

MOBILE RECEIPT SYSTEM

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MOBILE RECEIPT SYSTEM

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Thesis submitted in fulfillment of the requirements
for the award of the degree of
Bachelor of Computer Science (Computer Systems & Networking) with Honours

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In the name of Allah, the most beneficent, the most merciful. Praise be to Allah the Ruler of the universe. May His blessings and mercy be upon the noble Prophet Muhammad and the Messengers. Together with family and friends, everything.

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ABSTRAK

Sistem 'Mobile Receipt' adalah sistem inventif yang menguruskan dan mengatur resit pembelian pengguna. Sistem ini dibangunkan melalui platform aplikasi berasaskan web dan Android yang berinteraksi dan bertukar maklumat untuk menawarkan satu sistem yang lebih praktikal kepada pengguna. Sistem ini direka untuk peruncit sebagai sistem pembayaran dan pengurusan resit. Masalah utama ialah, pelanggan mempunyai masalah ketika menyimpan semua resit mereka dan memerlukan masa yang lama untuk menguruskan semua resit mereka. Sistem ini menawarkan lima fungsi yang log masuk, menambah item, menghasilkan resit, mengimbas resit dan menambah item senarai. Sistem ini akan menghasilkan resit digital yang boleh disimpan menggunakan aplikasi Android. Aplikasi Android 'Mobile Receipt' ini akan mengurus dan mengatur resit untuk pengguna. Sistem ini menggunakan ciri kod QR sebagai perantara untuk berinteraksi dengan sistem berasaskan web dan aplikasi telefon. 'Mobile Receipt' ini telah dibangunkan menggunakan kaedah 'Agile methodology' yang merangkumi 'iteration' dan 'incremental delivery' semasa proses pembangunan sistem. Untuk memastikan sistem setaraf dengan hasil yang diharapkan, ujian 'Black-box' telah dilakukan untuk mencari masalah, kecacatan atau kesilapan dalam sistem. Ujian 'Black-box' telah dipilih kerana ia akan menguji fungsi sistem berdasarkan keperluan. Dari projek ini, saya harap sistem ini dapat membantu pengguna mengurus dan mengatur semua resit pembelian mereka.

ABSTRACT

Mobile Receipt System is an inventive system that manages and organizes receipt purchased. The system was developed with the web-based and Android application platform that interact and change information to deliver a practical system to the user. The system is designed for the retailer as their payment and receipt management system. The main problem is, the customer has a problem when storing all their receipt and required a lot of time to organize all their receipts. The system has offers five function that is login, add an item, generate a receipt, scan the receipt and add a list item. The system generates a digital receipt that can be retrieved using the Android application. The Android application of Mobile Receipt System manage and organize the receipt for the user. The system is using QR code features as a medium to interact with the web-based system and the application. Mobile Receipt was developed using the Agile methodology that includes iteration and incremental delivery during the development process. To make sure the system matches the expected result, the Black-box testing has been done to find bugs, defect or error in the system. The Black-box testing has been chosen because it will test the functionality of the system based on the requirement. From this project, the system is able to perform its functionality and fulfil the user expectation to help the user manage and organize all their receipts.

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LIST OF ABBREVIATIONS

GPS	Global Positioning System
CSV	Comma Separated Values
PDF	Portable Document Format
iOS	iPhone Operating System
OCR	Optical Character Recognition
PC	Personal Computer
SDLC	System Development Life Cycle
RAM	Random Access Memory
GB	Gigabyte
MB	Megabyte
PHP	Hypertext Preprocessor
UML	Unified Modelling Language
MVC	Model View Controller
UAT	User Acceptance Test
XML	Extensible Markup Language
QR	Quick Response

CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION

A paper receipt is important as a purchase record for the customer. Keeping a copy of every receipt bring trouble to organize and manage your receipts. In most of the cases, the receipt received by the customer were instantly thrown and became trash. This brings a problem when claiming tax or warranty without the copies of the receipt records. The paper receipt gives the problem to the users to organize and manage the receipt. There are several systems help the user by providing an Application that stored and manage all the receipt from the user's transaction. The drawback of the existing system is the user still needs to fill up all the details of the receipt info into the systems. This required more time and less efficiency for the users to manage all their receipts.

Mobile Receipt system is designed for tracking personal or business paper receipts. Mobile Receipt offer technology that makes managing receipts report organize and fast. Mobile Receipt system is easy, organize and cost-effective method for receipt management by providing a digital receipt for retailer management receipts. Mobile Receipt System is the application that combined two different platforms using a web-based system and mobile application to digitalize the receipt for the retailer. The user can track your paper receipts using your Android device as digital receipts by using the Mobile Receipt Android application.

The Mobile Receipt web-based system is a platform that retailer can use as their payment system in their business that provides a digital receipt to their customer. The system will automatically create general receipt as a file and attach with QR Code that is a machine-readable code. The QR code contains the digital receipt of the business

purchasing and can interact with the Mobile Receipt application to transfer the digital receipt to the user's smartphone. The Mobile Receipt application is the application that can read and interact with a QR code that will be generated by Mobile Receipt web system to get the digital receipt data and save it to the smartphone. The application will manage and organize the digital receipt of the user by providing the shop name and date. The user can find and view their all-digital receipt in this application. The mobile application will keep the record of retailer name and date.

By using the technologies of digital receipt, the user can save the receipt info digitally. Therefore, it can improve the efficiency of the receipt organization for the user. The user also can retrieve their receipt info in the Android application that manages all the receipt of purchasing.

1.2 PROBLEM STATEMENT

- i. People have a problem when storing the tone of receipt as the report showing what has been purchased. Some people keep them in their bag, wallet, and shoebox. This distress the user to centralize all their receipt in one place. An ideal solution would be designed digital receipt as a copy of the paper receipt that can be saved on your smartphone.
- ii. The users deal with the problem of less efficiency in user input of using the existing system. The user needs to fill up the details of each receipt manually to an application.
- iii. Finding and tracking the receipt to claim defective product or warranty is difficult and required a lot of time. A solution is by bringing a system that offers efficiency and flexibility to find one specific receipt and save the user time.

1.3 OBJECTIVE

The objective of the research are:

- i. To design the system for organizing and managing receipts from the retailer purchasing.
- ii. To develop an application that can manage and organize the user receipts or invoice.
- iii. To test acceptance of the receipt management system based on the users and the retailer's acceptance.

1.4 SCOPE

This project is designed for the fashion retailer for the payment system and the receipt system. The system can be used by the fashion retailer such as Brand Outlet, Padini, Uniqlo and others fashion retailer as the payment system. The system will generate the receipt for the customer that can interact with the Android application. The system also is designed for the customer of the fashion retailer to obtain the digital receipt by using an Android application. The users also can store and view the digital receipt of the purchasing in the smartphone.

1.5 THESIS ORGANIZATION

Chapter 1 discusses the introduction of the current scenario on receipt system used by the retailer and the problem statement of receipt management. The chapter also discussed the objective of the project to solve the current problem and existing systems. The last section of Chapter 1 is focusing on the scope of the project which is the retailers and customers.

In chapter 2, the literature review discusses the comparison of Mobile Receipt system with the three-existing system in the market.

In chapter 3, the methodology chapter explains an overall about the selected methodology for the development, it is including the flow diagram of the system, hardware and software used to develop the Mobile Receipt system.

Next, chapter 4 discusses implementation of this project by following the selected methodology, the testing implemented to test the developed project and the result of testing that has been done.

Lastly, chapter 5 is about the conclusion, constraints and future work for the Mobile Receipt System.

CHAPTER 2

LITERATURE REVIEW

2.1 INTRODUCTION

This chapter explains in detail on three existing systems that offer the same function as receipt organizing and management application used by the users. In this chapter, there are few selected applications or systems that are discussed and studied. Every each of applications has a different function, tasks, and features that implement in their system.

2.2 REVIEW OF EXISTING SYSTEM

This section discusses briefly three existing system that has been compared with the proposed system. The review will compare many aspects of the system to provide service for the receipt management system to the users.

2.2.1 Shoeboxed

Developer: Zack Brown (2007).

Website: www.shoeboxed.com/

Shoeboxed is an application for managing and storing receipts for expense reports, tax or insurance document. This application offers different methods for digitalizing receipts into their online software. The users can scan receipts or take a snapshot of the receipt and send them to Shoeboxed. The application also interacts with the Google email of the users and automatically imported the receipt from the user email. This application

offers features of using GPS in the smartphone to set the location of the receipt when the scanning receipt happen. Shoeboxed also can export data to Excel and to file formats CSV or PDF.



Figure 2.1: Shoeboxed application interface

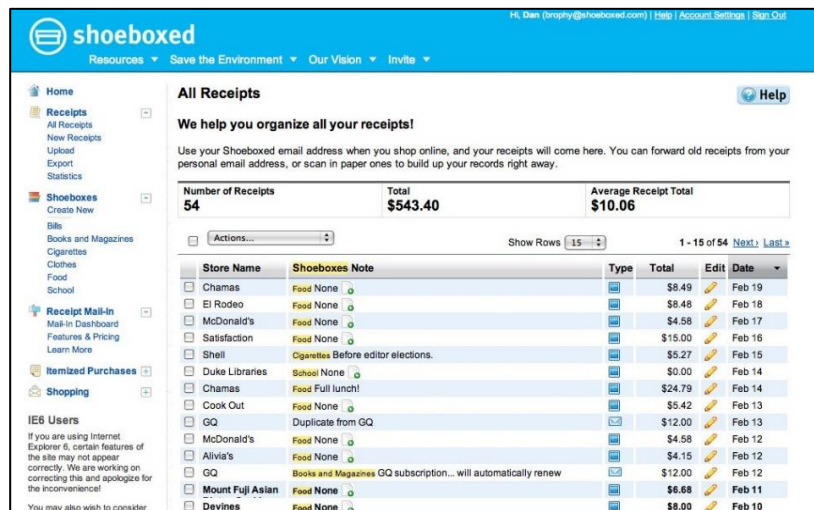


Figure 2.2: Shoeboxed web interface.

2.2.2 Certify

Developer: Robert Neveu (2008).

Website: www.certify.com/

Certify is a free application for keeping track the receipt. This application is designed for small-to-medium-size of businesses to organize their expenses. The mobile versions of this application are available for iOS, Android, Windows phone, and Blackberry. This application can be used in a web browser because of the application use cloud-based application. The receipt can be uploaded to the application and the user will fill the details and categorize the expenses. The available features in this system include receipt capture, receipt storage and geo-location services.

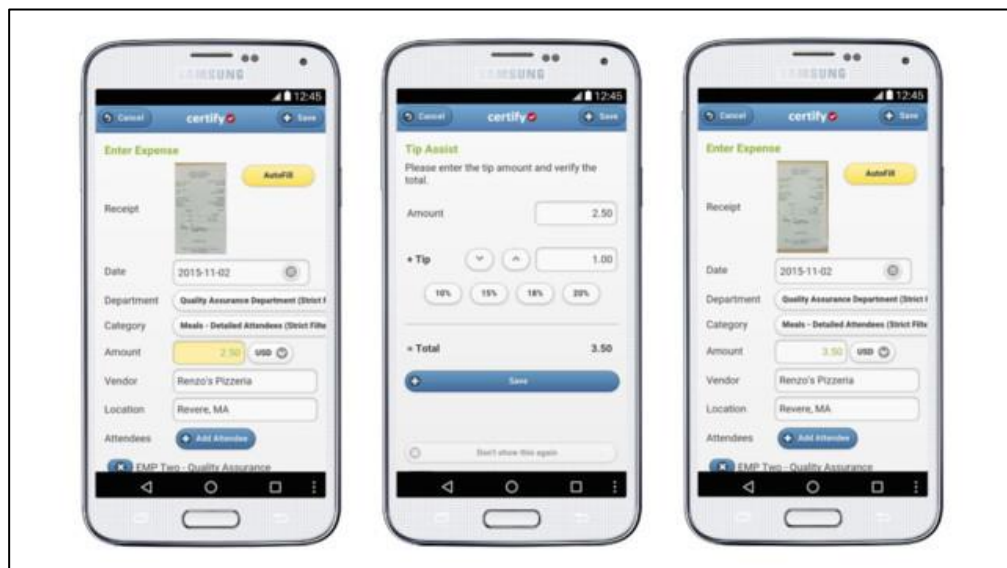


Figure 2.3: Certify application interface

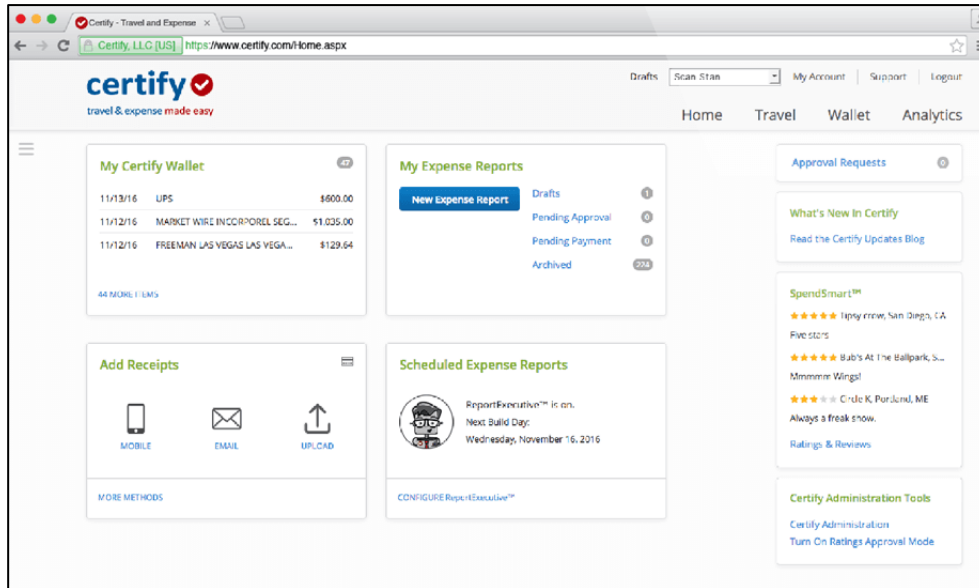


Figure 2.4: Certify web interface.

2.2.3 Wave

Developer: Kirk Simpson (2009).

Website: www.waveapps.com/receipts/

This is a free receipt scanning that will syncs the receipt to your smartphone. The application offered free accounting software and financial services. By simply snapping the receipt using the application and the information is transferred to Wave account. The application uses optical character recognition (OCR) to capture the information from the receipts. The user can review the receipt details using before saves the data in the smartphone. By using accounting and financial service, the user also can track and review all expenses that handle by the system.

