MOVING TRUCK SERVICE APPLICATION

NUR AFIQAH BINTI MD NASIR

UNIVERSITI TEKNIKAL MALAYSIA MELAKA

MOVING TRUCK SERVICE APPLICATION

NUR AFIQAH BINTI MD NASIR

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

MOVING TRUCK SERVICE APPLICATION

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

STUDENT : afiqah Date : <u>02/09/2021</u>
(NUR AFIQAH BINTI MD NASIR)

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 : <u>17/09/2021</u>
(Ts. AZLIANOR BINTI ABDUL AZIZ)

DEDICATION

My dissertation is dedicated to my beloved parents, Md Nasir Bin Md Isa and Jamaliah Binti Abdul Majid, whose words of encouragement and strive for tenacity ring in my ears, deserve special thanks. My deepest dedication also goes to my final year project supervisor, Ts. Azlianor Binti Abdul Aziz, who have guided me to finish my final year project and have given opportunity and trust me to complete this project. This dissertation is also dedicated to my friends, who have been extremely helpful in completing this assignment. Last but not least, I want to dedicate this system to all of the Faculty of Information and Communication Technology's students and lecturers.

ACKNOWLEDGEMENTS

I would like to express my appreciation to my supervisor, Ts. Azlianor Binti Abdul Aziz for his guidance, advice, motivation and knowledge shared to me throughout my journey in this research project. Without his continued moral support and concern, this thesis would not have been presented here.

My sincere appreciation to my fellow colleagues from Bachelor of Computer Science (Software Development) for all the ups and downs we have been through all these semesters.

I am also grateful to all my family members. Finally, I would like to extend my gratitude to everyone who have been directly and indirectly involved in the successful completion of this Final Year Project (FYP).

ABSTRACT

Moving Truck Service Application (MTSA) is a mobile application that integrated with web-based application. For mobile application, there are have two users, who are customer and vendor. Users must register beforehand and login to the system to make a request for the moving truck service. The vendor of the truck service can view and accept the job that has been requested by the customer. While in web-based application, admin need to approve the vendor verification to access the mobile application which is after company register into the system and view the company data with the successfully location that they done the job. This system solved the problem that faced most citizen in finding the moving truck service to help move many items in one period from one location to another location and the company of moving truck service did not have any platform or channel to get the customers to use their services. To overcome these problems, MTSA has been designed to ease people to request the job in their mobile phone to transferring their belongings from one place to another. This system has been developed step by step to get the prefect performance. Rapid Application Deployment (RAD) Technique is used to complete this system. MTSA able to make people's lives easier, and they will not have to worry about finding a moving truck service. Next, MTSA allow moving truck companies to advertise their services on the market.

ABSTRAK

MTSA adalah aplikasi mudah alih yang disatukan dengan aplikasi berasaskan web. Untuk aplikasi mudah alih, terdapat dua pengguna, iaitu pelanggan dan penjual perkhidmatan. Pengguna mesti mendaftar terlebih dahulu dan log masuk ke sistem untuk membuat permintaan perkhidmatan trak berpindah. Penjual perkhidmatan trak dapat melihat dan menerima tempahan trak yang telah diminta oleh pelanggan. Untuk aplikasi berasaskan laman sesawang pula, admin harus memberi verifikasi kepada penjual perkhidmatan untuk mengakses aplikasi mudah alih kepada penjual perkhidmatan yang telah mendaftar ke sistem dan melihat data penjual perkhidmatan bersama lokasi yang pelanggan yang telah selesai. Sistem ini menyelesaikan masalah yang dihadapi oleh kebanyakan masyarakat dalam mencari perkhidmatan trak berpindah untuk membantu memindahkan banyak barang dalam satu tempoh dari satu lokasi ke lokasi lain dan syarikat perkhidmatan trak berpindah tidak mempunyai saluran untuk membuat pelanggan menggunakan perkhidmatan. Untuk mengatasi masalah ini, MTSA telah dibina untuk memudahkan masyarakat untuk membuat permintaan perkhidmatan dari telefon bimbit mereka untuk memindahkan barang-barang mereka dari satu tempat ke tempat lain. Sistem ini telah dikembangkan langkah demi langkah untuk mendapatkan prestasi yang bagus. Teknik Rapid Application Deployment (RAD) digunakan untuk menyelesaikan sistem ini. MTSA dapat menjadikan kehidupan orang lebih mudah, dan mereka tidak perlu risau untuk mencari perkhidmatan trak berpindah. Seterusnya, MTSA membenarkan syarikat trak berpindah untuk mengiklankan perkhidmatan mereka di pasaran.

TABLE OF CONTENTS

PAGE

LIST OF TABLES

PAGE

LIST OF FIGURES

PAGE

LIST OF ABBREVIATIONS

MTSA	**-**	**Moving Truck Service A**pplication
UTeM	**-**	**Universiti Teknikal Malaysia Melaka**
FYP	**-**	**Final Year Project**
PHP	**-**	**Hypertext Preprocessor**
HTML	**-**	**Hypertext Markup Language**
CSS	**-**	**Cascading Style Sheets**
SCM	**-**	**Software Configuration Management**
SQL	**-**	**Structured Query Language**
SUT	**-**	**System Under Test**
ERD	**-**	**Entity Relationship Diagram**

CHAPTER 1: INTRODUCTION

This thesis about the system called Moving Truck Service Application. This chapter will discuss about introduction of the project, problem statements of this project, project objectives, scope of work, module to be developed, project significance and expected outcome for this system.

1.1 Introduction

Moving Truck Service Application (MTSA) is a mobile application that integrated with web-based application. For mobile application, there are two users, which are customer and vendor. User must register beforehand and login to the system to make a request for the moving truck service. The vendor of the truck service can view and accept the job that has been requested by the customer. While in web-based application, admin need to approve the vendor verification to access the mobile application (after company register into the system) and view the company data with the successfully location that they done the job.

The existing application that can relate with this system is online delivery tracking system and parcel delivery services. These two systems are the main system as a reference to build the MTSA. Online delivery tracking system allow users to choose between ordering from restaurants or from a mess. The same application can also be used by developers as a start-up company. It provides sufficient input to users, because if an error occurs, a feedback dialog will be shown to the users. The suggested scheme is intended to prevent people from making fatal mistakes or taking unacceptable actions. The new system's scope is justifiable since a vast number of residents are relocating to various areas, allowing a broader variety of people to benefit from it. The users can provide feedback to the interface.

For parcel delivery services, user can track their parcel using tracking number given by the courier services. Users can know every location and action taken by the courier service to make the users know the location of their parcel. This tracking is very important to both side which is users and courier company. Both the sender and the receivers will watch their messages in real time. Our well-trained drivers and drivers manage all packages. With multi-stop deliveries, this application can deliver to multiple locations at once. Upon completion, the recipient therefore receives confirmation of delivery.

1.2 Problem Statement(s)

The problem statement that leads to the idea in proposing both application systems are due to that most citizen faced the difficulty in finding the moving truck service to help move many items in one period from one location to another location. It can more difficult when they do not have any contact number of moving truck service at the time they need the service. Moreover, the company of moving truck service did not have any platform or channel to get the customers to use their services. It's definitely affected company sales performance and marketing process to make people know their services.

As a result, this mobile application is designed to help people overcome their problems with transferring their belongings from one place to another. Truck service companies are scrambling to come up with the best way to present and offer their services to customers who are looking for moving truck services.

Marketing is described by many experts as a set of tactics, methods and studies aimed at improving a product or service by determining the best way to display and sell it. But, in general, the moving truck services provider will face difficulties or issues in regard to marketing. They do not really know how to describe the value of the service they're trying to sell. Thus, their corporate operations will slow down, undermining economic development.

1.3 Objective

This project embarks on the following objectives:

1. To create a system that can minimalize the effort of the people to find the moving truck service.

2. To develop a mobile application that allows user to request moving truck service from the company.

3. To make recommendations in terms of based on the service provided by the moving truck company.

1.4 Scopes

The aim of the Moving Truck Service Application's is to provide customers with a moving truck service so they can move their belongings to a new location. Since the application is managed on the same platform, system administrators can easily handle all of the data. The project is proposed to be introduced as a smartphone application for customer and vendors, as well as a web application for administrators to maintain the whole system.

1.4.1 Module developed

The first module for MTSA is customer and vendor module. Customer and vendor need to register, login and logout to the system. Customer can recover their password by using the link given by the development team of MTSA on their email. Customer also can update their profile on customer's profile page. Customer also can top-up and make a payment from their e-wallet.

Then, service module is the one of the important modules in MTSA. Customer can request truck service by selecting the place to pick up on build-in-map. It will enable customer to request the truck service. After that, customer need wait the response from the vendor. Vendor can find the services based on customer's request. After that, vendor can accept the request and wait until the payment is done by the customers.

Tracking Module is the features added in MTSA that can ease the truck driver track the customer’s location using built-in-map in the vendor’s mobile application. Truck driver will follow the track that provide by built-in-map in the customer’s mobile application.

Payment Module in MTSA can make the payment method for the service easier than other. This module enable customer to pay the transportation services cost by online transfer. Customers need to pay upfront before vendor send the truck.

1.4.2 Target users

There are three users in MTSA. Customer need this service application to make easier to contact the moving truck service vendor if they want. Then, vendor will be easy to get the customers and boost the vendor’s sales. Last but not least, admin will verify the vendor that have register with this application. Admin can view the job that has been completed by the vendor.

1.5 Project Significance

MTSA provides users moving truck services that is easy to use and can be accessed at any time and from any place. Furthermore, MTSA offers a mobile application that helps the moving truck business to communicate with their customers in an efficient manner. This project has the potential to replace the manual process with a computerized system.

1.6 Expected Output

MTSA able to make people's lives easier, and they will not have to worry about finding a moving truck service. Next, MTSA would allow moving truck companies to advertise their services on the market.

This application is mostly can used by all people, and they can access it by simply downloading the apps into their smartphones. Developers worked on a web-based framework that allows administrators to log in to the application to verified vendors. Thus, vendor can used MTSA to accept the job request from the customer.

This, there are two developments introduced which are a mobile application and a web-based application.

1.7 Conclusion

Customers can save time and energy by using the Moving Truck Service Application, which offers moving truck service to them. It also offers moving truck companies the ability to advertise their services to customers. Furthermore, since the company application is a computerized system, it can be used to replace the manual process, reducing the amount of paper used and reducing human error. Last but not least, the Moving Truck Service Application is web-based and mobile-app based, allowing customers to access it from anywhere at any time using only the internet.

CHAPTER 2: LITERATURE REVIEW AND PROJECT METHODOLOGY

2.1 Introduction

In this chapter, a review of academic sources that offer an outline of a specific subject, as well as previous related initiatives, is explored in order to create a Moving Truck Service Application. Furthermore, the procedure for conducting literature analysis is explored. The primary goal of the research is to evaluate the software creation tool and technologies that will be used to build the Moving Truck Service Application. The information obtained in this segment would then be used as a guide to assess the project's progress in order to construct a useful Moving Truck Service Application.

This chapter would include reviews of the literature on two existing applications that are applicable to the project's domain. Furthermore, methodology is the overall research plan that outlines how this project will be carried out, will be addressed further, as will activities at each point. Research is a methodical, rigorous, data-driven, critical, and analytical empirical investigation into a particular issue with the aim of seeking solutions. The study provides the necessary data for managers to make well-informed decisions in order to effectively address the issue.

2.2 Facts and Findings

2.2.1 Domain

In the field of software engineering, a domain is the target field to which the technology will be applied. Thus, the domain of this project is the limited platform to find moving truck in customer area. The application aimed at giving the advantages to the customer to get the moving truck easily. Customer can pin their location and sent to the moving truck company near them, if the truck available, the truck arrives at pinned location by the customer.

2.2.2 Existing System

There are two existing structures that have been used as reference points in the implementation of this project:

i. *Integrated E-Parcel Management System with GSM Network*

ii. *Delivery Notification System Using Web Based*

2.2.2.1 Case Study of Integrated E-Parcel Management System with GSM Network

In the first case study that have reviewed, the system is about the management of the parcel system using GSM network(Abd Wahab *et al.*, 2009). Since nowadays mobile phone is very popular device that almost everyone had it, the author wants to develop a mailing system that can notify the recipient once their parcel is arrived to their place. The whole system utilizes the barcode system, Microsoft Visual Basic 6.0 and Active Server Pages 3.0 as the interface, and mobile network to realize the intended purpose. The system is developed in Universiti Tun Hussein Onn Malaysia (UTHM).

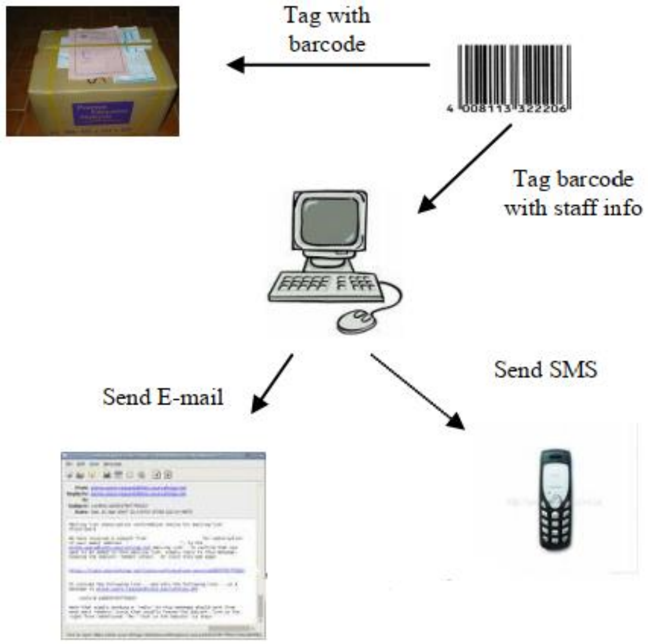
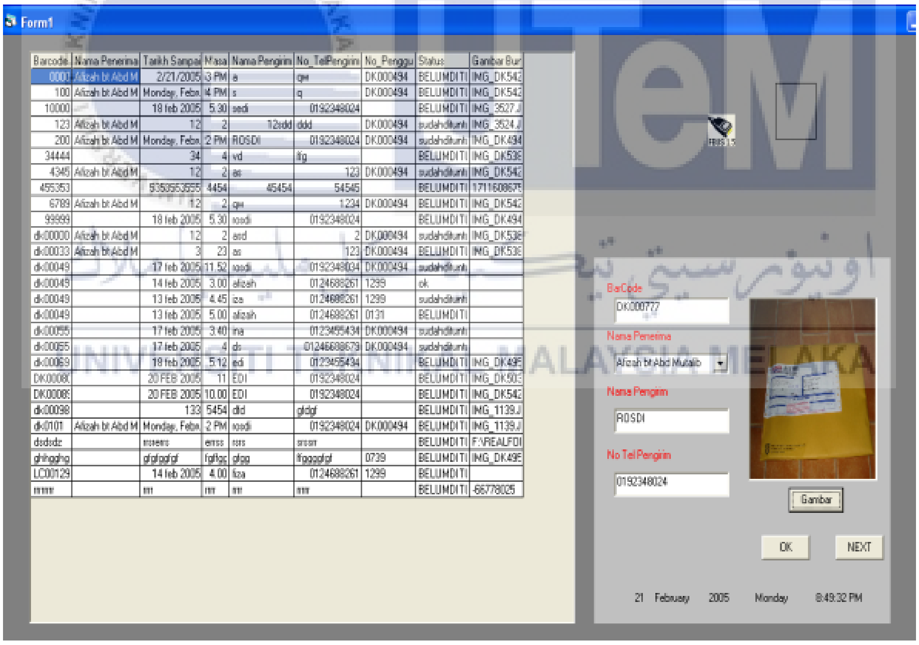


