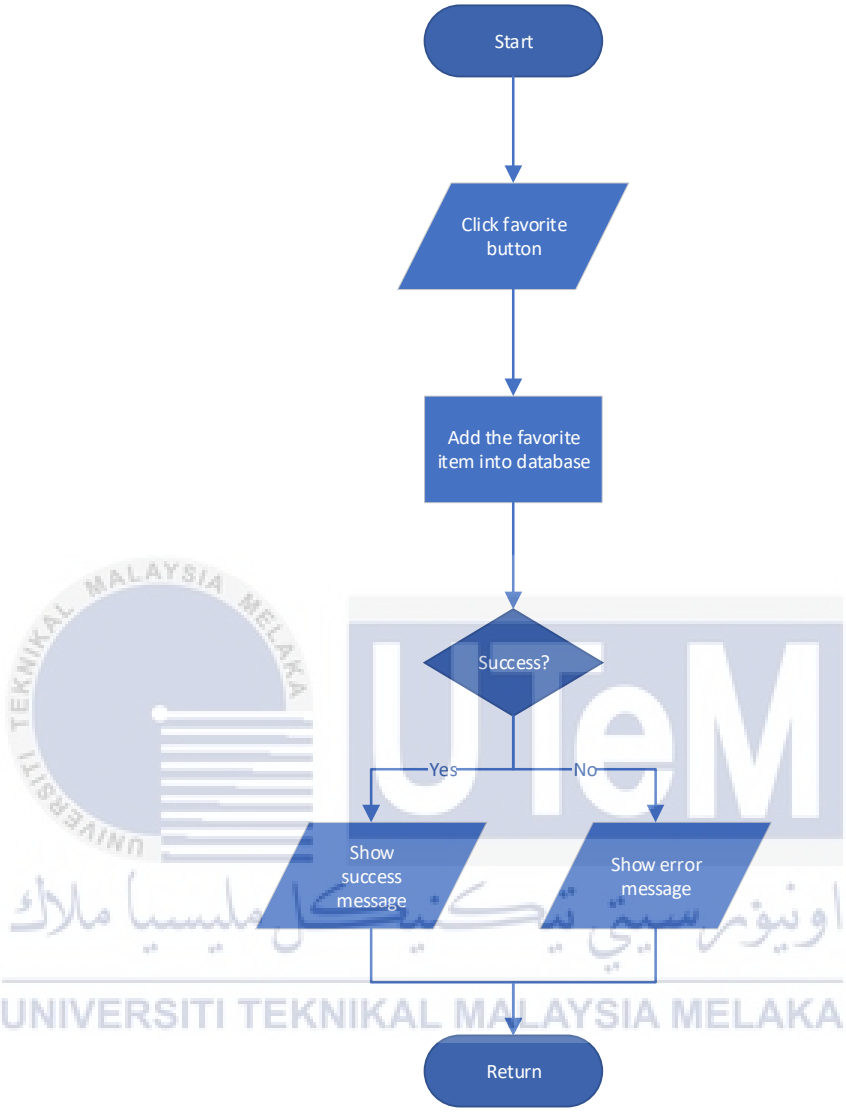


Figure 3.10: Flow chart for add to favourite function

Figure 3.10 displays the add to favourite process. When the user presses the add to favourite button, the system will check whether the item exists in the database. If yes then record the request into the database. If not, display an error message.

3.2.11 Recommender Module

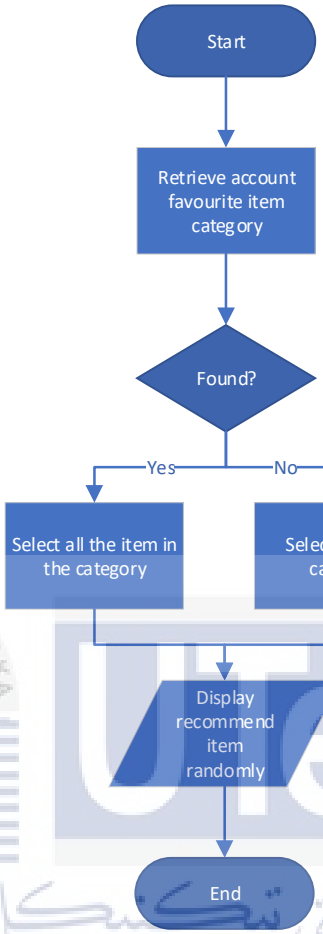


Figure 3.11: Flow chart for recommender function

Figure 3.11 displays the recommender process. This function run automatically when the user at the main page. The system will retrieve the categories of user favourite items and display them randomly, if the system cannot find any user favourite then the system will display the item from random categories.

3.2.12 Search Item Module

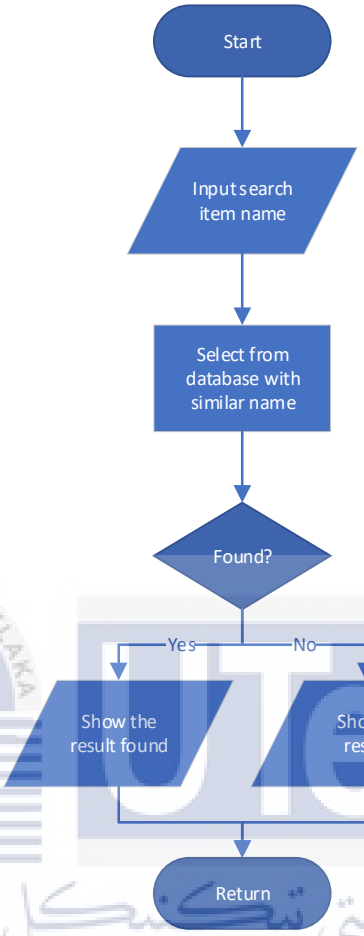


Figure 3.12: Flow chart for search item function

Figure 3.12 displays the search item process. When the user inputs the search name and presses the search button, the system will validate the name field whether it is empty or not if not, the system will find every item which name is similar to the subject being search by the user and if not found, the system will display 0 results.

3.2.13 Chat with Seller Module

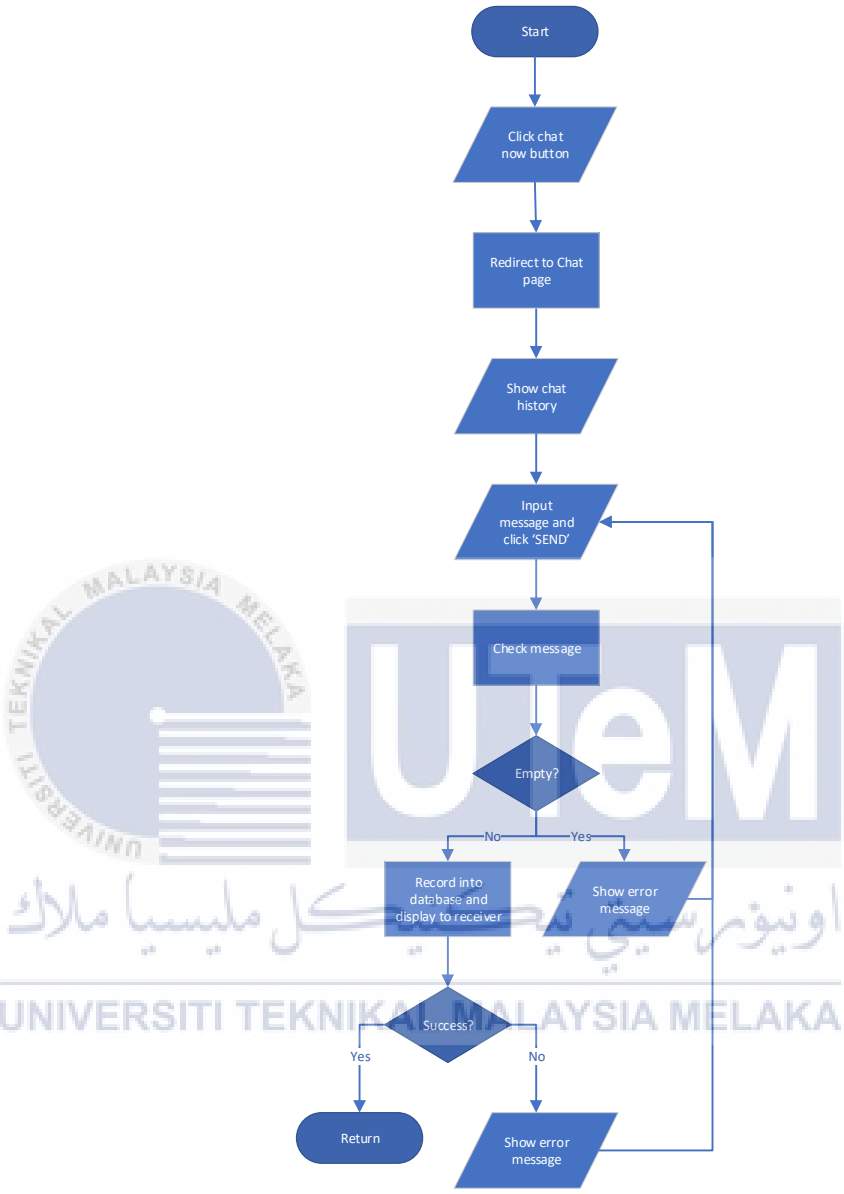


Figure 3.13: Flow chart for chat with seller function

Figure 3.13 displays the chat with seller process. The user needs to press the chat now button first. Then the system will redirect the user to the chat page and the user needs to input the message that they want to send and press the send button. The system will then validate the message field and if the input is valid then the system will record the message to the database. If the seller responds to the buyer, the website will update instantly without refresh the website.

3.2.14 Report Problem Module

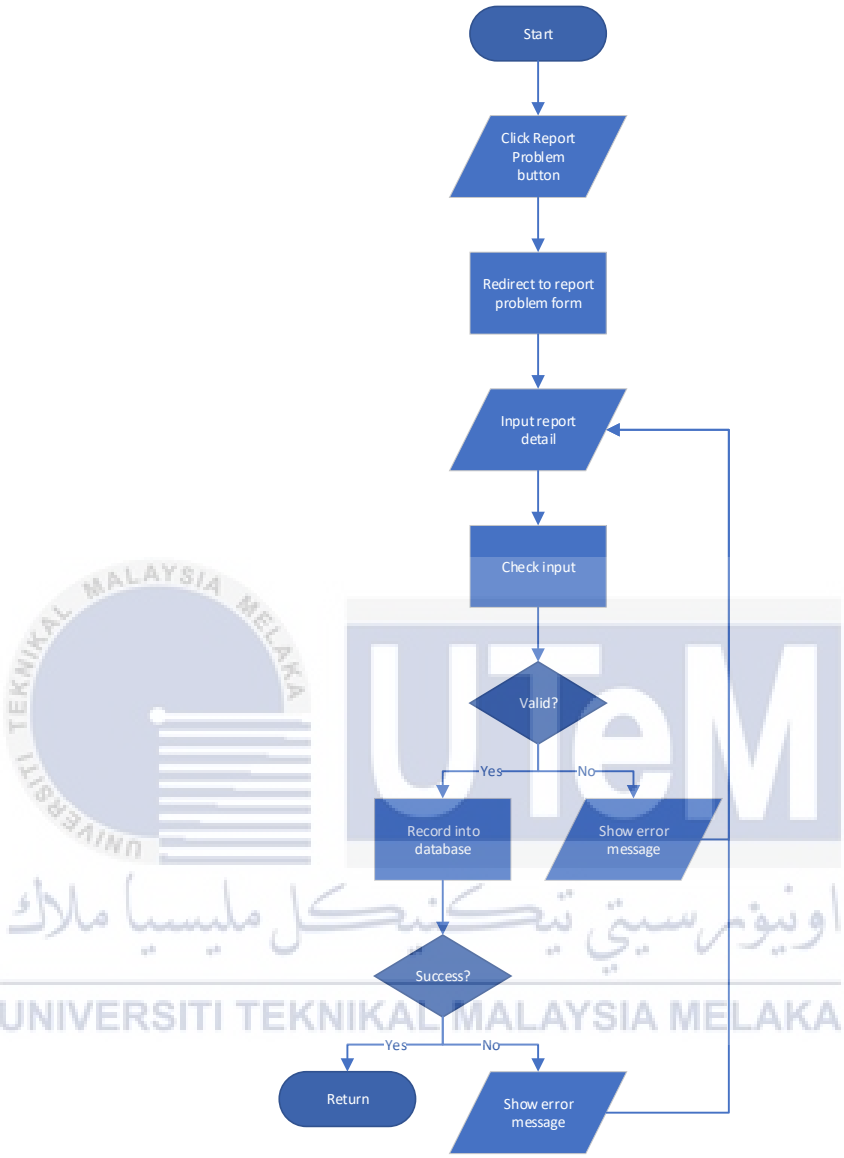


Figure 3.14: Flow chart for report problem function

Figure 3.14 displays the report problem process. The user needs to press the report problem button first. Then the user will require to input the screenshot which is optional and the problem title and problem description. When the user press send button, the system will check for user input and if everything is valid then the report will get recorded into the database.

3.2.15 Review Account Dashboard Module

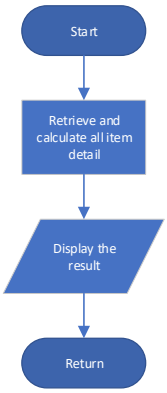


Figure 3.15: Flow chart for review account dashboard function

Figure 3.15 displays the review account dashboard process. This function will run automatically every time the user enters the seller center. The system will retrieve every information such as total follower, total item sold, total item bidding, and more in the dashboard.

3.2.16 Log out Module

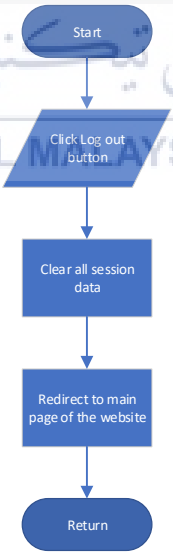


Figure 3.16: Flow chart for log out function

Figure 3.16 displays the log out process. When the user presses the logout button, the system will destroy the session and redirects the user back to the main page.

3.2.17 Review Feedback Module

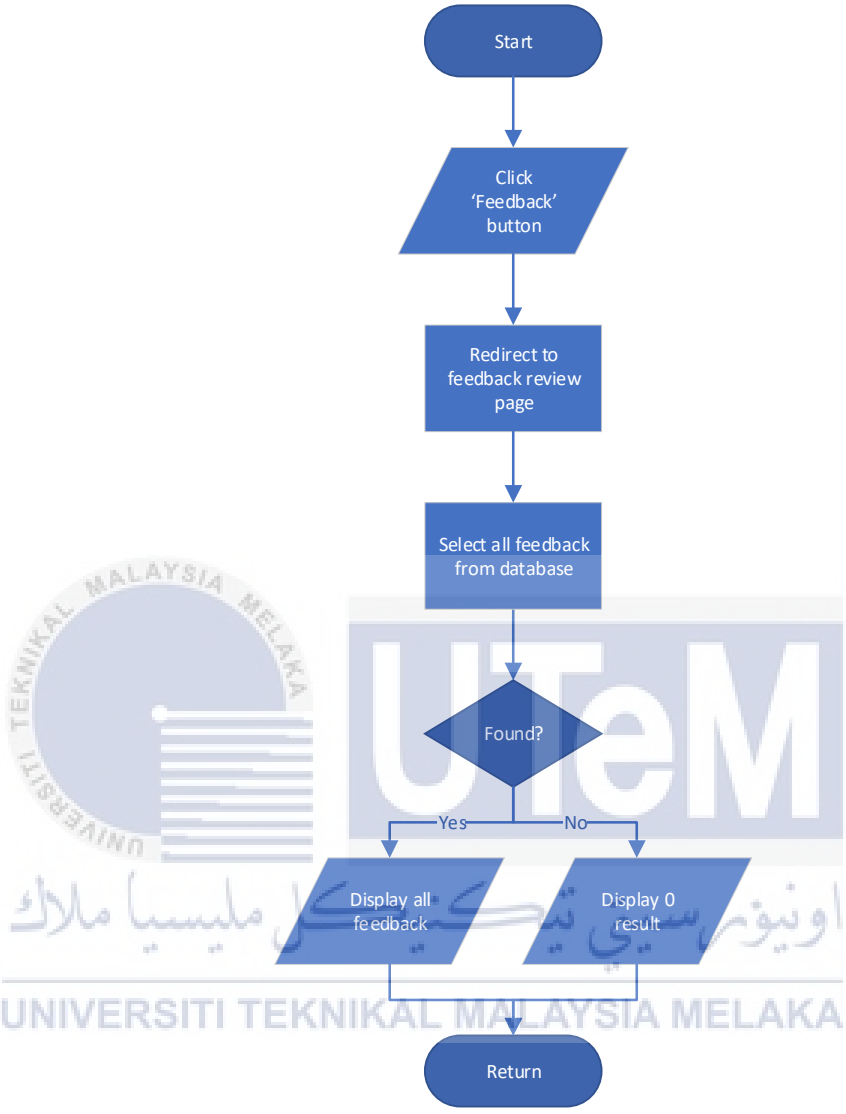


Figure 3.17: Flow chart for review feedback function

Figure 3.17 displays the review feedback process. This process starts when the user presses my feedback button. The system will redirect the user to the feedback page which displays all the feedback from the buyer. If there is no result found, then the system will display 0 results.

3.2.18 Manage Item Module

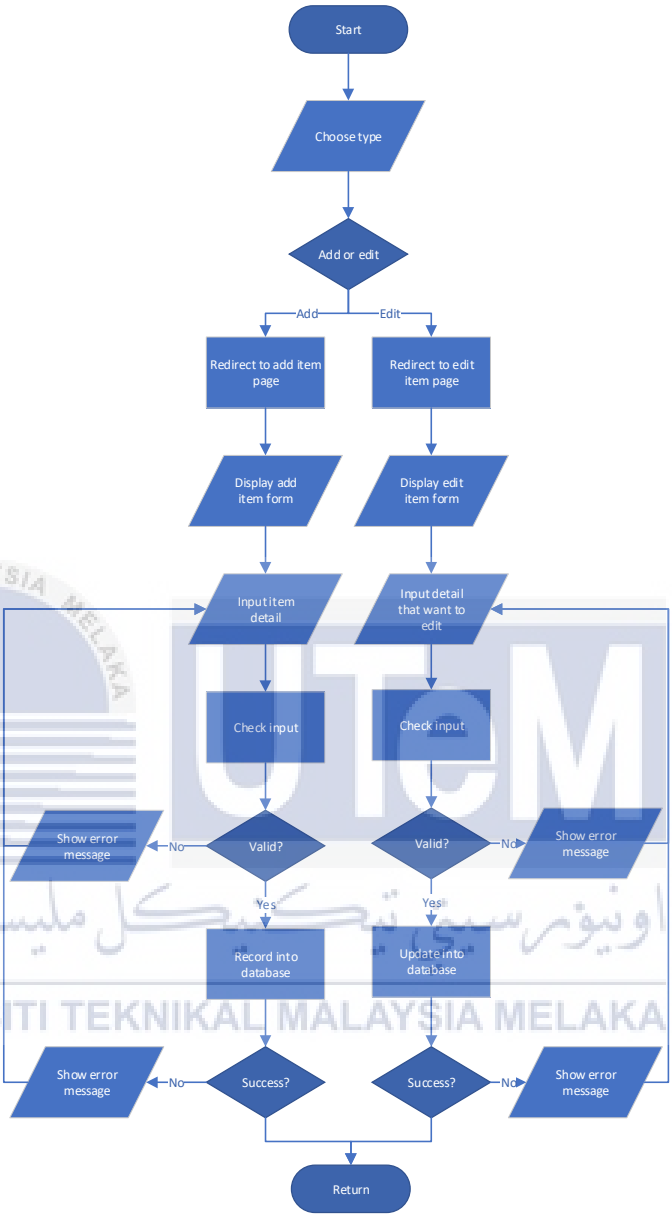


Figure 3.18: Flow chart for manage item function

Figure 3.18 displays the manage item process. This flowchart contains the process for add a new item and also edit an item. The user needs to input all the fields required to add or edit the item. When every field is valid then only the system will record the detail into the database, then the user also can add, edit, or delete the picture for the item.