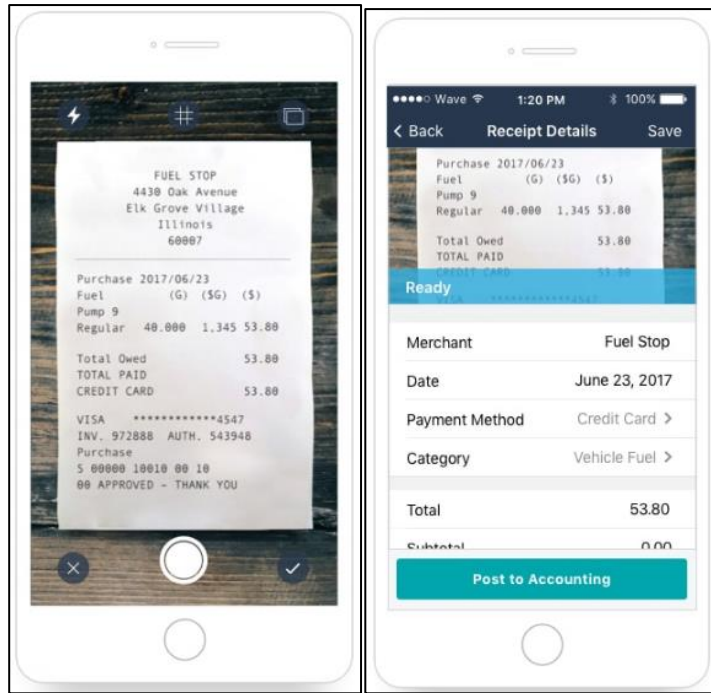


Figure 2.5: wave application interface.

	Date	Description	Amount	Category	Account
<input type="checkbox"/>	2017-06-09	Payment for photo shoot	\$ 1300.00	Sales	Checking Account
<input checked="" type="checkbox"/>	2017-06-23	Fuel Stop	\$53.80	Vehicle Fuel	Credit Card
<input type="checkbox"/>	2017-06-09	Lou's Camera	\$ 49.12	Equipment Rental	Credit Card
<input type="checkbox"/>	2017-06-09	By the Way Cafe	\$ 12.08	Meals & Entertainment	Checking Account
<input type="checkbox"/>	2017-06-05	Product shoot	\$ 2000.00	Sales	Checking Account
<input type="checkbox"/>	2017-06-02	GasBar	\$ 20.00	Vehicle Fuel	Credit Card

Figure 2.6: Wave web interface.

2.3 THE PROPOSED SYSTEM

The proposed system for the organizing and managing receipts is Mobile Receipt System. Mobile Receipt is a system that offered receipt organizing and management for the users. This system helps the users to track and organize their daily receipt management. This system has offered on two platform which is web-based for the fashion retailer and the Android application for the user. This system able to minimize time for

organizing the user’s receipt. The web-based of Mobile Receipt is designed for the fashion retailer as the payment system and providing the QR code for the digital receipt. This web-based system also can be used on other retailers. The user will scan the QR code using the application to retrieve the digital receipt and bringing the receipt to their smartphone. Mobile Receipt Android application will automatically organize and manage all the receipt in that application.

2.4 COMPARISONS ON EXISTING SYSTEMS

Comparison between the feature and functions of the system have been identified and analyzed. The following is the table of comparison between Mobile Receipt and existing system explained in table 2.1.

Table 2.1: Comparison of existing system

System	Users	Hardware and Tools	Technology	Features
Shoeboxed	Suitable for users from a different background.	Android Phone, IOS Phone, and PC and the tools are Android Studio and Swift	Phone camera	<ul style="list-style-type: none"> i. Ability to scan receipts or take a snapshot and send them electronically to Shoeboxed. ii. Generate expense reports. iii. Using phone GPS to track mileage.

				iv. Integrated with the Google Gmail.
Certify	Suitable for users from a different background. And small to medium size of businesses.	Android Phone, IOS Phone, and PC and the tools are Android Studio and Swift	Phone GPS	<ul style="list-style-type: none"> i. Free mobile app for all major platforms. ii. Mobile receipt scan and autofill. iii. Geo-location services for tracking receipts. iv. Create an auto expense report. v. Easy to set up.
Wave	Suitable for users from a different background.	Android Phone, IOS Phone, and PC and the tools are Android Studio and Swift	Optical character recognition (OCR).	<ul style="list-style-type: none"> i. Provide accounting software and financial services. ii. Using optical character recognition (OCR) to detect

				character on receipts.
Mobile Receipt System	The users of this system are the fashion retailer and the customer from the retailer.	Android Phone and PC and the tool is Android Studio	QR code	<ul style="list-style-type: none"> i. Less efficiency of user input. ii. Integrated with web-based to generate receipts. iii. Using QR code scanner.

From the table, every of each application has its own advantage and weaknesses in their system. For the Shoeboxed, the advantage we can see which the application can organize and automatically generate expense report for the users. The disadvantage of Shoeboxed is user need to fill up the input of the receipt's details. The certify have an ability of geo-location to track place of the receipts being scanned. But less efficiency of user input where the user needs to fill up the details of the receipts. The Wave application has an advantage by using Optical Character Recognition (OCR) to identify the information from the receipt captured. But some information mistake can happen when capturing receipts data using OCR.

2.5 CONCLUSION

As a conclusion, each of the existing systems has unique features and technique but the proposed system of Mobile Receipt Application is bringing much easy and efficiency by overcoming from the existing system of receipt management.

CHAPTER 3

METHODOLOGY

3.1 INTRODUCTION

This chapter describes the methodology used during the development of Mobile Receipt System. System development methodology is a process that is used to plan, structure and control process of developing an application or system. The methodology also is a guideline to achieve the project objective and describe the life cycle of a software. This section also will explain the method, model, and tools that used during the development of the Mobile Receipt System.

3.2 METHODOLOGY

This project is implemented with the Agile methodology to manage the life cycle of the project development. This method has the capability for incremental and interactive work sequence to utilized software development and minimizes the risk of developing in short period time and cost of the development (Highsmith & Cockburn, 2001). The development also provides rapid feedback and changes in the requirement (Stender, 2002).

Agile methodology considered the time allocation for a particular phase of a project. This approach more emphasizes real-time communication as the way to transfer information and ideas over the written document (Stender, 2002). This offer rapid and flexible response in communication between teams, stakeholders, and the client. This technique is applied iterations in each life cycle. Iteration cycle focuses on goals as a target to reduce the time from the delivery and extending life cycle (Highsmith & Cockburn, 2001). In the traditional life cycle that is the System Development Life Cycle

(SDLC) era, development team worked alone, with no input before handling the system to the tester and the production. This means the development team work based on the requirement before without any changes (Leau, Loo, & Friends, 2012). The changes of the requirement can bring the problem and delay in the development phase. With the Agile model, the business side also stayed involved in the development process to provide rapid changes and delivered the better system to the market. By using open communication, collaboration and communication became more easily between analyst team and development team. Figure 3.1 shows the life cycle that is used in Agile methodology.

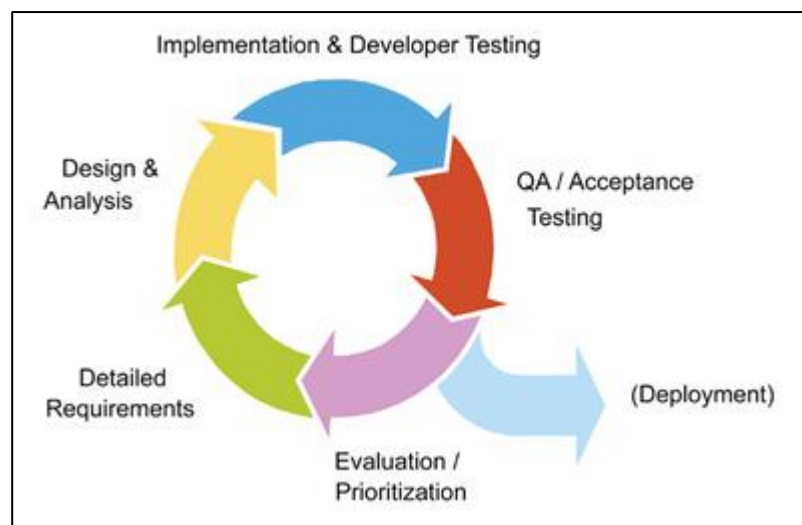


Figure 3.1: Agile Life Cycle.

There are 5 phases of Agile methodology that implemented in this project that starts with the requirement, analysis and design phase, implementation phase, testing phase and the last phase is the deployment phase.

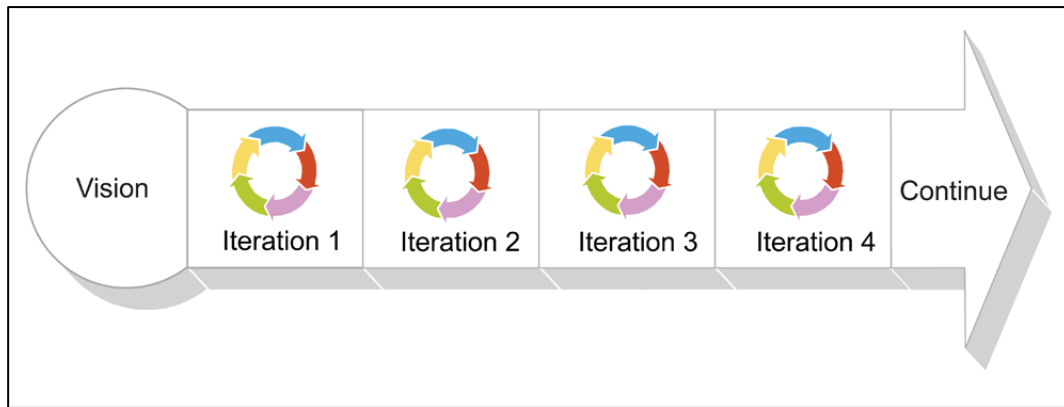


Figure 3.2: Agile iteration Cycle.

Agile has applied Iteration which means each version of the product is usable and open the previous version by adding more features and functionality. Every phase of development that is a requirement, analysis and design, development, test and deploy is reviewing to give better feedback and changes to the product (Stender, 2002). This incremental delivery happens until the final product is finalized. This methodology has been applied because it is the best method for small-scale project development. Any new features and changed requirement can be delivered quickly to the clients. The client involvement also ensures the customer satisfaction and acceptance of the system.

In conclusion, the methodology that has been chosen for the Mobile Receipt System is Agile Methodology because of the project can be delivered on the certain period time and less cost to implement (Highsmith & Cockburn, 2001). Besides that, this methodology offers iteration cycle where the project can rework on each phase to deliver the better system to the client. Lastly, the Agile methodology also offers to maintain and remove the complexity of the project development (Stender, 2002).

3.3 SYSTEM DESIGN

This subchapter will explain the architecture, modules, interface for the Mobile Receipt System. The UML Diagram represent the system actor, actions, process and activities that occur in the Mobile Receipt System.

3.3.1 Class Diagram of Mobile Receipt System

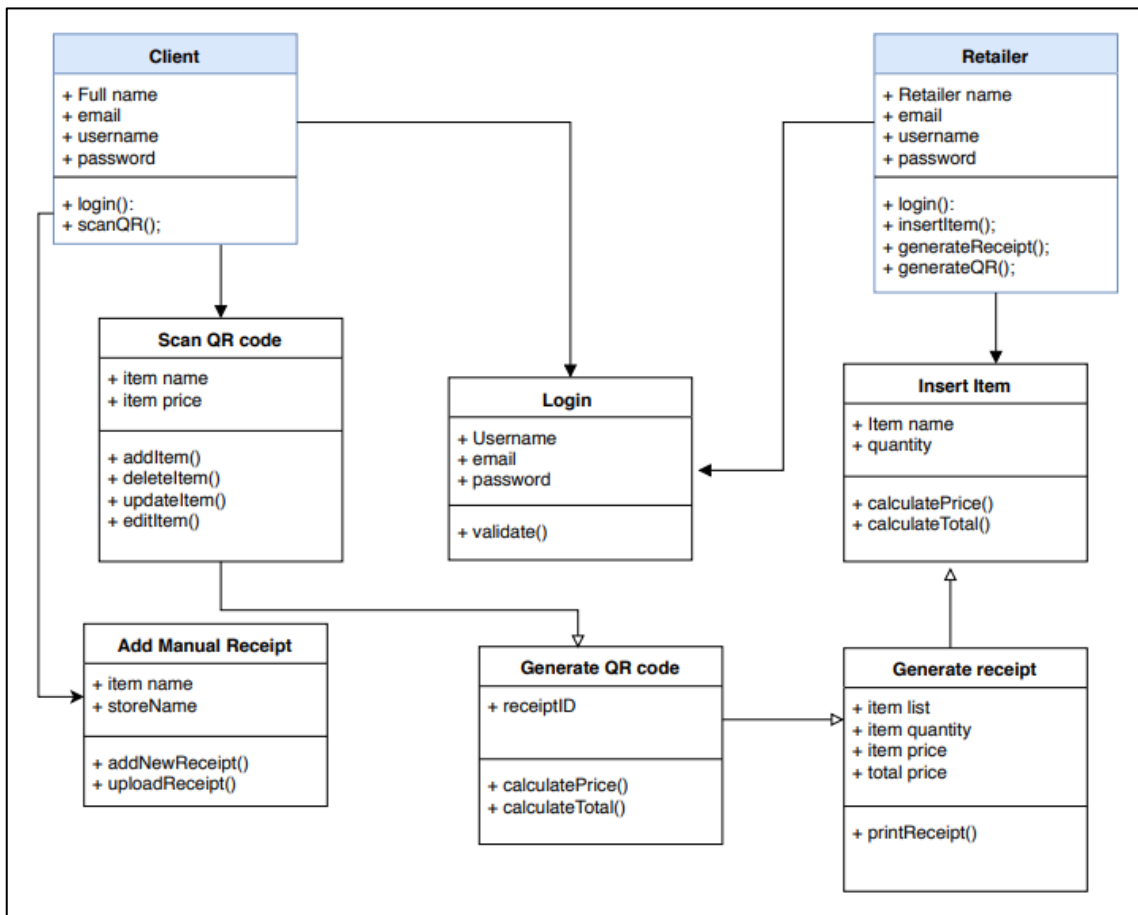


Figure 3.3: Class Diagram of Mobile Receipt System

Figure 3.3 shows the class diagram of Mobile Receipt System. Client and retailer is the user of the system and interacts with the system. The client has a specific attribute for the system. The client needs to pass the username and password data to the system to use the system. The client also can access the scan QR code module to retrieve the digital receipt of item purchasing. The system will generate a QR code to the user that contains

a link to the digital receipt. The user also has the ability to upload the manual Receipt. The user can capture the paper receipt to upload and saved it into the Mobile Receipt application. For the retailer, the retailer needs to login by providing an email and password. The retailer also needs to specify the order details into the system. This will allow the system to generate Receipt and generate QR code. Both functions required the previous module which is insert item to operate and process.

3.3.2 Use case of Mobile Receipt System

Figure 3.4 below shows the Use Case Diagram of Mobile Receipt System.