Figure 2.1 The architecture of the system



Barcode	Nama Penerima	Tarikh Sampai	Masa	Nama Pengirim	No_TelPengirim	No_Penggu	Status	Gambar Bur
0000	Afizah bt Abd M	2/21/2005	3 PM	a	qw	DK000494	BELUMDITI	IMG_DK542
100	Afizah bt Abd M	Monday, Febr	4 PM	s	q	DK000494	BELUMDITI	IMG_DK542
10000		18 feb 2005	5.30	sedi	0192348024		BELUMDITI	IMG_3527.J
123	Afizah bt Abd M	12	2	12sdd	ddd	DK000494	sudahditunt	IMG_3524.J
200	Afizah bt Abd M	Monday, Febr	2 PM	ROSDI	0192348024	DK000494	sudahditunt	IMG_DK494
34444		34	4	vd	ffg		BELUMDITI	IMG_DK538
4345	Afizah bt Abd M	12	2	as	123	DK000494	sudahditunt	IMG_DK542
455353		5353553555	4454	45454	54545		BELUMDITI	171160867
6789	Afizah bt Abd M	12	2	qw	1234	DK000494	BELUMDITI	IMG_DK542
99999		18 feb 2005	5.30	rosdi	0192348024		BELUMDITI	IMG_DK494
dk00000	Afizah bt Abd M	12	2	asd	2	DK000494	sudahditunt	IMG_DK538
dk00033	Afizah bt Abd M	3	23	as	123	DK000494	BELUMDITI	IMG_DK538
dk00049		17 feb 2005	11.52	rosdi	0192348034	DK000494	sudahditunt	
dk00049		14 feb 2005	3.00	afizah	0124688261	1299	ok	
dk00049		13 feb 2005	4.45	iza	0124688261	1299	sudahditunt	
dk00049		13 feb 2005	5.00	afizah	0124688261	0131	BELUMDITI	
dk00055		17 feb 2005	3.40	ina	0123455434	DK000494	sudahditunt	
dk00055		17 feb 2005	4	ds	01246688679	DK000494	sudahditunt	
dk00069		18 feb 2005	5.12	edi	0123455434		BELUMDITI	IMG_DK495
DK00080		20 FEB 2005	11	EDI	0192348024		BELUMDITI	IMG_DK503
DK00089		20 FEB 2005	10.00	EDI	0192348024		BELUMDITI	IMG_DK542
dk00098		133	5454	dfd	gfdgf		BELUMDITI	IMG_1139.J
dk0101	Afizah bt Abd M	Monday, Febr	2 PM	rosdi	0192348024	DK000494	BELUMDITI	IMG_1139.J
dsdsdz		rrsrers	errss	rsrs	srssrr		BELUMDITI	F:\REALFOI
ghhgghg		gfgfggfgf	fgffgg	gfgg	ffggggfgf	0739	BELUMDITI	IMG_DK495
LC00129		14 feb 2005	4.00	fiza	0124688261	1299	BELUMDITI	
rrrrrr		rrr	rrr	rrr	rrrr		BELUMDITI	-66778025

BarCode
DK000777

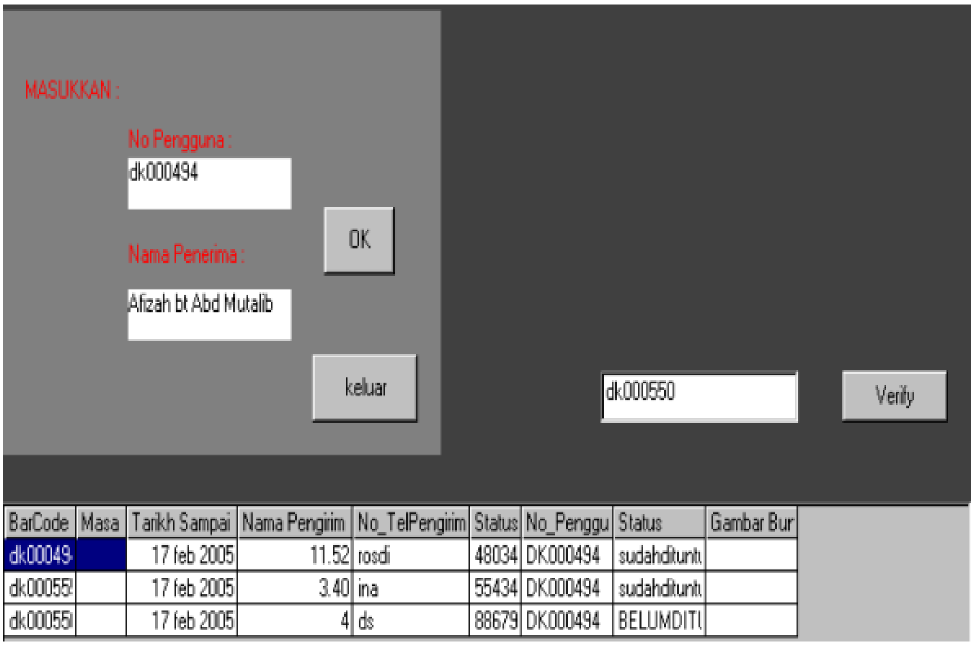
Nama Penerima
Afizah bt Abd Mutalib

Nama Pengirim
ROSDI

No Tel Pengirim
0192348024

21 February 2005 Monday 8:49:32 PM

Figure 2.2 Record parcel upon arriving



No Pengguna : dk000494

Nama Penerima : Afizah bt Abd Mutalib

dk000550

BarCode	Masa	Tarikh Sampai	Nama Pengirim	No_TelPengirim	Status	No_Penggu	Status	Gambar Bur
dk00049		17 feb 2005	11.52	rosdi	48034	DK000494	sudahditunt	
dk00055		17 feb 2005	3.40	ina	55434	DK000494	sudahditunt	
dk00055		17 feb 2005	4	ds	88679	DK000494	BELUMDIT	

Figure 2.3 Parcel collection interface

The system's objective is to avoid the parcel from being lost during the process of delivery to the addresses stated on the parcel within UTHM. Therefore, by using barcode system, every parcel is tagged with barcode contains the information of the staff. Then the staff will receive a notification of the parcel's location from their mobile phone for taking direct action to deliver the parcel.

Figure 2.2 illustrates the data of the parcel collection associated with the system database of the system. Figure 2.3 shows the system interface when the parcel is ready to be distributed to the particular addresses. It will require the staff ID to verify whether the parcel is already collected or not. The verified parcel will be checked as 'claimed'.

2.2.2.2 Case Study of Delivery Notification System Using Web Based

Delivery Notification System (DNS) is a system used in Residential College's office in University Malaysia Pahang that manages the mailing system(Najibah, 2010). This system enables the students to get the notifications when their mail or parcel is arrived to university address via their e-mail. This system provides advantages to the users as the problem of time wasting for the mail/parcel that has not arrived as the students has to go to the residence college's office besides the management can be improved.

This system designed to enhance the current system that already exist in Kolej Kediaman 1 (KK1) in Universiti Malaysia Pahang by implementing a notification of incoming parcel/mail to the students' e-mail as well as to improve the management of mailing at the KK1 office. This system is developed by using web - based technique where all the programming and data store are using Hypertext Preprocessor (PHP) and MySQL respectively. Besides, barcode technology is applied which could enhance the security level of the system. The results of this implementation are the students of KK1 will get an e-mail notification when their parcel/mail is arrived at the university thus the problem of time wasting for unnecessary checking for the parcel that has not arrived has been solved. Furthermore, the management of the mailing system at the KK1 can be improved and save times to record the incoming parcels. Lastly, DNS is a system that could improve the existing mailing system in UMP.

2.3 System Development Methodology

2.3.1 Web Application Development

There are some pressing reasons for accelerating the production of website. Users are knowledgeable and highly concerned in the company's priorities. The application of Rapid Application Development (RAD) is less stressful, according to System Analysis Design because users have helped to design the commercial elements of the system such as place order interface, payment method and parcel tracking. As RAD software tools used to produce displays and view the overall flow of the running programmed, the RAD design workshop deviates from the traditional Software Development Lifecycle (SDLC) design level. Users then sign a visual model representation when users accept the template, not the paper documentation only represents imaginative architecture. There are four phases used within this procedure and it illustrated as shown in Figure 2.5.

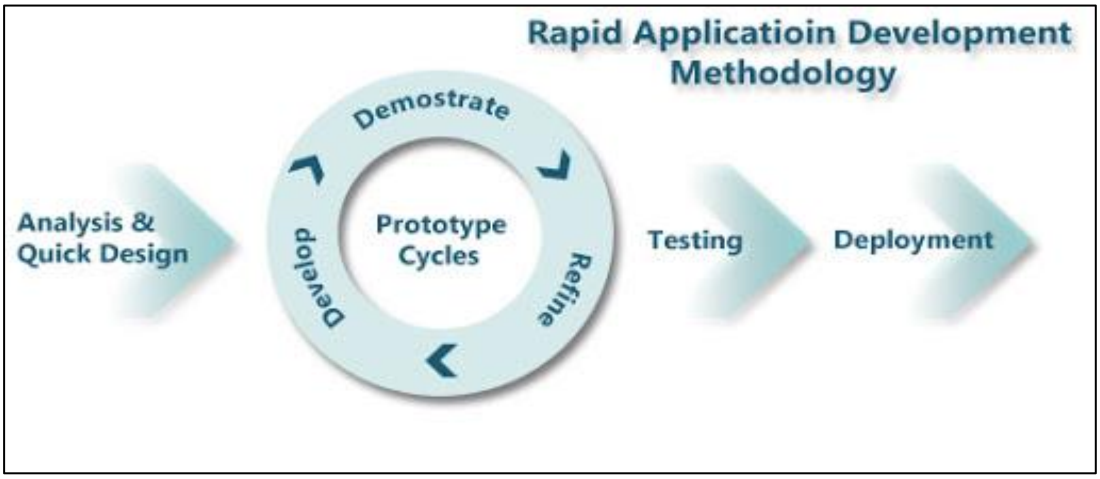


Figure 2.4 Rapid Application Development

The technique of RAD is composed of four phases. Analysis and quick design, prototype cycle, testing and deployment constitute those four stages that is analysis and quick design are the first step. Users and observers may meet and define the goals of the program or the specifications of the device in this process. Before design this system, developer find that people have a problem in moving their item to another location. To overcome this problem, developer get a quick sketch and rough design to create this system. The data processed and the data is analyzed by an expert. Next, the emphasis and discourse is on addressing the market dilemma. An initial plan proposed after the market dilemma solved.

Prototype cycle is the second level. In this step, the specification and refinement phase will take place. Developer makes the refinement on the module they has been develop. It also needs to add the recover password system to make the security of the customer more safety.

The third level is testing stage. This move involves checking the software product of MTSA and ensuring that all the module in this system operate together as customer standards and requirements. The testing phase is the important part to ensure that MTSA run smoothly while it published. Continue to integrate customer reviews as the code reviewed and retested for its smooth running.

The last phases is deployment. In this phase, during develop this system, the analyst would collaborate with the customer to design the business or non-technical elements of the framework. It will more user friendly because customer can use this system without any problem. The new system or component of the system evaluated and later applied to the developer as the system designed and perfected. The old method would not have to run in parallel when designing a new scheme.

2.4 Project Requirement

This part will provide all the software and hardware that will be required during the implementation of the system.

2.4.1 Software Requirement

i. Sublime Text Version-3

A cross-platform source code editor with a Python application programming interface is available as a freeware download (API). It supports a variety of programming and markup languages out of the box, and users can add functions through plugins, which are usually community-built and maintained under free-software licenses. This software use to develop and design the system interfaces of the system using Hypertext Preprocessor (PHP) and HyperText Markup Language (HTML) coding. The aim of system interfaces is to allow the user to communicate with the system.

ii. XAMPP (PHP 8.0.3)

The Apache HTTP Server, MariaDB database, and interpreters for scripts written in the PHP and Perl programming languages are all included in this free and open-source cross-platform web server solution stack kit created by Apache Friends. Since most real-world web server implementations share the same components as XAMPP, moving from a local test server to a live server is easy. Since of XAMPP's ease of deployment, a developer can quickly and easily install a WAMP or LAMP stack on an operating system, with the added benefit that popular add-in applications like WordPress and Joomla! can also be installed with similar ease using Bitnami.

iii. Hypertext Preprocessor (PHP)

An open-source general-purpose scripting language that is well-suited for web creation and can be embedded in HTML.

iv. PhoneGap

A platform that allows developers to create applications for all major mobile operating systems using standard web APIs. Web developers just need to be familiar with HTML, CSS, and JavaScript. The rest of the job, such as the app's look and feel and portability across different mobile operating systems is handled by PhoneGap.

v. MySQL (My Structured Query Language) Database

MySQL is one of the databases used in the system's development. It is compatible with a variety of operating systems, including Windows and Mac. It's a database management system based on relational databases. Data query and update, scheme development and modification and data access control are all included in its scope.

vi. Microsoft Office Word Version 2016

This software used to do the documentation of the system such as proposal and final report for the Final Year Project.

vii. StarUML

This software used to design and complete the uses case, activity, sequence and class diagram for this project. All the data used to attach in proposal and final report for this project.

2.4.2 Hardware Requirement

i. Laptop Hp Pavilion 15

This hardware used to develop this system. HP Pavilion 15 is a Windows 10 laptop that has a 1366x768-pixel resolution with a 15.60-inch display. It comes with 8GB of RAM and powered by a Core i7 CPU. HP Pavilion 15 packs 1TB of storage for HDDs. The Nvidia GeForce 940MX powered by graphics. Networking options include Wi-Fi 802.11 ac, Bluetooth and Ethernet.

ii. Android Smartphone-Oppo F5

This hardware used to install and run the mobile application that has been develop. For all your mobile activities, from speedy browsing to constant conversations and enthusiastic games, the OPPO F5 houses 4 GB RAM and Octa-core CPU. The energy-saving microprocessor helps you to crank on the heat while keeping the computer cold on your smartphone.

iii. Storage-Kingston SSD 120 GB

The system used at least 120 GB Solid State Drive (SSD) to run all the software used at one time.

2.4.3 Other Requirements

To complete the Moving Truck Service Application, one of the important requirements needed other than software and hardware requirements which is;

i. Internet Connection

A Wi-Fi and Android phone internet connection are used to demonstrate the system functionality.

2.5 Project Schedule and Milestones

The project schedule and milestone are very important to complete the system on time. The duration to complete this project is 15 weeks for Final Year Project 1 and 8 weeks for Final Year Project 2. Several activities had been written down and organized each week. There are have 4 phases to complete this system which are planning, analysis, design and implementation phases. In planning phase, it takes two weeks to complete this phase. After that, analysis phase takes two weeks to finish. Then, design phase takes 5 weeks to complete this phase. The final phase which is implementation phase takes 7 weeks to finish it.

For FYP2, there are have three activities to complete this project documentation which are testing phase, project presentation and project conclusion. Testing phase takes 5 weeks to test MTSA completely. Then, project presentation take 1 week to finish this part. After that, project conclusion takes 2 weeks to complete this prrt. Refer to Appendix A for a Gantt chart for this project.

2.6 Conclusion

In conclusion, Rapid Application Development (RAD) is suitable and realistic method applied for MTSA development. By using RAD, the process will focus more on the system interface and system function. For this reason, RAD will be very beneficial and empowering to us during the development process of the system.

CHAPTER 3: ANALYSIS

3.1 Introduction

One of the components of observing and analyzing an existing system in order to construct a new system is the analysis system. The analysis is carried out to determine the client's problem and to ensure that the system will meet the client's requirements. Each system is evolving in order to address a problem and expand its capabilities. To ensure that the development of the system goes smoothly, system planning should be carried out. A more thorough investigation is carried out to ensure that each step can be completed on time. A database process will be carried out to ensure that data is entered correctly.

In this chapter, an illustration of the system's emergent process from the beginning to the end will be shown, all within the context of specific knowledge. Moreover, the analyst must meet with end users to learn about their demands and difficulties with the current system to assist in the design of a new and more efficient system. Gather information, establish the new system's requirements, construct prototypes for the new system, priorities requirements and assess alternatives are all actions that must occur during the analysis phase.

3.2 Problem Analysis

The procedure of moving truck services is currently run on a manual system. When someone requires a truck to transport their belongings, they must locate the nearest moving truck vendor on their own. Not only has a lot of time been spent looking for a vendor who can provide these services, but they will be in an even more difficult scenario if they do not have access to contact the local vendor. Before using the service, users must fill out the needed information while waiting for the driver to arrive.