3.2.19 Chat with buyer Module

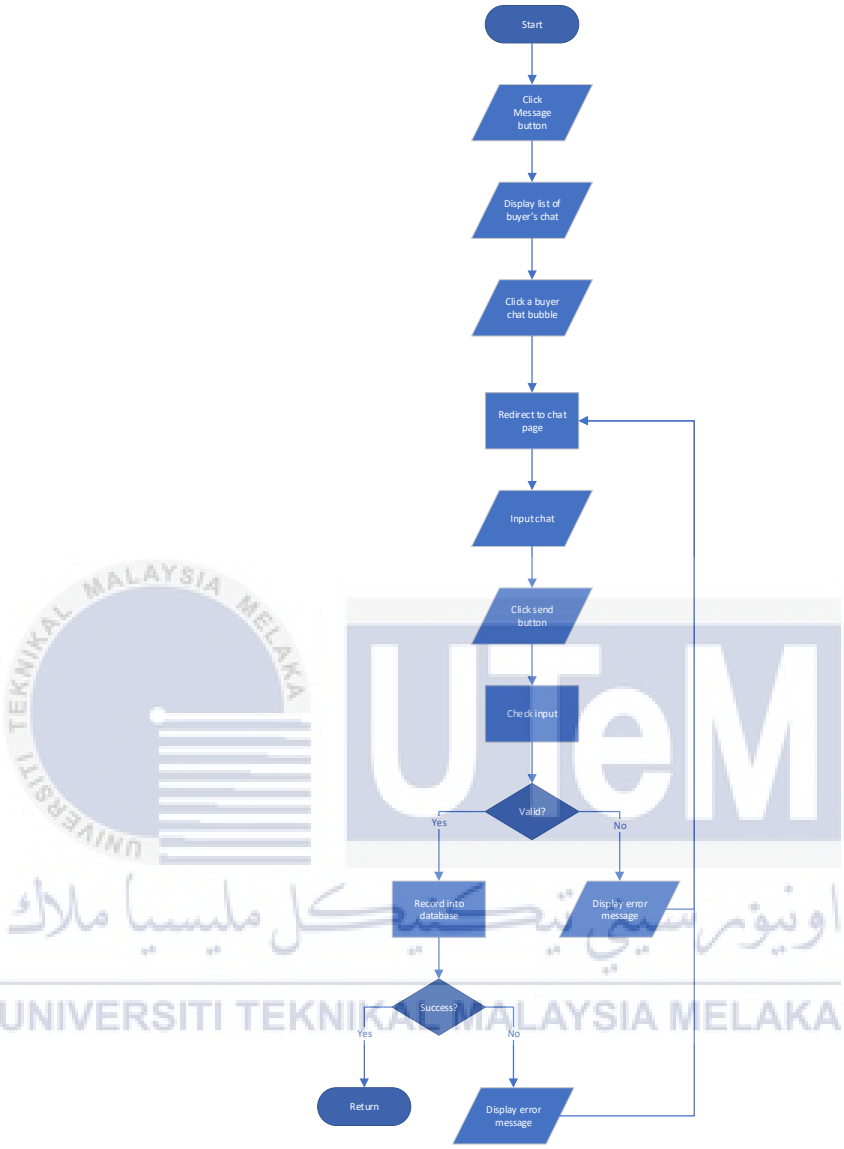


Figure 3.19: Flow chart for chat with buyer function

Figure 3.20 displays the chat with the buyer process. The seller can press the message button to be redirected to the chat list page which will display all the buyers who had sent a message to the seller. The seller can select the buyer to respond. The seller needs to input the message to be sent then press the send button. The system will validate the input and if the input is valid then the system will record the message into the database.

3.2.20 Manage account Module

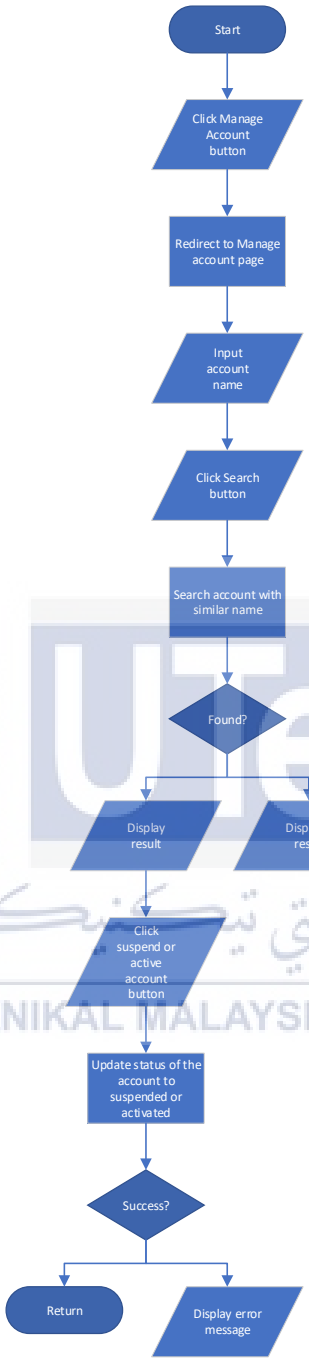


Figure 3.20: Flow chart for manage account function

Figure 3.21 displays the manage account process. Staff can suspend the account if anyone reports the account is a fake account or scam. The system will display a list of accounts based on the input of staff.

3.2.21 Review Report Submission Module

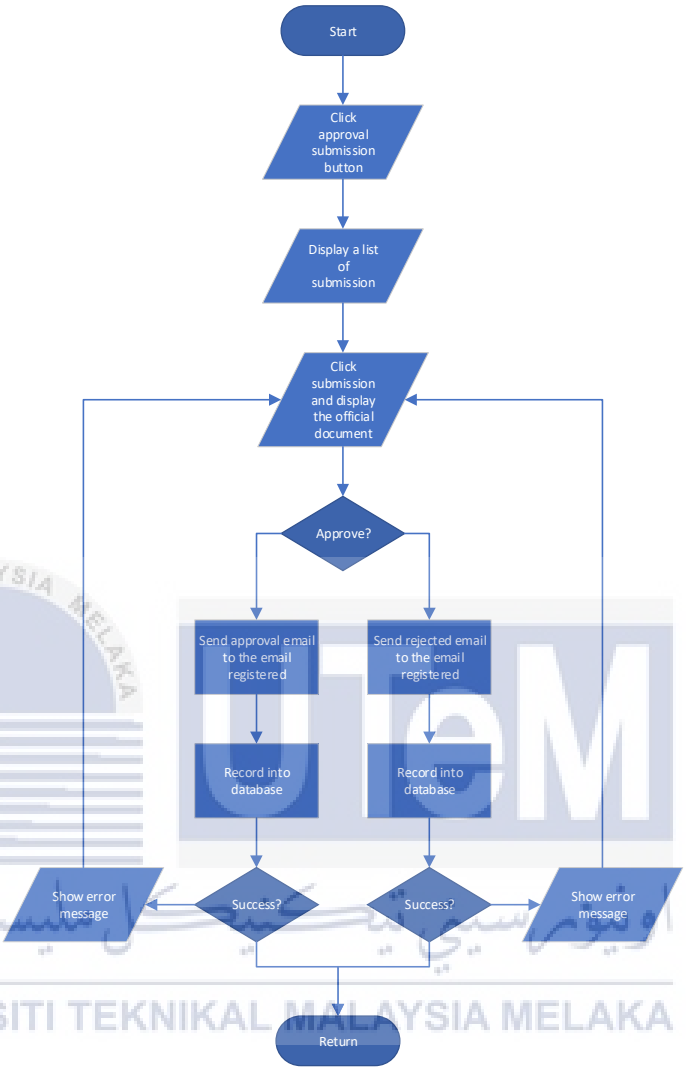


Figure 3.21: Flow chart for review report submission function

Figure 3.22 displays the review report submission process. The staff will see a list of report submissions from the customer. And the staff can decide whether to accept the submission or reject the submission. Both of the selection will initiate the system to send an email to the customer to tell he or she the result.

3.2.22 Review System Dashboard Module

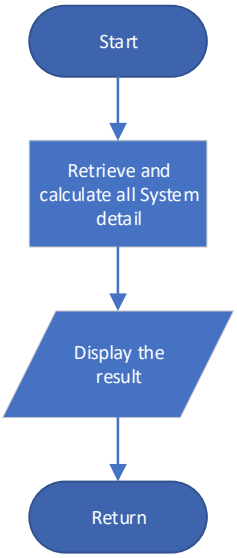


Figure 3.22: Flow chart for review system dashboard function

Figure 3.23 displays the review system dashboard process. This flow chart will initiate automatically every time the admin enters the main page. The system will retrieve every piece of information and display it in the dashboard.

3.2.23 Generate Report Module

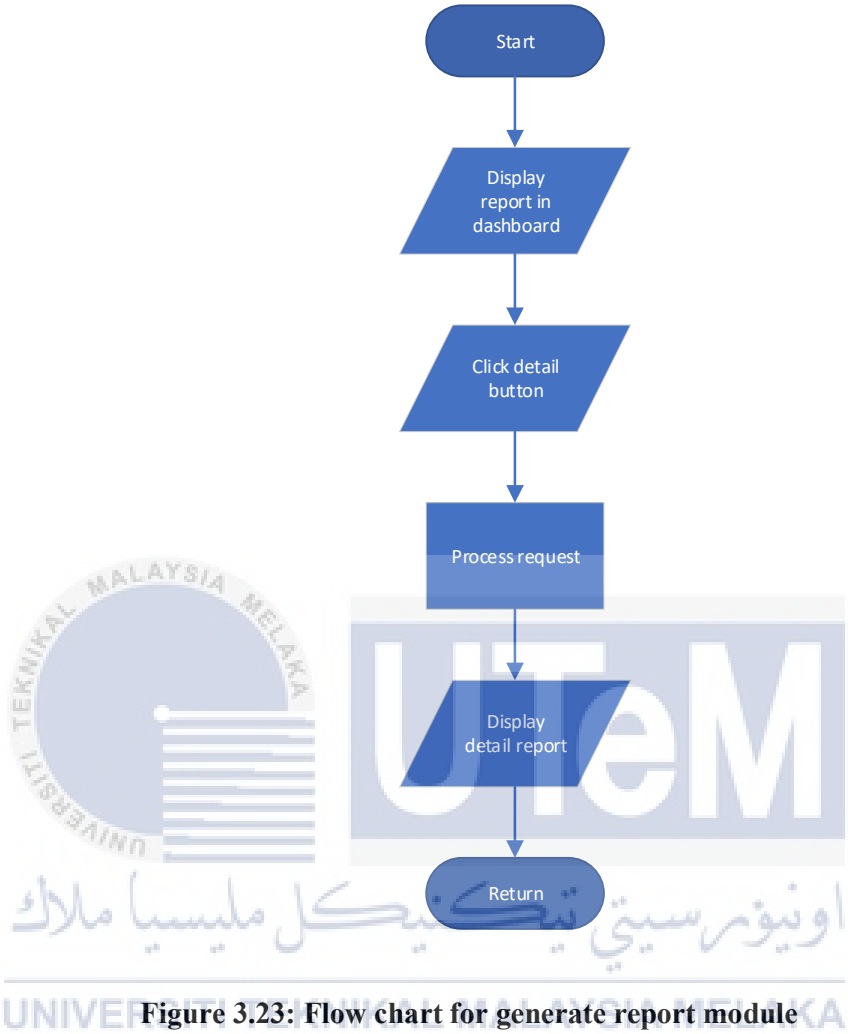


Figure 3.23: Flow chart for generate report module

Figure 3.24 displays the generate report process. Admin will need to press the detail button in the dashboard. The system will redirect the admin to the detail report page which will display the detail report to the admin based on the field admin presses.

3.2.24 Manage Staff Module

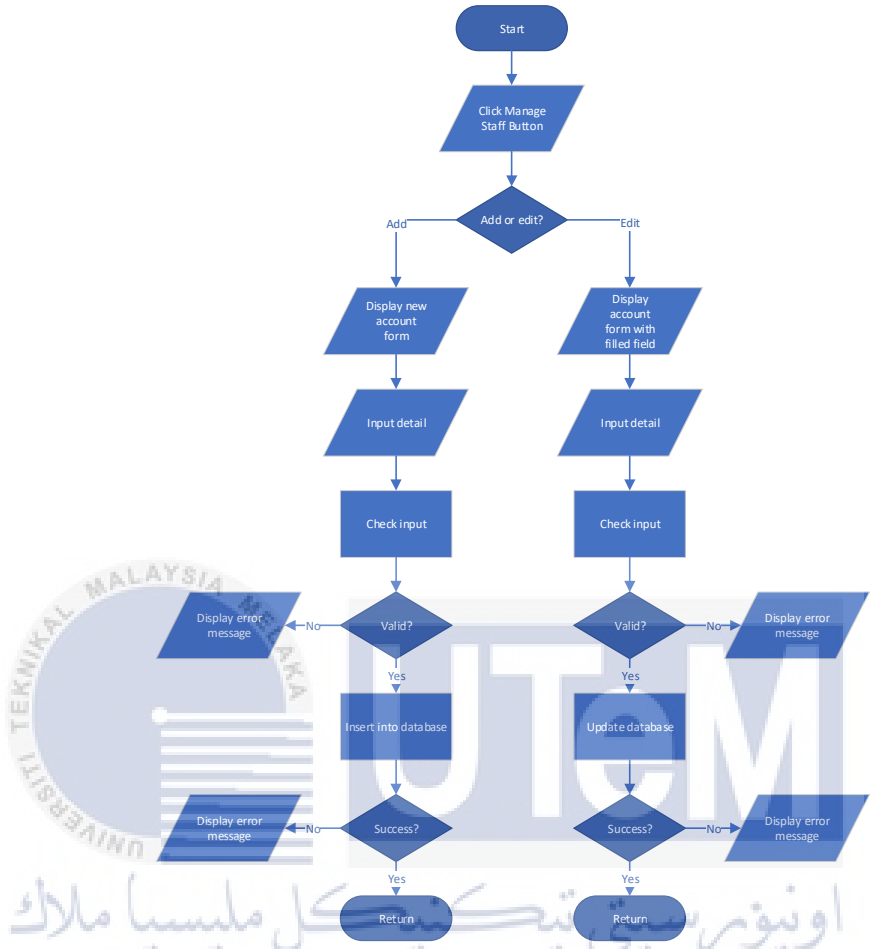


Figure 3.24: Flow chart for the manage staff function

Figure 3.25 displays the manage staff process. Admin can add, edit or de-active the staff account. To add and edit staff, the admin needs to input all required fields. The system will validate the input and if all input is valid system will record it into the database. If the admin presses the de-active or active button, the system will active or de-active the account.

3.3 Requirement Analysis

3.3.1 Data Requirement

Table 3.1: Data Dictionary of the system

address					
Column	**Type**	**Null**	**Default**	**Links to**	**Comments**
addressID *(Primary)*	int(11)	No			
userID	int(11)	No	user -> userID		
name	varchar(255)	No			
phone_number	varchar(255)	No			
address1	varchar(255)	No			
address2	varchar(255)	No			
city	varchar(255)	No			
postcode	varchar(5)	No			
state	varchar(255)	No			
bidding					
Column	**Type**	**Null**	**Default**	**Links to**	**Comments**

biddingID (Primary)	int(11)	No			
itemID	int(11)	No		item -> itemID	
bidderID	int(11)	No	NULL	user -> userID	
start_date	date	No			
end_date	date	No			
current_bid	double	No	0		
bidding_status	varchar(255)	No	pending		
system_pay	tinyint(1)	No			
payment_method	varchar(255)	No	NULL		
address	varchar(255)	No	NULL		
note	varchar(255)	No	NULL		
success	tinyint(1)	No	NULL		
reason	varchar(255)	No	NULL		
Notification_status	Tinyint(1)	No	0		

bidding_history

Column	**Type**	**Null**	**Default**	**Links to**	**Comments**
historyID (Primary)	int(11)	No			
bidderID	int(11)	No		user -> userID	

itemID	int(11)	No		item -> itemID	
bid_price	double	No			
category					
Column	**Type**	**Null**	**Default**	**Links to**	**Comments**
categoryID (Primary)	int(11)	No			
category_name	varchar(255)	No			
unlisted	tinyint(1)	No	0		
delivery					
Column	**Type**	**Null**	**Default**	**Links to**	**Comments**
deliveryID (Primary)	int(11)	No			
biddingID	int(11)	No		bidding -> biddingID	
courier_name	varchar(255)	No			
tracking_number	varchar(255)	No			
favourite					
Column	**Type**	**Null**	**Default**	**Links to**	**Comments**
favouriteID (Primary)	int(11)	No			

userID	int(11)	No		user -> userID	
itemID	int(11)	No		item -> itemID	

feedback

Column	**Type**	**Null**	**Default**	**Links to**	**Comments**
feedbackID (Primary)	int(11)	No			
buyerID	int(11)	No		user -> userID	
sellerID	int(11)	No		user -> userID	
itemID	int(11)	No		item -> itemID	
rating	int(11)	No			
feedback	varchar(255)	No			

follow

Column	**Type**	**Null**	**Default**	**Links to**	**Comments**
followID (Primary)	int(11)	No			
sellerID	int(11)	No		user -> userID	
followerID	int(11)	No		user -> userID	

item

Column	Type	Null	Default	Links to	Comments
itemID (Primary)	int(11)	No			
sellerID	int(11)	No		user -> userID	
item_name	varchar(255)	No			
item_description	varchar(255)	No			
item_start_price	double	No			
item_quantity	int(11)	No			
item_category	int(11)	No		category -> categoryID	
item_condition	varchar(255)	No			
item_website	varchar(255)	No	NULL		
item_duration	int(11)	No			
item_status	Tinyint(1)	No	1		

item_picture

Column	Type	Null	Default	Links to	Comments
pictureID (Primary)	int(11)	No			
itemID	int(11)	No	item -> itemID		
picture_name	varchar(255)	No			

messages					
Column	**Type**	**Null**	**Default**	**Links to**	**Comments**
messageID (Primary)	int(11)	No			
senderID	int(11)	No		user -> userID	
receiverID	int(11)	No		user -> userID	
msg	varchar(255)	No			
send_time	varchar(255)	No	current_timestamp()		

report					
Column	**Type**	**Null**	**Default**	**Links to**	**Comments**
reportID (Primary)	int(11)	No			
userID	int(11)	No		user -> userID	
report_title	varchar(255)	No			
report_description	varchar(255)	No			
report_category	varchar(255)	No			
report_time	datetime	No	current_timestamp()		
screenshot	varchar(255)	No	NULL		
report_status	tinyint(1)	Yes	NULL		
handled_by	int(11)	No	NULL	user -> userID	

sellerID	int(11)	Yes	NULL		
itemID	int(11)	Yes	NULL		
user					
Column	**Type**	**Null**	**Default**	**Links to**	**Comments**
userID (Primary)	int(11)	No			
username	varchar(255)	No			
password	varchar(255)	No			
firstName	varchar(255)	No	NULL		
lastName	varchar(255)	No	NULL		
email	varchar(255)	No	NULL		
phone_number	varchar(255)	No	NULL		
account_balance	double	No	0		
verification_key	varchar(255)	No			
verification_status	varchar(255)	No			
account_type	varchar(255)	No			
profile_picture	varchar(255)	No	NULL		
decline_time	int(11)	No	3		

Table 3.1 shows the data dictionary of the Online Bidding System. The database consists of 13 tables.

3.3.2 Functional Requirement

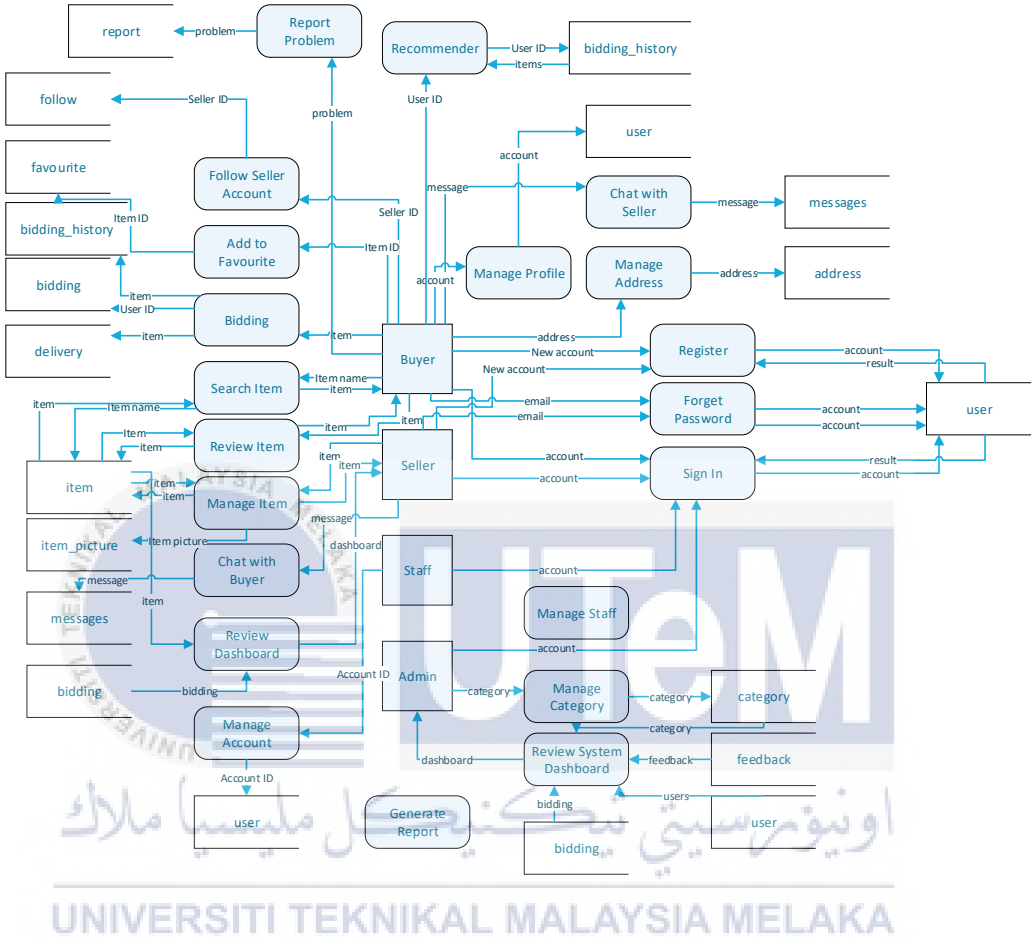


Figure 3.25: Data Flow Diagram of the system

Figure 3.25 show the data flow diagram of Online Bidding System which consist of 4 type of user which is the administrator, staff, seller and the buyer. Each actor is linked to their functionality.