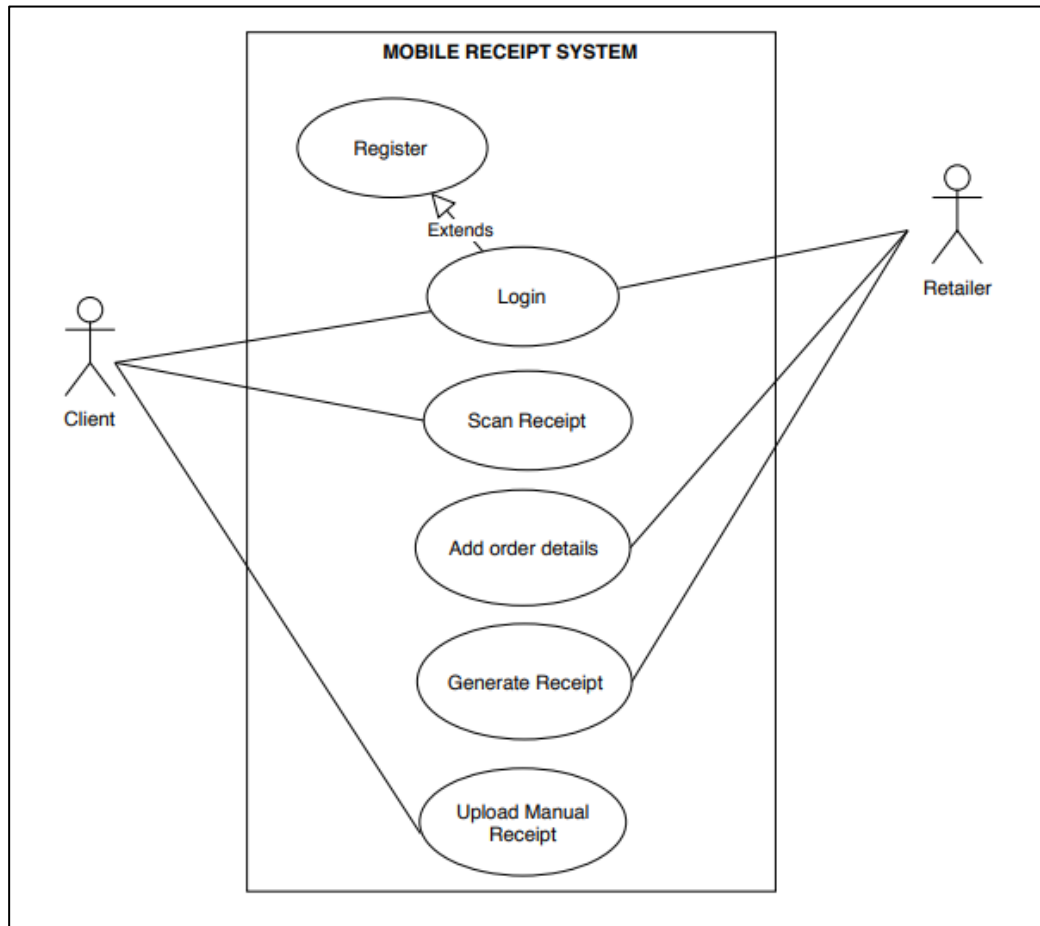


Figure 3.4: Use Case Diagram of Mobile Receipt System

There are three actors that consist of client, retailer and admin that have an interaction with the system. Each actor has a different module in the Mobile Receipt System. For the client, the client has login module for defining the authorized user for the system. The user has an ability to scan receipt using scan receipt module. The retailer also has login module to differentiate the retailer of the system. The retailer also has a module to add order details and generate a receipt module to produce the digital receipt. Admin has a unique module that adds item module to manage data and information on the Mobile Receipt System.

3.3.3 Sequence Diagram

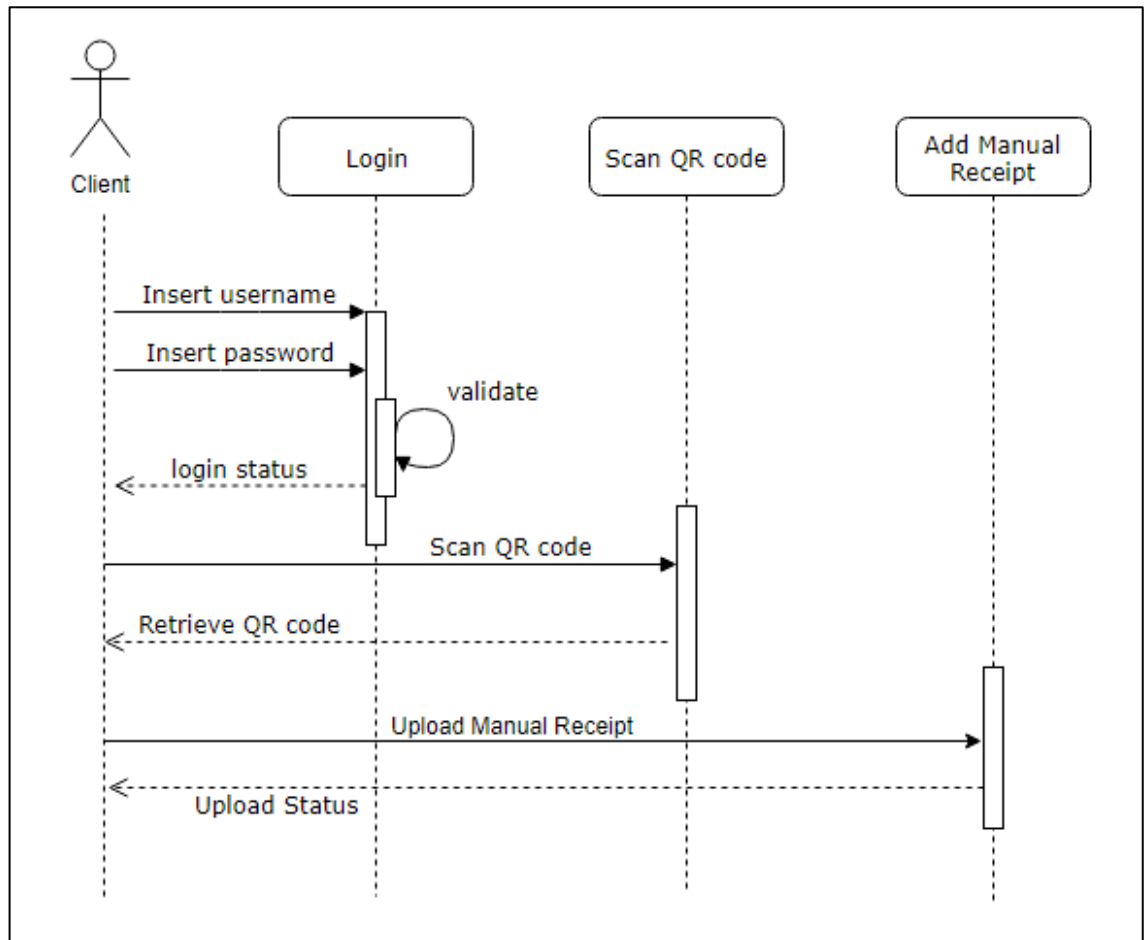


Figure 3.5: Client Sequence Diagram

Figure 3.5 shows the sequence diagram for the client in the Mobile Receipt System. The client has two modules or function in the system. The client passes the login details and the login module will process and validate the client details. When the validation is an authorized user, the client will be direct to the system. The client has an ability to used scan QR code module to retrieve the digital receipt that has been produced by the Mobile Receipt System.

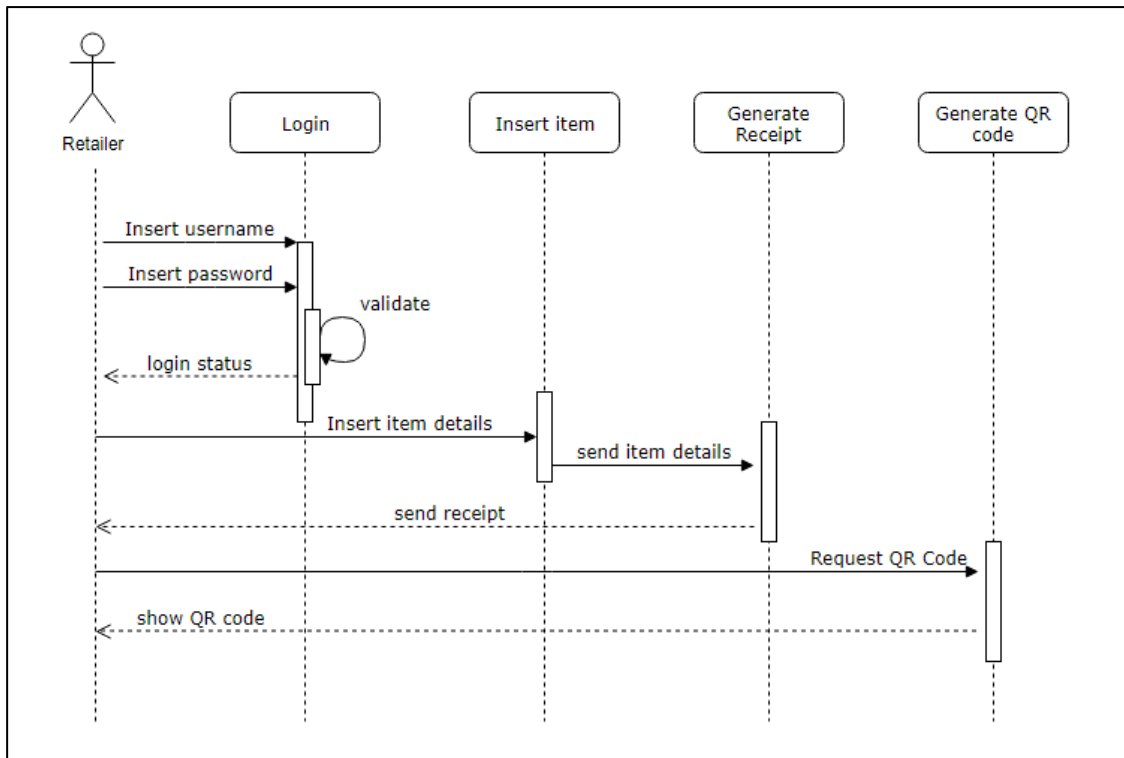


Figure 3.6: Retailer Sequence Diagram

Figure 3.6 shows the sequence diagram for the retailer in the Mobile Receipt System. The retailer has four module or function in the Mobile Receipt system. The First process for the retailer is to access login module by providing the login details to the system. The system will validate the retailer access. Then, the retailer can insert the item details which is item name and item quantity. This will allow the retailer to proceed with the next module which is generate receipt module. In this module, the system will do the calculation for the item price and build the receipt of the item that has been inserted. This module will generate a file text type of PDF for the receipt. The retailer also can request a QR code for the client that contains the digital receipt of user purchasing.

3.3.4 Modules

i. Shared Module

a) Module 1: Login Module

This Module requires the user of Mobile Receipt System to login to use the system. The system will verify user if the user login is client, retailer or admin. The user needs to provide email and password to login. This module also included register module for the new user to use the system.

ii. Client Module

a) Module 2: Scan Receipt

This module provides a QR code to the client user that contains digital receipt of the user purchasing. The QR code contains the information of retailer and purchasing items. The client only has access to this module.

b) Module 3: Upload Manual Receipt

This module enables the user to upload the image of the paper receipt into the Mobile Receipt Application. The user can capture the paper receipt and saved it into the application.

iii. Retailer Module

a) Module 4: Generate Receipt

This module is designed for the retailer to create generate a receipt of the purchasing item that can be retrieved by the client. The module will get all the details about the retailer and purchase items to generate a receipt. The receipt unique key will be converted to and saved into the QR code.

b) Module 5: Add Order Details

This module will ask the retailer to give input on the purchasing item. This module contains the information from the database where the user only selects and fill the quantity of the item. This module will automatically capture information about the retailer from the database. The calculation of the price also is automatically done by this module.

3.3.5 Flowchart Diagram

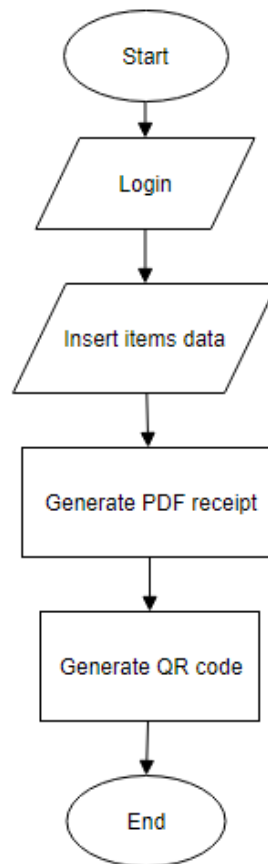


Figure 3.7: Flowchart Diagram for web-based system of Mobile Receipt.

Figure 3.7 shows the flowchart diagram for web-based system of Mobile Receipt System. The diagram shows the general flow of the user in the web-based system. The user will start with login before proceeding with the next function to insert item details. After the item details are complete, the user can generate the receipt for that item list. This function will automatically calculate the total price for client purchasing. Then the user has the ability to generate the QR code that contains the digital receipt links from the client purchasing. That is the last process that happens in the Mobile Receipt system.

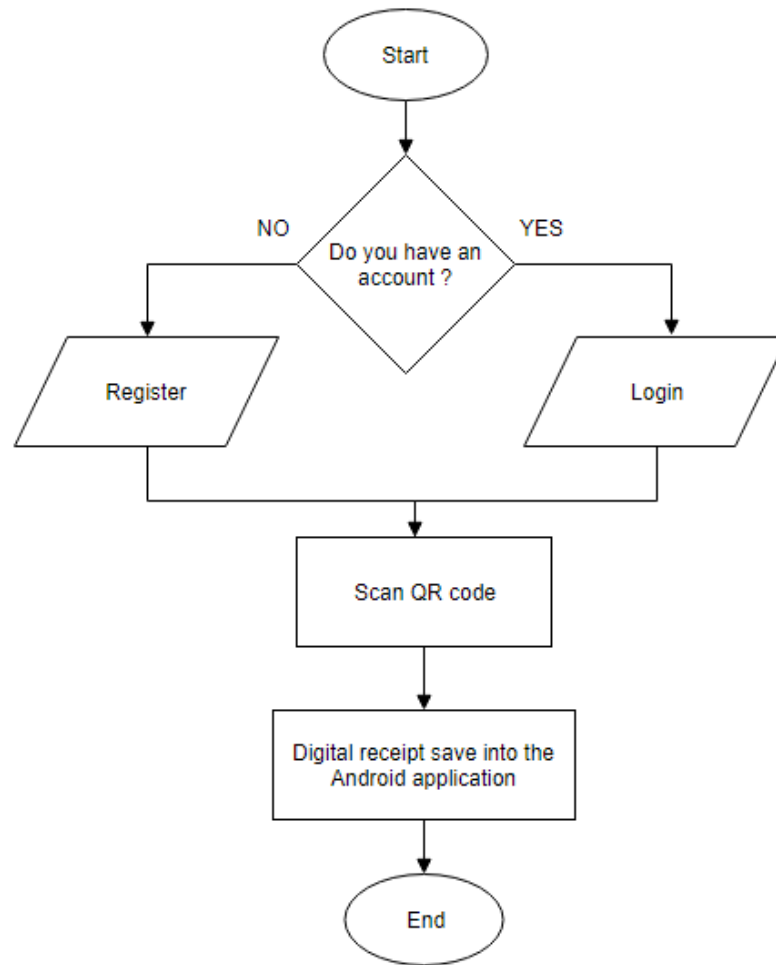


Figure 3.8: Flowchart Diagram for Android Application of Mobile Receipt.