If the current system is not changed, opportunities to improve the transportation industry's commercial growth would be limited. Efforts to assist folks who are having difficulty moving their goods will make it more difficult and less methodical. As a result, whether a major corporation or an individual, achieving business growth will be challenging. To transform the prevailing commercial movement in this country, a revolution is required.

Manual systems are the most frequent in many businesses and they always have a high error rate and are far slower than automated systems. As a result, a computerized system can address all these issues.

3.2.1 Activity Flow of Current System

Another essential behavioral diagram in the UML diagram is the activity diagram, which is used to illustrate dynamic characteristics of the system. An activity diagram is a more complex version of a flow chart that describes the flow of information from one activity to the next. The figure 3.1 until Figure 3.3 show the activity flow for customer, vendor and admin in current system.

3.2.2 Analysis of Proposed System

Moving Truck Service will be the name of the developed product. It's a web-based and mobile application-based platform that lets customers and vendors request and offer moving truck services. The entire process, including registration, request, and payment, can be completed online. The Moving Truck Service will be available 24 hours a day, 7 days a week. So, consumers can use it whenever they require a truck to transport many items.

3.2.3 Activity Flow of Proposed System

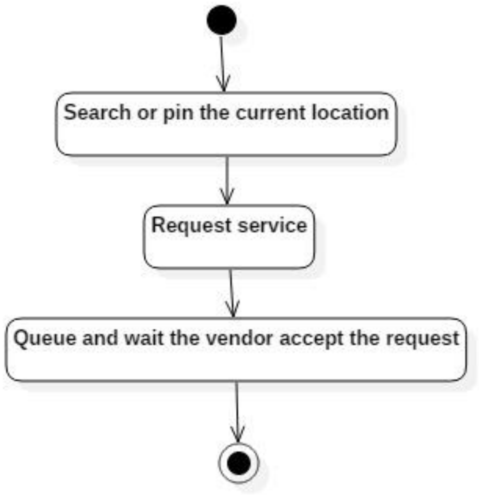

Search or pin the current location
Request service
Queue and wait the vendor accept the request

Figure 3.1 Current Activity Flow for Customer

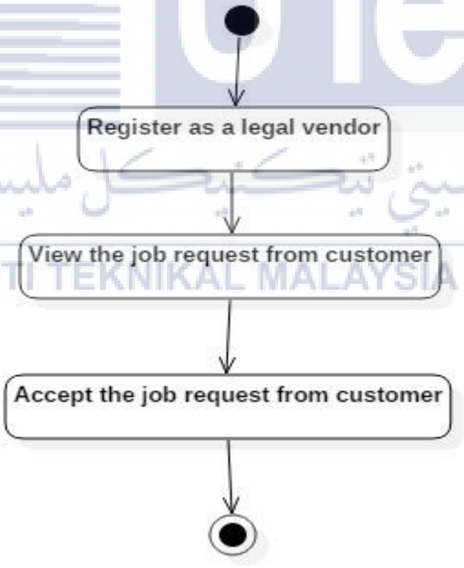

Register as a legal vendor
View the job request from customer
Accept the job request from customer

Figure 3.2 Current Activity Flow for Vendor

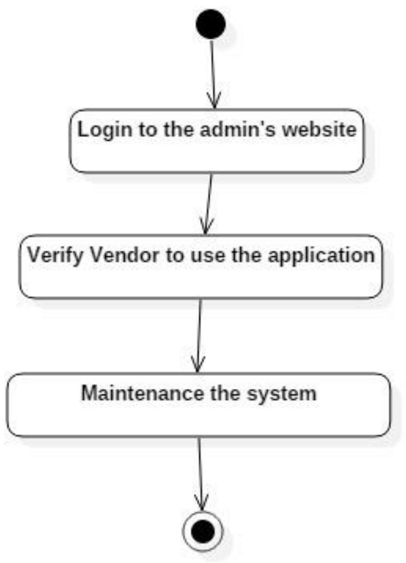

Login to the admin's website
Verify Vendor to use the application
Maintenance the system

Figure 3.3 Current Activity Flow for Admin

3.3 Requirement Analysis

This project's requirement analysis will be subdivided into data requirements, functional requirements, non-functional requirements, and other requirements. This analysis is crucial to a systems or software project's success or failure. The requirements should be documented, actionable, quantifiable, testable, and traceable, as well as tied to identified business needs or opportunities and described in sufficient detail for system design. Use case diagrams, use case descriptions, and data flow diagrams will be used to express both functional and non-functional needs.

3.3.1 Data Requirement

The type of data required for each input into the database is referred to as a data requirement. Each module will have its own set of data requirements and the data will be linked together using unique identification numbers or names.

Table 3.1 Data Requirement for Customer

Customer	
Attribute Name	**Description**
CustId	Customer ID number.
Email	Customer’s email.

Password	Encrypted password.
Name	Customer’s name.
PhoneNo	Customer’s phone number.
Balance	e-Wallet balance.
Address	Customer’s address.
State	Customer’s state.
Postcode	Customer’s postcode.

Table 3.2 Data Requirement for Vendor

Vendor	
Attribute Name	**Description**
VendorId	Vendor’s ID number.
Email	Vendor’s email.
Password	Encrypted password.
Name	Vendor’s name.
PhoneNo	Vendor’s phone number.
Balance	e-Wallet balance.
ProfileImage	Vendor’s profile image.
Verified	Vendor’s verification to login.

Table 3.3 Data Requirement for Admin

Admin	
Attribute Name	**Description**
AdminId	Admin ID number.
Username	Admin’s username.
Password	Encrypted Password.

Table 3.4 Data Requirement for Request

Request	
Attribute Name	**Description**
RequestId	Request ID number.
CustId	Customer’s ID number.
VendorId	Vendor’s ID number.
Location	Location’s name that requested by customer.
StatusId	Status ID number for accepted requested job.
Coordinate	Latitude and longitude for pinned location.

Table 3.5 Data Requirement for Status

Status	
Attribute Name	**Description**
StatusId	Status Id number.
StatusType	Type of status.

Table 3.6 Data Requirement for e-Wallet

Wallet	
Attribute Name	**Description**
WalletId	Customer Id number.
CustId	Customer’s ID number.
VendorId	Vendor’s ID number.
Debit	Debit balance for customer.
Credit	Credit balance for vendor.

3.3.2 Functional Requirement

This section defines and specifies the functional requirements for MTSA. Functional requirements are statements that specify the services a system should provide. These needs are the system's high-level capabilities that are required to provide benefits to users.

Table 3.7 Functional Requirement

FR No.	Requirement	Description
FR 1.1	User Account Registration	New users which is customer and vendor will be allow to register in this application.
FR 1.2	Login and Logout	Users will be allowed to login and logout from this application.
FR 2.1	Approval	Admin will be allowed to approve the new vendor to login into this application.
FR 3.1	Service	Customer will be allowed to request the moving truck services.
FR 3.2	Payment via Online	Online transaction will be allowed online transaction for customer to pay the service and vendor to transfer into their own bank account in this application.
FR 4.1	GPS Tracker	Vendor will be allowed to find the nearest job in this application.
FR 5.1	Notification	Notification will show up to the customer and vendor in this application.

3.3.2.1 Use Case Diagram

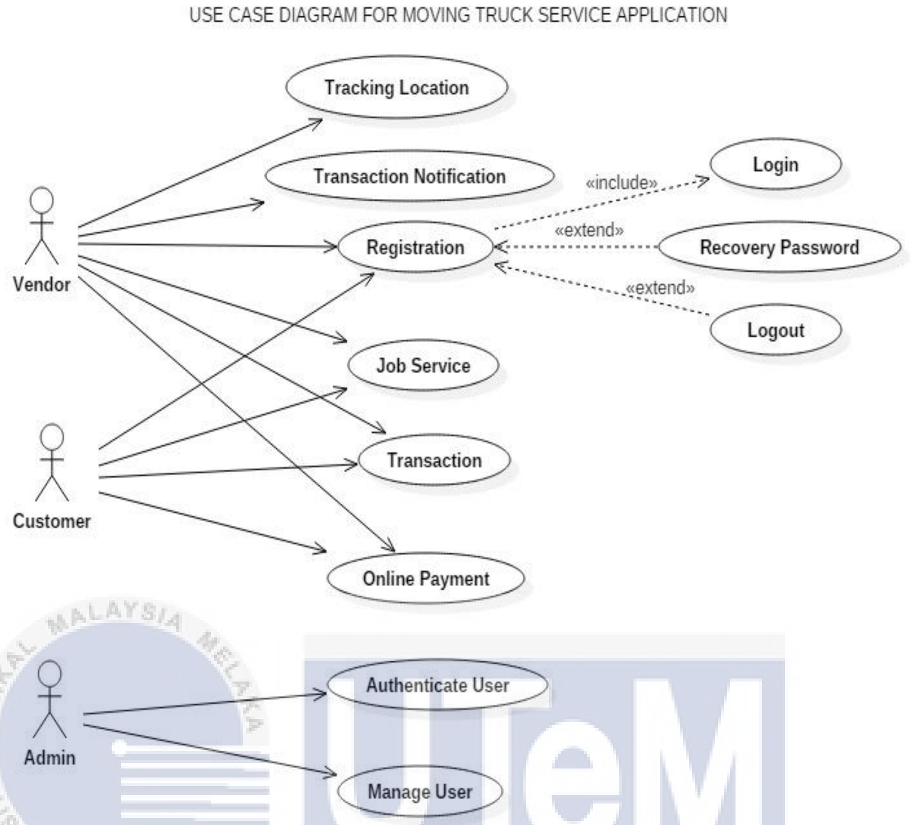


Figure 3.4 Use Case Diagram for MTSA

3.3.2.2 Use Case Description

A use case is a written description of how users will use the system to accomplish activities. It describes how a system reacts to a request from the perspective of a user. Each use case is described as a series of basic actions, starting with the user's goal and ending with the achievement of that goal. Each use case has a use case specification that includes the use case ID, name, description, actors, post and pre-conditions, flow of events and whether to “Include” or “Exclude” the use case.

Table 3.8 Use Case Description for Registration

Use Case ID	UC001
Use Case Name	Use case for registration.
Description	The flow to register a new user based on user role is described in this use case.
Actors	Customer, vendor and admin.
Pre- Condition	Users does not register yet on the system.
Post- Condition	Users registered successfully.
Flow of Events	Primary Flow (Customer) i. *Enter email, password, full name, phone number, address, state and postcode.* ii. *The system will check to see if the email address is already in the database. If all goes well, the main page will appear.* Primary Flow (Vendor) i. *Enter email, password, full name and phone number.* ii. *The system will check to see if the email address is already in the database. If all goes well, the main page will appear.*
“Include” Use Case	Applicable.
“Extend” Use Case	Applicable.

Table 3.9 Use Case Description for Job Services

Use Case ID	UC002
Use Case Name	Use case for job service.
Description	This use case allow customer to request the services and vendor to accept the job request.
Actors	Customer and vendor.
Pre- Condition	Users has been registered successfully.
Post- Condition	Users registered successfully.

Flow of Events	Primary Flow (Customer) i. *Enter the address or pin the location via build in GPS location.* ii. *The system will sent the location to the vendor. Customer can view their request job if success.* Primary Flow (Vendor) i. *Click button to receive job request by customer.* ii. *Vendor can track the customer's location by click the location button. Vendor can view their accepted job in the job schedule.*
"Include" Use Case	Not applicable.
"Extend" Use Case	Not applicable.

Table 3.10 Use Case Description for Online Payment

Use Case ID	UC003
Use Case Name	Use case for online payment.
Description	This use case allow user to make a payment or receive the payment via online.
Actors	Customer and vendor.
Pre- Condition	Customers have enough balance in the e-Wallet.
Post- Condition	Payment has been done successfully.
Flow of Events	Primary Flow (Customer) i. *Click "pay" button to make a payment.* ii. *Balance on the customer's account will be credited to the vendor's e-Wallet if success.* Primary Flow (Vendor)

	i. Click "update" button on the job that payment has been completed by the customer. *ii. Balance will be debit from the customer account if success.*
"Include" Use Case	Not applicable.
"Extend" Use Case	Not applicable.

Table 3.11 Use Case Description for Transaction

Use Case ID	UC004
Use Case Name	Use case for transaction.
Description	This use case allow users to credit or debit to their e-Wallet via online banking.
Actors	Customer and vendor.
Pre- Condition	Customers does not enough balance in the e-Wallet and vendor want to transfer their balance to their own bank account.
Post- Condition	Transaction has been done successfully.
Flow of Events	Primary Flow (Customer) *i. Fill in the top up value, the payment method and the bank card detail.* *ii. Money will be debit to the customer e-Wallet. Transaction page will be displayed.* Primary Flow (Vendor) *i. Click "transfer" button and fill in the account number, bank name and name.* *ii. Balance will be credit to their own bank account if success.*
"Include" Use Case	Not applicable.
"Extend" Use Case	Not applicable.

Table 3.12 Use Case Description for Tracking Location

Use Case ID	UC005
Use Case Name	Use case for tracking location.
Description	This use case allow vendor can track the customer’s location using build in map.
Actor	Vendor.
Pre- Condition	Job request has been accepted by the vendor.
Post- Condition	Track the customer location using build in map successfully.
Flow of Events	Primary Flow (Vendor) i. *Click “location” button on the accepted job at the job schedule page.* ii. *Vendor will get the track to go to the customer’s location.*
“Include” Use Case	Not applicable.
“Extend” Use Case	Not applicable.

Table 3.13 Use Case Description for Transaction Notification

Use Case ID	UC006
Use Case Name	Use case for transaction notification.
Description	This use case allow pop up notification for customer and vendor about the payment.
Actors	Customer and vendor.
Pre- Condition	Vendor accept the job request and customer make a payment for job requested.
Post- Condition	Transaction notification appear successfully.
Flow of Events	Primary Flow (Vendor) i. *Vendor accept the requested job by the customer.* ii. *Popup notification appear on customer to pay the services.*

	Primary Flow (Customer) i. *Customer pay the requested job by the vendor.* ii. *Popup notification appear on vendor to confirm their payment.*
“Include” Use Case	Not applicable.
“Extend” Use Case	Not applicable.

Table 3.14 Use Case Description for Authenticate User

Use Case ID	UC007
Use Case Name	Use case for authenticate user.
Description	This use case allow admin to approve the vendor registration to access the application.
Actors	Admin and vendor.
Pre- Condition	Admin has been register successfully.
Post- Condition	Vendor can login to the application successfully.
Flow of Events	Primary Flow (Admin) i. *Click on the “vendor list” button.* ii. *Choose verified or unverified status on the vendor list table.* iii. *Click “update” button.* iv. *The page will show the vendor data and status either it is already verified or unverified.*
“Include” Use Case	Not applicable.
“Extend” Use Case	Not applicable.

Table 3.15 Use Case Description for Manage User

Use Case ID	UC008
Use Case Name	Use case for manage user.
Description	This use case allow admin to create, update, review and delete the user information.
Actors	Admin.
Pre- Condition	Admin has been register successfully.
Post- Condition	Admin can manage user.
Flow of Events	Primary Flow (Admin) i. *Admin create, review, update and delete the user information.*
"Include" Use Case	Not applicable.
"Extend" Use Case	Not applicable.

3.3.3 Non-Functional Requirement

The non-functional needs for the system are described in this section. Non-functional requirements are limitations on the system's services or functions that are typically applied to it. Timing restrictions, as well as limits on the development process and standard, are examples of non-functional requirements.

Table 3.16 Non- Functional Requirement

NF No.	Requirement	Description
NF 1.1	Availability	The application must perform correctly and be accessible at any time and from any location.
NF 2.1	Usability	The application is user-friendly and compatible with the capabilities of its intended user to utilize it easily and effectively.

NF 3.1	Security	Password encryption will be used to secure the system. The password will be encrypted as the user enters it and will also be encrypted in the database.
MF 4.1	Reliability	This application is dependable, producing rapid and validated outputs for all of its processes.

3.3.4 Others Requirement

Table 3.17 Other Requirement

OR No.	Requirement	Description
OR 1.1	Operating System	Android 7.0 and above will support this application.
OR 2.1	Location Authorization	In order to use the app, the customer must agree to allow access to their location.

3.4 Conclusion

The requirements for the system are discussed in this chapter. There three requirements in this system which are functional, non-functional and other requirements. Non-functional requirements will describe system restrictions, whereas functional requirements will explain system modules. Other requirement will explain the platform that user used to use the application. The system will next go into the specifics of other needs, such as the software and hardware required to construct the system.