3.3.3 Non-functional Requirement

- Each page must load within 2 seconds.
- Only the account type is staff or admin can enter staff page or admin page respectively.
- An unauthorized account should not able to enter the page that required authorized permission such as without login, the user cannot enter the home page or my bid list page.
- The system should be able to operate 24/7 basis.
- The system should achieve 99% uptime.
- All private information such as password or profile picture name should be hash or rename to ensure confidentiality.
- Only an account that receives a reset password email can reset the password, users without the email will not allow resetting their account password.
- The system should be able to handle multiple users at the same time.
- The system should update instantly the bid price and the chatting session.
- All monetary amounts must be accurate to two decimal places.
- The system should be user-friendly to the adult members (age 18 or more) of the public.
- The system should be displayed on a large screen laptop or a small screen smartphone.

3.3.4 Other Requirement

- This system needs a browser to function.
- This system required an active internet connection to be able to function.

3.3.5 Conclusion

In conclusion, the analysis of the proposed system has been made and all of the requirements have been identified.

CHAPTER 4: DESIGN

4.1 Introduction

This chapter defines the result of the analysis of the preliminary design and the result of the detailed design.

4.2 High-Level Design

4.2.1 System Architecture

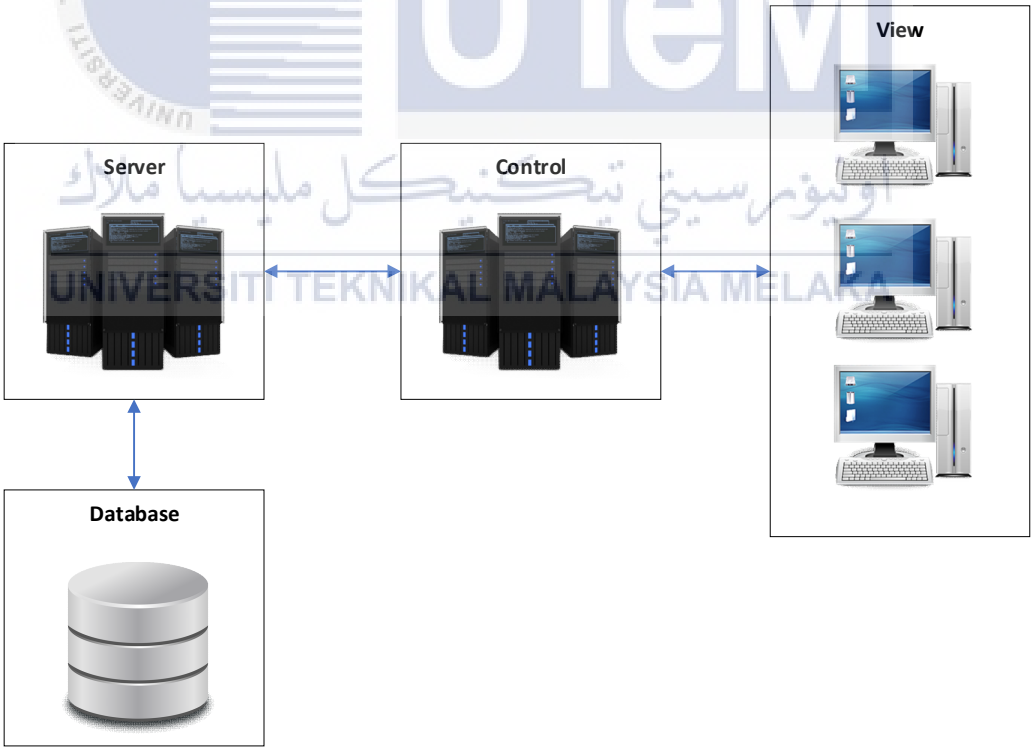


Figure 4.1: System Architecture of the system

Figure 4.1 displays the system architecture of the Online Bidding System. When a user uses their computer to enter the system. The computer will send a request to the control system and the control system will check the request and will process the request and send it to the server. The server will then process the request and if the request required the use of data from the database, the server will then get the data from the database and send back the requested data to the control system. The Control system will then send the data back to the user.

4.2.2 User Interface Design

4.2.2.1 Login Page

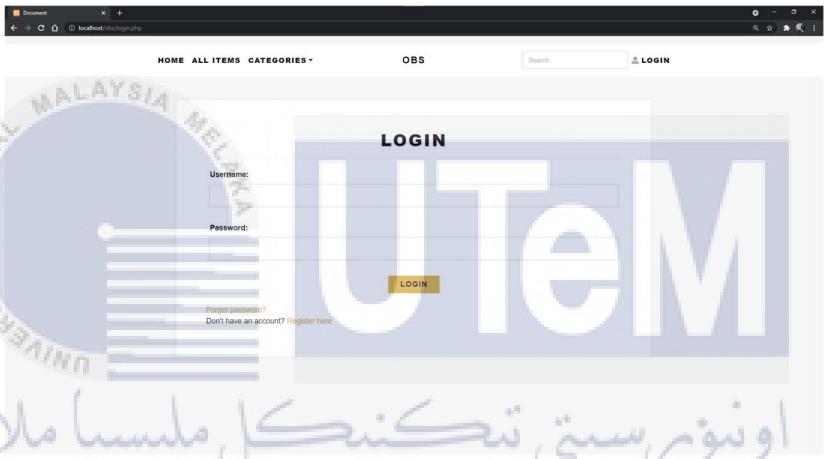


Figure 4.2: Login page of the system

Figure 4.2 shows the login page of the system. User needs to enter their username and password in both fields and press the login button to log into the system. If one of the fields or both fields are empty, the system will display an error message.

4.2.2.2 Register Page

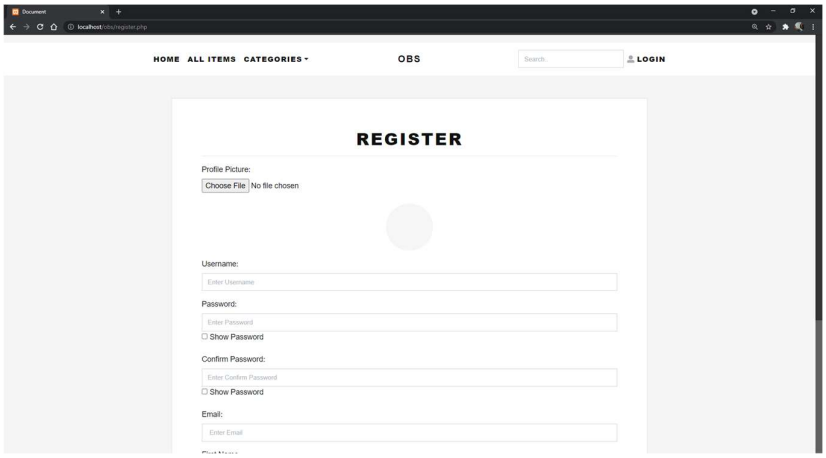


Figure 4.3: Register page of the system

Figure 4.3 shows the register page of the system. The user is required to enter all the information required for every field except the profile picture because it is optional. The user also needs to fulfill the requirement for the password format and email format. After every field is filled, the user will need to press the register button to register their account. The system will verify every field and if all fields are verified and all input is valid, then the system will send a verification email to the email registered. If one or multiple fields are empty, the system will display an error message.

4.2.2.3 View item page

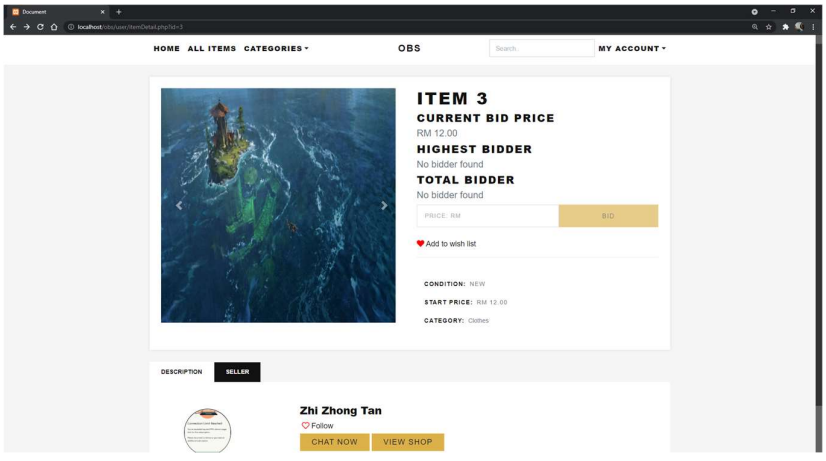


Figure 4.4: View item page of the system

Figure 4.4 shows the view item page of the system. This page will display the item's name, item's current bid price, highest bidder, total bidder, and more. If the user wants to bid for the item, then the user will need to insert the bid price in the bid price field and click the bid button. If the bid price inserted is lower than the current bid price, the system will display an error message. They can also click the add the item to the wish list by clicking the add to wish list button. Under the seller section, they can click the follow button to follow the seller. By clicking the chat now button, they can chat with the seller to know more about the item.

4.2.2.4 Profile page

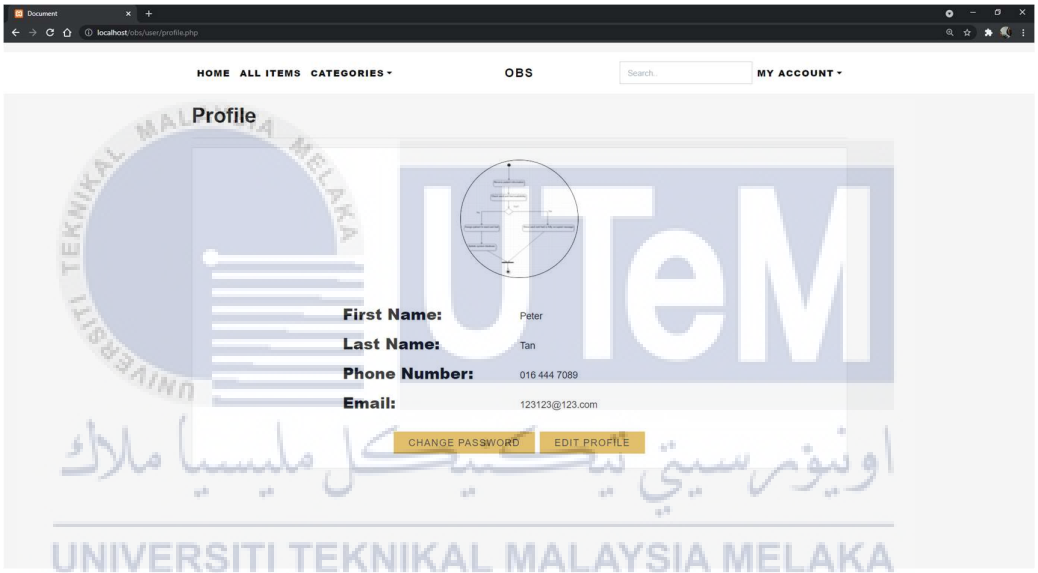


Figure 4.5: Profile page of the system

Figure 4.5 shows the profile page which will allow the user to see their account details. If they want to edit the details, they will be required to press the edit profile button.

4.2.2.5 Item list page

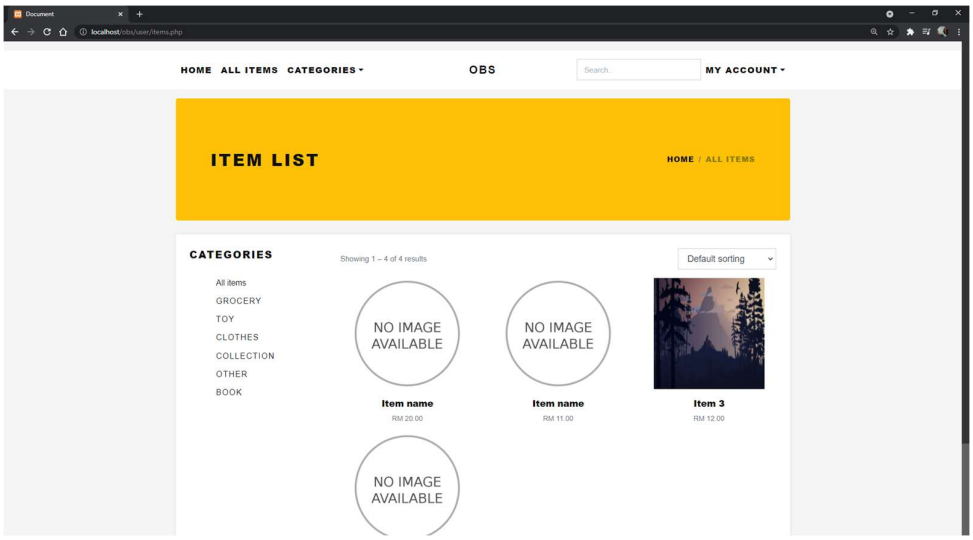


Figure 4.6: Item list page of the system

Figure 4.6 shows the item list page of the system. Users can see the all available items on this page. And they can sort the item based on the price and the popularity by choosing in the top-right selection box. They can also click the categories on the sidebar to display only certain categories of items. They can search for an item or a seller by using the search bar in the top navigation bar.

4.2.2.6 My bid list page

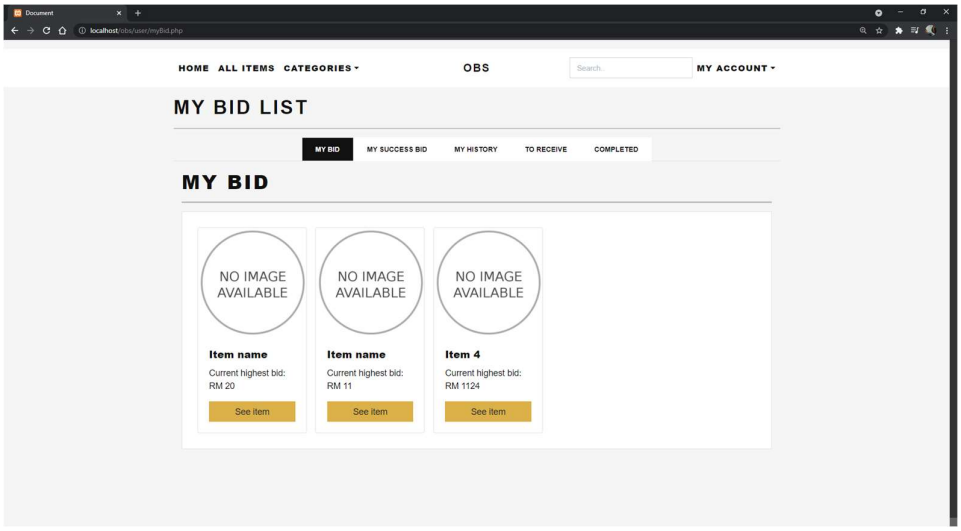


Figure 4.7: My bid list page of the system

Figure 4.7 shows my bid list page of the system. Users can see their current bidding items, success bid items, history, to receive, and completed page. They can switch the pages by clicking the tab and the page will be changed.

4.2.2.7 Admin page

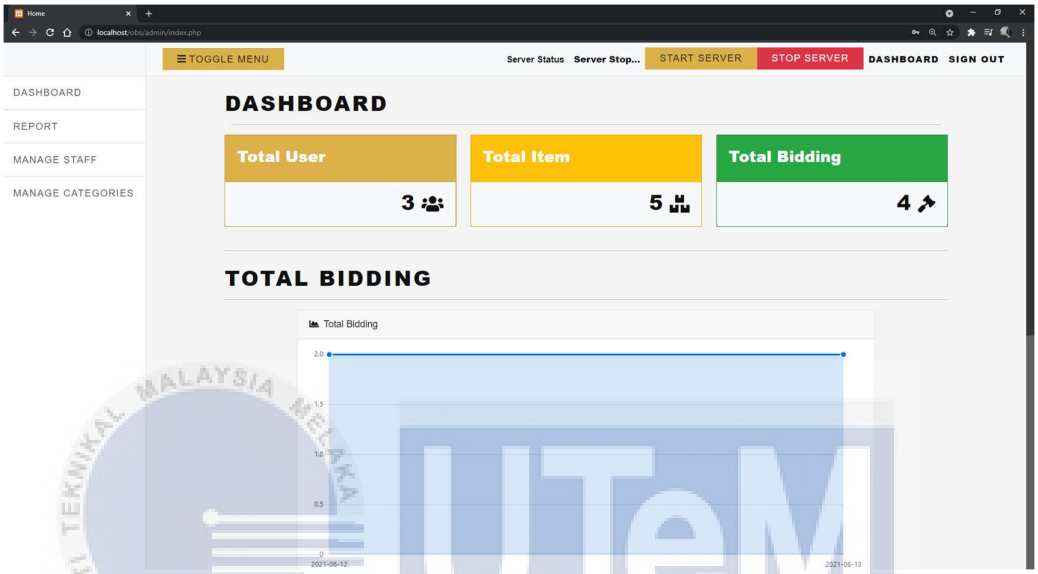


Figure 4.8: Admin page of the system

Figure 4.8 display the admin page of the system. Admin can see the overall system detail on this page such as total user, total item, total bidding, and more. Admin can also see a more detailed report by clicking the report in the left sidebar to navigate to that page. Admin can also manage the staff and manage the categories. Admin needs to click the start server button on the top navigation bar to start the server. The server will then constantly check for the date of every bidding and change the status of the bidding to either start or end. When the bidding ends, the system will then send an email to the bidder with the highest bid price to notify them.

4.2.3 Database Design

4.2.3.1 Conceptual and Logical Database Design

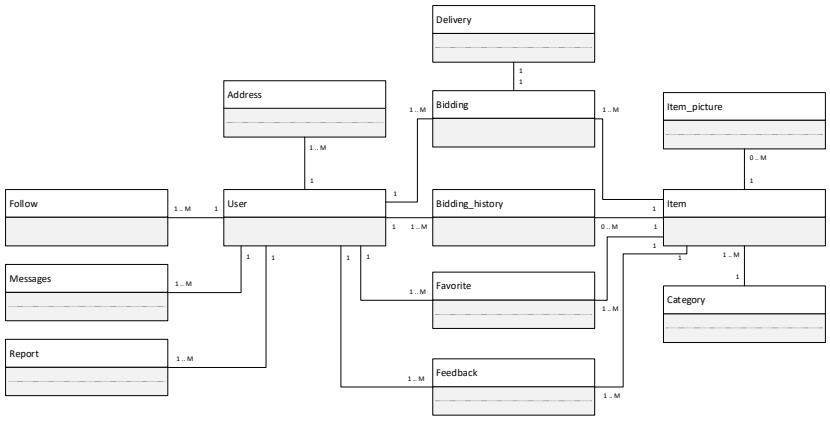


Figure 4.9: Conceptual Data Model of the system

Figure 4.9 displays the conceptual data model of the system. The online Bidding System consists of 13 tables and the relationship between each table is shown in Figure 4.9.

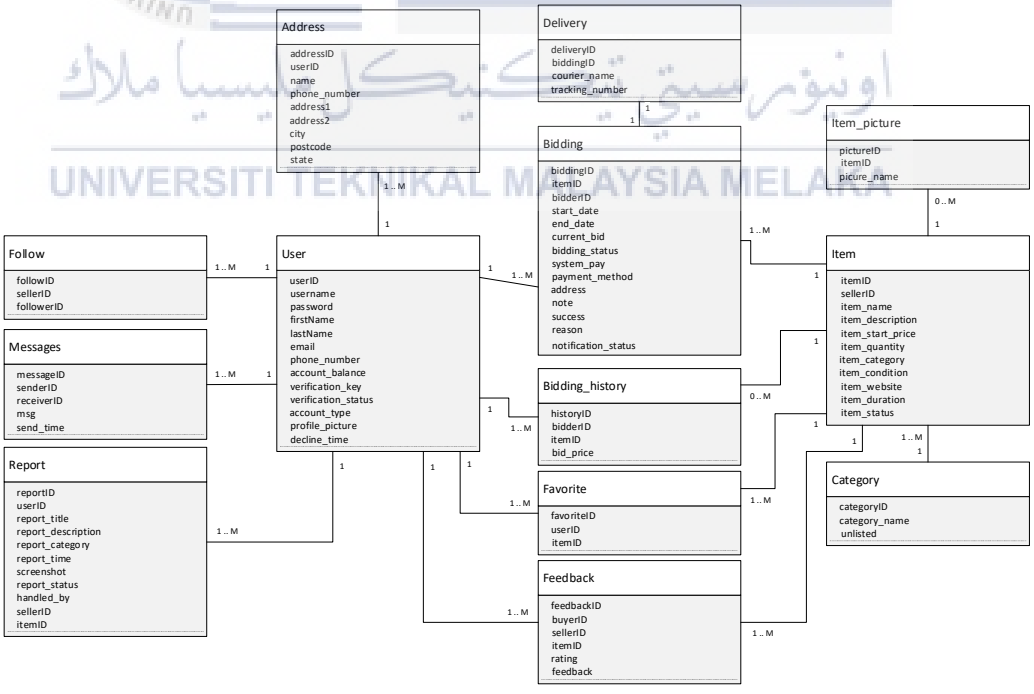


Figure 4.10: Logical Data Model of the system

Figure 4.10 shows the logical data model of the system. This logical data model displays all the attributes used in all of the tables. Some of the attributes will set cannot be null because some data will only be recorded into the system after the bidding process is ended. All IDs in all tables will be unique and cannot be null.