Figure 3.8 shows the flowchart diagram for the Android application of the Mobile Receipt system. The user of the application will start with the login to access the system. The user has an option to register for the new user. Then, the user only has one function which is scan QR code. The application scanned the QR code that has been generated by the web-based system to retrieve the receipt and saved it to the user smartphone.

3.3.6 User Interface of Mobile Receipt System

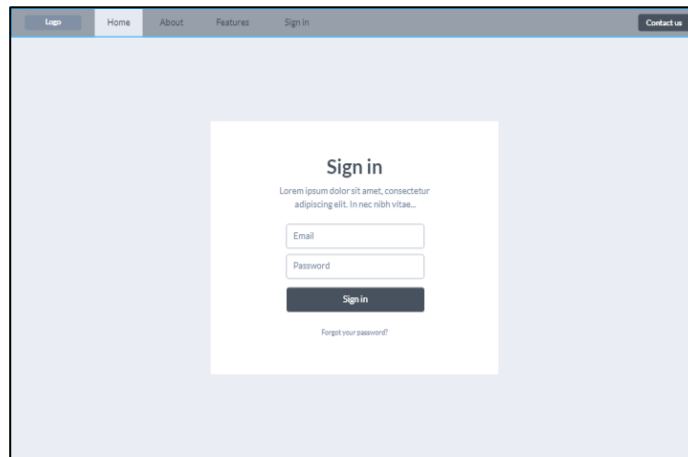


Figure 3.9: Sign in Interface.

Figure 3.9 shows the interface of the sign in form. This form is available for the authorized retailer to use the system. The retailer need to provide an email and password to enter the system.

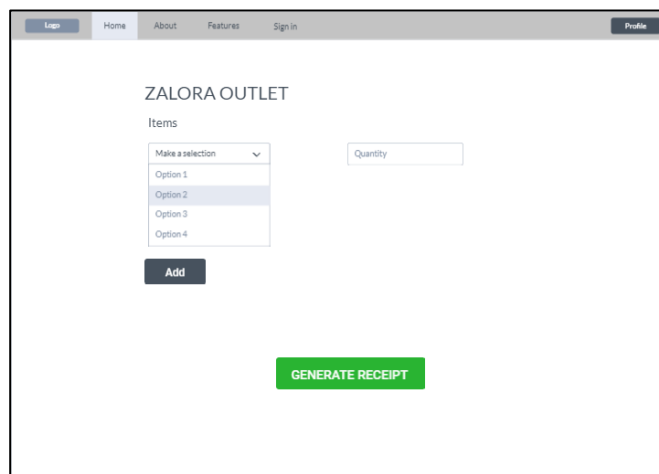


Figure 3.10: Outlet page Interface.

Figure 3.10 shows the interface for the retailer to fill in the item purchasing by their customer. The retailer can use the 'add' button to insert a new item on the user purchasing. The retailer also needs to specify the quantity of each item before generating the receipt.

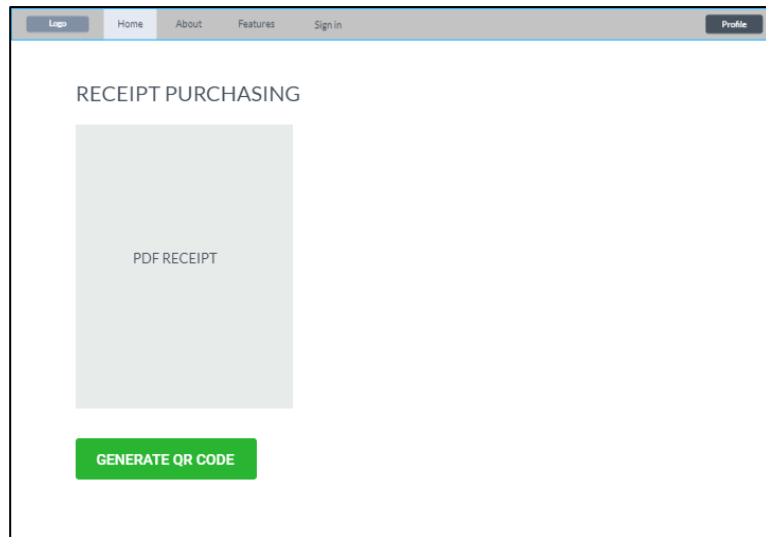


Figure 3.11: Receipt page Interface.

Figure 3.11 shows the interface for the receipt. The interface will show the digital receipt of the purchasing item in a PDF format. This interface also enables the retailer to generate a QR to retrieve the digital receipt.

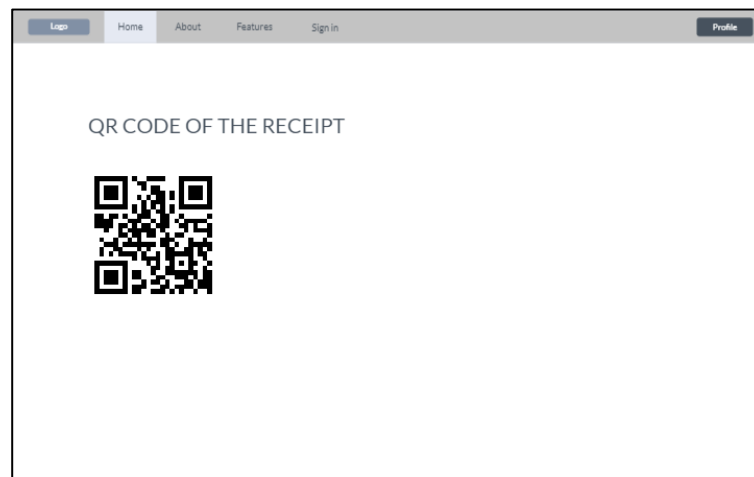


Figure 3.12: QR Code page interface.

Figure 3.12 is the QR code page to display a QR code for the digital receipt. The QR code contains the link to retrieve the digital receipt using Mobile Receipt application.

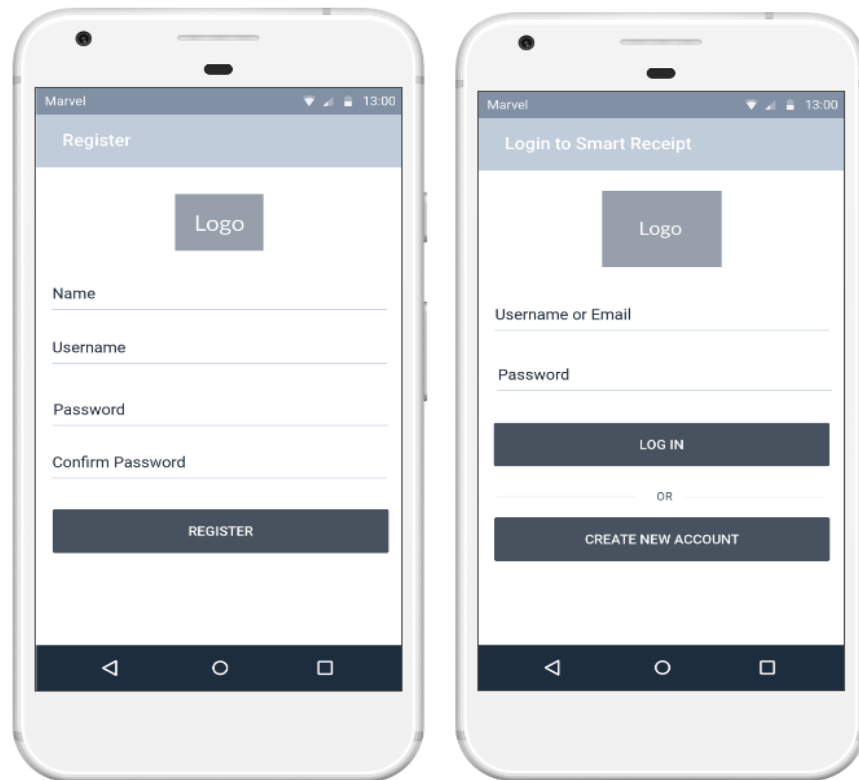


Figure 3.13: Register and Login page on Android Application

The register page consists of a form that contains name, username, password and password confirmation. The user can register to the system by fill in the registration form. The login page is for the registered user to login before entering into the system. This page prevents an unauthorized user to enter the system.

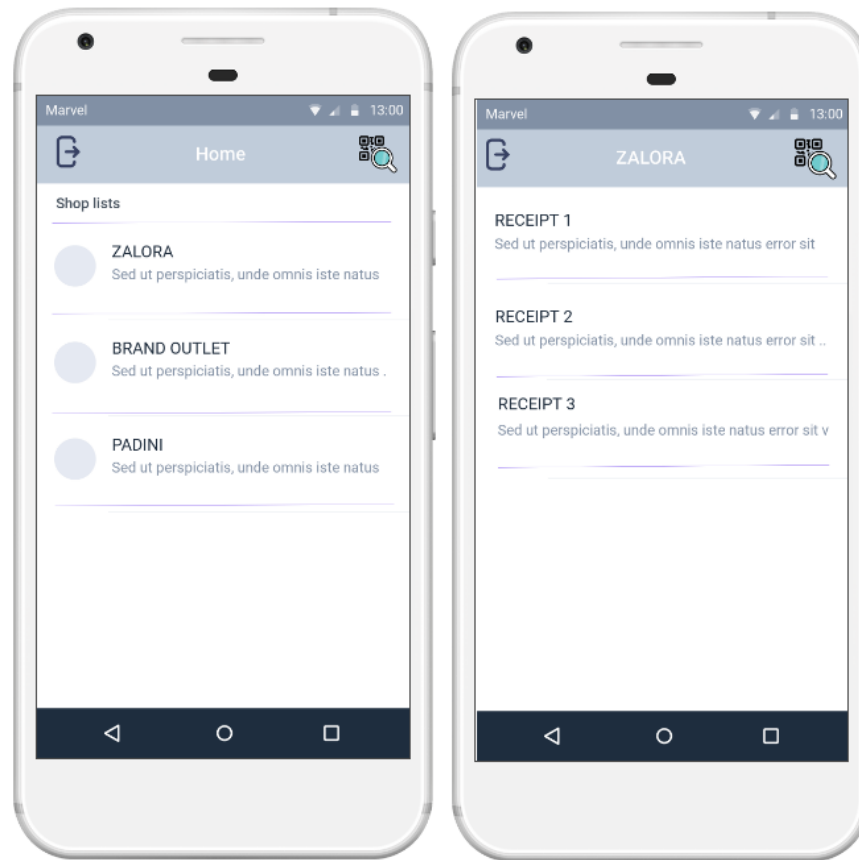


Figure 3.14: Homepage and Receipt page on Android Application

Homepage shows the list of the retailer that implement Mobile Receipt as their receipt system. The home page also has a scan button to scan the QR code from the retailer. The home button also has logout button for the user to end the login session. The receipt page will show the user the list of the digital receipt from the retailer.

3.4 HARDWARE AND SOFTWARE REQUIREMENT

Two major requirements of a system are hardware and software. Both parts contribute to developing the software system.

3.4.1 Hardware Requirement

Table 3.1 shows the software that is used for this project. The table explains the hardware minimum requirement and their function when developing the Mobile Receipt system.

Table 3.1: Hardware requirement of Mobile Receipt System.

Item	Minimum Requirement	Function / Purpose
Laptop	Intel Core i3 530 RAM: 4GB Storage: 500GB	The computer used for the development and documentation of the system.
External Hard Disk	Storage: 500 GB	The external hard disk acts as a data storage for the system development file and documentation backup storage.
Android Phone	Android Jelly Bean 4.3 RAM: 512mb Internal Storage: 8GB	The Android phone used for installing the system and testing tool in the mobile version of the system.

3.4.2 Software Requirement

Table 3.2 shows the software that is used for this project. The table also explains the software function for the development of Mobile Receipt system.

Table 3.2: Software requirement of Mobile Receipt System.

Software	Function / Purpose
Microsoft Office 2016 Microsoft Word Microsoft PowerPoint Microsoft Visio	Microsoft Word used to design the proposal and documentation of the system. Microsoft PowerPoint used for preparing a slide for presentation and Microsoft Visio used to design UML diagram and model.
Laravel	Laravel is an open source web framework based on PHP language. This work as a compiler when developing a web system.
Sublime	Sublime is a text editor used to write and edit the code for the system.
Android Studio	Android studio used as a platform to develop an Android application.
XAMPP	XAMPP is used for local web server during development and testing.
MySQL	MySQL is used for the database management system of Mobile Receipt System.

3.5 GANTT CHART

Gantt chart shows the activities of the project with the timescale. The project is divided into few phases which are Planning and Analysis, Designing System, Developing System, Testing and Finalize Document. The Gantt Chart of this project can be referring in Appendix I.

3.6 IMPLEMENTATION

This section will discuss the implementation of Mobile Receipt System. The methodology has been chosen for this project is Agile methodology that is suitable for small system project and offers incremental delivery to deliver a better system to the client. The Laravel framework used for developing web application of Mobile Receipt System. Laravel is PHP framework that supports development using MVC concept. The development also used Sublime that work as a text editor for writing and editing code. The implementation of MySQL as a tool to stored information data of the system. Android Studio software function is to develop the Android application of the Mobile Receipt system.

For the web system of Mobile Receipt system that has been designed for the admin and retailer. The new user needs to login to enter the system. A verified user can continue using the system and fill in the order details. This function enables the user to generate the receipt of the purchasing item. The system will automatically generate a digital receipt and QR Code for the user. The function of delete also has been offered for the user. The system records all the activities in the system database.

For the Android application of Mobile Receipt System, the user needs to login to use the application. The application also offered registration for the new user of the system. The user of the application has a function to scan QR Code. From that QR Code, the user will able to retrieve the digital receipt and save it to the smartphone. The user will have a list of their receipt and able to delete them from the smartphone. All the receipt has been saved in the local database of the user smartphone.

3.7 TESTING

Software testing it is important plan to check whether the actual result matches with the expected result of the system. Black-box Testing has been chosen as the testing plan for the Mobile Receipt System. Black-box testing is a functional testing where the testing focuses on the output generated by the system and the execution of the system. This technique will ignore the internal mechanism of the system and focus more on external behavior (Tuteja & Dubey, 2012). The proposed system will go through the functional testing to test the behavior of the system. The advantage of using this technique is the contradictions of the system and the specifications can be verified.