The design of the suggested system will be discussed in the following chapter. In addition, the present scenario analysis in the transportation industries will be discussed. Design is a stage in which a solution system is created based on requirements and analysis.

CHAPTER 4: DESIGN

4.1 Introduction

Software design is the process by which an agent produces a specification for a software artifact that is meant to achieve goals and is based on a set of primitive components and restrictions(Ralph and Wand, 2009). The process of imagining and specifying software solutions to one or more sets of issues is known as software design. The software requirements analysis is one of the most important aspects of software development (SRA). SRA is a specification list used in software engineering that is part of the software development process. If the software is "semi-automated" or user-centered, user experience design, which results in a storyboard, may be used to assist define those criteria. A software design can be as basic as a flow chart or text outlining a planned sequence of events if the program is fully automated such as there is no user or user interface. Unified Modeling Language and Fundamental Modeling Concepts are two semi-standard approaches(Freeman and Hart, 2004). In any scenario, some form of plan documentation is generally the end result of the design. Furthermore, depending on the availability of the technology used for the design, a software design may be platform-independent or platform-specific.

Software design is a model as well as a method. The design process is a set of stages that allows the designer to define all parts of the program that will be built. Critical success criteria for a competent design include creative ability, prior expertise, an understanding of what constitutes the excellent software, and an overall dedication to quality. It's worth noting, though that the design process isn't always easy. The design model may be compared to a set of home blueprints drawn out by an architect. It starts by depicting the entirety of the item to be created. For example, a threedimensional depiction of a home is gradually, the thing is improved to offer advice for building each detail. Similarly, the software design approach gives a number of distinct perspectives on the computer software. The software engineer can traverse the design process using basic design concepts.

4.2 High-Level Design

4.2.1 System Architecture

The process of defining the architecture, product design, modules, interfaces and data for a system in order to meet specific criteria is known as systems design. The application of systems theory to product development is known as systems design. The disciplines of systems analysis, systems architecture and systems engineering have some overlap.

4.2.2 User Interface Design

The visual layout of the elements that a user might interact with in a website or technical product is referred to as user interface design or UI design. This could be a radio's control buttons or a website's graphic layout. Not only must user interface designs be appealing to potential users, but they must also be practical and designed with them in mind.

4.2.2.1 Navigation Design

The discipline of navigation design entails developing, assessing, and implementing methods enabling users to navigate across a website or app. Designers use a combination of design patterns, including links, labels, and other UI elements, to create these engaging encounters. The optimal navigational design is one that encourages usability. Poor navigation will lead to fewer users using your product, which is why navigation is so important in user experience design. Next section shows the navigation designs that have in MTSA.

4.2.2.1.1 Customer

Navigation button on this application is on the bottom of the screen. Customer can jump to another page such as home, request, e-Wallet and profile page easily.

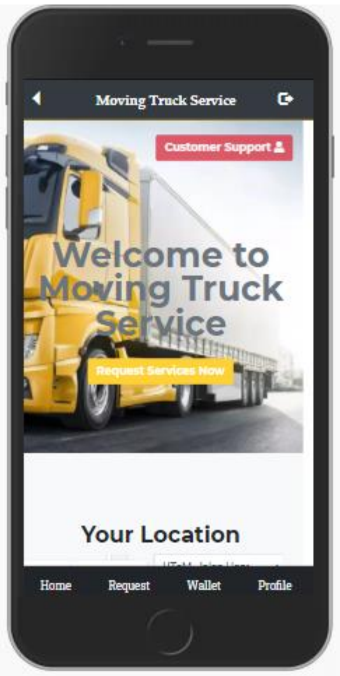
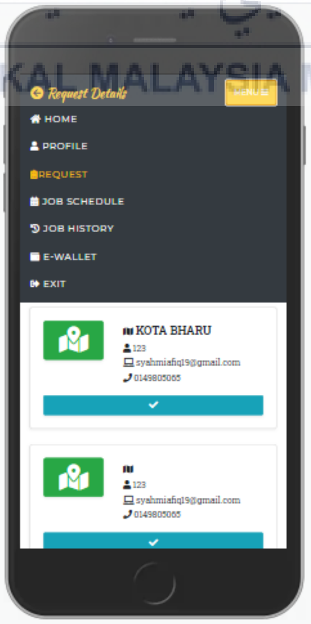


Figure 4.1 Customer's Navigation Design

4.2.2.1.2 Vendor

For vendor mobile application also have the navigation button. The navigation button placed on the top right corner in this application.



KOTA BHARU
123
syahmiafiq19@gmail.com
0149805065

123
syahmiafiq19@gmail.com
0149805065

Figure 4.2 Vendor's Navigation Design

4.2.2.2 Input Design

The process of changing a user-created input format to a computer-based format is known as input design. The input form, often known as the source document, is a computer-based format. . Next section shows the input designs that have in MTSA.

4.2.2.2.1 Customer

4.2.2.2.1.1 Login

Customers need to enter the email and their password in the text field.

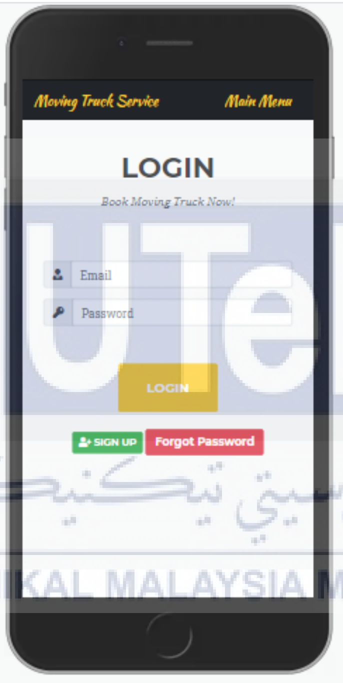
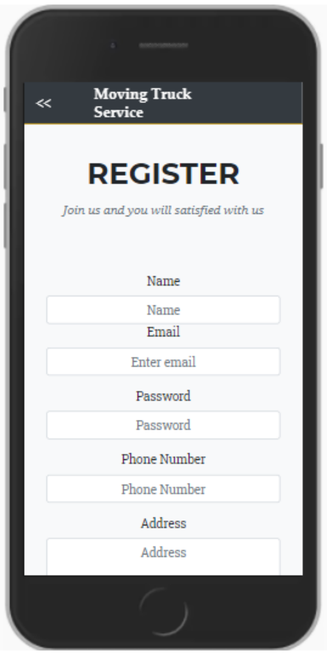


Figure 4.3 Customer Login

4.2.2.2.1.2 Registration

Customers need to enter the name, email, password, phone number, address and postcode in the text field provided.



REGISTER

Join us and you will satisfied with us

Name: Name

Email: Enter email

Password: Password

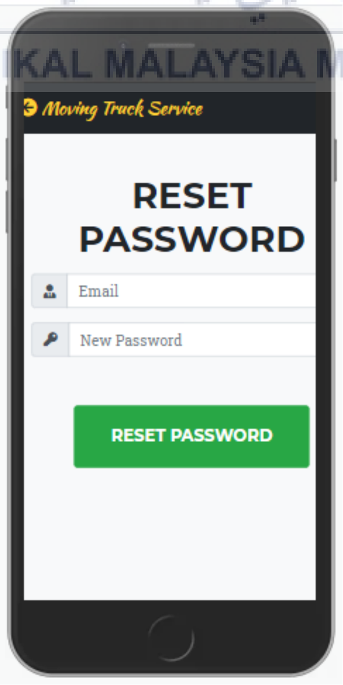
Phone Number: Phone Number

Address: Address

Figure 4.4 Customer Registration Form

4.2.2.2.1.3 Reset Password

Customers need to click ‘Forgot Password’ button on the login page to renew the password. System sends the link to reset password to the valid email address. Customers need to enter their email and the new password to reset the old password.



RESET PASSWORD

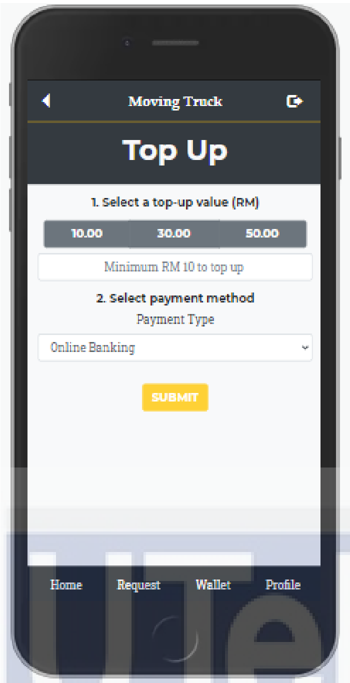
Email

New Password

Figure 4.5 Customer Reset Password

4.2.2.2.1.4 Top-up Details

Customers can top-up the money to their e-Wallet account and the minimum value is RM 10.



Moving Truck

Top Up

1. Select a top-up value (RM)

Minimum RM 10 to top up

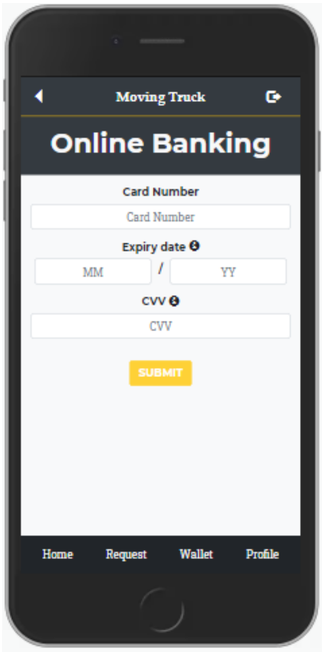
2. Select payment method

Payment Type: Online Banking

Figure 4.6 Customer Top-up

4.2.2.2.1.5 Online Banking

Customers can top-up to their e-Wallet account via online banking. They need to enter the bank card detail.



Moving Truck

Online Banking

Card Number

Card Number

Expiry date

MM / YY

CVV

CVV

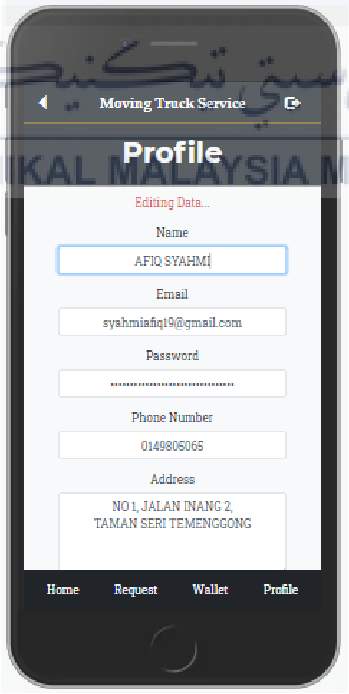
SUBMIT

Home Request Wallet Profile

Figure 4.7 Customer Online Banking

4.2.2.2.1.6 Profile

Customers can view and update their profile information.



Moving Truck Service

Profile

Editing Data...

Name

AFIQ SYAHMI

Email

syahmiafiq19@gmail.com

Password

••••••••••••••••••••••••••••••

Phone Number

0149805065

Address

NO 1, JALAN INANG 2,
TAMAN SERI TEMENGGONG

Home Request Wallet Profile

Figure 4.8 Customer Profile

4.2.2.2.2 Vendor

4.2.2.2.2.1 Registration

Vendors need to enter their email, password, confirm password, full name and phone in the text field to register.

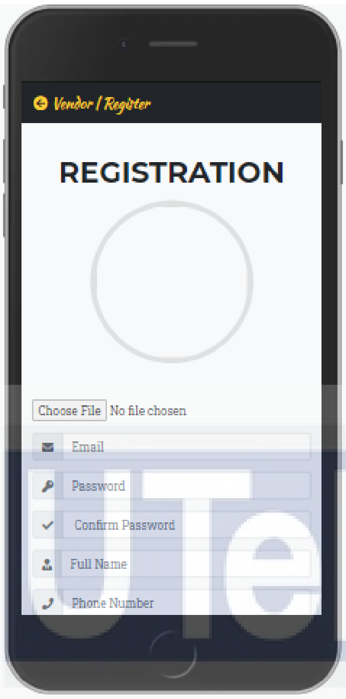


Figure 4.9 Vendor Registration

4.2.2.3 Output Design

Output is something done to attract customers. In terms of website design, an output focused strategy is one where web design services concentrate on adding elements and features designed to bring in customers.

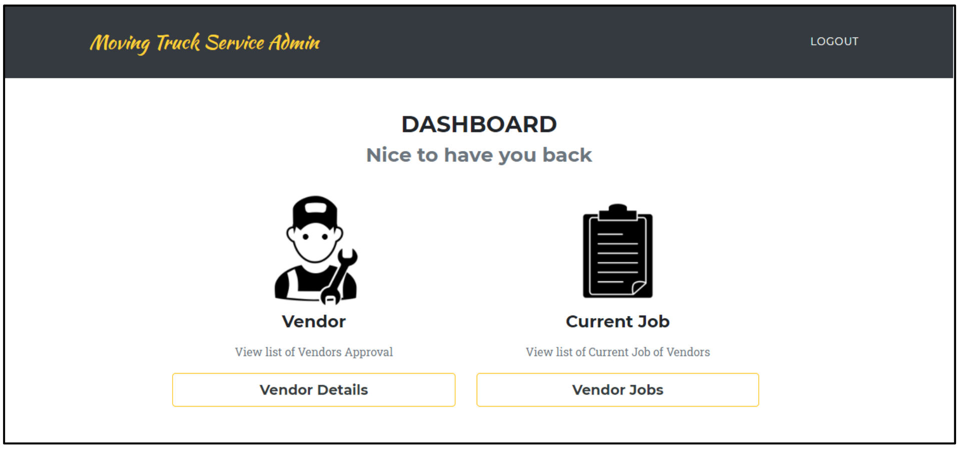
4.2.2.3.1 Admin

4.2.2.3.1.1 Home Page

Admin can view the information about the website.

4.2.2.3.1.2 Dashboard

Admin can click the button to go to the specific page.


Moving Truck Service Admin
LOGOUT

DASHBOARD

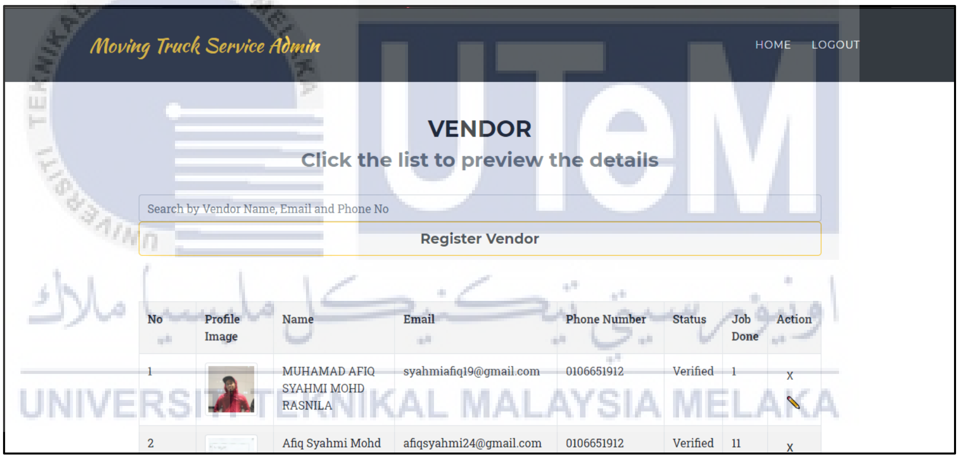
Nice to have you back

Vendor
View list of Vendors Approval
Vendor Details
Current Job
View list of Current Job of Vendors
Vendor Jobs

Figure 4.10 Admin Dashboard

4.2.2.3.1.3 Vendor Detail

Admin can create, retrieve, update and delete the vendor information.