4.3 Detailed Design

4.3.1 Software Design

4.3.1.1 Authentication

(a) Login

Process name : Login

Objective : To provide a standard gateway for the user to enter the system and this process will verify the username, password, and account status before the user enters the system.

The process of the login is as below:

1. User is required to input their username and the password for that username in the username field and the password field.

2. The system will then validate the input field to check whether the input is valid or not, if valid the system continues to check the existence of the account by checking the username inside the database.

3. If the account exists in the system and the password is correct, the system will then check the account status whether it is active, inactive, or suspended. If the account is active and the account type is user then the system will redirect the user to the user home page, or else if the account type is staff, the system will redirect the user to the staff home page, or else if the account type is admin, system will redirect the user to the admin home page.

4. The system will restrict the total characters being input, the user is allowed to input only 20 characters in the username field and also the password field. Moreover, both of the fields are not allowed to be empty.

Figure 4.11: Data flow for process Log in

(b) Register

Process name : Register

Objective : To provide a standard way for the user to register to the system to log in to the system.

The process of the register is as below:

1. The user is required to input the username, first name, last name, email, password, phone number, and insert their profile picture which is optional.

2. The system will check whether the input fields are valid or not. If all of the input fields are valid, the system will then check whether the username, email, and phone number have already existed in the database.

3. If the username, email, or phone number already exists in the system then the system will display an error message to prompt the user to use another username, email, or phone number.

4. If the username, email, and phone number are allowed to use, then the system will insert the account into the database and send a verification email to the email registered. The user will be required to verify their account through the email sent to able to log into their account.

5. The system will restrict the number of characters that input in every text field. In addition, the password must include a capital character, a small character, and a number. It also must more than eight characters. The confirmed password also will need to be the same with the password being input.

6. The email field also will have restrictions such as the input only accept the format xxx@xxx.com, @ and .com, or others must include in the email field.

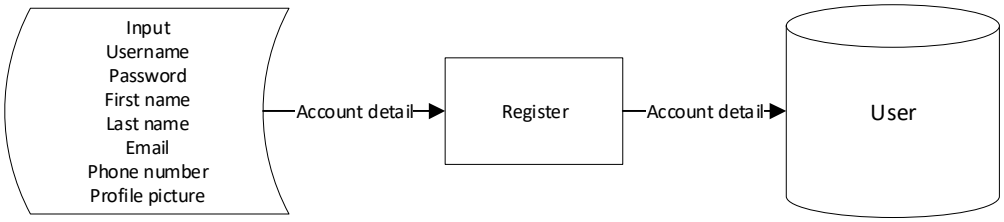


Figure 4.12: Data flow for process Register

(c) Forget/Change password

Process name : Forget/Change password

Objective : To provide a way for the user that forgets their password to change their password or those who wanted to change their password.

The process of forget/change password is as below:

1. The user is required to input the username of their account while for those who want to change their password. This step can be skipped.

2. After the system confirmed there is the existence of the account then the system will send an email to the email being registered with that account.

3. User can change their password using the link sent in the email. The password requirement is the same as the registration. It must include a capital character, a small character, and a number. It also must more than eight characters. The confirmed password also will need to be the same with the password being input.

4. After that, the system will update the new password into the database, redirect the user to the main page, and prompt the user to log in again with the new password.

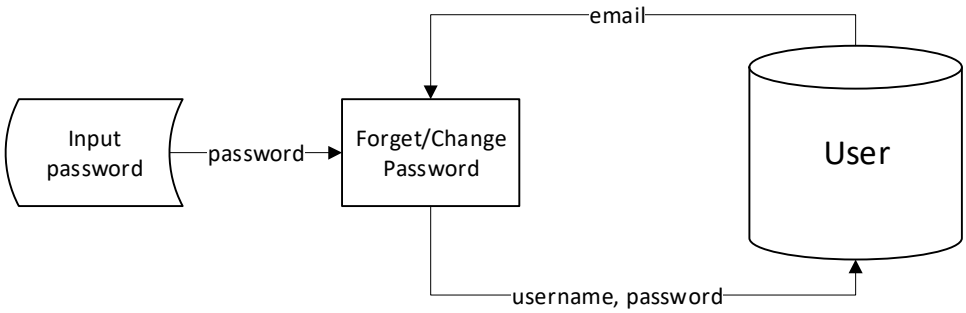


Figure 4.13: Data flow for process Forget/Change Password

4.3.1.2 Item Searching

Process name : Item Searching

Objective : Allow the user to search for an item or a seller.

The process of item searching is as below:

1. The user inputs the search text in the search field.

2. The system will then check the input is valid, if the input is valid, the system will then search in the database to find the item, which contains the text in the name or the seller with the text searching.

3. If the system cannot find any item or seller with the text being input, the system will display “0 results found” as the result. Or else the system will display a list of sellers or a list of items, which contain the text being searched.

4. To prevent empty input, the system will prompt the user to input the search text if the input field is empty and the search button is pressed. To prevent the text from being entered is too long, the system will also restrict the input of the character to 30 characters only.

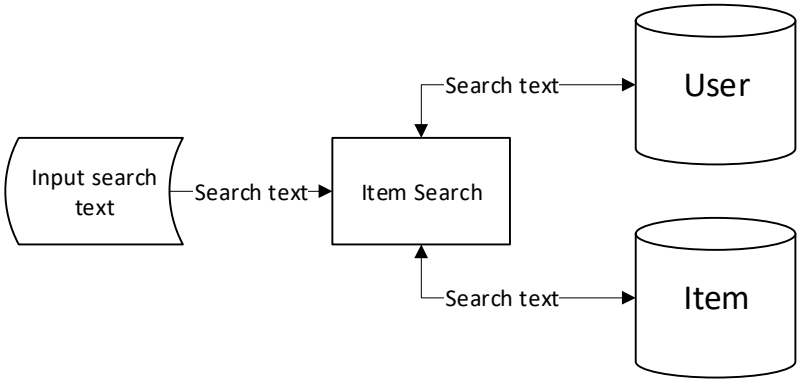


Figure 4.14: Data flow for process Item Searching

4.3.1.3 Item review

Process name : Item review

Objective : Allow the user to view the detail about the item being displayed.

The process of an item review is as below:

1. User click the item card
2. The system gets the item ID and collects the information and data about the item such as the name, description, category, bid price. In addition, the system will display the seller's detail.

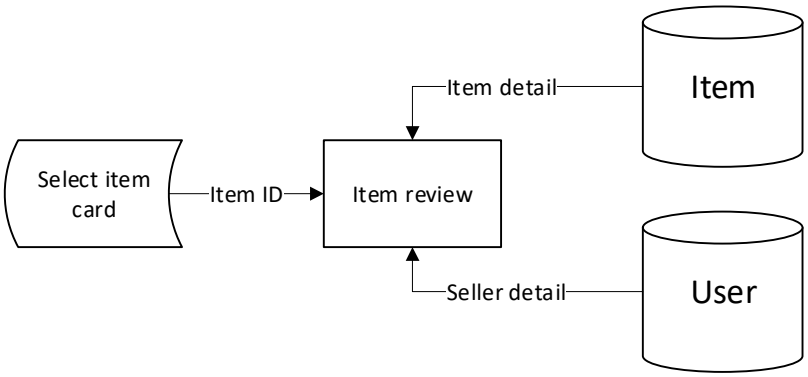


Figure 4.15: Data flow for process Item Review

4.3.1.4 Transaction

Process name : Transaction

Objective : Allow the user to pay for the successful bid item or reload their system pay account

The process of transaction is as below:

- Reload

1. The user clicks the top-up button.

2. The user inputs the amount that they want to reload.

3. The system redirects the user to the transaction page.

4. After the transaction has been done, the system updates the e-wallet balance of the account and redirects the user back to the top-up page, and displays the latest amount of the e-wallet.

5. The system will restrict the user to input a negative value or empty value in the top-up amount field. At the same time, the input of alphabetical characters is not allowed.

- Payment

1. User click the make payment button.

2. The user will need to insert his/her address first.

3. The user will be redirected to the payment page when they have finish insert the address. They can choose whether to use online banking or use their e-wallet to make the payment.

4. After the payment is completed, the system updates the status of the item to be paid and notifies the user to ship out the item as soon as possible.

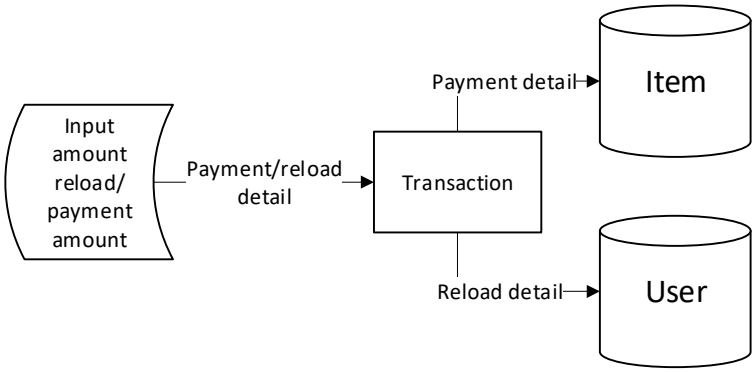


Figure 4.16: Data flow for process Transaction

4.3.1.5 Report Generate

Process name : Report Generate

Objective : Allow the seller to see the overall detail of his/her shop, allow the staff to see the overall report of the problem reported, allow the admin to see the overall report of the system.

The process of report generate is as below:

- Seller

1. When the seller enters the seller center page, a dashboard will display the detail of the total item, total item success, and more.

- Staff

2. When the staff enters the staff main page, a dashboard will display the detail of the total problem reported, total problem accepted, and more.

- Admin

3. When the admin enters the admin main page, a dashboard will display the detail of the total user, total item, total bidding, and more.

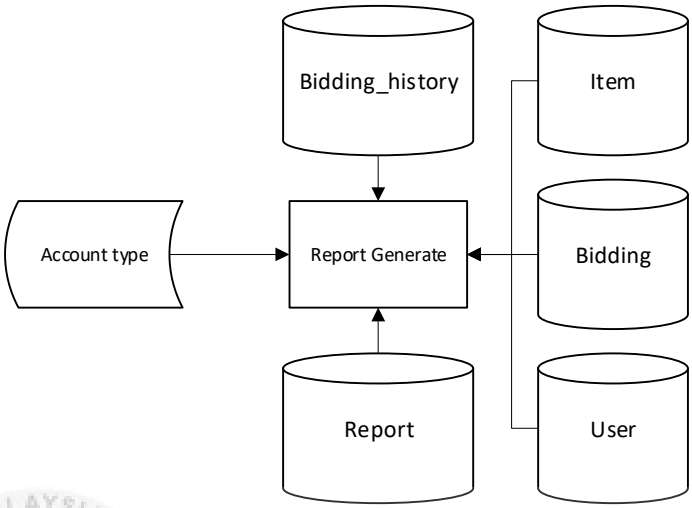


Figure 4.17: Data flow for process Report Generate

4.3.1.6 Feedback and Rating Service

Process name : Feedback and Rating Service

Objective : Allow the buyer to leave a feedback and rating to the seller to help another buyer to know more about the seller.

The process of feedback and rating service is as below:

1. The pre-condition for this function is the buyer must have successfully received the item that he/she successfully bided.

2. The buyer can then leave their rating and their comment on the item or the seller.

3. The system will then check for input whether the input is valid. If the input is valid, the system will continue to insert the feedback and the rating into the database.

4. The rating star must be clicked and the feedback cannot be blank.

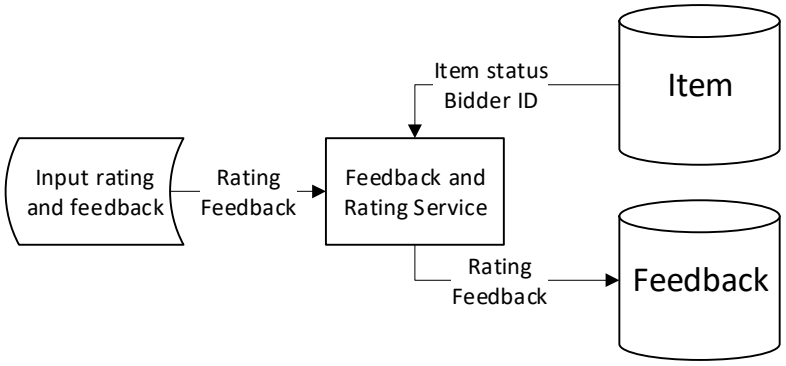


Figure 4.18: Data flow for process Feedback and Rating Service

4.3.1.7 Conversation between seller and buyer

Process name : Conversation between seller and buyer

Objective : Allow the buyer to chat with the seller to know more about the item being bided.

The process of conversation between seller and buyer is as below:

1. The buyer needs to click the chat now button to start the conversation with the seller.

2. The buyer needs to enter the message that they want to send to the seller in the message field and the field is not allowed to be empty if the send button is pressed.

3. The system will then insert the message into the database and the system will update the chat box displayed in real-time to make sure that the message sent by the seller can be seen once the seller has sent any message to the buyer.

4. The message sending process for the seller is the same as the buyer.

5. The seller and buyer can see the chat list on the chat list page to see the user that they had been sent a message with.

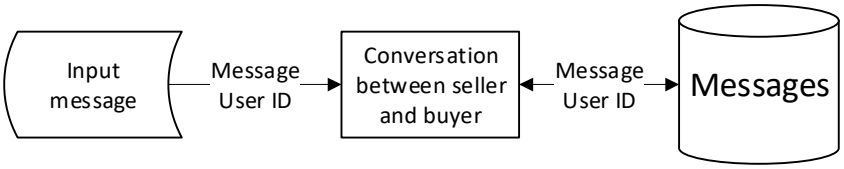


Figure 4.19: Data flow for process Conversation between Buyer and Seller

4.3.1.8 Bidding

Process name : Bidding

Objective : Allow the buyer to insert the bid price they willing to pay for

The process of bidding is as below:

1. The pre-condition for this process is the user must sign in to an account.
2. The buyer can insert the amount of bid price in the bid price field. The bid price field is restricted to input numerical characters only. And the input of negative value is not allowed.
3. When the buyer presses the bid button. The system will check for the validity of the input as an example, the bid price must be higher than the current bid price. If the bid price input by the buyer is lower than the current bid price, the system will display an error message to the buyer to indicate that the bid price cannot be lower than the current bid price.

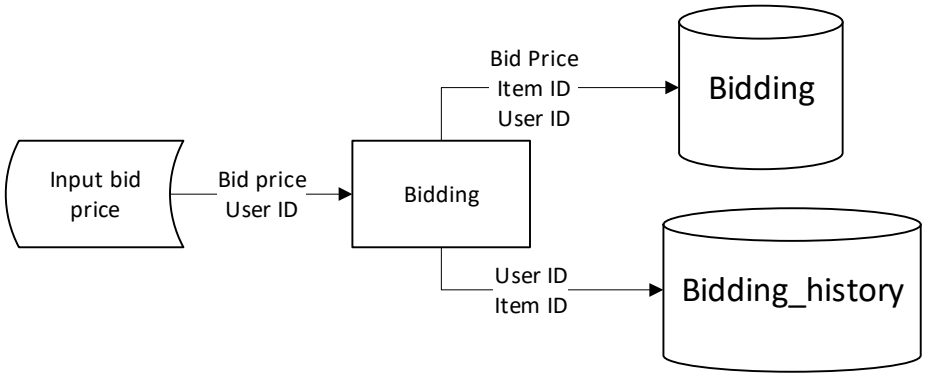


Figure 4.20: Data flow for process Bidding

4.3.1.9 Update Bidding Price

Process name : Update Bidding Price

Objective : Allow the system to update the bid price in real-time without required the user to reload or refresh the browser.

The process of update the bidding price is as below:

1. The system will periodically get the current bid price from the server.

2. Once the bid price in the database has changed the displayed bid price will also get updated.

Figure 4.21: Data flow for process Update Bidding Price

4.3.1.10 Recommender

Process name : Recommender

Objective : System will recommend the category which has been bided by the user or randomly recommends a list of items from different categories.

The process of the recommender is as below:

1. The system gets the user ID and checks from the database whether the user has bided any item or not. If yes, the system will get the category of the item and display a list of items to be displayed to the user.

2. If the system cannot find any bided by the user, the system will randomly recommend a list of items from different categories.

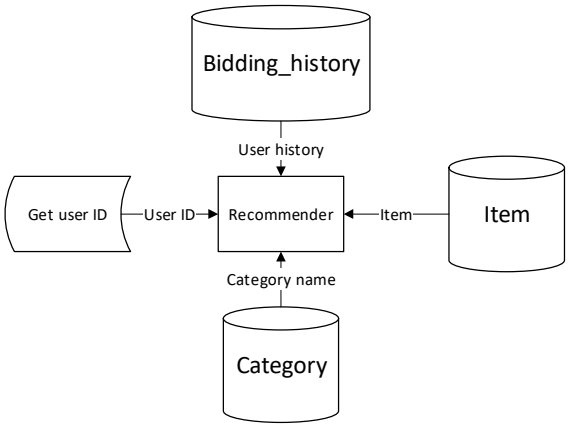


Figure 4.22: Data flow for process Recommender

4.3.1.11 Add to Favourite

Process name : Add to Favourite

Objective : Allow the buyer to add an item to favorite or follow a seller account

The process of add to favorite is as below:

- Add item to the favourite

    1. Users click the heart button to add the item to their favorite.

- Add seller to favorite

    1. Users click the follow button to follow the seller account.

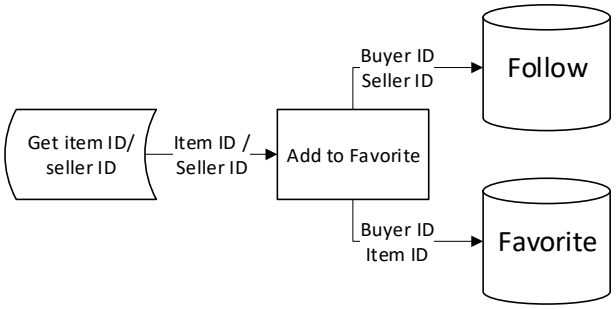


Figure 4.23: Data flow for process Add to Favorite

4.3.2 Physical Database Design

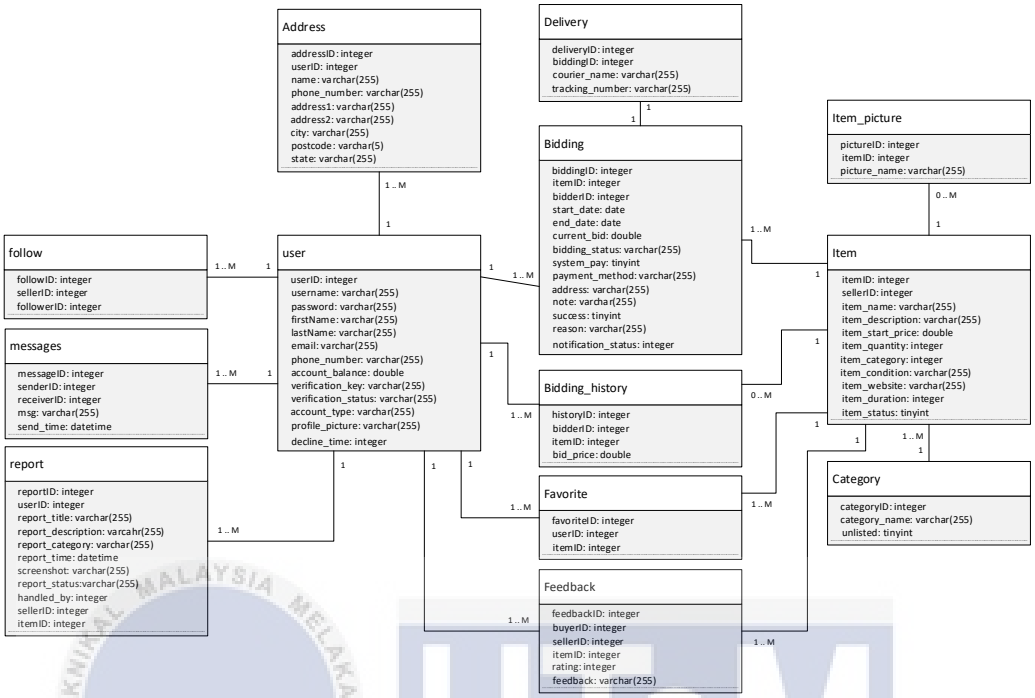


Figure 4.24: Physical Data Model of the system

Figure 4.24 shows the physical data model of the system. The physical data model shows the data type of all the attributes in all of the tables being used in the system. The column which will record text will be using VARCHAR while the field using integer will be using INTEGER. The column which records the true-false value will be using TINYINT which is 1 for true and 0 for false.