User Acceptance Testing (UAT) also will be implemented which is the subclass of Black-box testing technique. The testing is done by the client environment to do the testing to ensure the requirement of the system is fulfilled (Tuteja & Dubey, 2012). The system is tested with the real-world scenario to ensure the system can handle as expected in the system requirement. This will help to identify errors, bugs or missing requirement of the system.

CHAPTER 4

RESULT AND DISCUSSION

4.1 INTRODUCTION

This chapter explains in detail about the whole system design, implementation and testing and result of the Mobile Receipt System. By following the implemented methodology for this project, this process occurs during the implementation and testing phase. The implementation phase is the phase in the development phase that converts the design of the project into an executable system. Some necessary enhancement and modification have been done during this phase to deliver the system that full fill the requirement. At the end of this chapter, it also discussed testing and result for this project.

4.2 IMPLEMENTATION

This section has reviewed the implementation requirement and procedures of the system. The user interface of the system and the process involve also has been justified.

4.2.1 Implementation Requirement

The Mobile Receipt system required web-based system and the Android application to facilitate the system run smoothly. Implementation stage of software development is the process of converting the system specification into an executable system development including graphic design is a user interface (GUI), database design and engine program which is programming code. The main objective of this system is to improve user and the retailer to manage and organize the receipt. The implementation of QR code has been used as a medium to transfer the digital receipt to the user smartphone. A QR code is a

machine-readable optical label that contains information about the receipt details which it is attached to the QR code. The figure 4.1 shows the process of the Mobile Receipt System.

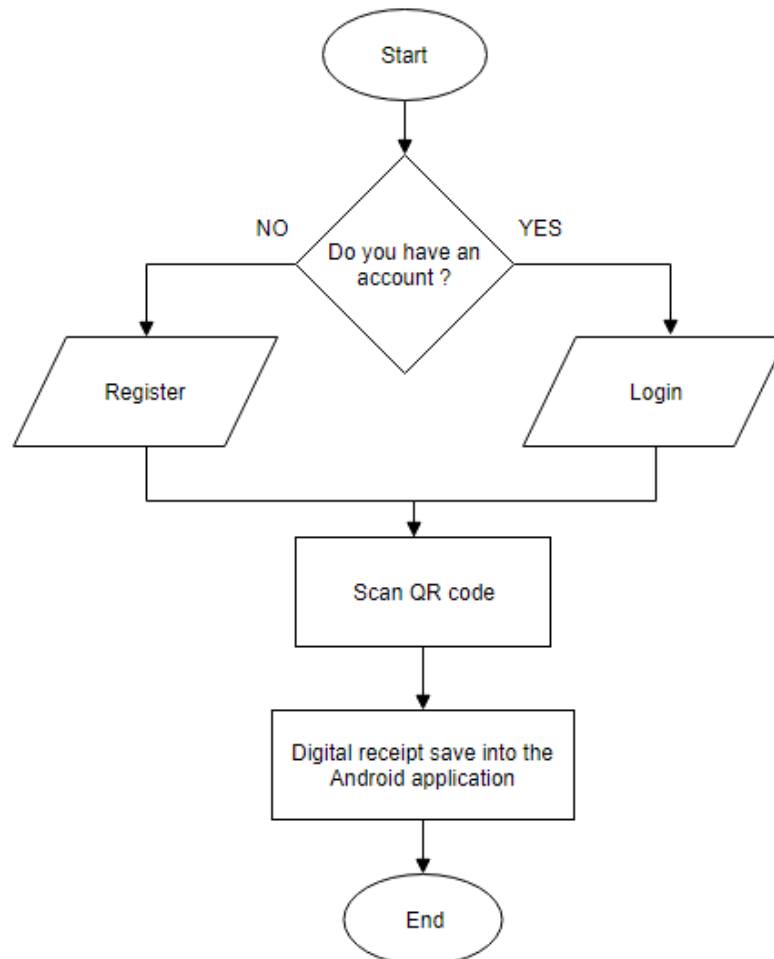


Figure 4.1: Process of Mobile Receipt Application

The diagram 4.1 shows the process of mobile receipt application. The diagram consists of three (3) databases which are for login, receipts information, and manual receipt. In the database for login will keep the information such as username and password. Besides, in the database for the customer will store the details about customer information such as store details, product details and item prices while in the database for manual receipt contain image of the manual receipt that has been upload by the user.

4.2.2 Development

i. Laravel Implementation

The web-based platform is a web application of Mobile Receipt System. This module is being developed using Laravel. Laravel is a web application framework that follows the model-view-controller (MVC) model which using PHP as a programming language to develop the system functions. The MySQL has been used for the database management system of this project. The database also being used by others module to store information data. The interface of the system is developed using HTML language and JavaScript for the advanced design. Figure 4.2 Shows the MySQL platform that has been used during the development process.

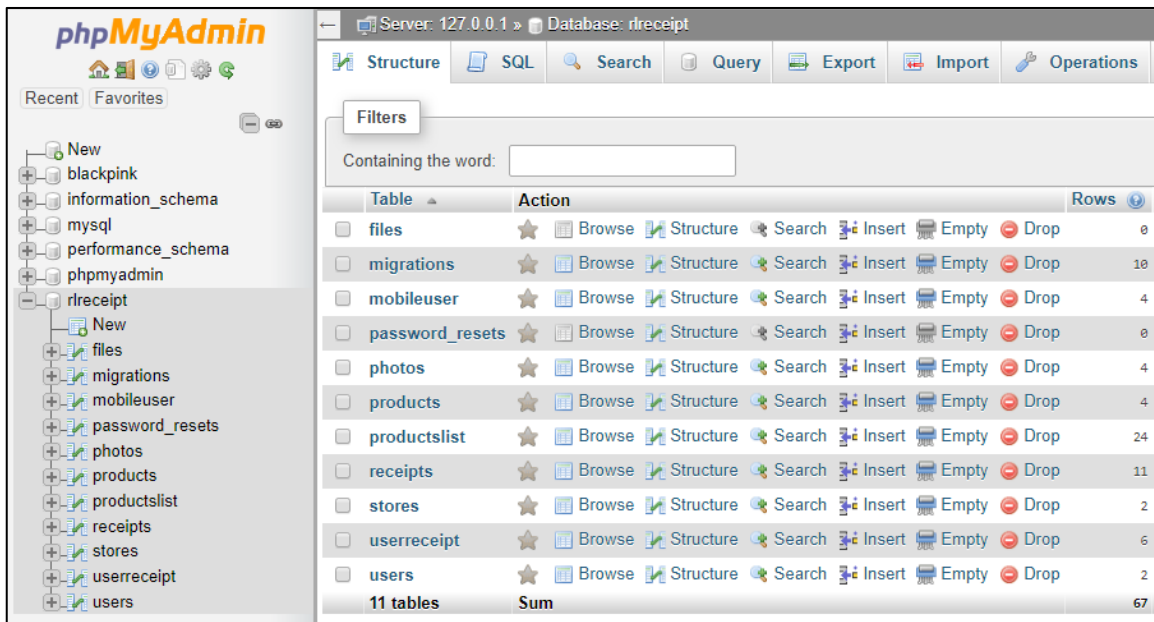


Figure 4.2: MySQL platform

ii. Android Application Implementation

The mobile implementation is an Android Application for the Mobile Receipt System. This platform is being developed using Android Studio as a development tool and using the Java programming language to create all function for this module. The database of this module shared the same database with the web module as a database management system. All data interact between both modules. The interface is designed using XML language in Android Studio. Figure 4.3 shows the android studio development platform.

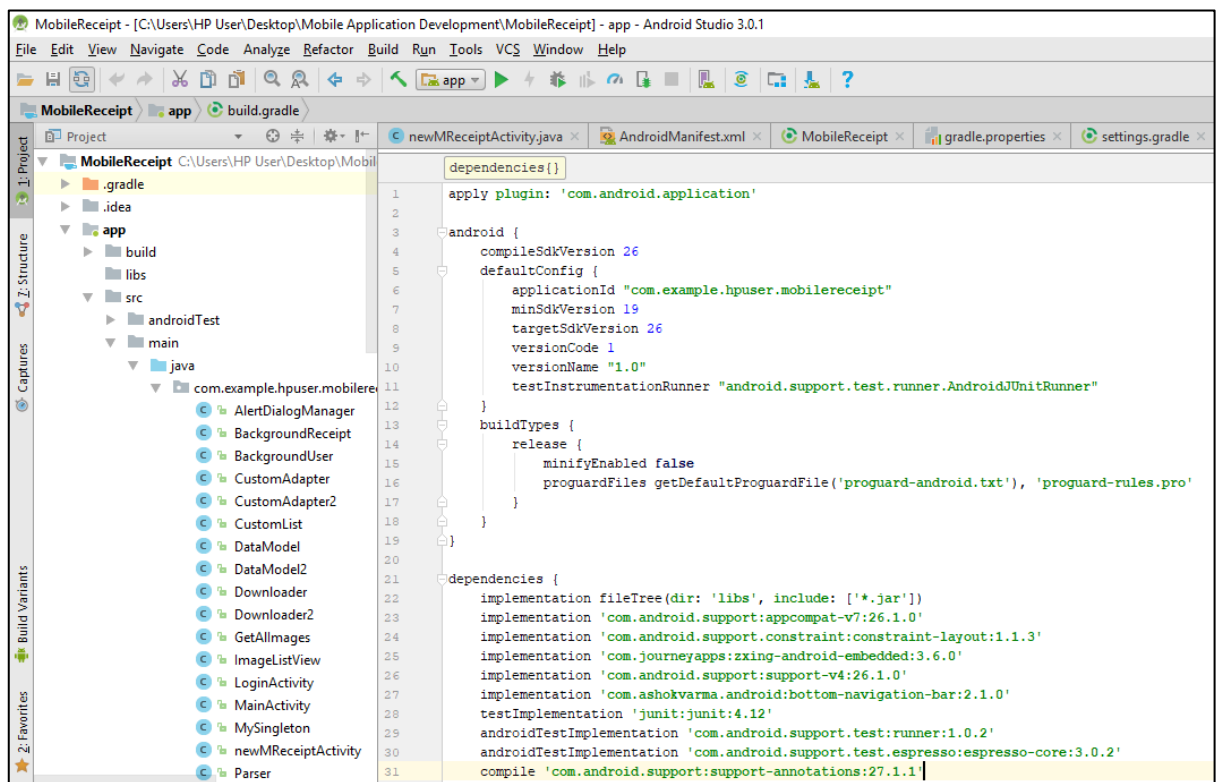


Figure 4.3: Android Studio Development Interface

4.3 USER MANUAL

User manual is a technical communication document intended that help people or users using a Mobile Receipt system. The user manual will show the flow of the system with the details explanation. The user manual of consist of two platform which is web-based platform and mobile application platform. The user of the system has been shown on the Appendix II.

(Refer Appendix II – User Manual.)

4.4 TESTING AND RESULT

This section shows the process of testing and results discussion about this project. This project will undergo the User Acceptance Test (UAT) to check and verify the system functionality according to the requirement purposed.

4.4.1 User Acceptance Test (UAT)

This section shows the details of a testing process using the User Acceptance Test (UAT). The system is being tested by the user to check the specification of the system. Approval of this testing implies that the user can successfully run the application according to the test plan. User Acceptance Test has been done for all modules which are login, register, scan receipt, add new receipt, add manual receipt and download receipt. The respondents are from the general user. The result of the testing has been summarized on the Appendix III.

(Refer Appendix III - User Acceptance Test (UAT).)

4.4.2 Testing and Result Discussion

Mobile Receipt system is tested to ensure it is meet the user requirement. To summarize the result from the UAT, the web-based platform able to deliver the user requirement. The web user can register with the different store and created a receipt for their client. The cashier able to add multiple products to the receipt and the result of total price is successful. The system also successfully delivers to create a QR code module that can be scan by their client. The privacy of the system also is tested and the result shows that the user cannot view others stores receipt. The result of Mobile platform of the system is also successful to retrieve the digital receipt from the QR code and saved it into the user smartphone. The user also able to upload their manual receipt to be saved into the Mobile application.

CHAPTER 5

CONCLUSION

5.1 INTRODUCTION

This chapter discussed the overall conclusion about the Mobile Receipt system project. This project is the combination of both web-based and mobile application. The purpose is to give the benefits to both store's staff and customers. This project was proposed and developed to replace the old technique that used a printed receipt. Therefore, this project is developed to improve user efficiency in managing and keeping the record of the receipts. Mobile Receipt system is used for store management to generate a digital receipt that can be retrieved by the users using Mobile Receipt application. The application implemented the use of QR Code technology as a medium to transfer digital receipt to the mobile application for organizing the receipts record. The web-based system will generate a QR code that contains id for the digital receipt. The customer can retrieve their receipts by scanning the QR code by using Mobile Receipt application. The application will automatically add the receipt record into the customer application. The application can trace their digital receipt in their Android application. All the stores and products information will be displayed on the digital receipt. The Mobile Receipt application also sorted the customer's receipt by the different stores. This will help the user efficiency to find the receipt later.

The project implements the methodology of the Iterative development lifecycle. This method allows the development process to be divided into several parts which then can be completed iteratively until the final version. The process keeps looping the phase of development in order to achieve the project objective. For the testing phase, (User

Acceptance Test) UAT has been conducting to test all the requirement of this project are successfully implemented. Lastly, Mobile Receipt system can be applying to remove paper receipt and improving the customer efficiency on managing their receipts.

5.2 PROJECT CONSTRAINTS

There are several constraints of the project due to several factors such as lack of experience, time and resources. The constraints of the project includes:

- i. The application must have an internet connection or online for the application to works.
- ii. The web-based module of the project is only focusing on the clothing stores.
- iii. Mobile Receipt Application can be support for the Android user only.
- iv. The QR code is lack of security. This QR code can be scan by anyone and retrieve the digital receipt.

5.3 FUTURE WORK

There are several aspects that can be improved for the application especially in term of security. Since anyone can scan the QR code and retrieve the receipt, the data transferring between the QR code and the application is lack of security. Some token or key may be applied to secure that QR code can be scan for the authorized user only. Currently, the application only organized the user receipts by the stores and order the latest receipt on the top list. By adding a search function on the receipt list and categorize by date, the managing and tracing receipt can become more efficient. The expense record or data can be added on the user account to display all the user expenses.