Moving Truck Service Admin
HOME
LOGOUT

VENDOR

Click the list to preview the details

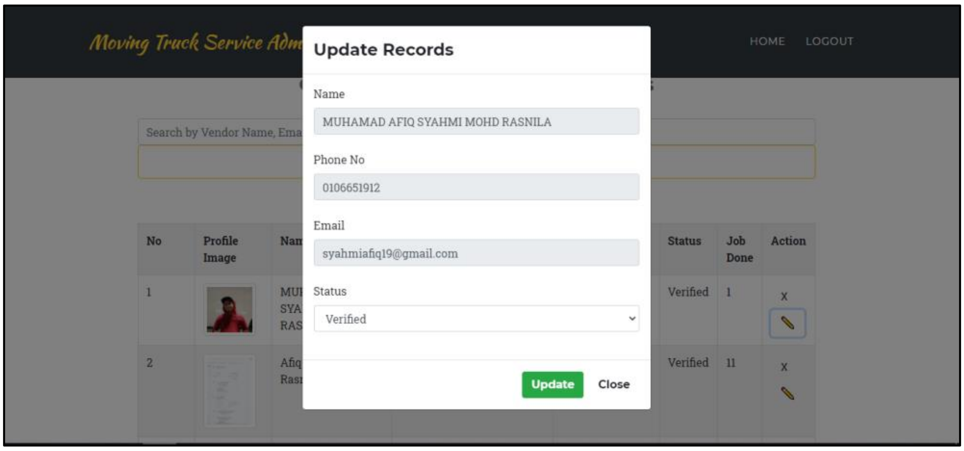
Search by Vendor Name, Email and Phone No
Register Vendor

No	Profile Image	Name	Email	Phone Number	Status	Job Done	Action
1		MUHAMAD AFIQ SYAHMI MOHD RASNILA	syahmiafiq19@gmail.com	0106651912	Verified	1	x
2		Afiq Syahmi Mohd	afiqsyahmi24@gmail.com	0106651912	Verified	11	x

Figure 4.11 Vendor Detail

4.2.2.3.1.4 Approval from Admin to Vendor

Admin need to give approval to the vendor to access to the application.



Update Records

Name: MUHAMAD AFIQ SYAHMI MOHD RASNILA

Phone No: 0106651912

Email: syahmiafiq19@gmail.com

Status: Verified

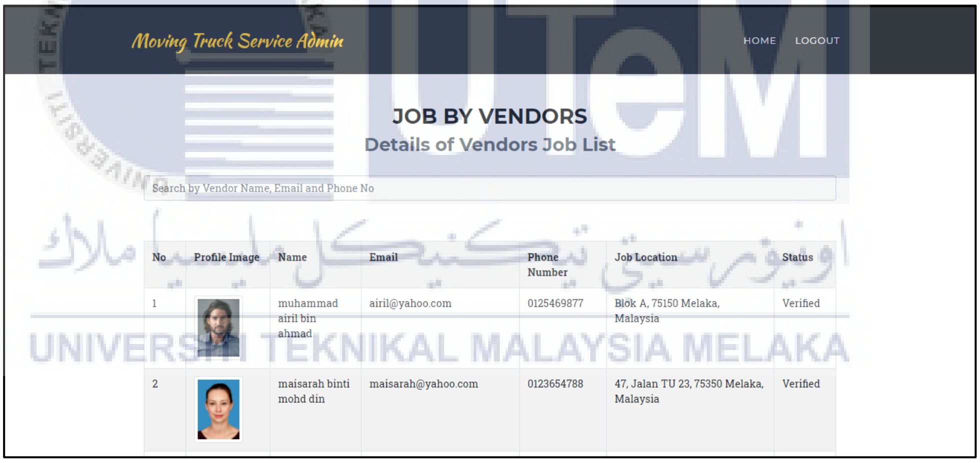
No	Name	Status	Job Done
1	MU SYA RAS	Verified	1
2	Afiq Rasi	Verified	11

Update Close

Figure 4.12 Verification for Vendor

4.2.2.3.1.5 Job Display from Admin to Vendor

Admin can view the vendor data that has done their job with the pick-up location.



JOB BY VENDORS

Details of Vendors Job List

Search by Vendor Name, Email and Phone No

No	Profile Image	Name	Email	Phone Number	Job Location	Status
1		muhammad airil bin ahmad	airil@yahoo.com	0125469877	Blok A, 75150 Melaka, Malaysia	Verified
2		maisarah binti mohd din	maisarah@yahoo.com	0123654788	47, Jalan TU 23, 75350 Melaka, Malaysia	Verified

Figure 4.13 Job Done by the Vendor

4.2.2.3.2 Customer

4.2.2.3.2.1 Request Services

Customers need to enter the location on the text field or pin the location on the build in map. The system will send the location to the vendor.

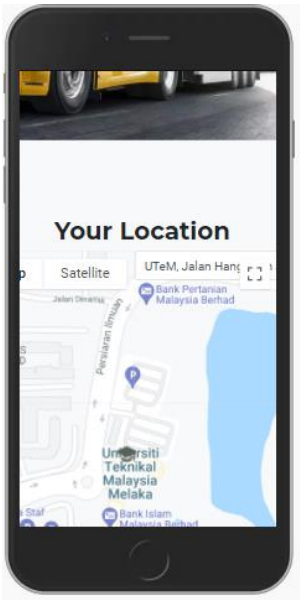
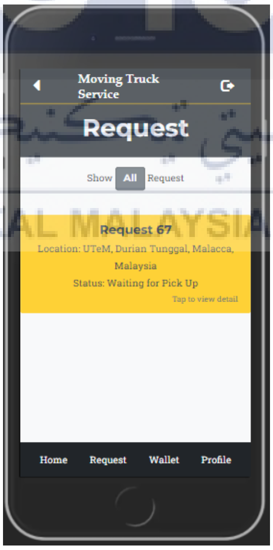

Your Location
Satellite
UTeM, Jalan Hang
Bank Pertanian Malaysia Berhad
Persiaran Ilmu
Universiti Teknikal Malaysia Melaka
Bank Islam Malaysia Berhad

Figure 4.14 Customer Job Request Services

4.2.2.3.2.2 View Request

Customer can view the job that has been requested by their own.


Moving Truck Service

Request

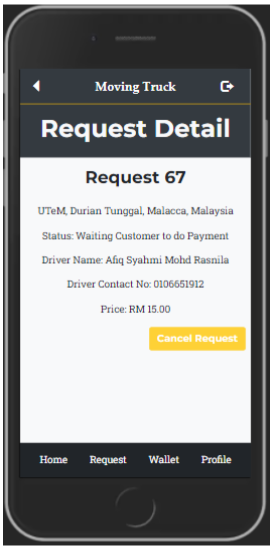
Show All Request

Request 67
Location: UTeM, Durian Tunggal, Malacca, Malaysia
Status: Waiting for Pick Up
Tap to view detail

Figure 4.15 Customer View Job Request

4.2.2.3.2.3 Request Detail

Customer can view the request detail that requested and cancel the request if the job did not picked up by the vendor yet.



Moving Truck

Request Detail

Request 67

UTeM, Durian Tunggal, Malacca, Malaysia

Status: Waiting Customer to do Payment

Driver Name: Afiq Syahmi Mohd Rasnila

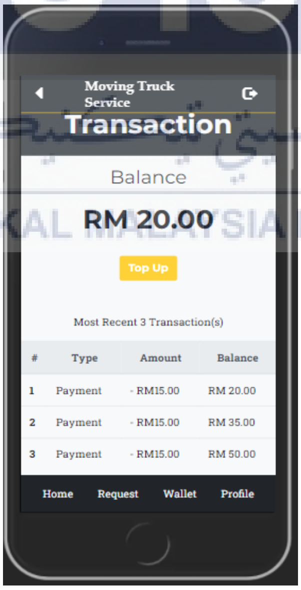
Driver Contact No: 0106651912

Price: RM 15.00

Figure 4.16 Customer Request Detail

4.2.2.3.2.4 e-Wallet

Customer can view the balance in their e-Wallet and show the last three transaction on the account.



Moving Truck Service

Transaction

Balance

RM 20.00

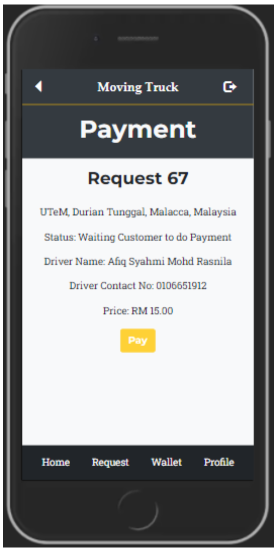
Most Recent 3 Transaction(s)

#	Type	Amount	Balance
1	Payment	- RM15.00	RM 20.00
2	Payment	- RM15.00	RM 35.00
3	Payment	- RM15.00	RM 50.00

Figure 4.17 Customer e-Wallet

4.2.2.3.2.5 Doing payment

Customer made the payment for the services when service is completed. They need to click the pay button and it automatically will credit from their e-Wallet.



Request 67

UTeM, Durian Tunggal, Malacca, Malaysia

Status: Waiting Customer to do Payment

Driver Name: Afiq Syahmi Mohd Rasnila

Driver Contact No: 0106651912

Price: RM 15.00

Figure 4.18 Customer Payment Module

4.2.2.3.3 Vendor

4.2.2.3.3.1 Login

Vendors need to enter their email and valid password in the text field to login in this system.

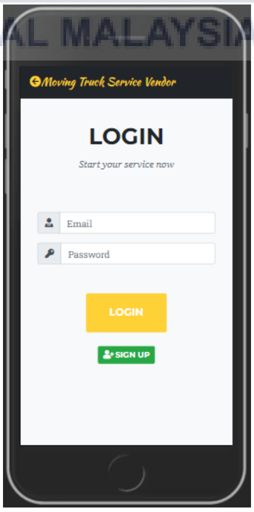
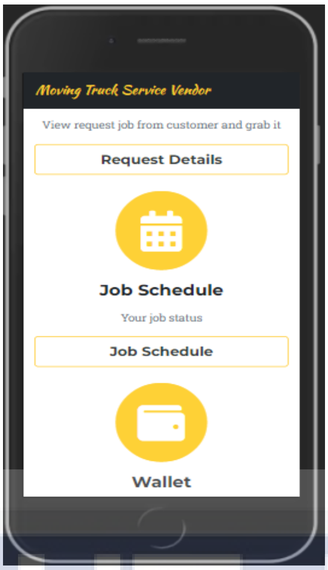


Figure 4.19 Vendor Login

4.2.2.3.3.2 Main menu

This is the main page for vendor after login. Vendor can click the button to go to the selected page.



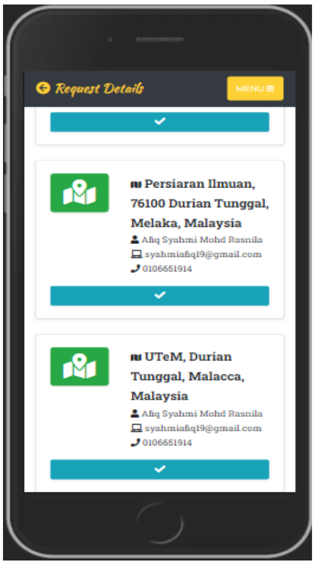
View request job from customer and grab it

Your job status

Figure 4.20 Vendor Main Menu

4.2.2.3.3.3 Request Detail

Vendor can view request from the customer in this page. Vendor can click the blue button to pick up the job from the customer.



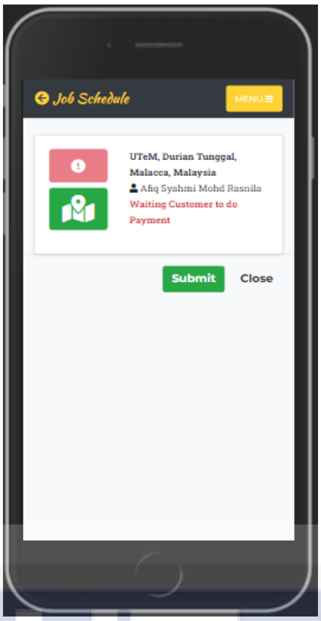
Persiaran Ilmuan, 76100 Durian Tunggal, Melaka, Malaysia
Afiq Syahmi Mohd Rasnila
syahmiafiq19@gmail.com
0106651914

UTeM, Durian Tunggal, Malacca, Malaysia
Afiq Syahmi Mohd Rasnila
syahmiafiq19@gmail.com
0106651914

Figure 4.21 Vendor Request Detail

4.2.2.3.3.4 Job Schedule

Vendor can view and update the status of the job that they have picked up.

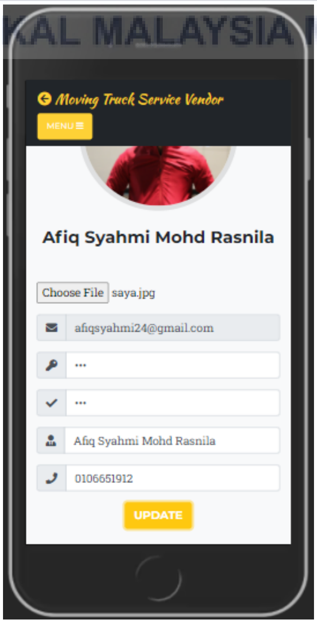


UTeM, Durian Tunggal, Malacca, Malaysia
Afiq Syahmi Mohd Rasnila
Waiting Customer to do Payment

Figure 4.22 Vendor Job Schedule

4.2.2.3.3.5 Profile

Vendor can view and update their profile information.



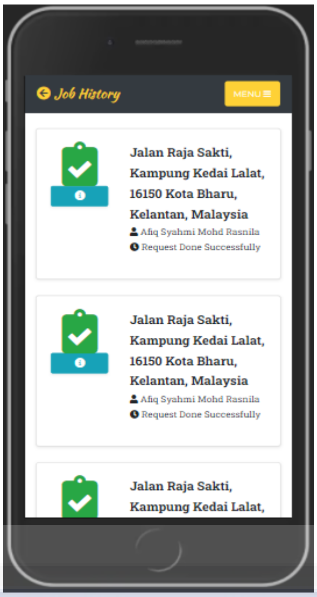
Afiq Syahmi Mohd Rasnila

saya.jpg
afiqsyahmi24@gmail.com
...
...
Afiq Syahmi Mohd Rasnila
0106651912

Figure 4.23 Vendor Profile

4.2.2.3.3.6 Job History

Vendor can view the job that has be done by them.



Job History

MENU ≡

Jalan Raja Sakti, Kampung Kedai Lalat, 16150 Kota Bharu, Kelantan, Malaysia

Afiq Syahmi Mohd Rasnila

Request Done Successfully

Jalan Raja Sakti, Kampung Kedai Lalat, 16150 Kota Bharu, Kelantan, Malaysia

Afiq Syahmi Mohd Rasnila

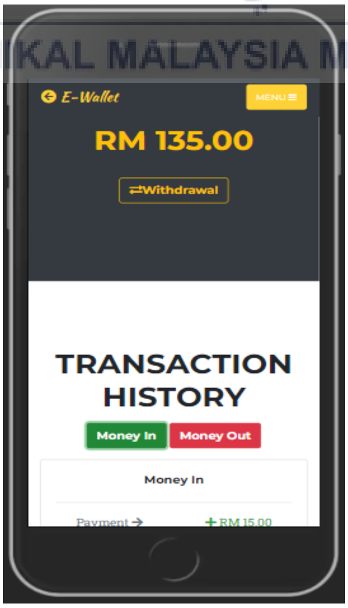
Request Done Successfully

Jalan Raja Sakti, Kampung Kedai Lalat,

Figure 4.24 Vendor Job History

4.2.2.3.3.7 e-Wallet

Vendor can view their e-Wallet balance and transfer to their own bank account.



E-Wallet

MENU ≡

RM 135.00

⇄Withdrawal

TRANSACTION HISTORY

Money In | Money Out

Money In

Payment → +RM 15.00

Figure 4.25 Vendor e-Wallet

4.2.3 Database Design

A database is usually an important part of an information system. As a result, database design is an important element of system development. This phase consists of three parts which are conceptual design, logical design and physical design.

4.2.3.1 Conceptual and Logical Database Design

4.2.3.1.1 Entity Relationship Design (ERD)

An Entity Relationship Diagram (ERD) is a graphical representation of an information process of interaction and integration between people, objects, locations, concepts and events. An ERD is a data modelling technique that can be used to help describe business processes and can also be used to construct a relational database's framework.