4.4 Conclusion

In conclusion, this chapter explains all the high-level design containing the system architecture, user interface design, and the database design which consists of conceptual and logical database design. This chapter also explains the detailed design of the system such as the software design of the system and the physical database design. The next chapter is going to talk about the implementation phase.

CHAPTER 5: IMPLEMENTATION

5.1 Introduction

This chapter describes the activity that will be involved in the implementation phase and the expected output after this phase is completed.

5.2 Software Development Environment Setup

This system is build-using XAMPP as the web server. XAMPP is one of the most popular PHP development environments at the same time it is completely free. It is a free and open-source cross-platform web server, which provides the services such as Apache Web Server, MySQL database that supported MySQL, and PHP packed in one package. It has the entire features that will be required during the development of the Online Bidding System.

Figure 5.1: Logo of XAMPP server

Figure 5.1 shows the logo of the XAMPP server. After the installation of the software, the server is already completely set up. It is used as the web server during the development of the system. Once the XAMPP server is successfully installed and the server is started. We can use localhost/path_name to access the server. Moreover, the path name will need to change to OBS because we named the project file as OBS.

The integrated development environment used is Visual Studio Code. Visual Studio Code is a source-code editor made by Microsoft for Windows, Linux, and macOS. It is packed with features such as debug, a lot of extensions that can be installed to increase the efficiency of programming supports code refactoring and it. It is also the most popular developer environment tool ranked by Stack Overflow in the 2019 Developer Survey. It includes basic support for most common programming languages. This basic support includes syntax highlighting, bracket matching, code folding, and configurable snippets. Visual Studio Code also ships with IntelliSense for JavaScript, JSON, CSS, and HTML. Support for other languages can be provided freely available extensions on the Visual Studio Code Marketplace.

Figure 5.2: Logo of the Visual Studio Code

Figure 5.2 shows the Visual Studio Code, which is the application that needs to be download and install into the computer to complete the environment to develop the system. After the installation, we can start creating a new folder called OBS to store all files needed to be used by the system. In addition, all files need to be categorized according to their file types such as .js, .css, and more.

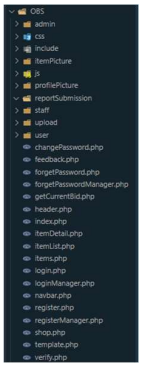


Figure 5.3: Folder structure of the system

Figure 5.3 shows the folder structure of the system. Different types of accounts will use different folder names, all functions and pages use by the admin will put inside folder admin. All the CSS files and JavaScript files will put in their respective folder, which is named css and js. All images are also put in multiple different folders to differentiate the use of the image.

For the database management software, Online Bidding System will be using phpMyAdmin, which is provided by the XAMPP server. phpMyAdmin is a free software tool that is written in PHP and the intention is to handle the administration of MySQL over the web. It also supports a wide range of operations on MySQL, frequently used operations can be easily performed via the user interface, and the ability to directly execute a SQL statement is also provided.

Figure 5.4: Logo of phpMyAdmin used in developing this system

Figure 5.4 shows the logo of phpMyAdmin, which is chosen as the database of the system. It can use MySQL and at the same time, it comes together with the XAMPP server and phpMyAdmin provides a clean interface and various functions to be used, such as one-click TRUNCATE table, one-click DROP table, one-click CREATE table, and more.

HTML, CSS, PHP, JavaScript, and SQL are the languages that are mostly used to complete the system. HTML, JavaScript, CSS are used to make the graphical user interface which Bootstrap 5 is also being used as the framework. While PHP is used as the back end of the system to process the request from the front end. SQL is used to process any request that required a connection to the database no matter it is retrieved from the database or record into the database.

Figure 5.5: Logo of the language and framework used to develop the system

Figure 5.5 shows the language to be used to develop the system, which is HTML, CSS, JavaScript, and PHP. The framework to be used in this system is Bootstrap. HTML, CSS, JavaScript, and Bootstrap is used to present the front-end interface while PHP is used in the back-end server to process all the request.

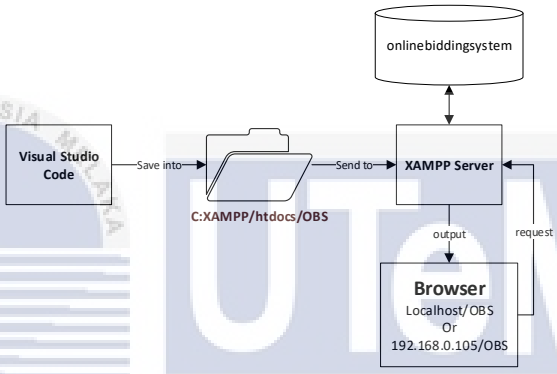


Figure 5.6: Environment architecture of the system

Figure 5.6 shows the process involve during the development phase. Visual Studio Code is used as the source code editor and all files used in the Visual Studio Code will be saved into the OBS file. The OBS file will contain all the PHP files, CSS files, and JavaScript files of the system. XAMPP server will get the file from the htdocs and process it and display it into the browser. The browser can use either localhost or the IP address of the device, which is 192.168.0.105, based on Figure 5.4. The name of the database is set to onlinebiddingsystem. In addition, all table names will be as same as the table name being designed in Figure 4.2.

5.3 Software Configuration Management

5.3.1 Configuration environment setup

After installing the XAMPP server and Visual Studio Code, create a new folder in the htdocs folder in the XAMPP folder. Named the folder as OBS, and turn on XAMPP, start the APACHE server and the MYSQL, then go to the browser and open the phpMyAdmin to create the database. Create a database named onlinebiddingsystem and set the collation to utf8_general_ci.

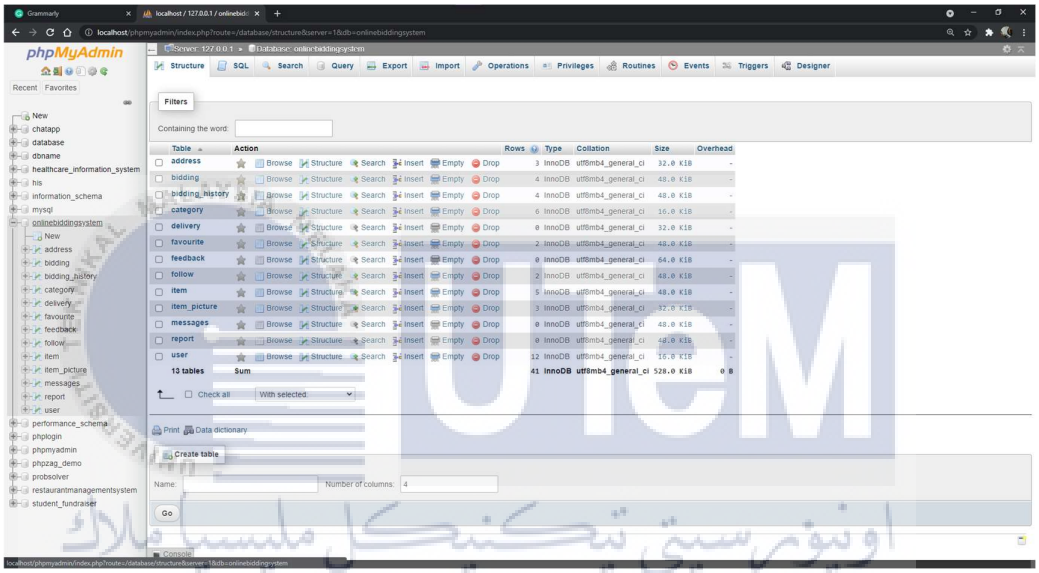


Figure 5.7: phpMyAdmin page after successfully created the database of the system

Figure 5.7 shows the outcome when the database onlinebiddingsystem is successfully created and all the necessary tables are created.

After the installation is completed, configure the XAMPP server so that it can be used to send an email. Find the file named sendmail.ini, we need to change the smtp_server to equal smtp.gmail.com. Then, we need to specify which Gmail account we are using, set the auth_username and auth_password to the account used to develop this system.

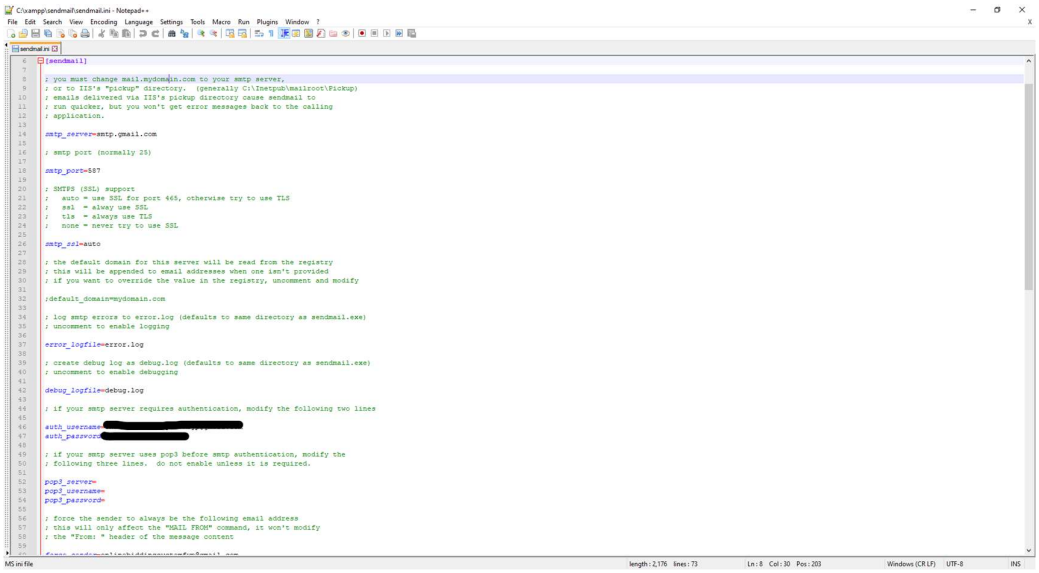


Figure 5.8: Content to be edit in send_mail.ini

Figure 5.8 shows the result after modification send_mail.ini file. The smtp_server is changed to smtp.gmail.com and the auth_username and auth_password are filled which is empty by default.

We still got another file to modify which is php.ini, we need to commend out the SMTP=localhost, and we need to set the sender account to let the localhost use which accounts to send the email, set the email being used to develop this system to sendmail_from. Another step is we need to specify the sendmail_path, change the path to "C:\xampp\sendmail\sendmail.exe -t". After setting these up, the mail function in localhost is now available.

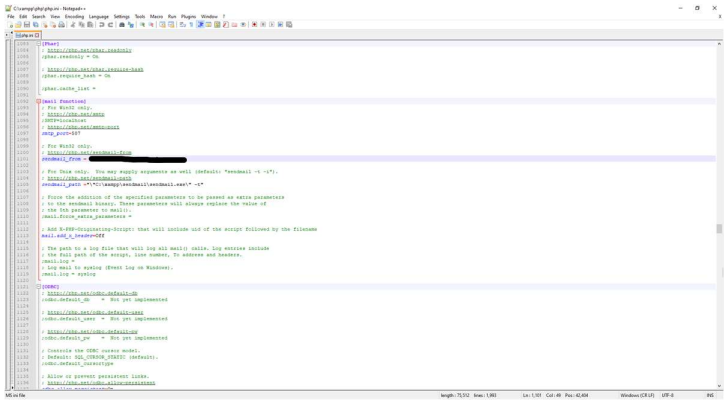


Figure 5.9: Content to be edit in php.ini

Figure 5.9 shows the result after modification of the php.ini file. The sendmail_from is filled with a Gmail account and the sendmail_path is filled with "C:\xampp\sendmail\sendmail.exe -t".

5.4 Version Control Procedure

The project will get back up and saved to an external hard disk to manage the source code version once a week. Every week after the backup, the version number will increase 1 as an example, 1.0 will become 2.0. This is to prevent any incident that can cause the folder or the project to get missing or corrupted. Weekly backup is the solution to prevent these problems.

5.5 Implementation Status

Table 5.1: Progress of the development status

No.	Module name	Description	Duration to Complete
1	Authentication	• Login and register need to be done. • Email can be sent. • Account able to verify and if the account is inactive, the system will not allow the account to enter the main page.	5 days
2	Log out	• Able to redirect the user back to the main page. • Destroy the session.	30 minutes
3	Profile	• The user can see their account detail.	4 hours
4	Manage Item	• The user can add an item.	5 days

		• The user can edit an item. • The user can delete an item.	
5	View item	• The user can see the detail about the item.	1 day
6	Bidding	• The user can insert the bid price and insert price into the database. • The system should able to update the bid price in real-time without refreshing the page. • The system must able to check the validity of the input.	3 days
7	Forget password	• The system can send a reset password email to the email of the username being input. • The system can update the new password into the database.	3 days
8	Follow seller	• The system can add the record into the database. • The system can update the status of followed in real-time.	2 days
9	Add to favourite	• The system can add the record into the database.	2 days

		• The system can update the status of added to favourite in real-time.	
10	Search Item	• The system can display the items which contain the text input by the user.	3 days
11	Chat with seller Chat with buyer	• The system should able to display the latest messages in real-time. • The system should able to send the message to the receiver instantly.	5 days
12	Feedback and Rating	• The system should able to check whether the user had successfully bided and received the product. • The system should able to insert the feedback and rating into the database.	3 days
13	Recommender	• The system should able to display a list of recommended items based on the history bided list of the user if exist else display random items to be recommended.	2 days
14	Report problem	• The system should able to record the problem in the database	2 days
15	Review account dashboard	• The system should able to display result in the dashboard based on the type of the account if the account type is normal user then display the account dashboard, if the account type is staff then display the staff dashboard while the account	6 days

	Review system dashboard	type is admin then display the admin dashboard.	
16	Manage account	• A system able to change the account status to suspend or active	3 days
17	Generate report	• The system should able to generate the report in graph form and table form	4 days
18	Manage Staff	• The system can add the new staff, edit a staff, or delete the staff from or into the database.	3 days

5.6 Conclusion

In conclusion, this chapter shows the software development environment setup and the software configuration management which consists of configuration environment setup, version control procedure, and the implementation status. The next phase is the testing phase.

CHAPTER 6: TESTING

6.1 Introduction

This chapter describes the activity that will be involved in the testing phase which are, test plan, test strategy, test design, and test result and analysis.

6.2 Test Plan

6.2.1 Test Organization

Two testers involved in the testing of the system, and more than 30 involved in an online questionnaire survey in order to test the user satisfaction on the system. Testers are friends of mine which are not profession in Computer Science fields. One of them profession in Civil Engineering and another is International Business. The survey respondents is random people comes from various age and gender.

6.2.2 Test Environment

Black-box testing was conducted at my house which is Sungai Petani, Kedah. Testera are called to come to my house to test the system. The system will be tested in the localhost. The hardware used is the laptop used to develop the system, and the configuration of the system can refer to Chapter 5.3. The training prior for these tester is to test the functionality of the system and did the system perform as what it should perform. The training is conducted to make sure the testers know what are they suppose to do and how are they going to perform the testing process. The training process conducted as I teach them about the purpose of testing and how the testing process going to be and which criteria is include inside the testing process. In the other hand, an questionnaire survey will be distributed to multiple people. The link of system demonstration and the link to use the system will also be provided in the questionnaire.

In the questionnaire survey, the system are hosted online and the database also hosted online by the host, 000webhost.com. People can use the system by clicking the link provided and then answer the questionnaire.

6.2.3 Test Schedule

Test	Schedule
Testing with tester	05/08/2021
Testing with questionnaire survey	06/08/2021 – 13/08/2021

For the tester who test the system using the localhost. They will be given 1 day to test out the system based on the test case designed. Only one cycle will be carried out in this testing phase.

For the people who test the system using an online host, They will be given 1 weeks before the questionnaire stop receive any respond for them.

6.3 Test Strategy

For the test strategy, black-box testing is chosen because the access to the code is not required. Black-box testing also well suited and efficient for large code segment. It also clearly separated user's perspective from the developer's prespective through visibly defined roles. A large number of tester can test the system because they do not need the knowledge of implementation, programming languages, or the operating system being used by the system.

6.4 Test Design

6.4.1 Test Description

To test the functionality a list of test cases will be designed and tested by the testers. To test the efficiency of the system, we will be using the performance recorder provided by Microsoft Edge to test the efficiency and reliability of the system. A series

of action will be perform and the time comsumed will be recorded and the Microsoft Edge will record the process and categorized them accordingly.

6.4.1.1 Test case to test functionality of the system

Table 6.1: Test case template for testing functionality

TestCase#	Test Scenario	Test Cases	Test Steps	Test Data	Expected Result	Actual Result	Pass /Fail

Test case used to test the functionality of the system will be in table form as presented in Table 6.1. Each test case will have their unique test case number. The scenario and the test case will be stated in the table. Test Step is the step to be carried out by the tester. Test Data is the input that need to be input by the tester into the system but not all the test case required input of data. Expected Result is the expected result should be produce by the system if the tester carried out the test case. Actual Result is the result that actually produce by the system when the tester carried out the test case. Pass/Fail is the column where the tester fill up to test whether the test case is pass or fail. The full test case table can be seen in Appendix 1 till Appendix 4. There are a total of 26 test cases prepared for the testers to perform the testing process.

6.4.1.2 Questionnaire to Test User Acceptance

The questionnaire is created using Google Form. The questionnaire consists of 37 questions which come in 7 sections which are respondent's details, perceived ease of use of the system, perceived usefulness of the system, capability of the system, trustworthiness of the system, attitude of the respondent to the system, and intention of use of the respondent. The questionnaire will be distributed to people near me through social media. The full questionnaire can be seen in Appendix 5 till Appendix 11.

6.4.2 Test Data

6.4.2.1 Testing Functionality

The test data can be seen in Appendix 1 till Appendix 4. Each of the test case has their respective test data or test step to be carried out by the tester.

6.4.2.2 Testing Efficiency and Reliability

The overall process is about the general function and the main flow of the bidding process. The flow will perform a series of action for the bidding process and some function of the system. The main target user is the registered user. The flow is the user log into the system using account1 with password 123123Aa, then click all items and click the first item, bid the item with the price which is more than the current bid price by RM5. Then, click add to wish list, and click follow seller. Then go to My wish list then go to following page. Then, chat with the first user by sending Hi. Lastly, sign out of the account. This flow will undergo 5 time and get the average as the result. For every step, we will need to wait until the page is fully loaded then only we can start our action.

6.4.2.3 Testing User Acceptance

The questions asked in the questionnaire can be see in Appendix 5 till Appendix 11. All of the question is section in respective sections which is 7 sections in total. The answer that collected from the respondent for each questionnaire item is from scale 1 which indicate totally disagree up to 5 which indicate totally agree to the statement.

6.5 Test Results and Analysis

6.5.1 Testing Functionality

For the result for testing functionality of the system, refers to Appendix 1 till Appendix 4. Based on the column actual result and pass/fail, we can see that the actual result match with the expected result and all of the test case is passed which is 26/26 or 100.00% out of all the test cases. We can conclude that the system is functioning properly but there are still error that needs to be rediscover because the system is tested under control environment and also the system is tested in localhost only. There can be errors when the system is officially release to the public in a online host. But for current testing phase, all of the test cases has passed and we can conclude that the system is functioning properly to some certain extent.