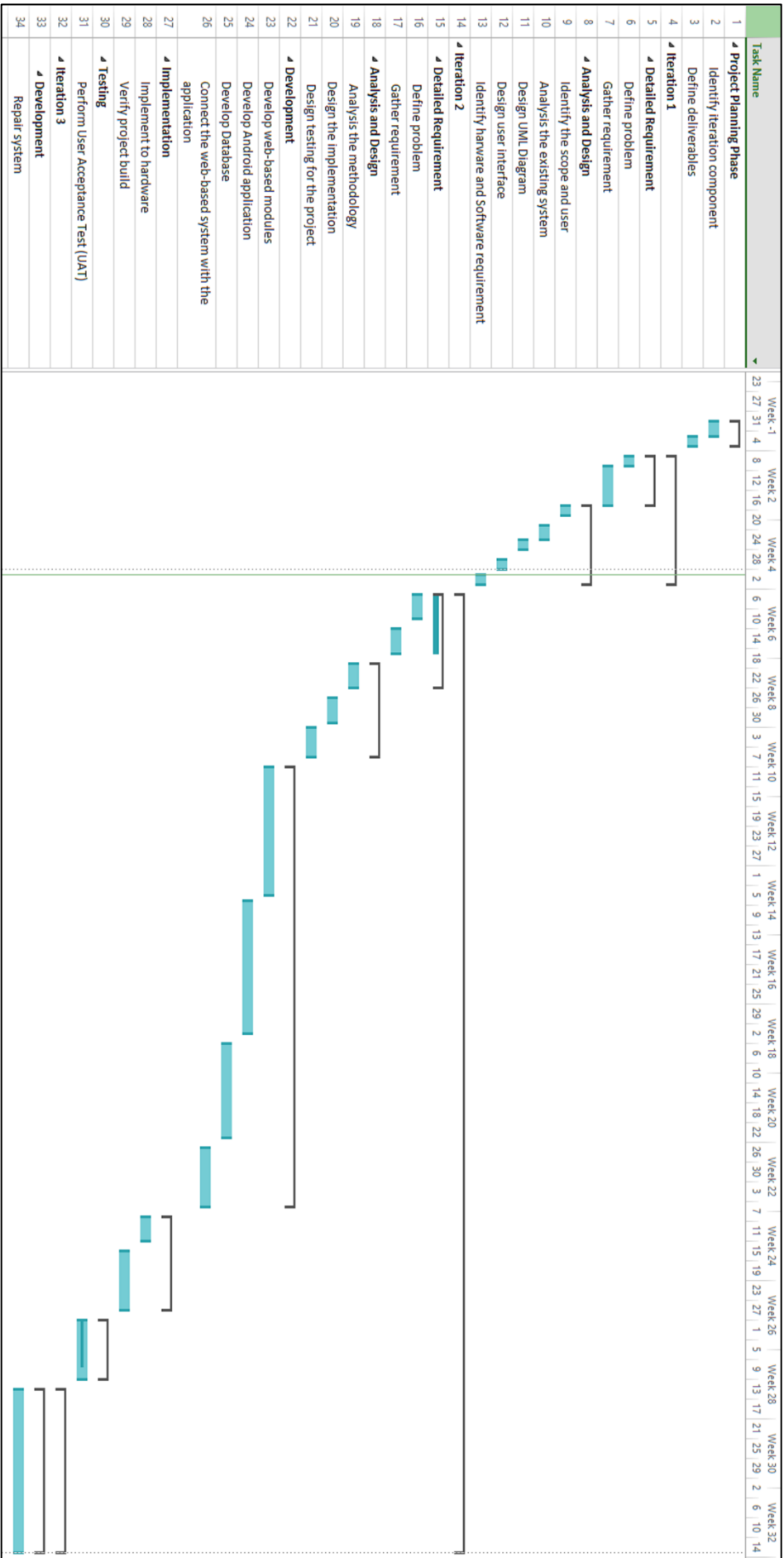
5.4 CONCLUSION

In conclusion, Mobile Receipt system which consists of web and the mobile module has fulfilled the objectives. The project can eliminate the problem of using paper receipt and missing receipt without a trace. The project also helps the users managing receipt become easier and more efficient. Nevertheless, the application still requires further review for better enhancement in both graphical interface and data management. With a proper maintenance and improvement, this application may be globally used by several other institutions. Lastly, the Mobile Receipt System able to perform its functionality and fulfil the objective of this project to help the user manage and organize all their receipts.

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APPENDIX I
GANTT CHART



**APPENDIX II
USER MANUAL**

1. Web Application System

The web application system is designed for the retailer to use as the payment system and to create the receipt to their customer. The user for this web application system is a retailer to create a digital receipt.

i. Home Page

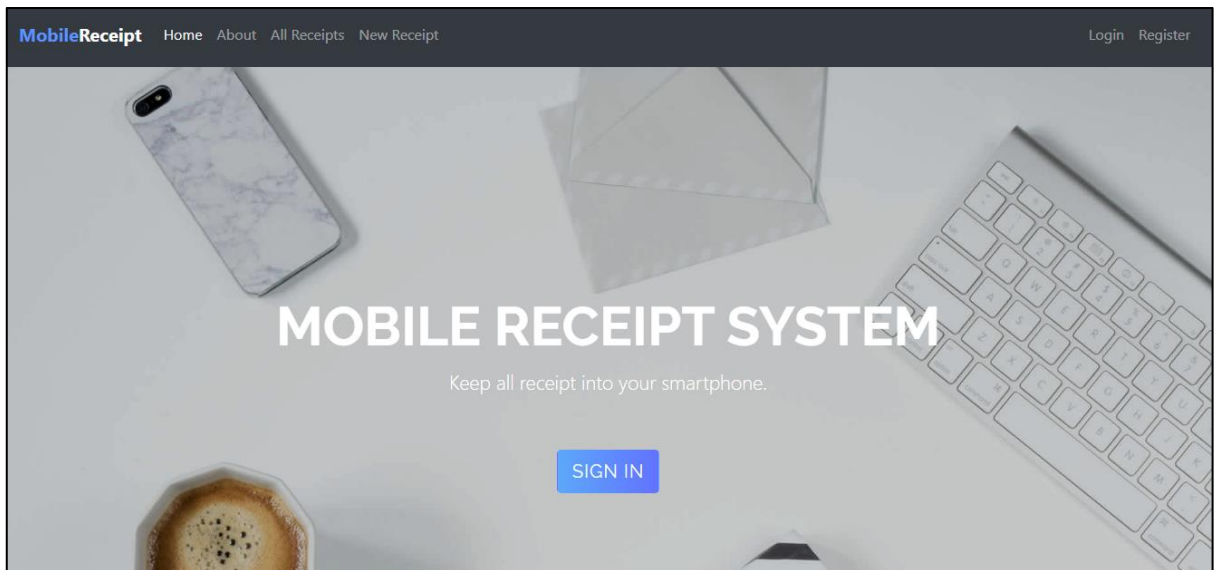


Figure 1: Home Page Interface

Figure 1 shows the Home Page of the Mobile Receipt System. The homepage is a starter page that contains some graphics information for the user to understand the system better. The page shows how the system work and some information about the developer contact to submit any feedback, error report and recommendation.

ii. Receipt List Page

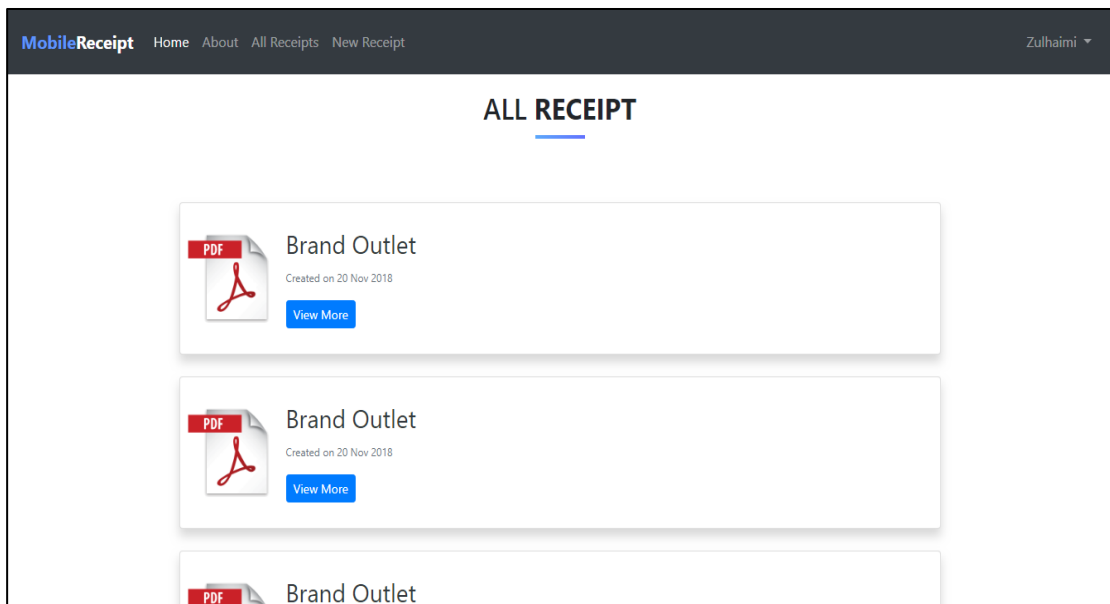
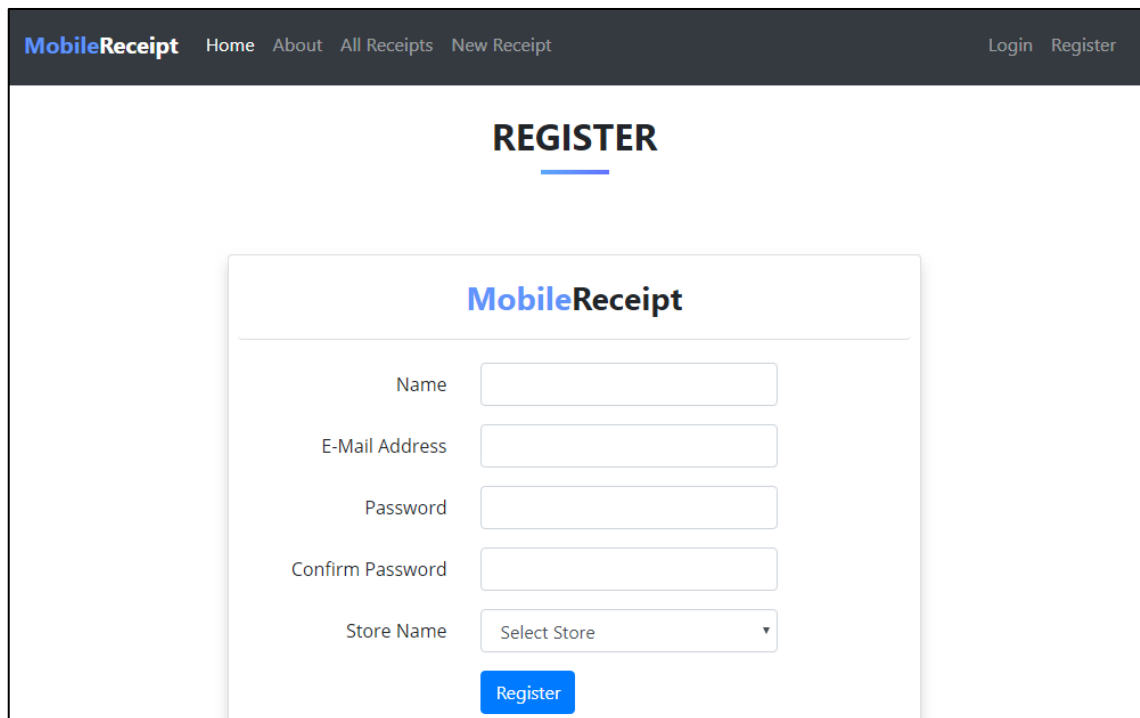


Figure 2: Receipt List Page Interface

Figure 2 shows the Receipt List page that displays a list of receipt that has been created. This page required login confirmation before can be access to the user. The page only displays the receipt list from the store that belongs to user store's session. Each post shows the receipt creation date and the name of the creator. The page has a pagination control that controls page to display only ten posts of the receipt for the page. The user can click next page to explore more receipts. The users also can click the receipt post to view to digital receipt information on the Receipt Page.

iii. Registration Page

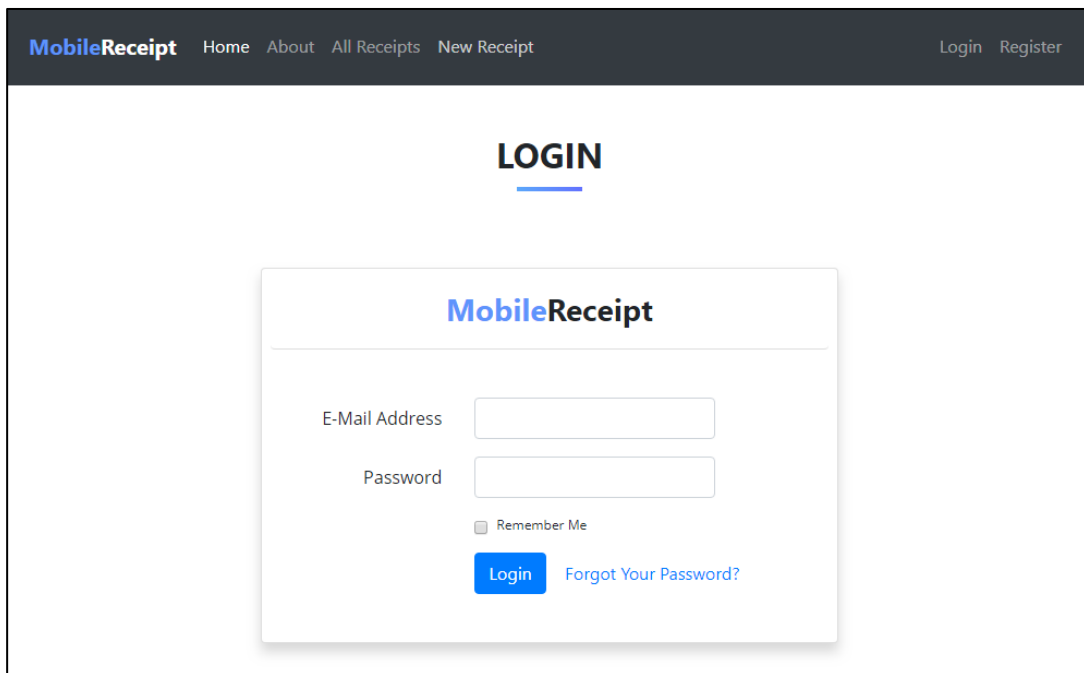


The screenshot displays the registration page for the MobileReceipt system. At the top, a dark navigation bar contains the 'MobileReceipt' logo and links for 'Home', 'About', 'All Receipts', and 'New Receipt'. On the right side of the navigation bar, there are links for 'Login' and 'Register'. The main content area features a large, centered heading 'REGISTER' with a blue underline. Below this heading is a white registration form box with the 'MobileReceipt' logo at the top. The form includes five input fields: 'Name', 'E-Mail Address', 'Password', 'Confirm Password', and 'Store Name'. The 'Store Name' field is a dropdown menu with 'Select Store' as the placeholder text. A blue 'Register' button is positioned at the bottom center of the form.