Figure 4.1 below show the 6 tables of the database table which are customer, vendor, request, status, wallet and admin. For customer table store the customer information such as email, password, name, phone number, address, state, postcode and e-Wallet balance. Then, vendor table store email, password, vendor name, contact number, e-Wallet balance, profile image and their status. Next, in request table store the information about the job request by the customer. It contains customer ID, vendor ID, status ID, customer location the coordinate of the location to make truck driver easier to find the customer location. Other than that, the status table is for the indicator for the customer and vendor about the job requested. They can know their status when open the application. For e-Wallet table contain the vendor ID, customer ID and credit that customer make the payment for the service by the moving truck. Last but not least, admin table contain the admin that have the username and password to entering in the admin website to monitor the system.

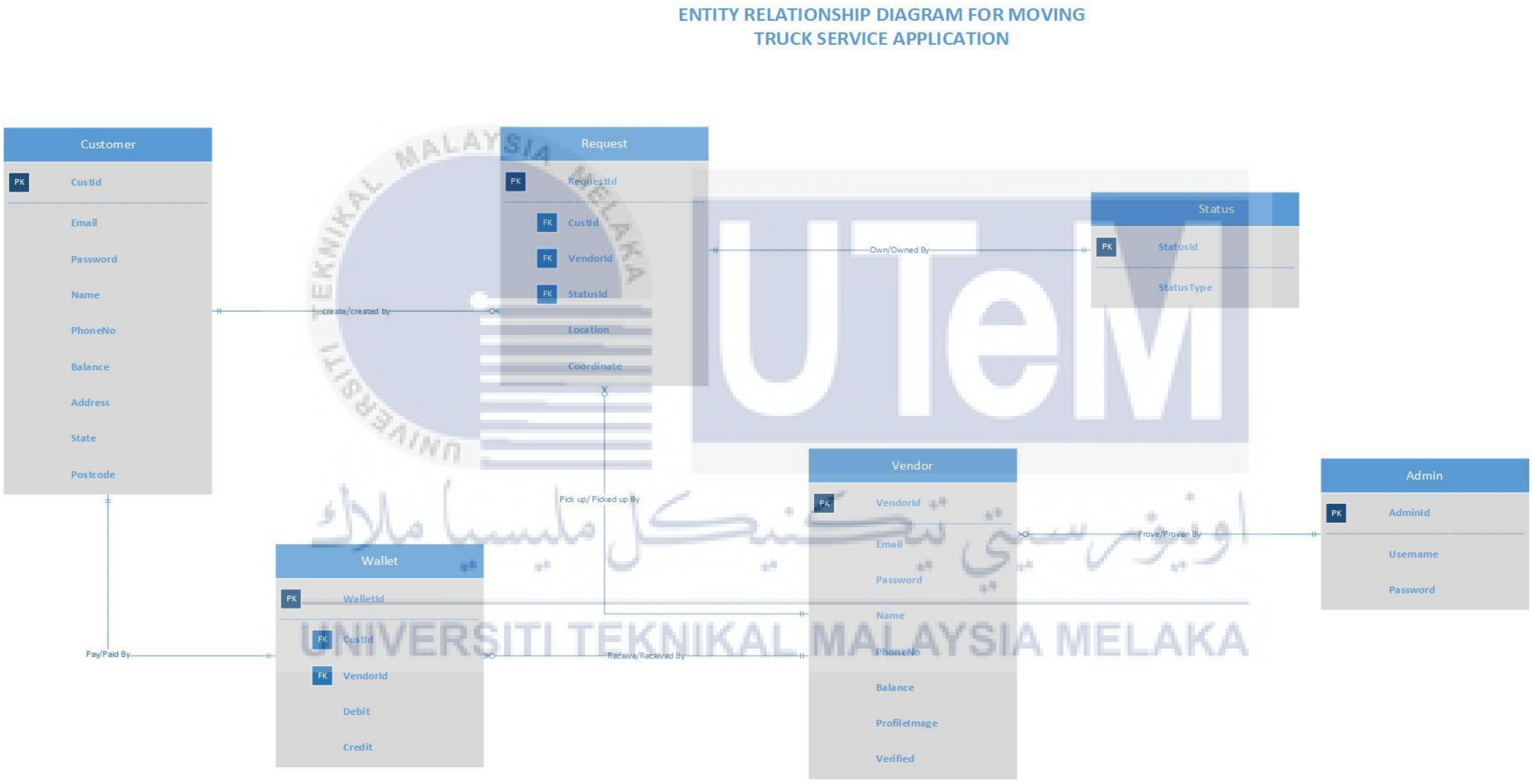


Figure 4.26 Entity Relationship Diagram (ERD)

4.2.3.1.2 Business Rule

In their most basic form, business rules are directions that define (or regulate) business activities. Designed to assist a firm in achieving its objectives, those who lack clear business rules and procedural definitions will frequently find a chaotic workplace with uneven results, low employee morale, and disgruntled consumers.

Business rules are not really a product of the technological revolution. Rather, business rules were created as a result of a grassroots effort to provide the greatest possible approach to corporate operations. However, it wasn't until the early 1990s that business rules became a widespread idea for enterprises. Most organizations today recognize business rules as an underlying need and they are frequently used to assist in the preparation of system-flows or procedural flow charts that explain how a corporation will run.

When done well, business rules give efficiency, uniformity, predictability and many other advantages. They also make it possible for work to continue.

There are the business rules for MTSA:

i. *One customer can make many jobs.*

ii. *One customer can make a payment to vendor.*

iii. *One vendor can accept many payments.*

iv. *One admin can verify many vendors.*

v. *One request can only have one status.*

vi. *One vendor can pick up many requests.*

4.2.3.1.3 Data Dictionary

A database's metadata is referred to as a data dictionary. It establishes the database's description, constraints and relationships between tables. A data dictionary is a text that lists the various data types and data elements found in a system.

Table 4.1 Data Dictionary for Customer

MOVING TRUCK SERVICE APPLICATION					
CUSTOMER					
ATTRIBUTE NAME	**CONTENT**	**DATA TYPE AND SIZE**	**PK OR FK**	**CONSTRAINT**	**FK REFERENCE TABLE**
CustId	Customer Id	INT(11)	PK	UNIQUE, NOT NULL, AUTO_INCREMENT	
Email	Customer Email	VARCHAR(32)		UNIQUE, NOT NULL	
Password	Customer Password	VARCHAR(32)		NOT NULL	
Name	Customer Name	VARCHAR(32)		NOT NULL	
PhoneNo	Customer Phone Number	VARCHAR(12)		NOT NULL	
Balance	Customer Account Balance	DECIMAL(7,2)		NOT NULL	
Address	Customer Address	VARCHAR(100)		NOT NULL	
State	Customer State	VARCHAR(20)		NOT NULL	
Postcode	Customer Postcode	CHAR(5)		NOT NULL	

Table 4.2 Data Dictionary for Admin

MOVING TRUCK SERVICE APPLICATION					
ADMIN					
ATTRIBUTE NAME	**CONTENT**	**DATA TYPE AND SIZE**	**PK OR FK**	**CONSTRAINT**	**FK REFERENCE TABLE**
AdminId	Admin Id	INT(11)	PK	UNIQUE, NOT NULL, AUTO_INCREMENT	
Username	Admin Username	VARCHAR(32)		UNIQUE, NOT NULL	
Password	Admin Password	VARCHAR(32)		NOT NULL	

Table 4.3 Data Dictionary for Vendor

MOVING TRUCK SERVICE APPLICATION					
VENDOR					
ATTRIBUTE NAME	**CONTENT**	**DATA TYPE AND SIZE**	**PK OR FK**	**CONSTRAINT**	**FK REFERENCE TABLE**
VendorId	Vendor Id	INT(11)	PK	UNIQUE, NOT NULL, AUTO_INCREMENT	
Email	Vendor Email	VARCHAR(32)		UNIQUE, NOT NULL	
Password	Vendor Password	VARCHAR(32)		NOT NULL	
Name	Vendor Name	VARCHAR(32)		NOT NULL	
PhoneNo	Vendor Phone Number	VARCHAR(12)		NOT NULL	
Balance	Vendor Account Balance	DECIMAL(7,2)		NOT NULL	
ProfileImage	Vendor Profile Image	MEDIUMBLOB		NOT NULL	
Verified	Vendor Account Verify Status	TINYINT(1)		NOT NULL	

Table 4.4 Data Dictionary for Request

MOVING TRUCK SERVICE APPLICATION					
REQUEST					
ATTRIBUTE NAME	**CONTENT**	**DATA TYPE AND SIZE**	**PK OR FK**	**CONSTRAINT**	**FK REFERENCE TABLE**
RequestId	Request Id	INT(11)	PK	UNIQUE, NOT NULL, AUTO_INCREMENT	
CustId	Customer Id	INT(11)	FK	NOT NULL	USER
VendorId	Vendor Id	INT(11)	FK	NOT NULL	VENDOR
StatusId	Status Id	INT(11)	FK	NOT NULL	STATUS
Location	Location Request	VARCHAR(255)		NOT NULL	
Coordinate	Coordinate Request	VARCHAR(255)		NOT NULL	

Table 4.5 Data Dictionary for Status

MOVING TRUCK SERVICE APPLICATION					
STATUS					
ATTRIBUTE NAME	**CONTENT**	**DATA TYPE AND SIZE**	**PK OR FK**	**CONSTRAINT**	**FK REFERENCE TABLE**
StatusId	Status Id	INT(11)	PK	UNIQUE, NOT NULL, AUTO_INCREMENT	
StatusType	Status Type	VARCHAR(33)		UNIQUE, NOT NULL	

Table 4.6 Data Dictionary for e-Wallet

MOVING TRUCK SERVICE APPLICATION					
e-WALLET					
ATTRIBUTE NAME	**CONTENT**	**DATA TYPE AND SIZE**	**PK OR FK**	**CONSTRAINT**	**FK REFERENCE TABLE**
WalletId	Wallet Id	INT(11)	PK	UNIQUE, NOT NULL, AUTO_INCREMENT	
CustId	Customer Id	INT(11)	FK		USER
VendorId	Vendor Id	INT(11)	FK		VENDOR
Debit	Money decreased from account	DECIMAL(7,2)		NOT NULL	
Credit	Money added to account	DECIMAL(7,2)		NOT NULL	

4.3 Detailed Design

This phase, which is divided into software design and physical database design, identifies and analyses system requirements.

4.3.1 Software Design

Every feature of each class was documented in software design. The following are the responsibilities of each method or operation, input or output parameter, and pre-conditions or post conditions:

4.3.1.1 Registration

i. *Purpose:*

- To acquire access to this system, enter all of the data into the database.

ii. *Input and Output:*

- Input: Name, Email, Password, Phone Number, Address, State, Postcode and Profile Image.

- Output: If registration is successful, the login page will appear.

iii. *Pseudocode or Steps:*

- Enter Name, Email, Password and Phone Number in the text field required.

- The system will verify if the email address is already in the database. If all runs properly, the main page will appear.

4.3.1.2 Login

i. *Purpose:*

- To identify that authorized user only can access on the system.

ii. *Input and Output:*

- Input: Email and password.

- Output: Main page will appear if the login is success.

iii. *Pseudocode or Steps:*

- Enter the Email and password in the text field required.

- The system will verify if the email and password is match in the database. The main page will display if the requirement success.

4.3.1.3 Request

i. *Purpose:*

- Allow customer to request the services.

ii. *Input and Output:*

- Input: Current Location via Google Maps.

- Output: If request is success, view request page will be display.

iii. *Pseudocode or Steps:*

- Enter the address in the text field on the map or just pin the location on the map.

- The system will direct send the job location to the vendor. Customer can view the status of the request if the request is success.

4.3.1.4 Transaction

i. *Purpose:*

- Allow customer to make a payment via online banking.

ii. *Input and Output:*

- Input: Click “pay” button.

- Output: Balance in e-Wallet account will credit to the vendor.

iii. *Pseudocode or Steps:*

- Click “pay” button to make a payment via online banking.

- Balance in the customer’s e-Wallet account will credit to the vendor e-Wallet account. Transaction page will display.

4.3.1.5 Top-up

i. *Purpose:*

- Allow customer top-up in their e-Wallet account.

ii. *Input and Output:*

- Input: Top-up Value, Payment Method and Balance in account.

- Output: The money will debit into the e-Wallet account.

iii. *Pseudocode or Steps:*

- Enter the top-up and select the payment method.
- Fill in the card detail on the text field required.
- The money will debit into the customer's e-Wallet account if the transaction is successful. Transaction page will appear.

4.3.1.6 Profile

i. *Purpose:*

- Allow customer to update their profile information by their own.

ii. *Input and Output:*

- Input: Update the new data.
- Output: The new data updated successfully.

iii. *Pseudocode or Steps:*

- Click "Edit Data" button.

4.3.1.7 Vendor Request Detail

i. *Purpose:*

- Allow vendor to pick up the job request from the customer.

ii. *Input and Output:*

- Input: Click the button to accept the job request.
- Output: the status on the job request will change to the pick up by the vendor.

iii. *Pseudocode or Steps:*

- Click the button to accept the job request.

- The status on the job request will change to the pick up by the vendor.

4.3.1.8 Job Schedule

i. *Purpose:*

- Allow vendor to view and change the status of the job request that has been accepted by them.

ii. *Input and Output:*

- Input: Click the button to change the current status of the job request.

- Output: The status that shows will change depend on the current situation.

iii. *Pseudocode or Steps:*

- Click the button to change the job request status that has been accepted by the vendor.

- The status will change depends on the current status.

4.3.1.9 Vendor Job History

i. *Purpose:*

- Allow vendor to view the job request that has been successfully done by them.

ii. *Input and Output:*

- Input: Click the button to show the history job that has been done by the vendor.

- Output: The system will show the job history page.

iii. *Pseudocode or Steps:*

- Click the button to show the history job that has been done by the vendor.

- The system will show the job history page.

4.3.1.10 Admin Display Vendor

i. *Purpose:*

- Allows the admin to view all of the information about the vendors who have already registered.

ii. *Input and Output:*

- Input: To search a vendor, enter their name, email, address or phone number.

- Output: The vendor data that has been successfully registered will be displayed on this page.

iii. *Pseudocode or Steps:*

- To identify a vendor, enter the vendor's name, email, address or phone number.

- The system will look up the vendor and display the results.

4.3.1.11 Approval from Vendor

i. *Purpose:*

- Allows the admin to approve vendor verification in order to gain access to the application.

ii. *Input and Output:*

- Input: Admin need to submit verified or unverified status.
- Output: The page will display the vendor's information and status, indicating whether it has been validated or not.

iii. *Pseudocode or Steps:*

- The “action” button should be clicked.
- In the approve vendor’s table, select verified or unverified.
- The “update” button should be clicked.
- The page will display the vendor's information and status, indicating whether it has been validated or not.

4.3.1.12 Display Job

i. *Purpose:*

- Allows the admin to see the vendor's data together with the location where the operation was completed successfully.

ii. *Input and Output:*

- Input: To search a vendor, enter in their name, email, address or phone number.

- Output: The page will display information about vendors who have completed their work successfully.

iii. *Pseudocode or Steps:*

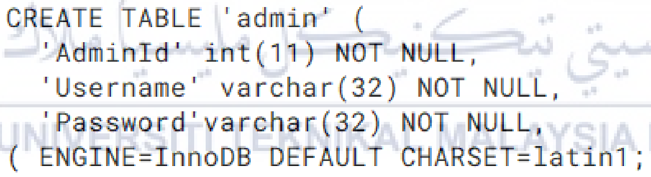
- To search a vendor, enter the vendor's name, email, address or phone number.

- The system will look up the vendor and display the information with the job location.