6.5.2 Testing Efficiency and Reliability

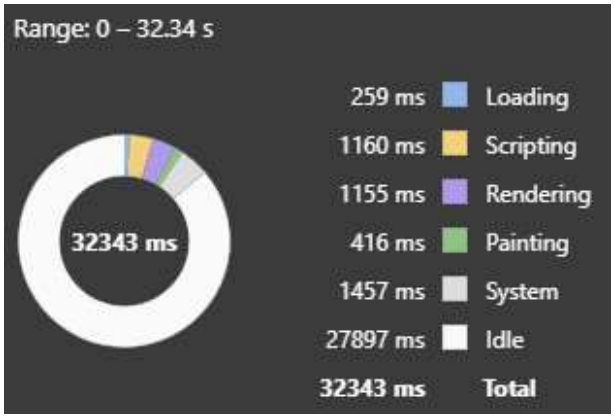


Figure 6.1: Run 1 to test efficiency and reliability

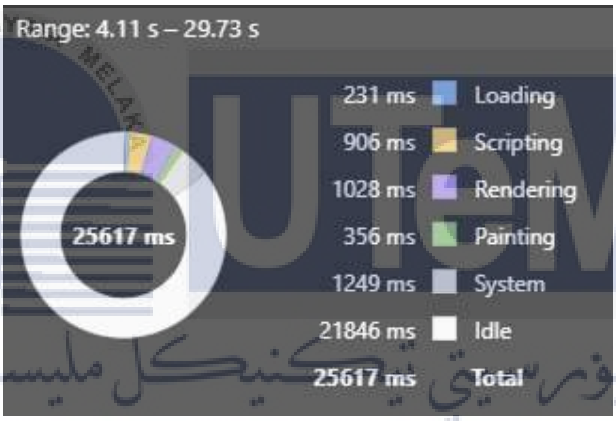


Figure 6.2: Run 2 to test efficiency and reliability

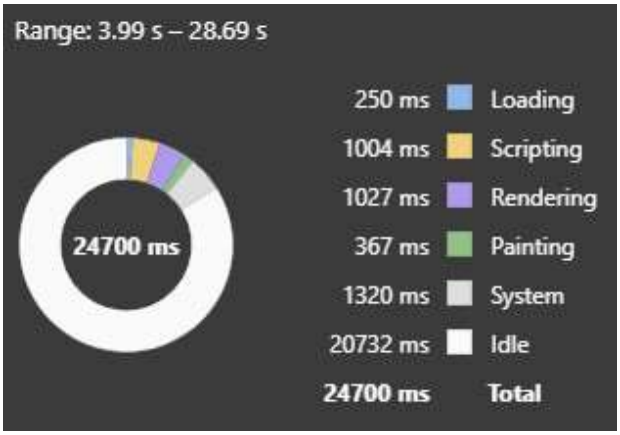


Figure 6.3: Run 3 to test efficiency and reliability

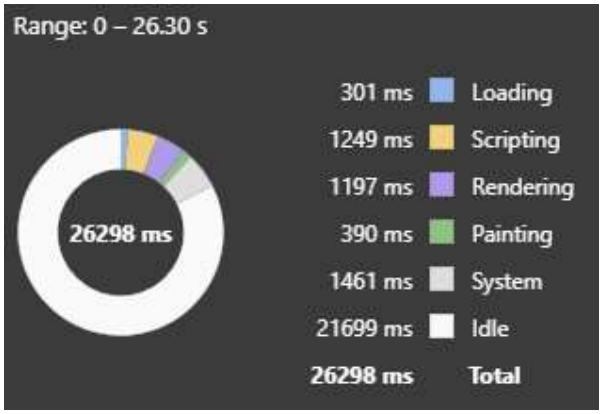


Figure 6.4: Run 4 to test efficiency and reliability

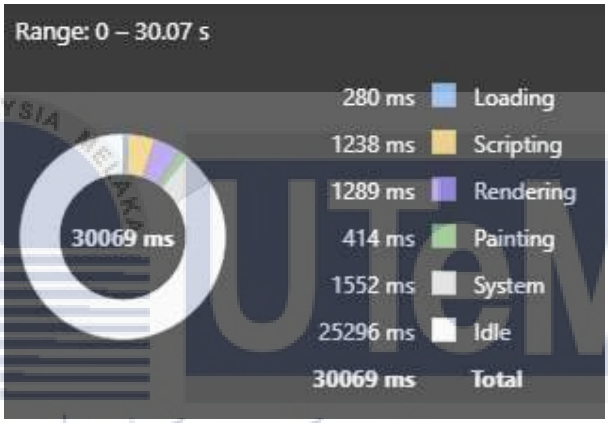


Figure 6.5: Run 5 to test efficiency and reliability

Table 6.2: Total time used in milliseconds for each run

Run	Loading (ms)	Scripting (ms)	Rendering (ms)	Painting (ms)	System (ms)	Idle (ms)	Total (ms)
1	259	1160	1155	416	1457	27897	32343
2	231	906	1028	356	1249	21846	25617
3	250	1004	1027	367	1320	20732	24700
4	301	1249	1197	390	1461	21699	26298

5	280	1238	1289	414	1552	25296	30069

Table 6.3: Total time used in percentage for each run

Run	Loading (%)	Scripting (%)	Rendering (%)	Painting (%)	System (%)	Idle (%)	Total (%)
1	0.0080	0.0359	0.0357	0.0129	0.0450	0.8625	100.00
2	0.0090	0.0354	0.0401	0.0139	0.0488	0.8528	100.00
3	0.0101	0.0406	0.0416	0.0149	0.0534	0.8394	100.00
4	0.0114	0.0475	0.0455	0.0148	0.0556	0.8251	100.00
5	0.0093	0.0412	0.0429	0.0138	0.0516	0.8413	100.00
Average	0.0096	0.0401	0.0412	0.0141	0.0509	0.8442	100.00

Based on Table 6.6, we can see that the average time used for loading is only 0.0096%. Which we can come with a conclusion that the system is very efficient because it does not required a lot of time to load and resources. For Scripting is where the JavaScript being loaded, it only occupy approximately 0.0401% throughout the run. Rendering and Painting is the process where the browser is running the CSS and all graphical content, it only used up 0.0412% throughout the run. The idle time is 0.8442% which mean the system is continuously idle when we are conduct the action which mean it will not consume a lot of resource.

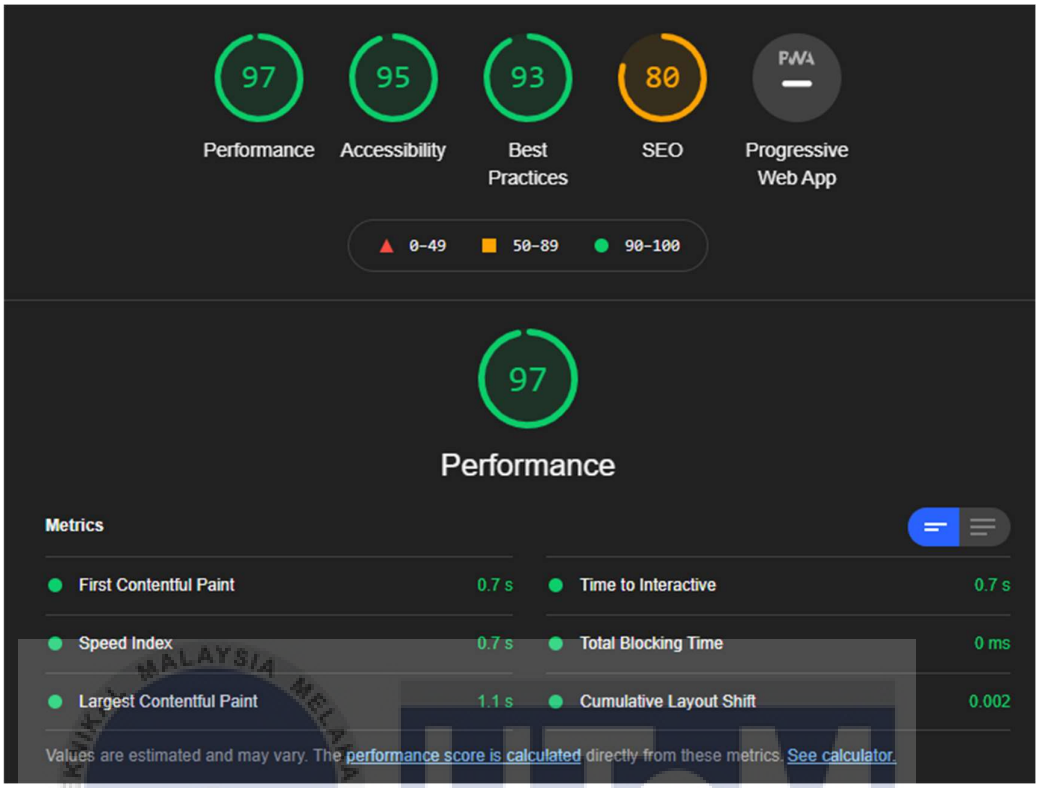


Figure 6.6: Lighthouse Calculator from Microsoft Edge

Based on Figure 6.6, we can see that the performance is at 97 marks. In the metric section, First Contentful Paint marks the time at which the first text or image is painted and it takes only 0.7 second to load. Speed Index shows how quickly the contents of a page are visibly populated, the website used 0.7 second to populate the screen. Largest Contentful Paint marks the time at which the largest text or image is painted, the website used 1.1 second for the largest test or image to loaded. Time to interactive is the amount of time it takes for the page to become fully interactive, Online Bidding System used 0.7 second for the page to become fully interactive. Total Blocking Time is the sum of all time periods between FCP and Time to Interactive, when task length exceeded 50ms, expressed in milliseconds, the system used a total 0 milliseconds which mean that there is no tasks are excedded 50 milliseconds. The last one is cumulative layout shift. Cumulative Layout Shift measures the movement of visible elements within the viewport, the website used 0.002 which mean it is very good because if we want to provide a good user experience, the website should have a cumulative layout shift of 0.1 or less. This system get 0.002 which is less than 0.1. (MSEdgeTeam, n.d.)

6.5.3 Test User Acceptance

The total responses collected is 88. And all of the responses is calculated and tabulated in Table 6.4 and Table 6.5.

Table 6.4: Questionnaire result – respondent

Title	Option	Total (person)	Total (%)
Age	0-18	3	3.40
	19-25	53	60.20
	26-40	32	36.40
	40 or above	0	0.00
Gender	Male	41	46.60
	Female	35	39.80
	Prefer not to say	12	13.60
Have you heard about online bidding system or online auction system before?	Yes	68	77.30
	No	20	22.70

Based on Table 6.4, we can see that there are total 3 respondent is age 0-18 years old, 53 respondents is age 19-25 years old, 32 respondents is age 26-40 years old, and there is no respondent age 40 years old or above. There are 41 male respondents, 35 female respondents, and 12 respondents prefer not to state their gender. From Table 6.7, we also can see that 77.30% which is 68 respondent had heard about online bidding system or online auction system before while there are only

22.70% which is 20 respondents does not heard about online bidding system or online auction system before.

Table 6.5: Questionnaire result - responses

Question	Frequency					Satisfaction (Average)
	1	2	3	4	5	
Overall, I am satisfied with Online Bidding System.	0	0	10	39	39	4.33
Online Bidding System is a system that is flexible to interact with.	0	0	13	40	35	4.25
Online Bidding System can do what I want to do.	0	0	17	32	39	4.25
Online Bidding System is easy to use.	0	1	11	42	34	4.24
Interaction with Online Bidding System is clear and understandable.	1	2	11	39	35	4.19
Online Bidding System is user-friendly.	0	0	11	38	39	4.32
I can use Online Bidding System without written instructions.	1	0	15	39	33	4.17
Using Online Bidding System is effortless.	0	1	11	41	35	4.25
It help me sell my second-handed item or new items.	0	2	6	38	42	4.36

It help me bid for second-handed item or new items.	0	2	6	49	31	4.24
It saves my times when I use it.	0	0	17	32	39	4.25
It meets what I need.	0	2	8	40	38	4.30
It does everything I would expect it to do.	1	2	9	43	33	4.19
It make the things I want to accomplish easier to get done.	0	0	9	42	37	4.32
By using Online Bidding System, I can manage my shop more easily.	0	0	7	40	41	4.39
By using Online Bidding System, I can see how many buyer is bidding for the item in real-time.	0	0	9	33	46	4.42
Online Bidding System provides clear instruction for manage items and bidding process.	0	0	11	32	45	4.39
Bidding can be easily done on Online Bidding System.	0	1	8	46	33	4.26
Online Bidding System provides clear feedback for every action I make.	0	0	8	42	38	4.34
Item can be easily manage added into my shop	0	1	8	41	38	4.32
I trust Online Bidding System for my information on my profile	1	1	12	30	44	4.31

I trust Online Bidding System provides security for my account.	1	0	11	46	30	4.18
I trust Online Bidding System provides security for my transactions.	0	2	14	31	41	4.26
I trust Online Bidding System provides me a safe platform to bid or sell items.	0	0	13	41	34	4.24
I would love to use Online Bidding System.	0	1	12	29	46	4.36
It is a pleasure for me to use Online Bidding system as my platform to sell my items.	0	2	9	47	30	4.19
It is desirable for me to learn how to use Online Bidding System.	0	1	8	35	44	4.39
I feel I need to have Online Bidding System.	0	2	12	36	38	4.25
I would recommend it to a friend.	0	1	6	35	46	4.43
I intend to use Online Bidding System to sell my item.	0	2	9	32	45	4.36
I intend to use Online Online Bidding System to bid for item I want.	0	3	6	57	22	4.11
I will continue to use Online Bidding System as my platform to sell my item.	0	1	9	34	44	4.38
I will continue to use Online Bidding System as my platform to bid item.	0	2	9	40	37	4.27
Total Average						4.29

Based on Table 6.5, 1 indicate the respondent is totally disagree with the statement while the number increase to 5 which indicate the respondent is totally agree with the statement. We can see from Table 6.5, the average responses get for each statement is above 4 which is agree with the statement. And the total average for all of the respondent is 4.29 which is agree, which also means that they satisfy with the system and by the result of this questionnaire, we can said that the user is satisfy with the system.

Table 6.6: Mean and standard deviation of each construct

Construct	Mean ± SD
Trustworthiness	4.25 ± 0.05
Perceived Ease of Use	4.25 ± 0.05
Perceived Usefulness	4.31 ± 0.08
Capability	4.33 ± 0.05
Attitude	4.33 ± 0.10
Intention to Use	4.28 ± 0.12

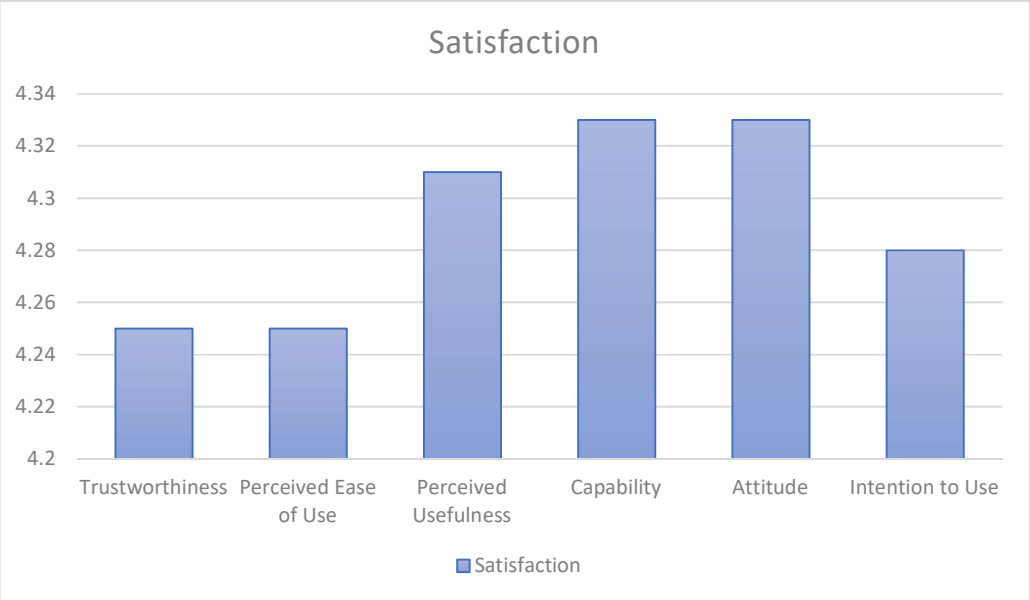


Figure 6.7: End user satisfaction bar chart

Based on Figure 6.7, we can see that capability and attitude of the system received the highest satisfaction among others category at 4.32 average. While trustworthiness and perceived ease of use has the lowest satisfaction among others at 4.25 average. Even though, trustworthiness and perceived ease of use has the lowest average satisfaction level but 4.25 is a high satisfaction after all. So, we can conclude that the end user is satisfied with the system.

6.6 Conclusion

In conclusion, we have test out the system to test the system functionality, system efficiency and reliability, and user acceptance in this chapter. Based on the result of the various test carried out, we can conclude that the system is functioning properly what it should be, the system is efficient and reliable, at the same time the user acceptance is high.

CHAPTER 7: PROJECT CONCLUSION

7.1 Observation on Weaknesses and Strengths

The strengths of the system is this system can help seller to sell their new items or second-handed items more easily while the buyer can bid for the item they wanted. This system provide a new way for the user to bid for various type of item compared to others system which only allow the user to bid for property. This system also provide a better platform for the seller to sell their product instead of using social media such as Facebook, Whatsapp, or more.

The weaknesses of the system is the system comes with only single language which is English. And also, The currency used in this system is only Ringgit Malaysia at the same time. This system also only come with a desktop version even though user can access the website using their smartphone's browser but this system is recommended to be used in a laptop or a desktop. There is no mobile application version of the system.

7.2 Proposition for Improvement

There are some suggestion are suggested to improve the functionality of the system. Firstly, implement multiple language pack for the website to support more language. Next, provide more payment method other than only provde Paypal gateway, such as E-Wallet, credit card, or debit card. In the other hand, we can add the feature like upload video for the item detail instead of only allow the seller to upload photo of the item which can allow the buyer to see the item more accurately. Lastly, we can come out with a mobile application version of the system which will allow the user to use it either on desktop or in their mobile phone.

7.3 Project Contribution

This project contribute in the E-Commerce field which can help the seller and also the buyer to get the item they want to sell or buy at the price they are prefer. It also provide another platform for the seller to sell their item instead of using site like Shopee, Lazada, and more which the seller will need to fix the price for the item. This project provide a different way for the buyer to buy the items that attract them and they are willing to buy in a price they desire because the price is bid by the buyer, if the buyer are willing to get the item, they will need to increase the bid price until they finally get the item.

7.4 Conclusion

In conclusion, I think that Online Bidding System has meet my expectations and at the same time it fulfill the objectives. The main purpose of the system is successfully achieved. There are some difficulties during the period of implementation of the system. Error occurred due to invalid coding in PHP and MySQL are commonly the issue. But at the end, all the problems and issues get solved and the system is functioning well. With the help of my supervisor and my friends, this system has successfully developed.

REFERENCES

Agile software development. (2021, April 2). Retrieved from Wikipedia: https://en.wikipedia.org/wiki/Agile_software_development

Amitava , B., & Atul, S. (2003). *Internet Auctions: Some Issues and Problems.* Berlin, Heidelberg: Springer. Retrieved from SpringerLink.

Auction - Understanding How the Auction Process Works. (2020, April 27). Retrieved from Corporate Finance Institute: https://corporatefinanceinstitute.com/resources/knowledge/finance/auction/

BANTON, C. (2019, June 25). *Auction*. Retrieved from Investopedia: https://www.investopedia.com/terms/a/auction.asp

Byron , S., & Anne , W. (2006, December 6). *Researchers Uncover Online Auction Fraud*. Retrieved from Carnegie Mellon University: https://www.cmu.edu/news/archive/2006/december/dec6auctionfraud.shtml

Chothani, R., Patel, N., Dekavadiya, A., & Patel, P. (2015). A Review of Online Auction and It's Pros and Cons. *International Journal of Advance Engineering and Research Development*, 3-134.

Fast Facts. (n.d.). Retrieved from eBay Inc. - Fast Facts: https://investors.ebayinc.com/fast-facts/default.aspx

Lin, Y. (2021, April 16). *10 eBay Statistics You Need to Know in 2021 [Infographic]*. Retrieved from Oberlo: https://my.oberlo.com/blog/ebay-statistics#:~:text=There%20are%201.3%20billion%20listings%20on%20eBay.

MSEdgeTeam. (n.d.). *Test accessibility using Lighthouse - Microsoft edge development*. Retrieved from Microsoft Edge Development | Microsoft Docs: https://docs.microsoft.com/en-us/microsoft-edge/devtools-guide-chromium/accessibility/lighthouse

Muslihat, D. (2021, January 14). *Agile Methodology: An Overview*. Retrieved from Zenkit: https://zenkit.com/en/blog/agile-methodology-an-overview/

Pros and Cons of Online Auction. (2018, July 16). Retrieved from AtoZFinanceInfo: http://www.atozfinanceinfo.com/general/pros-and-cons-of-online-auction/

Sabanoglu, T. (2021, April 30). *eBay: number of users 2019*. Retrieved from Statista: https://www.statista.com/statistics/242235/number-of-ebays-total-active-users/#:~:text=In%20the%20first%20quarter%20of,to%20the%20prior%20

year%20quarter.&text=During%20December%202019%2C%20the%20most,number%20of%20unique%20monthly%20visitors.

SOMANI, A., BOBADE, G., & SHARMA, V. (2017). *SECURE ONLINE AUCTIONING PORTAL.* BELAGAVI, KARNATAKA: Academia.

What is Agile Methodology? and Why Do We Use It? (2016, May 14). Retrieved from VC Web Design: http://vcwebdesign.com/uncategorized/what-agile-methodology-why-do-we-use-it/#:~:text=The%20agile%20method%20anticipates%20change,to%20the%20budget%20or%20schedule.&text=This%20method%20saves%20the%20client,at%20each%20step%20of%20development.

WHAT IS AGILE? WHAT IS SCRUM? (n.d.). Retrieved from cprime: https://www.cprime.com/resources/what-is-agile-what-is-scrum/#:~:text=Agile%20software%20development%20refers%20to%20a%20group%20of%20software%20development,%2Dorganizing%20cross%2Dfunctional%20teams.