Figure 3: Register Page Interface

Figure 3 shows the registration page for the new user. Register page allows the user to create a new account for Mobile Receipt System so that the user can access the system and use the function provided. The users need to fill up the information such as Name, Username, and Password. The user also needs to specify their store's name. Then, the user can click the register button to submit their registration to the database and redirect to dashboard page.

iv. Login Page



The screenshot displays the login page for the MobileReceipt application. At the top, a dark navigation bar contains the 'MobileReceipt' logo on the left and 'Home', 'About', 'All Receipts', and 'New Receipt' links in the center. On the right side of the navigation bar are 'Login' and 'Register' links. The main content area is white and features the word 'LOGIN' in large, bold, black capital letters, centered and underlined with a blue horizontal line. Below this, a white login form is centered. The form has a header with the 'MobileReceipt' logo. It contains two input fields: 'E-Mail Address' and 'Password'. Below the password field is a checkbox labeled 'Remember Me'. At the bottom of the form, there is a blue 'Login' button and a blue link that says 'Forgot Your Password?'.

Figure 4: Login Page Interface

Figure 4 shows the login page for the registered user to enter or use the system functionality. The login page required the user to fill up their registered email and password to access the system. The system will validate the information with the registered data. The user also can tick remember me an option to make sure that the system can remember the login detail so that they did not need to enter it again when they want to access later.

v. New Receipt Page

The screenshot shows the 'NEW RECEIPT' page in the MobileReceipt application. The page has a dark header with the logo and navigation links: Home, About, All Receipts, and New Receipt. A user profile 'test' is visible in the top right. The main content area is titled 'NEW RECEIPT' and features a 'Store Information' section for 'Topshop' with its address and phone number. Below this is a 'Products' section with two rows of product selection. The first row shows '001 - Shirt' selected with a quantity of '2' and an 'Add More' button. The second row shows '003 - Top' selected with a quantity of '1' and a red 'X' delete button. A blue 'Submit' button is located at the bottom left of the product list.

Figure 5: New Receipt Page Interface

Figure 5 shows the interface for the new receipt page. This page is designed for the user to create a new receipt. Firstly, the page will detect the user store's session and display the information about that store. Then the users need to fill the product with the quantity of the product. The product field act as search field where the users need to enter the code of the product and the system will Automatically detect product name. The users also can click Add more Button to add more product. The user also can cancel the product by clicking the delete button of each product form. The user can add the limitless number of products into the receipt. Lastly, the users need to submit the details and the system will calculate all the product details with the stated price. The system also will automatically create a digital receipt and redirect to Receipt page to display the digital receipt that has been created.

vi. Receipt Page

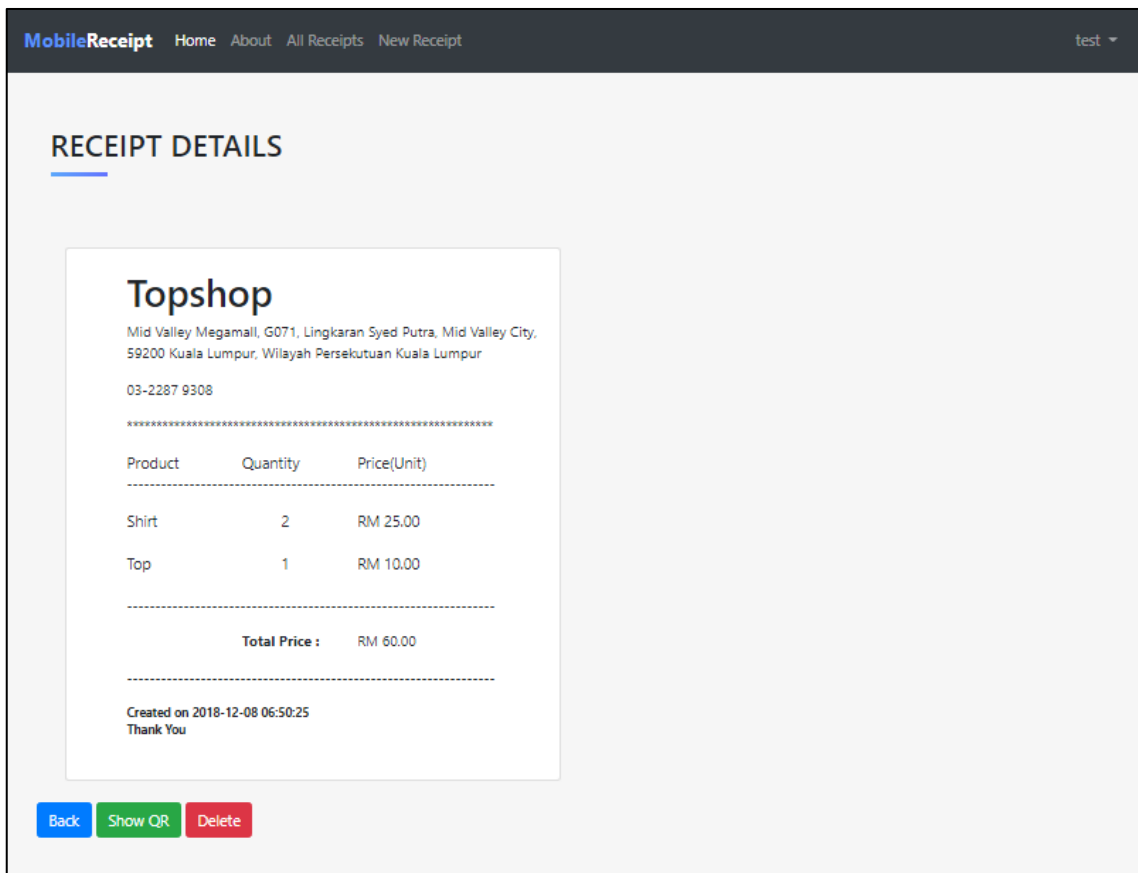


Figure 6: Receipt Page Interface

Figure 6 shows the Receipt page. After the users created the receipt, the system will redirect to this page to display the digital receipt. The page will display the information of the receipt. The user also can click the show QR button that enables the system to create a QR code for the digital receipt and redirect to the QR code page.

vii. QR Code Page

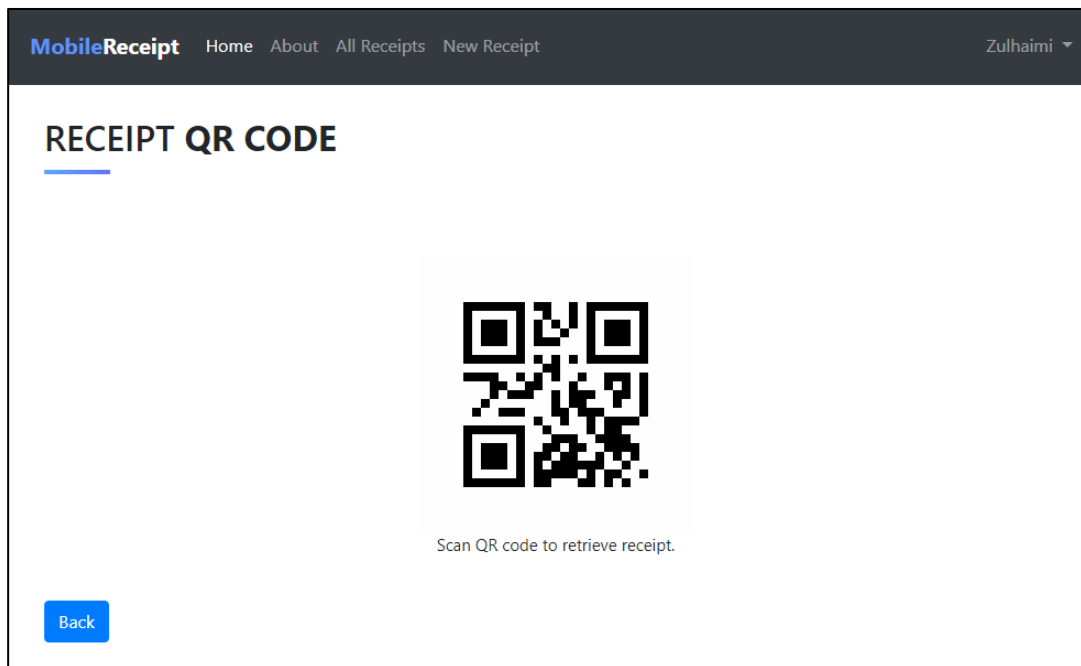


Figure 7: QR Code Page Interface

Figure 7 shows the QR code page of the system. The QR code page function is to create a QR code that contains the digital receipt that can be retrieved by Android Application of the Mobile Receipt System. This page will show the QR code for the receipt. QR code is a medium to transfer the digital receipt from the system into the user Android Application.

viii. Dashboard Page

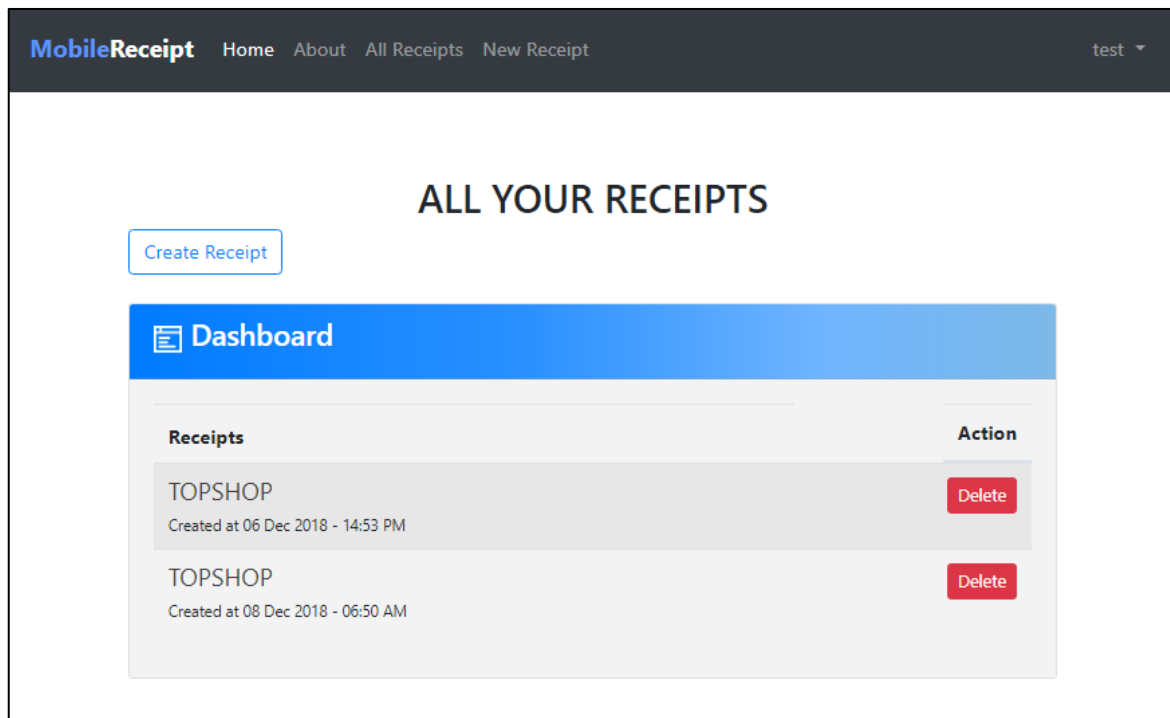


Figure 8: Dashboard Page Interface

Figure 8 shows the interface of the dashboard page. Each user has their own dashboard that contains the list of the receipts that has been created. The page will display all the receipt that has been created by that user. The user can see the date and time of the receipt created. The user also can display back the receipt that they are created. This page also has a delete function where the user can click delete button the 'delete' the unneeded receipts. This page also has a button for the user to create a new receipt. All the receipt that been displayed belongs to the user.

2. Android Application Platform

Mobile Receipt Application is designed for the customer of the store to retrieve digital from the QR code generated by the store. The digital receipt will be saved into the user smartphones.

i. Login Page

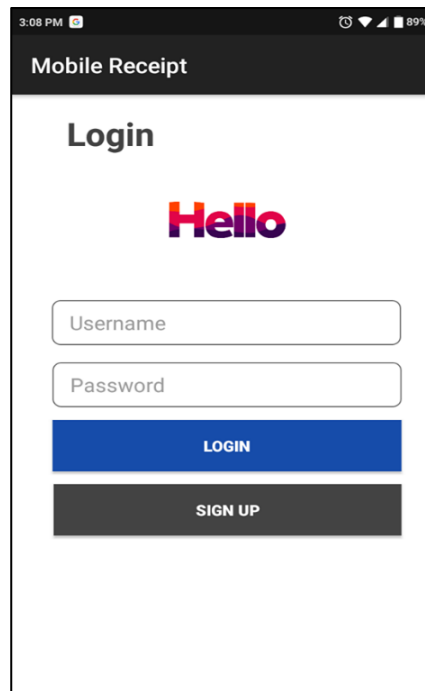
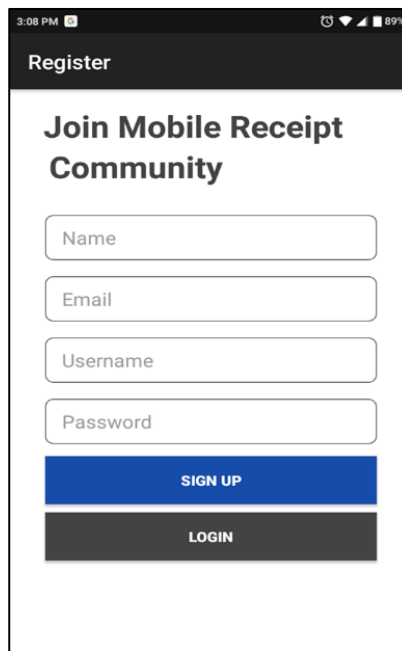


Figure 9: Login Interface

Figure 9 shows the Login page for Android Application of Mobile Receipt System. The user needs to fill up login information which is Email and their password. Then the users click the login button to use the Application. This page will validate user account for authorizing user only can enter the Application. The page also has a register button for the new user that will redirect to the registration page.

ii. Register Page



The screenshot shows a mobile application interface for registration. At the top, the status bar displays the time as 3:08 PM and a battery level of 89%. Below the status bar, the page title is "Register". The main heading is "Join Mobile Receipt Community". There are four input fields: "Name", "Email", "Username", and "Password". Below the input fields are two buttons: a blue "SIGN UP" button and a dark grey "LOGIN" button.