4.3.2 Physical Database Design

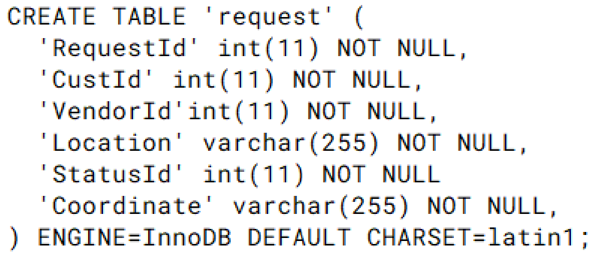
User views will be built to control access to a specified section of at least one database in the physical design. Security systems will also be discussed in this section. Physical design will be applied to all classes. This section will show how to translate a consistent database configuration to a target Database Management System (DBMS).

i. *Table Admin*



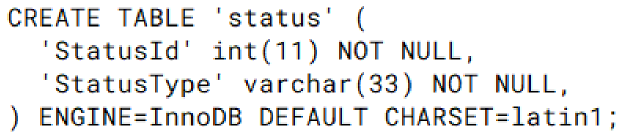
```
CREATE TABLE 'admin' (
  'AdminId' int(11) NOT NULL,
  'Username' varchar(32) NOT NULL,
  'Password'varchar(32) NOT NULL,
( ENGINE=InnoDB DEFAULT CHARSET=latin1;
```

ii. *Request Table*



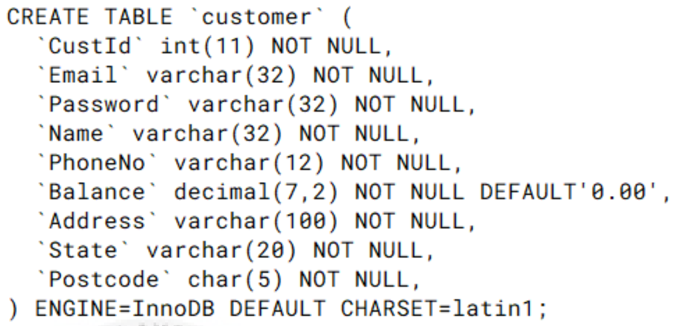
```
CREATE TABLE 'request' (
  'RequestId' int(11) NOT NULL,
  'CustId' int(11) NOT NULL,
  'VendorId'int(11) NOT NULL,
  'Location' varchar(255) NOT NULL,
  'StatusId' int(11) NOT NULL
  'Coordinate' varchar(255) NOT NULL,
) ENGINE=InnoDB DEFAULT CHARSET=latin1;
```

iii. Status Table



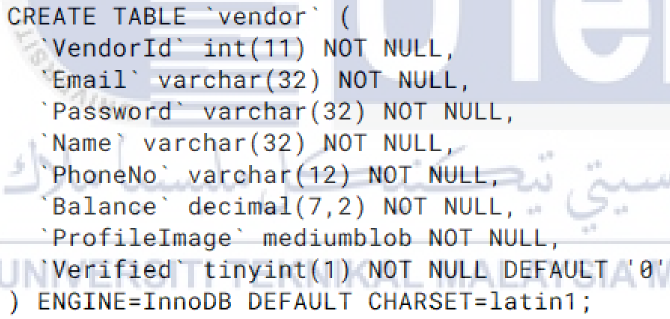
```
CREATE TABLE 'status' (
  'StatusId' int(11) NOT NULL,
  'StatusType' varchar(33) NOT NULL,
) ENGINE=InnoDB DEFAULT CHARSET=latin1;
```

iv. Customer Table



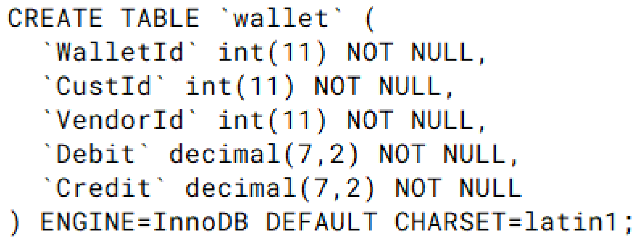
```
CREATE TABLE `customer` (
  `CustId` int(11) NOT NULL,
  `Email` varchar(32) NOT NULL,
  `Password` varchar(32) NOT NULL,
  `Name` varchar(32) NOT NULL,
  `PhoneNo` varchar(12) NOT NULL,
  `Balance` decimal(7,2) NOT NULL DEFAULT'0.00',
  `Address` varchar(100) NOT NULL,
  `State` varchar(20) NOT NULL,
  `Postcode` char(5) NOT NULL,
) ENGINE=InnoDB DEFAULT CHARSET=latin1;
```

v. Vendor Table



```
CREATE TABLE `vendor` (
  `VendorId` int(11) NOT NULL,
  `Email` varchar(32) NOT NULL,
  `Password` varchar(32) NOT NULL,
  `Name` varchar(32) NOT NULL,
  `PhoneNo` varchar(12) NOT NULL,
  `Balance` decimal(7,2) NOT NULL,
  `ProfileImage` mediumblob NOT NULL,
  `Verified` tinyint(1) NOT NULL DEFAULT '0'
) ENGINE=InnoDB DEFAULT CHARSET=latin1;
```

vi. e-Wallet Table



```
CREATE TABLE `wallet` (
  `WalletId` int(11) NOT NULL,
  `CustId` int(11) NOT NULL,
  `VendorId` int(11) NOT NULL,
  `Debit` decimal(7,2) NOT NULL,
  `Credit` decimal(7,2) NOT NULL
) ENGINE=InnoDB DEFAULT CHARSET=latin1;
```

4.4 Conclusion

The entire configuration of the management system for MTSA is discussed in this chapter. The design of MTSA may be broken down into three categories: software, conceptual design and physical design. The User Interface Design is created to guarantee that the gadget follows the specifications. The entity relation diagram is used in database design to show the interrelationships between the tables in the MTSA database. This chapter also demonstrated how method operations and input/output parameters are utilized to define the information of each attribute and actor in greater detail.

The system's implementation will be discussed in the following chapter. This section will outline the activities involved in the implementation phase as well as the expected outcomes once this phase is completed.

CHAPTER 5: IMPLEMENTATION

5.1 Introduction

This chapter explain the implementation phase of the project in great depth. The process of specifying on how the system should be built and ensuring that it can be operated and used is known as system implementation. The most important thing is to make sure the system is up to par. It will primarily concentrate on the process of setting up a software development environment and managing software configurations. It will also describe the process's current state of implementation. The goal is to make the system accessible to a select group of users who have been trained, as well as to place ongoing support and maintenance of the system within the business.

5.2 Software Development Environment Setup

A system developer's software development environment is a set of hardware and software tools used to create software systems. In order to implement an actual scheme, the development environment must first be established.

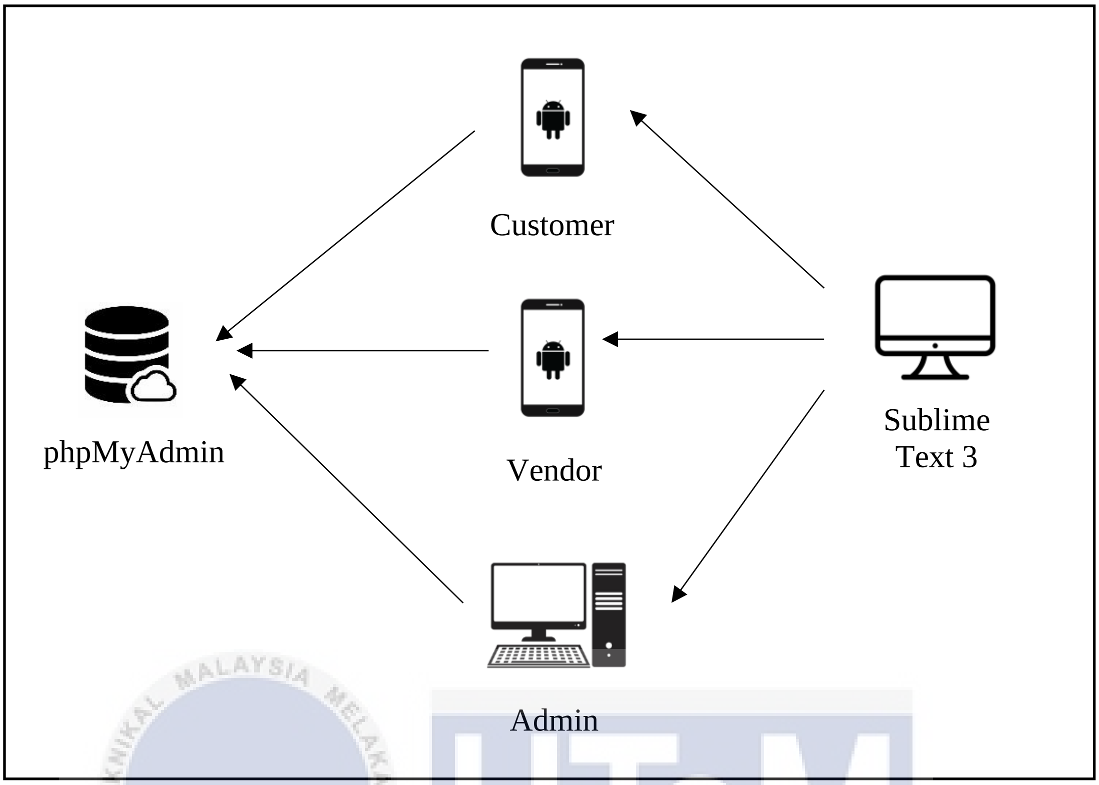


Figure 5.1 Software Development Environment Setup

5.2.1 Sublime Text 3

Sublime Text is a cross-platform source code editor with a Python application programming interface that is available as a shareware download (API). It supports a variety of programming and markup languages out of the box, and users can add functionalities via plugins, which are often community-built and maintained under free-software licenses. This software is a cross-platform code editor that is noted for its speed, ease of use, and active community. It's a fantastic editor right out of the box, but the real power comes from the ability to customize it with Package Control and custom settings. This software used to write the coding for this system.

5.2.2 XAMPP

XAMPP is a free software compilation (comparable to a Linux distribution), and it is free to use and copy under the conditions of the GNU General Public License. However, only the XAMPP compilation is released under the GPL. Please review each of the contained products' licenses to get a sense of what is and isn't permitted. Please review the product licenses (particularly MySQL) in the case of commercial use; nonetheless, business use of XAMPP is likewise free. It also is the most popular PHP development environment. XAMPP is a completely free, easy to install Apache distribution containing Maria DB, PHP and Perl. This software opened to turn on the database that has been connected with the MTSA.

5.2.3 MySQL (My Structured Query Language)

MySQL Database Service is a fully managed database service that enables developers to create and deploy safe, cloud native apps fast using the world's most popular open source database. MySQL Database Service is the only MySQL cloud service that includes HeatWave, an integrated, high-performance, in-memory query accelerator that allows customers to run sophisticated analytics directly against their operational MySQL databases, eliminating the need for complex, time-consuming, and costly data movement and integration with a separate analytics database. HeatWave improves MySQL performance for analytical and transactional queries by orders of magnitude. This database is used to save the data from the MTSA users.

5.2.4 PhoneGap

PhoneGap is a framework for creating mobile apps. Instead of relying on platform-specific APIs like those in Android, iOS, or Windows Phone, it allows software developers to create mobile applications using CSS3, HTML5 and JavaScript. It allows you to wrap CSS, HTML, and JavaScript code depending on the device's platform. It works with the device by extending HTML and JavaScript functionalities. The resulting hybrid applications are neither really native mobile apps nor completely Web-based. This software help to run customer and vendor mobile application in android phone.

5.2.5 Android

In the testing stages, android has been used to test the mobile application for this system.

5.2.6 Microsoft Windows

In the development stage, this system was conducted and tested using the Microsoft Windows operating system. It also used to write the thesis for MTSA.

5.3 Software Configuration Management

Software Configuration Management (SCM) is a process in software engineering that identifies the functional and physical attributes of software at critical points in time and implements procedures to control changes to those attributes with the goal of maintaining software project integrity and traceability throughout the software life cycle.

Identifying configuration items for the software project, controlling these configuration items and changes to them and recording and reporting status and change activity for these configuration items are all part of software configuration management.

5.3.1 Configuration Environment Setup

Configuration Environment Setup will walk through how to use the program during the system's implementation.

5.3.1.1 Sublime Text 3

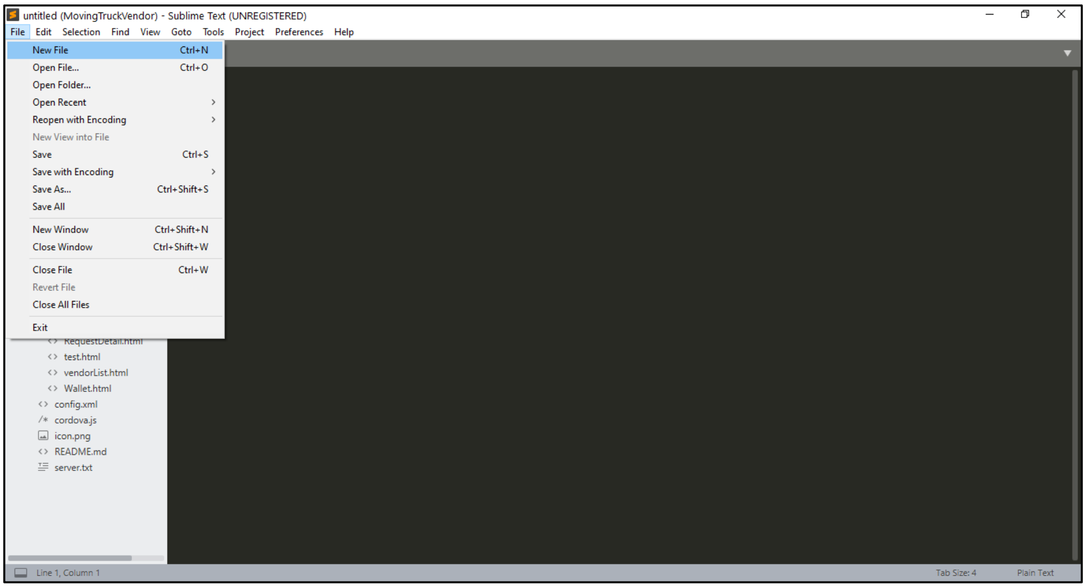


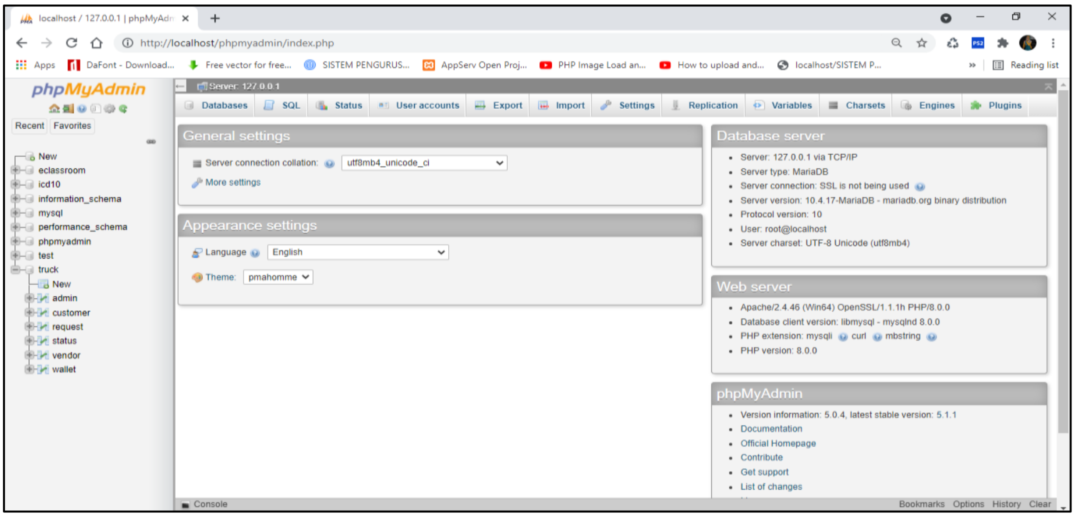
Figure 5.2 Sublime Text 3

i. *Firstly, create the empty folder and open the program to create the new project code.*

ii. *Click "File" on the top left corner and then select "New File" and can start the coding for the system.*

iii. *Click "File" and select "Save" to save the coding on the empty folder that has been created before.*

5.3.1.2 phpMyAdmin


localhost / 127.0.0.1 | phpMyAdm
http://localhost/phpmyadmin/index.php
Apps DaFont - Download... Free vector for free... SISTEM PENGURUS... AppServ Open Proj... PHP Image Load an... How to upload and... localhost/SISTEM P... Reading list
phpMyAdmin
Recent Favorites
New
eclassroom
icd10
information_schema
mysql
performance_schema
phpmyadmin
test
truck
New
admin
customer
request
status
vendor
wallet
Server: 127.0.0.1
Databases SQL Status User accounts Export Import Settings Replication Variables Charsets Engines Plugins
Console
Bookmarks Options History Clear

General settings

Server connection collation: utf8mb4_unicode_ci

More settings

Appearance settings

Language: English

Theme: pmahomme

Database server

- Server: 127.0.0.1 via TCP/IP
- Server type: MariaDB
- Server connection: SSL is not being used
- Server version: 10.4.17-MariaDB - mariadb.org binary distribution
- Protocol version: 10
- User: root@localhost
- Server charset: UTF-8 Unicode (utf8mb4)

Web server

- Apache/2.4.46 (Win64) OpenSSL/1.1.1h PHP/8.0.0
- Database client version: libmysql - mysqlnd 8.0.0
- PHP extension: mysqli curl mbstring
- PHP version: 8.0.0

phpMyAdmin

- Version information: 5.0.4, latest stable version: 5.1.1
- Documentation
- Official Homepage
- Contribute
- Get support
- List of changes

Figure 5.3 Opening phpMyAdmin Database

i. *Firstly, open the XAMPP Control Panel and Click "Start" on the action column for Apache and MySQL.*

ii. *Click "Admin" button to go to the phpMyAdmin homepage.*

5.3.2 Version Control Procedure

The technique of managing different draughts and versions of a document or record is known as version control. It is used as a tracking medium for a series of draught documents leading up to a final edition. It keeps track of the revisions and updates made to these finished versions. Every source code or associated file will be recorded in full for revision of version during the implementation of creating MTSA. As a result, any changes made from time to time can be rolled back to the original version if an issue arises.