Wolinsky, J. (n.d.). *Online Auctions Definition - Entrepreneur Small Business Encyclopedia*. Retrieved from Entrepreneur: https://www.entrepreneur.com/encyclopedia/online-auctions

APPENDICES

Appendix 1

TestCase#	Test Scenario	Test Cases	Test Steps	Test Data	Expected Result	Actual Result	Pass/Fail
OBS1	Verify Navigation Button	Navigation button should bring to corresponding pages	1. Click the navigation button on top		Redirect user to corresponding pages	System redirect user to the correct pages	Pass
OBS2	Verify Sign in Page	Username cannot be empty	1. Do not enter a value in Username field				
			2. Click Login button		An error message "Please enter a username" must shown	An error message "Please enter a username" shown	Pass
		Username cannot longer than 25 characters	1. Enter 30 characters in Username field	aaaaaaaaaaaaaaaaaaaaaaaaaaaaaa	System should stop the input of character at 25th characters	System stop the input of character at 25th characters	Pass
		Username should not accept blank space	1. Enter blank space in Username field		System should not accept the blank space input	System does not accept the blank space input	Pass
OBS3	Verify Sign in Password Field	Password cannot be empty	1. Do not enter a value in Password field				
			2. Click Login button		An error message "Please enter a password" must shown	An error message "Please enter a password" shown	Pass
		Password cannot longer than 25 characters	1. Enter 30 characters in Password field	aaaaaaaaaaaaaaaaaaaaaaaaaaaaaa	System should stop the input of character at 25th characters	System stop the input of character at 25th characters	Pass
		Password should not accept blank space	1. Enter blank space in Password field		System should not accept the blank space input	System does not accept the blank space input	Pass
OBS4	Verify Sign in Function	Wrong account should not allow to enter the system	1. Enter a wrong account and wrong password	Abc123, abc123			
			2. Click Login button		An error message “Wrong account” must shown	An error message “Wrong account” shown	Pass

		Wrong password should not allow to enter the system	1. Enter a correct account and wrong password	Account1, 123123			
			2. Click Login button		An error message “Wrong password” must shown	An error message “Wrong password” shown	Pass
		Only correct account is allowed to enter the system	1. Enter a correct account and correct password	Account1, 123123Aa			
			2. Click Login button		System should redirect user to the logged in user main page	System redirect user to the logged in user main page	Pass
OBS5	Verify Register Form	Username cannot be empty	1. Do not enter a value in Username field				
			2. Click Login button		An error message "Please enter a username" must shown	An error message "Please enter a username" shown	Pass
		Username cannot longer than 25 characters	1. Enter 30 characters in Username field	aaaaaaaaaaaaaaaaaaaaaaaaaa	System should stop the input of character at 25th characters	System stop the input of character at 25th characters	Pass
		Username should not accept blank space	1. Enter blank space in Username field		System should not accept the blank space input	System does not accept the blank space input	Pass
		Password cannot be empty	1. Do not enter a value in Password field				
			2. Click Login button		An error message "Please enter a password" must shown	An error message "Please enter a password" shown	Pass
		Password cannot longer than 25 characters	1. Enter 30 characters in Password field	aaaaaaaaaaaaaaaaaaaaaaaaaa	System should stop the input of character at 25th characters	System stop the input of character at 25th characters	Pass
		Password should not accept blank space	1. Enter blank space in Password field		System should not accept the blank space input	System does not accept the blank space input	Pass
		Confirm Password cannot be empty	1. Do not enter a value in Confirm Password field				

			2. Click Login button		An error message "Please enter a password" must shown	An error message "Please enter a password" shown	Pass
		Confirm Password cannot longer than 25 characters	1. Enter 30 characters in Confirm Password field	aaaaaaaaaaaaaaaaaaaaaaaaaaaaaa	System should stop the input of character at 25th characters	System stop the input of character at 25th characters	Pass
		Confirm Password should not accept blank space	1. Enter blank space in Confirm Password field		System should not accept the blank space input	System does not accept the blank space input	Pass
		Email cannot be empty	1. Do not enter a value in Email field				
			2. Click Login button		An error message "Please enter a email" must shown	An error message "Please enter a email" shown	Pass
		Email cannot longer than 30 characters	1. Enter 35 characters in Email field	aaaaaaaaaaaaaaaaaaaaaaaaaaaaaaa	System should stop the input of character at 30th characters	System stop the input of character at 30th characters	Pass
		Email should not accept blank space	1. Enter blank space in Email field		System should not accept the blank space input	System does not accept the blank space input	Pass
		First Name cannot be empty	1. Do not enter a value in First Name field				
			2. Click Login button		An error message "Please enter your first name" must shown	An error message "Please enter your first name" shown	Pass
		First Name cannot longer than 30 characters	1. Enter 35 characters in First Name field	aaaaaaaaaaaaaaaaaaaaaaaaaaaaaaa	System should stop the input of character at 30th characters	System stop the input of character at 30th characters	Pass
		Last Name cannot be empty	1. Do not enter a value in Last Name field				
			2. Click Login button		An error message "Please enter your last name" must shown	An error message "Please enter your last name" shown	Pass
		Last Name cannot longer than 30 characters	1. Enter 35 characters in Last Name field	aaaaaaaaaaaaaaaaaaaaaaaaaaaaaaa	System should stop the input of character at 30th characters	System stop the input of character at 30th characters	Pass
		Phone Number cannot be empty	1. Do not enter a value in Email field				
			2. Click Login button		An error message "Please enter a phone number" must shown	An error message "Please enter a phone number" shown	Pass

		Phone Number cannot longer than 13 characters	1. Enter 15 characters in Phone Number field	111111111111111	System should stop the input of character at 13th characters	System stop the input of character at 13th characters	Pass
		Phone Number should not accept blank space	1. Enter blank space in Phone Number field		System should not accept the blank space input	System does not accept the blank space input	Pass
		Phone Number should not accept alphabatical characters	1. Enter alphabatical characters in Phone Number field	abc	System should not accept the alphabatical characters	System does not accept the alphabatical characters	Pass
		Clear button should clear out all the field	1. Enter some random test in some of the field	abc123			
			2. Click Clear button		System should clear every field in the form	System clear every field in the form	Pass
OBS6	Verify Register Function	Existed username cannot register to the system	1. Register an account using existed username	Account1			
			2. Click register button		An error message "The username is already taken, please try again." must shown	An error message "The username is already taken, please try again." shown	Pass
		Existed email cannot register to the system	1. Register an account using existed email	Zacktan5027@gmail.com			
			2. Click register button		An error message "The email is already taken, please try again." must shown	An error message "The email is already taken, please try again." shown	Pass
		Existed phone number cannot register to the system	1. Register an account using existed phone number	0164447088			
			2. Click register button		An error message "The phone number is already taken, please try again." must shown	An error message "The phone number is already taken, please try again." shown	Pass

		None existed username, email and phone number can be register to the system	1. Register an account using none existed username, email, and phone number	Account9, testing123@gmail.com, 0164447097			
			2. Click register button		System should display "Successfully register, an email is sent to testing123@gmail.com ,please verify your account." message	System display "Successfully register, an email is sent to testing123@gmail.com ,please verify your account." message	Pass
OBS7	Verify item list function	System should display all the item based on the category	1. Click one of the categories in the left-hand sidebar		System should display only the items which suit the category clicked only	System display only the items which suit the category clicked only	Pass
		System should sort all the item based on the condition	1. Choose one of the conditions in the top right corner		System should sort the item based on the condition choose	System sort the item based on the condition choose	Pass
		System should redirect user to the correct page	1. Click on any of the item		System should redirect user to the item detail page of the item being clicked	System redirect user to the item detail page of the item being clicked	Pass

Appendix 2

TestCase#	Test Scenario	Test Cases	Test Steps	Test Data	Expected Result	Actual Result	Pass/Fail
OBS8	Verify item list function	System should display all the item based on the category	1. Click one of the categories in the left-hand sidebar		System should display only the items which suit the category clicked only	System display only the items which suit the category clicked only	Pass
		System should sort all the item based on the condition	1. Choose one of the conditions in the top right corner		System should sort the item based on the condition choose	System sort the item based on the condition choose	Pass
		System should redirect user to the correct page	1. Click on any of the item		System should redirect user to the item detail page of the item being clicked	System redirect user to the item detail page of the item being clicked	Pass
OBS9	Verify Bid function	System should not accept alphabetical characters	1. Input alphabetical characters in the bid field	aaa	System should not accept the input and display "Numbers only" message	System not accept the input and display "Numbers only" message	Pass
		System should not accept bid price less than current bid price	1. Input a bid price which is lower than the current bid price	1			
			2. Click bid button		An error message "Your bid price cannot lower than or equal to the current bid price." must shown	An error message "Your bid price cannot lower than or equal to the current bid price." shown	Pass
		System should not accept bid price more than current bid price by 100	1. Input a bid price which is higher than the current bid price by 100	999			
			2. Click bid button		An error message "The maximum bid price for each bid is RM100." must shown	An error message "The maximum bid price for each bid is RM100." shown	Pass

OBS10	Verify real-time update of bid price	System should not require user refresh the page to update the current bid price	1. Input a valid bid price				
			2. Click bid button		System should update the bid price right away.	System update the bid price right away.	Pass
		System should not require user refresh the page to update the highest bidder	1. Input a valid bid price				
			2. Click bid button		System should update the highest bidder name right away.	System update the highest bidder name right away.	Pass
		System should not require user refresh the page to update the total bidder	1. Input a valid bid price				
			2. Click bid button		System should update the total bidder number right away.	System update the total bidder number right away.	Pass
OBS11	Verify my bid list	System should only display the item that the user has bid only	1. Click the My Bid List in the top right dropdown list				
			2. Go through the category of the bid status		System should display only the item that is related to the account only.	System display only the item that is related to the account only.	Pass
		System should restrict the user to reject item for multiple time	1. Click the reject item button		System should display the time remaining for the user to reject an item, and the system should warn the user that they will have only 3 times to reject item.	System display the time remaining for the user to reject an item, and the system should warn the user that they will have only 3 times to reject item.	Pass
		System should display the status of the item	1. Go through the category in the bid list		System should display all the status correctly which either it is bidding,	System display all the status correctly which either it is	Pass

					success bid, to be receive, or completed.	bidding, success bid, to be receive, or completed.	
OBS12	Verify my chat list	System should display only the user which the current account have interact with before	1. Click the My Chat List in the top right dropdown list				
			2. Check the user being listed		System should list out only the user who have interact with the current account before only	System list out only the user who have interact with the current account before only	Pass
		System should display the message from or to the user in real-time	1. Click any of the user and input some text into the message field	Hi			
			2. Click the send button		System should update the chat box right away without the need for the user to refresh the page.	System update the chat box right away without the need for the user to refresh the page.	Pass
OBS13	Verify my wish list	System should display only the item being favorite by the account	1. Click to any item in the item list				
			2. Click the add to wish list button				
			3. Click the my wish list in the top right dropdown list				
			4. Check whether the item just now is in the list		System should display the item which added to the wish list only	System display the item which added to the wish list only	Pass
OBS14	Verify following list	System should display only the user that is	1. Click to any item in the item list				

		followed by the account					
			2. Click the follow seller button				
			3. Click the following in the top right dropdown list				
			4. Check whether the user just now is in the list		System should display only the user that is being followed by the account	System display only the user that is being followed by the account	Pass
OBS15	Verify profile page	System should able to update the profile of the account	1. Click profile in the top right dropdown list				
			2. Click edit profile button				
			3. Change the profile				
			4. Click save profile button		System should able to update the profile being changed	System able to update the profile being changed	Pass
		System should able to update the profile picture	1. Click profile in the top right dropdown list				
			2. Click change profile button				
			3. Change the profile picture				
			4. Click save button		System should update the profile picture right away	System update the profile picture right away	Pass
OBS16	Verify my address page	Name cannot longer than 30 characters	1. Click my address in the top right dropdown list				
			2. Click add Address				
			3. Enter 35 characters in Name field	aaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaa	System should stop the input of character at 30th characters	System stop the input of character at 30th characters	Pass

		Address1 cannot longer than 30 characters	1. Click my address in the top right dropdown list				
			2. Click add Address				
			3. Enter 35 characters in Address1 field	aaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaa	System should stop the input of character at 30th characters	System stop the input of character at 30th characters	Pass
		Address2 cannot longer than 30 characters	1. Click my address in the top right dropdown list				
			2. Click add Address				
			3. Enter 35 characters in Address2 field	aaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaa	System should stop the input of character at 30th characters	System stop the input of character at 30th characters	Pass
		City cannot longer than 30 characters	1. Click my address in the top right dropdown list				
			2. Click add Address				
			3. Enter 35 characters in City field	aaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaa	System should stop the input of character at 30th characters	System stop the input of character at 30th characters	Pass
		Postcode cannot longer than 5 characters	1. Click my address in the top right dropdown list				
			2. Click add Address				
			3. Enter 10 characters in Post Code field	1234567890	System should stop the input of character at 5th characters	System stop the input of character at 5th characters	Pass
		Postcode should not accept blank space	1. Enter blank space in Post Code field		System should not accept the blank space input and display “Number only” message	System does not accept the blank space input and display “Number only” message	Pass
		Postcode should not accept special characters	1. Enter special characters in Post Code field	!@#$	System should not accept the special characters input and display “Number only” message	System does not accept the special characters input and display “Number only” message	Pass
		Phone Number cannot longer than 13 characters	1. Click my address in the top right dropdown list				

			2. Click add Address				
			3. Enter 15 characters in Post Code field	123456789012345	System should stop the input of character at 5th characters	System stop the input of character at 5th characters	Pass
		Phone Number should not accept blank space	1. Enter blank space in Phone Number field		System should not accept the blank space input and display "Number only" message	System does not accept the blank space input and display "Number only" message	Pass
		Phone Number should not accept special characters	1. Enter special characters in Phone Number field	!@#$	System should not accept the special characters input and display "Number only" message	System does not accept the special characters input and display "Number only" message	Pass
		All field cannot be empty	1. Do not input anything in all the field				
			2. Click add address button		An error message "Please fill up , name , address1 , address2 , city , state , postcode , phone number fields" must shown	An error message "Please fill up , name , address1 , address2 , city , state , postcode , phone number fields" shown	Pass
		System cannot display address that is not related to the account	1. Click my address in the top right dropdown list				
			2. Click add Address				
			3. Fill up all the field				
			4. Click add address button				
			5. Check whether the address is correctly display in the address list		System should display only the addresses added by the account only	System display only the addresses added by the account only	Pass
OBS17	Verify Seller Center page	System should display notification for the user if there is any item need to be shipped out	1. Click seller centre in the top right dropdown list				

			2. Check whether the notification is displayed correctly		System should display the notification if there is any item need to be shipped out.	System display the notification if there is any item need to be shipped out.	Pass
OBS18	Verify add item page	All field cannot be empty	1. Do not input anything in all the field				
			2. Click add item button		System should display error message below every field to prompt the user to fill up.	System display error message below every field to prompt the user to fill up.	Pass
		Name cannot longer than 30 characters	1. Enter 35 characters in Name field	aaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaa	System should stop the input of character at 30th characters	System stop the input of character at 30th characters	Pass
		Start Price cannot longer than 5 characters	1. Enter 8 characters in Start Price field	12345678	System should stop the input of character at 5th characters	System stop the input of character at 5th characters	Pass
		Start Price should not accept blank space	1. Enter blank space in Start Price field		System should not accept the blank space input	System does not accept the blank space input	Pass
		Start Price should not accept special characters	1. Enter special characters in Start Price field	!@#$	System should not accept the special characters input	System does not accept the special characters input	Pass
		Item quantity cannot longer than 2 characters	2. Enter 5 characters in Item quantity field	12345	System should stop the input of character at 2th characters	System stop the input of character at 2th characters	Pass
		Item quantity should not accept blank space	2. Enter blank space in Item quantity field		System should not accept the blank space input	System does not accept the blank space input	Pass
		Item quantity should not accept special characters	2. Enter special characters in Item quantity field	!@#$	System should not accept the special characters input	System does not accept the special characters input	Pass
OBS19	Verify shipping page	Tracking Number cannot be empty	1. Do not input anything in tracking number field				

			2. Click Save Now button		An error message “Please enter a tracking number” must shown	An error message “Please enter a tracking number” shown	Pass
		Courier Name cannot be empty	1. Do not choose any of the courier name				
			2. Click Save Now button		An error message “Please select a courier service” must shown	An error message “Please select a courier service” shown	Pass

Appendix 3

TestCase#	Test Scenario	Test Cases	Test Steps	Test Data	Expected Result	Actual Result	Pass/Fail
OBS20	Verify report page	System should display the correct report	1. Click the detail button on any of the report.				
			2. Check if the target item is not N/A, then the output should be about an item		System should display the correct report detail to the staff and corresponding action such as active, suspend, accept report or reject report.	System display the correct report detail to the staff and corresponding action such as active, suspend, accept report or reject report.	Pass
OBS21	Verify manage user page	System should display all user and their corresponding status correctly	1. Click the manage user in the left sidebar				
			2. Check whether the user status is correct		System should display all user and their corresponding status which is active or suspend.	System display all user and their corresponding status which is active or suspend.	Pass
		System should display item that related to the user only	1. Click the view button on any of the user				
			2. Check whether the item is added by the user clicked		System should display all the item that is being added the user	System display all the item that is being added the user	Pass
OBS22	Verify profile page	System should be able to update the profile	1. Click the profile in the left sidebar				
			2. Fill up all the field				

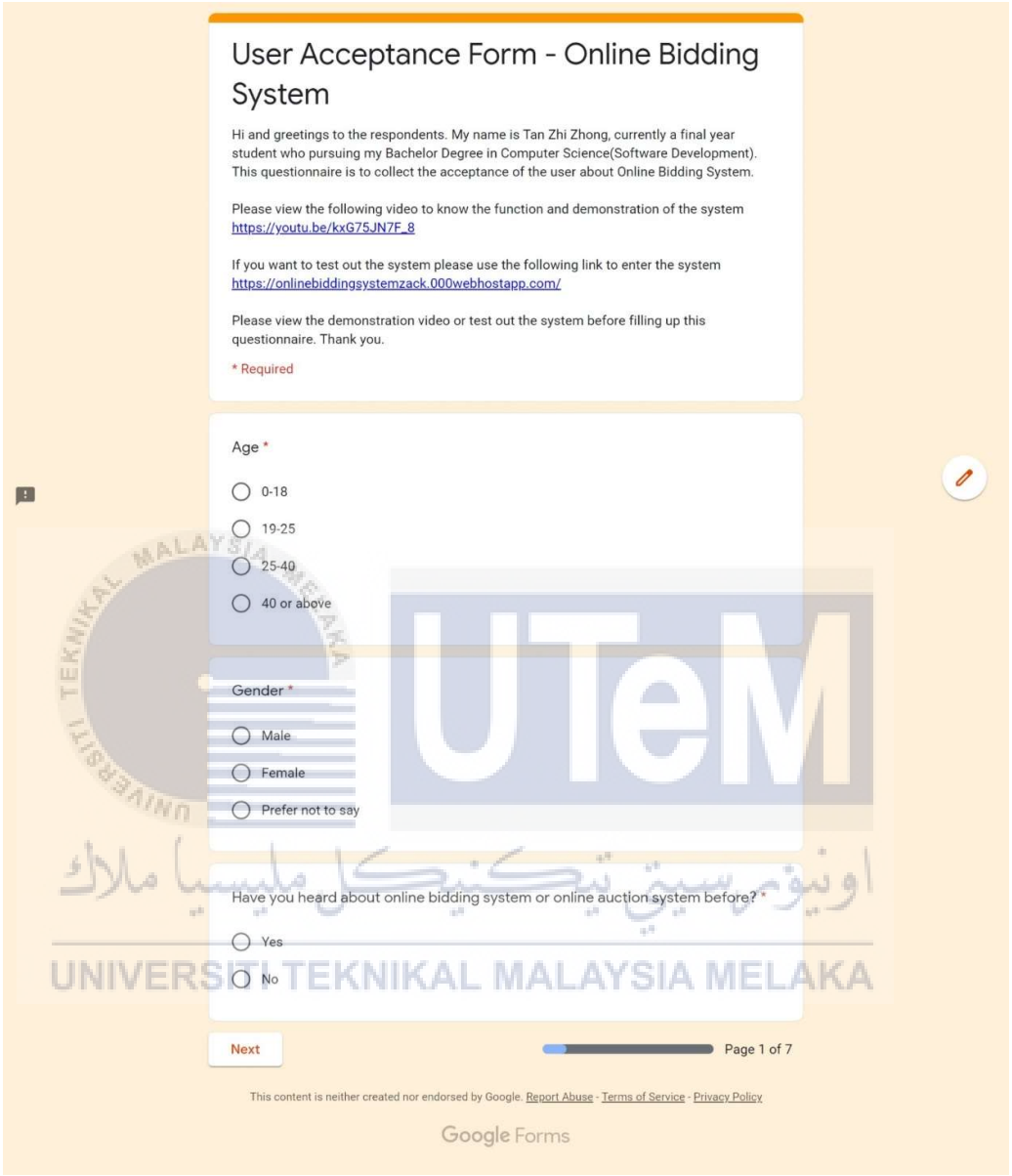
			3. Click save button		System should update the profile for the staff	System update the profile for the staff	Pass
		First Name cannot longer than 30 characters	1. Enter 35 characters in First Name field	aaaaaaaaaaaaaaaaa aaaaaaaaaaaaaaaaaa	System should stop the input of character at 30th characters	System stop the input of character at 30th characters	Pass
		Last Name cannot longer than 30 characters	1. Enter 35 characters in Last Name field	aaaaaaaaaaaaaaaaa aaaaaaaaaaaaaaaaaa	System should stop the input of character at 30th characters	System stop the input of character at 30th characters	Pass
		Email cannot longer than 30 characters	1. Enter 35 characters in Email field	aaaaaaaaaaaaaaaaa aaaaaaaaaaaaaaaaaa	System should stop the input of character at 30th characters	System stop the input of character at 30th characters	Pass
		Phone Number cannot longer than 13 characters	1. Enter 15 characters in Email field	123456789012345	System should stop the input of character at 13th characters	System stop the input of character at 13th characters	Pass
		Phone Number should not accept blank space	1. Enter blank space in Phone Number field		System should not accept the blank space input	System does not accept the blank space input	Pass
		Phone Number should not accept special characters	1. Enter special characters in Phone Number field	!@#$	System should not accept the special characters input	System does not accept the special characters input	Pass
		All field cannot be empty	1. Do not input anything in all the field				
			2. Click save button		System should display error message below every field to prompt the user to fill up.	System display error message below every field to prompt the user to fill up.	Pass