Figure 10: Register Interface

Figure 10 shows the Registration page for the new user. The user needs to fill up registration information such as Name, Email, Username, and Password. Then users need to click the register button to submit the information into the database. After successfully registered, the system will redirect the users to the homepage of the Application.

iii. Home Page

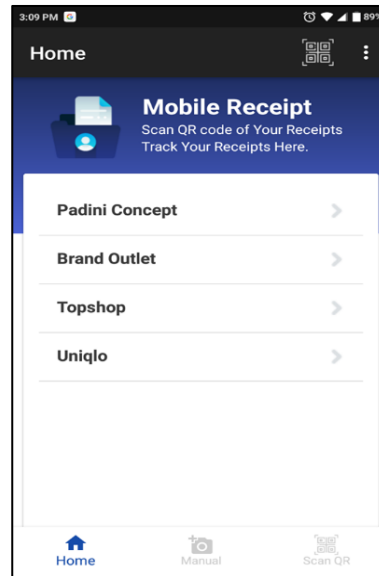


Figure 11: Home Page Interface

Figure 11 shows the Home page of the Android Application. The scan icon on the top enables the user to open the scanner to scan the QR code. The sublist bar on the top also shows the list of pages such as Manual Receipt and user profile. All the user's receipt has been organized by the name of the store. The user can click the store name list to redirect to the receipt list page that belongs to the selected store name. The bottom navigation shows the link to go to manual receipt page and open the QR code scanner.

iv. Receipt List Page

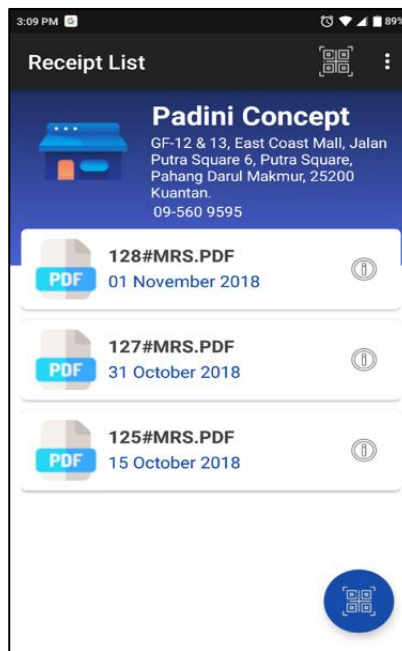


Figure 12: Receipt List Interface

Figure 12 shows the receipt list page that displays the list of the receipt. On the top of the page shows some information about the store. The list will display receipt information such as receipt name and date created. The receipt list is ordered by the latest date of the receipt created. The user can click the receipt to view the digital receipt on the receipt page.

v. Receipt Page



Figure 13: Receipt Interface

Figure 13 shows the receipt page that displays the digital receipt. The digital receipt will display about store information and the product information. All about the receipt information will be displayed on this page. The PDF button enables the user to download PDF file of the receipt into their smartphone. The downloaded file will be saved into the document folder of the user smartphone.

vi. QR code page

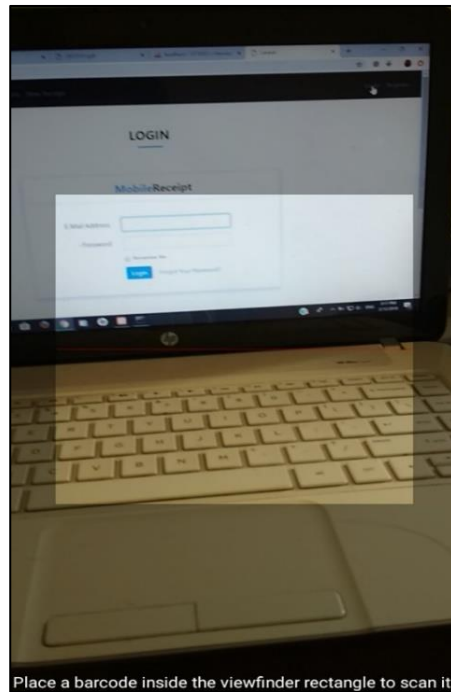


Figure 14: QR Code Scanner Interface

Figure 14 shows the scanner page to scan QR code to retrieve the digital receipt. The users need to place the QR code into the rectangle of the scanner. Then the application retrieves data and redirect to the receipt page to show the digital receipt. The system also automatically saved the receipt into the user database.

vii. Manual Receipt Page

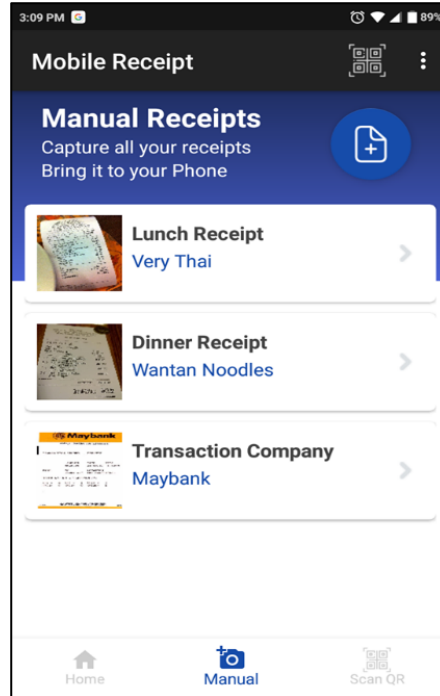


Figure 15: Manual Receipt List Interface

Figure 15 shows the interface of the Manual Receipt Page. This page will display the list of manual receipt that has been captured by the user. The list of the receipt shows the thumbnail of the image, receipt name and the receipt store name. The user can click the list to view the full-size image of the receipt has been captured and saved. On the top of the page, there is a button to add new manual receipt that will lead the users to the New Manual Receipt Page.

viii. New Manual Receipt Page

The screenshot shows a mobile application interface for creating a new receipt. The page is titled "New Receipt" and is part of a "Mobile Receipt" application. It features two text input fields for "Receipt Name" and "Store Name". Below these fields is a section labeled "Upload Receipt Here" which includes a blue "CHOOSE FILE" button and a large empty rectangular area for the receipt image. At the bottom of the form is a blue "UPLOAD RECEIPT" button. The status bar at the top indicates the time is 3:09 PM and the battery level is 89%.

Figure 16: New Manual Receipt Interface

Figure 16 shows the New Manual Receipt Page where the user can add new manual receipt into the Android Application. The user needs to fill up the form that required receipt name and store name. The user also needs to upload the receipt image by using the camera button to open camera or choose from the gallery by clicking the choose file button. Lastly, the users need to click the upload button to upload and save the receipt image in the database server.

ix. Profile Page

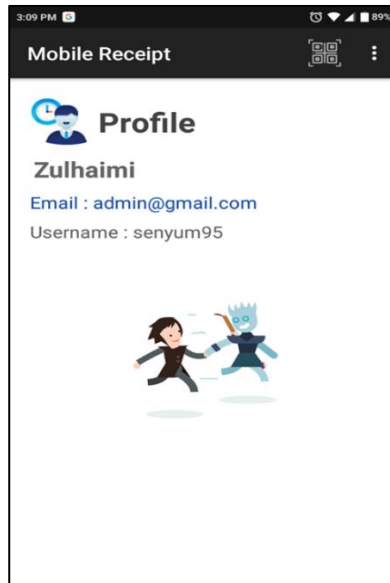


Figure 17: Profile Interface

Figure 17 shows the Profile Page for the users. This page shows the user information such as Email, Name and Username.

APPENDIX III
USER ACCEPTANCE TEST (UAT)

1. Test Case for Web Application Platform

i. Register Module

Table 1 shows the test case for the user registration module that used by users to create a new account in the web module of Mobile Receipt System.

Table 1: Register Test Case

Test Case	Test Data	Expected Result	Actual Result	Pass/Fail	Comment
Signing up for an account	Username: user2 Password: 12345	Successfully register for an account	Similar as expected result	Pass	-
Signup with different password and password confirmation	Password 1: user12 Password 2: User11	Popup error message will be shown	Registration was failed	Pass	-

ii. Login Module

Table 2 shows the test case for the user login module that used by users to use the Mobile Receipt System.

Table 2: Login Test Case

Test Case	Test Data	Expected Result	Actual Result	Pass/Fail	Comment
Login with correct username and password	Username: admin Password: admin	Successfully login And redirect to Home Page	Login success and redirect to expected page	Pass	-
Login with incorrect username and password	Username: user12 Password: asd	Popup error message will be shown	Registration was failed	Pass	-

iii. Receipt Module

Table 3 shows the test case for the Receipt module that displays receipt that has been created by Mobile Receipt System.

Table 3: Receipt Test Case

Test Case	Test Data	Expected Result	Actual Result	Pass/Fail	Comment
View all receipts	Click All Receipt on the Menu	Redirect to All receipt page with the list of all receipts	The interface shows the list of receipts.	Pass	-
View the receipt by clicking the receipt list	Click selected receipt.	Redirect to receipt page and display the receipt information.	Redirect to receipt page and display the receipt data.	Pass	-
Back to the receipt list	Click the Back Button	Redirect to the receipt list page	System redirects to the receipt list page.	Pass	-
Show QR code button available for receipt creator account	Log in and go to receipt page that created by that user.	Has functionality to show QR code of the receipt.	Similar to expected Result	Pass	-
Show delete button available for receipt creator account	Log in and go to receipt page that created by that user.	Has functionality to show delete the receipt.	Button delete was appear	Pass	-

iv. New Receipt Module

Table 4 shows the test case to create new receipt module. To add a new receipt, this module was used to fill up all the receipt details.

Table 4: New Receipt Test Case

Test Case	Test Data/ Action	Expected Result	Actual Result	Pass/Fail	Comment
Check user login session.	Click New receipt on the menu	If the user has the login session, the system will redirect to create new receipt page. If the user does not logs, redirect to the login page.	Similar to expected result	Pass	-
Select store name field	Select the available stores	Show the list of stores.	Selection list shows the stores data.	Pass	-
Add more Item	Click button add more	Another field for the new item will appear	Another field for next product appears	Pass	-
Cancel field for new Item	Click cancel button on left side of the item field	The field of that item will be removing.	Similar as expected result	Pass	-
Submit the receipt information	Click the submit button.	Successfully create a receipt and redirect to the show receipt page	The receipt successful generated and redirect to show receipt page.	Pass	-

v. QR code Module

Table 5 shows the test case for QR code module. This module creates the QR code for the receipt.

Table 5: QR code Test Case

Test Case	Test Data	Expected Result	Actual Result	Pass/Fail	Comment
Redirect to QR code page	Click Show QR button	Redirect to QR code page	Similar as expected result	Pass	-
Generate and display the QR code of the receipt.	-	Display QR code	The interface shows the QR code image	Pass	-

vi. Dashboard Module

Table 6 shows the test case for the dashboard module for the users. This module display list of receipts that have been created by the users.

Table 6: Dashboard Test Case

Test Case	Test Data	Expected Result	Actual Result	Pass/Fail	Comment
Available only for login user	Click The menu that Appears user's Name.	Redirect to dashboard list	Similar as expected result	Pass	-
Display list of receipt that has been created by the user.	-	The interface displays the list of the receipt	The interface displays the list of the receipt	Pass	-
Delete the receipt	Click delete button on Action category	The delete successful and receipt list updated	Similar as expected result	Pass	-

2. Test Case for Mobiles Application Platform

i. Login Module

Table 7 shows the test case for the user login module that used by users before entering the Mobile Receipt Application.

Table 7: Login Test Case

Test Case	Test Data	Expected Result	Actual Result	Pass/Fail	Comment
Login with correct username and password	Username: admin Password: admin	Successfully login And redirect to Home Page	Login success and redirect to the expected page	Pass	-
Login with incorrect username and password	Username: user12 Password: asd	Popup error message will be shown	Registration was failed, and Toast message appear	Pass	-

ii. Register Module

Table 8 shows the test case for the user Registration module that used by users to create a new account in web module of Mobile Receipt System.

Table 8: Register Test Case

Test Case	Test Data	Expected Result	Actual Result	Pass/Fail	Comment
Register with Name, Email, username and password data	Username: admin Password: admin	Successfully login And redirect to Home Page	Login success and redirect to the expected page	Pass	-
Submit blank field	-	Error message shows the field was empty	Similar as expected result	Pass	-

iii. Home page Module

Table 9 shows the test case for the home page module for Android Application of Mobile Receipt System.

Table 9: Home Page Test Case

Test Case	Test Data	Expected Result	Actual Result	Pass/Fail	Comment
Click the store list and redirect to the receipt list page	-	Successfully redirect to the receipt list page	Redirect to the expected page.	Pass	-

iv. Receipt List Module

Table 10 shows the test case for the receipt list module. This module displays all the receipt that belong from the stores.

Table 10: Receipt List Test Case

Test Case	Test Data	Expected Result	Actual Result	Pass/Fail	Comment
Display the store information at the top page	-	The interface shows the store information's at the top	Similar as expected result	Pass	-
All the receipt list belongs to that store	-	The receipts list displays the receipt from that store.	The receipt list is belonging to that store.	Pass	-

v. Receipt Module

Table 11 shows the test case for the receipt module that display the digital receipt in the user’s smartphones.

Table 11: Receipt Test Case

Test Case	Test Data	Expected Result	Actual Result	Pass/Fail	Comment
Display receipt information	-	Successfully display receipt information	Similar as expected result	Pass	-
Download PDF file of the receipt	Click the PDF button	Message popup will be displaying that file has been successfully downloaded	Similar as expected result	Pass	-
Check file in the Document folder	Open document folder	File PDF of the receipt has saved into the Document folder	Document folder shows the downloaded PDF file.	Pass	-

vi. Manual Receipt Module

Table 12 shows the test case for the manual receipt module where user upload an image of the receipts.

Table 12: Manual Receipt Test Case

Test Case	Test Data	Expected Result	Actual Result	Pass/Fail	Comment
Display the Manual Receipt list and receipt Information	-	Display manual receipt that user has been captured.	The list of Manual Receipt has been displayed	Pass	-
Add new Manual Receipt	Click add Button	Redirect to Add Manual Receipt Page	Similar as expected result	Pass	-

vii. New Manual Receipt Module

Table 13 shows the test case to add new manual receipt module by capturing manual receipt and save into the Application.

Table 13: New Manual Receipt Test Case

Test Case	Test Data	Expected Result	Actual Result	Pass/Fail	Comment
Test uploading image	Click upload image Button	Open gallery and selected image load into imageview	Similar as expected result	Pass	-
Test submit the new Manual Receipt	Click submit button	Message show upload successful and redirect to the manual receipt list page	Similar as expected result	Pass	-

viii. Profile Module

Table 14 shows the test case for user profile module. This module displays the user information such as name, email and username.

Table 14: Profile Test Case

Test Case	Test Data	Expected Result	Actual Result	Pass/Fail	Comment
Profile page	Click menu sublist and choose profile	Display user information such as Email and Name.	Similar as expected result	Pass	-

ix. Scanner Module

Table 15 shows the test case for scanner module to scan QR code of the receipt. This module opens the scanner to scan the QR code from web-based platform.

Table 15: Scanner Test Case

Test Case	Test Data	Expected Result	Actual Result	Pass/Fail	Comment
Scan QR code	Click scan QR Button	Open scanner and redirect to receipt page and add into the user database	Similar as expected result	Pass	-

3. System Testing Approval

	Name	Date
Verified by: _____ Zulhaimi Bin Zulkefli (Developer)		
Approved by: _____ (Client)		
Approved by: _____ (Client)		
Approved by: _____ (Client)		