Appendix 4

TestCase#	Test Scenario	Test Cases	Test Steps	Test Data	Expected Result	Actual Result	Pass/Fail
OBS23	Verify system report page	System should display all the report based on the condition given correctly	1. Click the report in the left sidebar				
			2. Check whether the report shown is correct based on the condition selected		System should display the report based on the condition given such as based on category, date, or more	System display the report based on the condition given such as based on category, date, or more	Pass
OBS24	Verify Mange staff page	System should display all the staff of the system	1. Click the manage staff in the left sidebar				
			2. Check whether all the staff is listed		System should display all the staff in the list	System display all the staff in the list	Pass
OBS25	Verify Add Staff Function	Username cannot be empty	1. Do not enter a value in Username field				
			2. Click Add Staff button		An error message "Please enter a username" must shown	An error message "Please enter a username" shown	Pass
		Username cannot longer than 25 characters	1. Enter 30 characters in Username field	aaaaaaaaaaaaaaa aaaaaaaaaaaaaaa	System should stop the input of character at 25th characters	System stop the input of character at 25th characters	Pass
		Username should not accept blank space	1. Enter blank space in Username field		System should not accept the blank space input	System does not accept the blank space input	Pass

		Password cannot be empty	1. Do not enter a value in Password field				
			2. Click Add Staff button		An error message "Please enter a password" must shown	An error message "Please enter a password" shown	Pass
		Password cannot longer than 25 characters	1. Enter 30 characters in Password field	aaaaaaaaaaaaaaa aaaaaaaaaaaaaaa	System should stop the input of character at 25th characters	System stop the input of character at 25th characters	Pass
		Password should not accept blank space	1. Enter blank space in Password field		System should not accept the blank space input	System does not accept the blank space input	Pass
		Confirm Password cannot be empty	1. Do not enter a value in Confirm Password field				
			2. Click Add Staff button		An error message "Please enter a password" must shown	An error message "Please enter a password" shown	Pass
		Confirm Password cannot longer than 25 characters	1. Enter 30 characters in Confirm Password field	Aaaaaaaaaaaaaaa aaaaaaaaaaaaaaa	System should stop the input of character at 25th characters	System stop the input of character at 25th characters	Pass
		Confirm Password should not accept blank space	1. Enter blank space in Confirm Password field		System should not accept the blank space input	System does not accept the blank space input	Pass
OBS26	Verify Manage Categories page	Category Name cannot be empty	1. Do not enter a value in Category Name field				
			2. Click Add Category button		An error message "Please enter a category name" must shown	An error message "Please enter a category name" shown	Pass

Appendix 5



User Acceptance Form - Online Bidding System

Hi and greetings to the respondents. My name is Tan Zhi Zhong, currently a final year student who pursuing my Bachelor Degree in Computer Science(Software Development). This questionnaire is to collect the acceptance of the user about Online Bidding System.

Please view the following video to know the function and demonstration of the system
https://youtu.be/kxG75JN7F_8

If you want to test out the system please use the following link to enter the system
https://onlinebiddingsystemzack.000webhostapp.com/

Please view the demonstration video or test out the system before filling up this questionnaire. Thank you.

* Required

Age *

- 0-18
- 19-25
- 25-40
- 40 or above

Gender *

- Male
- Female
- Prefer not to say

Have you heard about online bidding system or online auction system before? *

- Yes
- No

Next

Page 1 of 7

This content is neither created nor endorsed by Google. Report Abuse - Terms of Service - Privacy Policy

Google Forms

Appendix 6

User Acceptance Form - Online Bidding System

* Required

Trustworthiness

I trust Online Bidding System for my information on my profile *

	1	2	3	4	5	
Totally disagree	○	○	○	○	○	Totally Agree

I trust Online Bidding System provides security for my account. *

	1	2	3	4	5	
Totally disagree	○	○	○	○	○	Totally Agree

I trust Online Bidding System provides security for my transactions. *

	1	2	3	4	5	
Totally disagree	○	○	○	○	○	Totally Agree

I trust Online Bidding System provides me a safe platform to bid or sell items. *

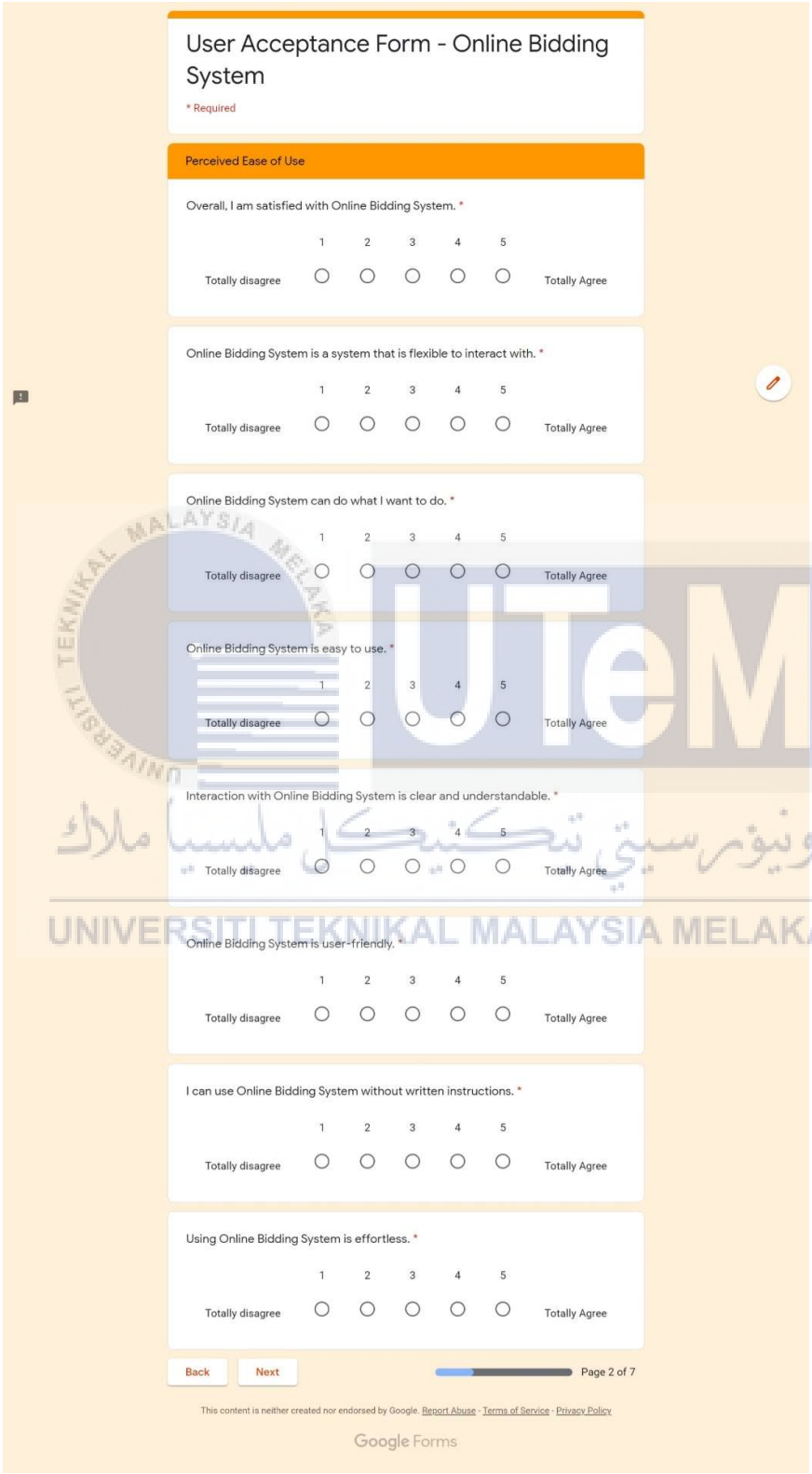
	1	2	3	4	5	
Totally disagree	○	○	○	○	○	Totally Agree

Back Next Page 5 of 7

This content is neither created nor endorsed by Google. Report Abuse - Terms of Service - Privacy Policy

Google Forms

Appendix 7



User Acceptance Form - Online Bidding System

* Required

Perceived Ease of Use

Overall, I am satisfied with Online Bidding System. *

1 2 3 4 5

Totally disagree ○ ○ ○ ○ ○ Totally Agree

Online Bidding System is a system that is flexible to interact with. *

1 2 3 4 5

Totally disagree ○ ○ ○ ○ ○ Totally Agree

Online Bidding System can do what I want to do. *

1 2 3 4 5

Totally disagree ○ ○ ○ ○ ○ Totally Agree

Online Bidding System is easy to use. *

1 2 3 4 5

Totally disagree ○ ○ ○ ○ ○ Totally Agree

Interaction with Online Bidding System is clear and understandable. *

1 2 3 4 5

Totally disagree ○ ○ ○ ○ ○ Totally Agree

Online Bidding System is user-friendly. *

1 2 3 4 5

Totally disagree ○ ○ ○ ○ ○ Totally Agree

I can use Online Bidding System without written instructions. *

1 2 3 4 5

Totally disagree ○ ○ ○ ○ ○ Totally Agree

Using Online Bidding System is effortless. *

1 2 3 4 5

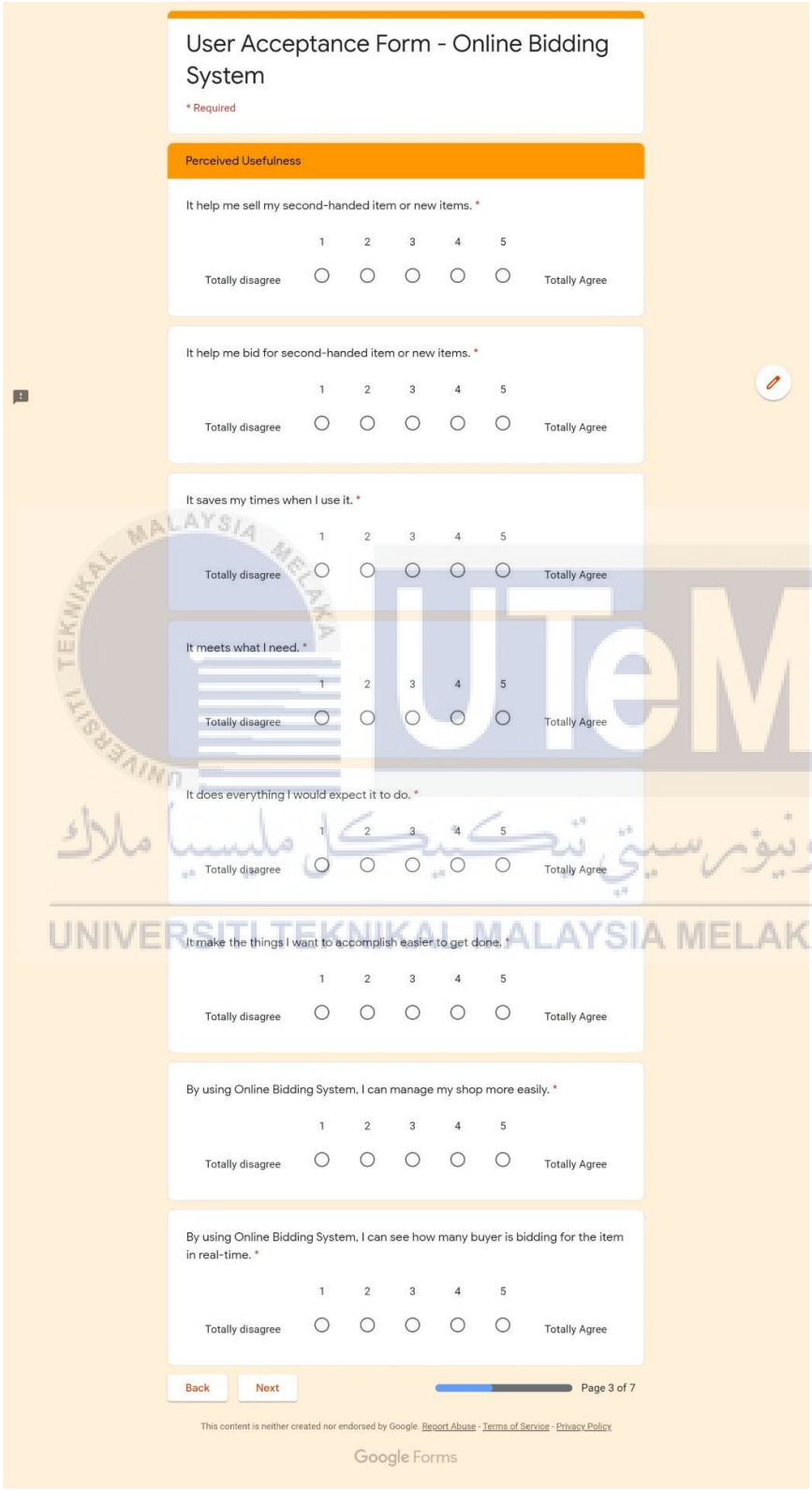
Totally disagree ○ ○ ○ ○ ○ Totally Agree

Back Next Page 2 of 7

This content is neither created nor endorsed by Google. Report Abuse · Terms of Service · Privacy Policy

Google Forms

Appendix 8



User Acceptance Form - Online Bidding System

* Required

Perceived Usefulness

It help me sell my second-handed item or new items. *

1 2 3 4 5

Totally disagree ○ ○ ○ ○ ○ Totally Agree

It help me bid for second-handed item or new items. *

1 2 3 4 5

Totally disagree ○ ○ ○ ○ ○ Totally Agree

It saves my times when I use it. *

1 2 3 4 5

Totally disagree ○ ○ ○ ○ ○ Totally Agree

It meets what I need. *

1 2 3 4 5

Totally disagree ○ ○ ○ ○ ○ Totally Agree

It does everything I would expect it to do. *

1 2 3 4 5

Totally disagree ○ ○ ○ ○ ○ Totally Agree

It make the things I want to accomplish easier to get done. *

1 2 3 4 5

Totally disagree ○ ○ ○ ○ ○ Totally Agree

By using Online Bidding System, I can manage my shop more easily. *

1 2 3 4 5

Totally disagree ○ ○ ○ ○ ○ Totally Agree

By using Online Bidding System, I can see how many buyer is bidding for the item in real-time. *

1 2 3 4 5

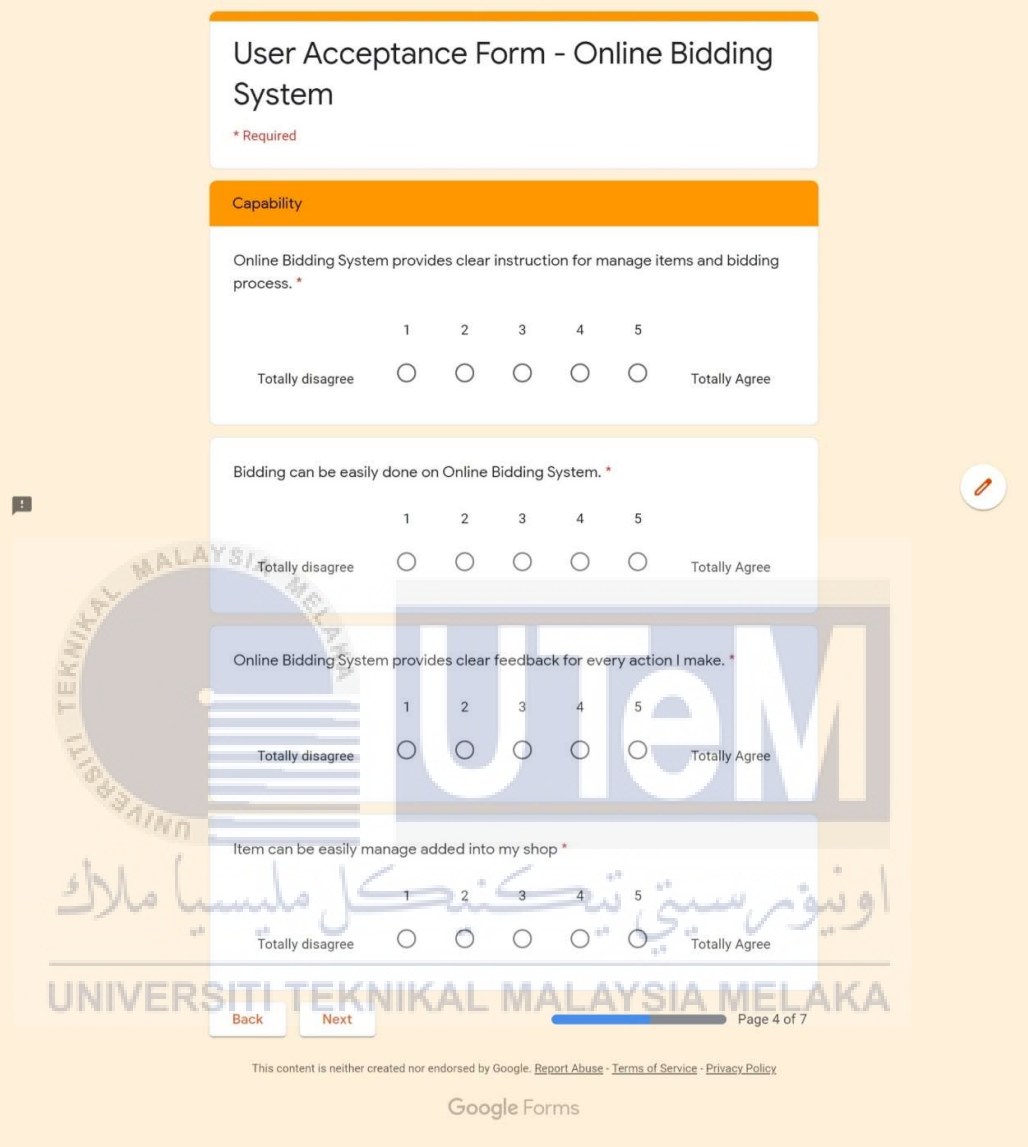
Totally disagree ○ ○ ○ ○ ○ Totally Agree

Back Next Page 3 of 7

This content is neither created nor endorsed by Google. Report Abuse - Terms of Service - Privacy Policy

Google Forms

Appendix 9



User Acceptance Form - Online Bidding System

* Required

Capability

Online Bidding System provides clear instruction for manage items and bidding process. *

	1	2	3	4	5	
Totally disagree	○	○	○	○	○	Totally Agree

Bidding can be easily done on Online Bidding System. *

	1	2	3	4	5	
Totally disagree	○	○	○	○	○	Totally Agree

Online Bidding System provides clear feedback for every action I make. *

	1	2	3	4	5	
Totally disagree	○	○	○	○	○	Totally Agree

Item can be easily manage added into my shop *

	1	2	3	4	5	
Totally disagree	○	○	○	○	○	Totally Agree

Back Next Page 4 of 7

This content is neither created nor endorsed by Google. Report Abuse - Terms of Service - Privacy Policy

Google Forms

Appendix 10

User Acceptance Form - Online Bidding System

* Required

Attitude

I would love to use Online Bidding System. *

	1	2	3	4	5	
Totally disagree	○	○	○	○	○	Totally Agree

It is a pleasure for me to use Online Bidding system as my platform to sell my items. *

	1	2	3	4	5	
Totally disagree	○	○	○	○	○	Totally Agree

It is desirable for me to learn how to use Online Bidding System. *

	1	2	3	4	5	
Totally disagree	○	○	○	○	○	Totally Agree

I feel I need to have Online Bidding System. *

	1	2	3	4	5	
Totally disagree	○	○	○	○	○	Totally Agree

I would recommend it to a friend. *

	1	2	3	4	5	
Totally disagree	○	○	○	○	○	Totally Agree

Back Next Page 6 of 7

This content is neither created nor endorsed by Google. Report Abuse - Terms of Service - Privacy Policy

Google Forms

Appendix 11