Table 5.1 Version Control Procedure

Version	Description
MTSA Version 1	Only the login and recovery password functionality of the MTSA was deployed in the first stage of the project.
MTSA Version 2	This is the version where the user module was created and added to the system. Users such as admins, vendors and customers were able to register their accounts based on their roles throughout this phase.
MTSA Version 3	This version includes an approval module that allows admins to authorize a vendor's registration as a user.
MTSA Version 4	The service module was designed for the users in this version.
MTSA Version 5	The tracking module was built for giving a timely, organized series of position data for subsequent processing in this version.
MTSA Version 6	This version includes a payment module that allows users to credit and debit their e-Wallet accounts.
MTSA Version 7	The final version of MTSA which includes all of the system's needs.

5.4 Implementation Status

Table 5.2 Implementation Status

Component or Module Name	Description	Duration to complete	Date completed
User	• Registration form for customer, vendor and admin. • Authentication stage for getting access to the system and logging out.	7 days	15/03/2021
Approval	• Allow the administrator to approve the vendor's registration as a user. • Allow the administrator to view information about the company.	14 days	22/03/2021
Service	• Allow the customer to request a moving truck, and the vendor will locate the customer's location to pick up the items.	14 days	05/04/2021
Tracking	• Track the customer location through the application built-in maps.	14 days	19//04/2021
Payment	• Allow customer to pay the service. • Fee through online or cash.	14 days	03/05/2021

5.5 Conclusion

The MTSA implementation procedure is explained in this chapter. The system implementation step is the most important phase to complete this project because it entails getting the new system to work properly in its environment which includes installing, configuring and making essential system adjustments. As a result, extensive system testing is required to verify that the system runs smoothly. Furthermore, this system runs on two platforms: a web platform and a mobile platform. As a result, this step is critical in the evolution of MTSA.

The testing phase of the system will be discussed in the following chapter. System testing is an important part of the development process. It comprises a thorough examination of a system to ensure that it fulfils the client's needs and objectives. The fundamental purpose of testing is to find all of the system's flaws and mistakes. System testing is critical because it ensures that the application meets the user's technical, functional and business requirement.

CHAPTER 6: TESTING

6.1 Introduction

This chapter is about the testing activities that have been carried out on MTSA after the previous chapter's implementation phase is completed. Software testing is defined as the running of a program to discover its defects. As a result, a successful test is one that detects a fault. This may appear to be a straightforward task, but there is a lot to consider while performing software testing. It must be interested in testing performance, safety, fault-tolerance or security in addition to discovering defects. This chapter will go over everything from the test plan to the test strategy to the test design to the test results and analysis.

6.2 Test Plan

A Test Plan is a detailed document that outlines the testing strategy, objectives, timetable, estimation, deliverables and resources needed to test a software product. One of the important strategies to ensure that these critical trials are not recorded and that exams are documented for future reference is to use a test plan. The test organization, test environment and test schedule are described in this section.

6.2.1 Test Organization

A test organization establishes who are responsible of which aspects of the testing process. The test functions, test facilities and test activities are all defined by the organization. It specifies who are responsible to which actions in the testing process following the development of the MTSA. Unit testing, integration testing, system testing and user acceptance testing are the organizations that are involved in the testing process. Each test will be overseen by testers who are assigned to certain duties.

During the creation of an application, software testers are crucial. Because developers have knowledge of system development, including functional codes, modules and the architecture of the system, they are the System Developer specialists who test the complete system. The test manager is responsible for performing testing and comparing the system to current real-world systems to guarantee that there are no defects, poor performance or interface concerns. In addition, an end user is part of the testing team that tests the system and evaluates its usability. Furthermore, as a new user, they are given a percentage to use the system.

Table 6.1: Key Personnel for Type of Test

Type of Test	Tester Designation	Tester Name
Unit Testing	System Developer	Nur Afiqah Binti Md Nasir
Integration Testing	System Developer	Nur Afiqah Binti Md Nasir
System Testing	Test Manager	Muhamad Afiq Syahmi Bin Mohd Rasnila
User Acceptance Testing	End User (new in application)	Alya Maisarah Binti Muhammad

6.2.2 Test Environment

The test environment is a platform designed primarily for implementing and running test cases on a software product. To successfully carry out the executions of the intended tasks, processes and activities, each process requires a controlled environment with desirable standards and specifications.

Testing for MTSA is simple for the users and can be resumed with a couple of taps on the phone screen, as with other of these types of applications. This software was executed on a physical machine which are laptop and smartphone as well as a logical setup, which included the database server and any other software needed to run the system.

All the testers have been explained in details by system developer about this system and they have analyze the system service and provide recommendations in order to improve users' satisfaction level and productivity.

6.2.3 Test Schedule

It is possible to build a testing schedule with information of the testing strategy and scope. Separate the work into testing activities and calculate the time required. The table below summarizes the test schedule for this system during the development phase.

Table 6.2 Test Schedule Summary

Activity	Duration	Start Date	End date
User Register and Login	2 days	19/07/2021	20/07/2021
Recovery Password	1 day	21/07/2021	21/07/2021
Approval	1 day	22/07/2021	22/07/2021
Tracking	3 days	26/07/2021	28/07/2021
Services	4 days	02/08/2021	05/08/2021
Payment	5 days	16/08/2021	20/08/2021

6.3 Test Strategy

The test strategy can be established at a variety of levels, including organizational, program and project levels. The point is, it might not be referred to as a test strategy at all, but rather as a management policy or a component of a governance plan. The test strategy may simply be an element of the test plan at the project level. Furthermore, depending on the nature of the project, the project-level test strategy may or may not satisfy the test strategy mentioned previously at a higher level. During the testing phase of this project, a few different methodologies are applied.

i. Bottom-Up Approach

Bottom-up testing is a technique of integration testing that focuses on the code's most basic components. More broadly, it refers to a stage of software testing in which integrated code modules are tested together before the complete system or code base is tested. MTSA tests are carried out in stages, from sub-modules to main modules. As a result, system integration starts with the integration of the most basic elements.

ii. White Box Testing

White Box Testing is a software testing technique in which the product's fundamental structure, architecture and coding are examined in order to verify input or output flow and improve design, usability and security. Each file in the MTSA project folder that contains source code for the respective modules is tested for mistakes and programming logic to ensure proper validation. White box testing entails examining the source code of the MTSA for the following:

- Security flaws on the inside.
- Paths in the coding procedures that are broken or poorly structured.
- The order in which specific inputs are passed through the code.
- The output that is expected.
- Conditional loops' functionality.
- Individualized testing of each statement, object and function.

iii. Black-Box Testing

Testing a system with no prior knowledge of its internal workings is known as black box testing. A tester gives the system under test an input and watches the output it produces. This allows you to see how the system reacts to expected and unexpected user activities, as well as the system's reaction time, usability issues, and reliability concerns.

Because it exercises a system from beginning to end, black box testing is a powerful testing technique. A tester can replicate user activity and see if the system delivers on its promises, just as end-users "don't care" how a system is written or architected and expect to obtain a suitable response to their requests. A black box test assesses all important subsystems along the route, including the user interface and user experience, the web server or application server, the database, dependencies and integrated systems.

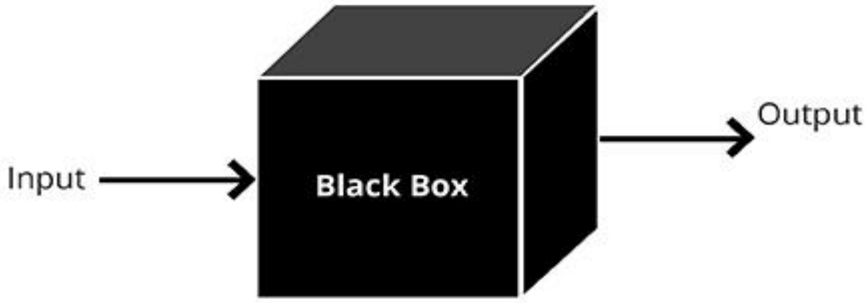


Figure 6.1 Black Box Testing Technique

The basic steps for doing Black Box Testing in this phase are listed below:

- First, the MTSA requirements and specifications are studied.
- The tester selects legitimate inputs (positive test scenario) to ensure that the System under Test (SUT) processes them properly. In addition, certain faulty inputs are chosen (negative test scenario) to ensure that the SUT can detect them.
- For each of those inputs, the tester determines the predicted outputs.
- A software tester creates test cases using the inputs they've chosen.
- The test cases are carried out.
- The actual outputs are compared to the expected outputs by the software tester.
- Any defects are repaired and retested.

6.3.1 Classes of Tests

To analyze a method to construct the example case, there are a variety of testing techniques available. The designer and the tester employ a testing approach to accomplish unit testing, integration testing and system testing. Portioning equivalency is used in unit testing. Integration testing is a type of performance and reliability testing. Following that, testing includes production correctness testing, security testing, stress testing, usability testing, and user acceptability testing in the sample script.

i. Unit Testing

Unit testing refers to the software that the designer examines in order to ensure that the modules they have created run properly. To design modules, the developer in MTSA will work from functional requirements. They can also test the precise feature that the modules will do for this system.

ii. Integration Testing

Integration testing is used to ensure that the system's functionalities are working properly between modules in MTSA. It establishes the correct parameters, ensures that the dates between implementation schemes for this system are adhered to and that each feature in the system is correctly coordinated.

iii. System Testing

System testing that also known as system-level testing or system-integration testing, is the process by which a quality assurance (QA) team assesses how the many components of an application interact in the overall, integrated system or application. System testing ensures that MTSA does what it is supposed to do. This process, which is similar to black box testing, focuses on the application's functionality. System testing, for example, might ensure that every type of user input result such as login and registration page in the desired output across the application.

iv. User Acceptance Testing

User acceptance testing is the most typical activity, and testers or end users are responsible for checking or restarting the previous test case in the last three steps to ensure the system's quality. It adopts to ensure that MTSA feature meets the user's desire from beginning to end.

6.4 Test Design

Test design is a method for describing how testing should be carried out. It contains procedures for identifying test cases by listing the steps of the defined test criteria. The steps are enumerated using the testing approaches indicated in the test strategy or plan. This part prepares test descriptions for test data in order to keep track of each module's tests.

6.4.1 Test Description

Each module's test description, test case identification, test case, and expected outcome are defined and documented for future reference and usage. The test descriptions for each module and component of MTSA are listed in the tables below.

Table 6.3 Customer Registration Test Description

Test ID	Test Case	Expected Result
TC_01_01	Examine to see if any needed or mandatory fields are displaying an error message.	Navigate to the user registration page.
TC_01_02	Verify that the username and email fields are valid.	If an error occurs, the appropriate error must be displayed.
TC_01_03	Verify to see if leaving blank spaces in mandatory fields causes a validation error.	If a blank space is encountered, a proper error must be displayed.

Table 6.4 Vendor Registration Test Description

Test ID	Test Case	Expected Result
TC_02_01	Verify that the fields that are required or mandatory have a * against the field.	Proceed to register vendor.
TC_02_02	Verify that photo can be uploaded by vendor.	Profile photo uploaded.

TC_02_03	Check validation on email and password field.	Proper error message must be displayed if did not follow the format.
TC_02_04	Verify when entering the register button without fill anything on the mandatory field.	Proper error must be displayed if has blank fields.

Table 6.5 Login and Logout Test Description

Test ID	Test Case	Expected Result
TC_03_01	Verify if the users was successful in logging in.	The user must be able to successfully log in to the mobile application and website.
TC_03_02	Test with a valid email and an empty password to ensure that login is unsuccessful.	A proper error message must be displayed, along with a prompt to re-enter the login information.
TC_03_03	Check if login is successful with an empty email and password.	A proper error message must be displayed, along with a prompt to re-enter the login information.
TC_03_04	Test with an invalid email format and an empty password to ensure that login is unsuccessful.	A proper error message must be displayed, along with a prompt to re-enter the valid registered email and password.
TC_03_05	Check if the user can successfully log out.	User must successfully logout from the mobile application and webpage.

Table 6.6 Recovery Password Test Description

Test ID	Test Case	Expected Result
TC_04_01	Test with a registered email to change the password.	Customer will receive the email that provide a link to proceed to the reset password page.
TC_04_02	Test with an empty email to change the password.	Customer need to enter email.

Table 6.7 Customer Edit Profile Test Description

Test ID	Test Case	Expected Result
TC_05_01	After a successful login, click profile navigation button to go to profile page.	It be taken to the profile page, where it will see the customer's details.
TC_05_02	Click edit data button.	Edit profile confirmation box appear.
TC_05_03	Click cancel button in the edit profile confirmation box.	Profile data field is unable to edit.
TC_05_04	Click confirm button in the edit profile confirmation box.	Profile data field is enable to edit.
TC_05_05	Check if all profile data can be updated.	All profile data can be updated successfully.
TC_05_06	After edit profile data, click confirm edit data button.	Confirmation box for profile data update appeared.
TC_05_07	Click on cancel button in confirmation box.	Profile data unable to save on the updated data.
TC_05_08	Click on confirm button in confirmation box.	Data is being verified before returning to the profile page, where the customer profile information is being updated.

Table 6.8 Vendor Profile Test Description

Test ID	Test Case	Expected Result
TC_06_01	After a successful login, click profile navigation button to go to profile page.	It be taken to the profile page, where it will see the user's details.
TC_06_02	Check if vendor can upload profile photo.	The vendor's profile photo displayed.
TC_06_03	Check if all profile data can be updated.	All profile data can be updated successfully.

Table 6.9 Request Input Field Test Description

Test ID	Test Case	Expected Result
TC_07_01	Location is filled or pinned.	Location sent to the vendor.

Table 6.10 Top Up Value Test Description

Test ID	Test Case		Expected Result
	Amount	Partition Tested	
TC_08_01	5	0 < Top Up Value < 10	Error message popup.
TC_08_02	20	Top Up Value > 10	Proceed to the card detail page.
TC_08_03	0	Top Up Value <= 0	Error message popup.

Table 6.11 Request Job and Job Progress Test Description

Test ID	Test Case	Expected Result
TC_09_01	Accept the job request by the customer.	Proceed to make a payment for requested job by customer.
TC_09_02	Waiting for customer do the payment for the request job.	Payment success by customer.
TC_09_03	Check if the vendor confirmation works successfully.	Vendor e-Wallet updated.

Table 6.12 Vendor Details Test Description

Test ID	Test Case	Expected Result
TC_10_01	Preview the vendor details.	Proceed to vendor status update.
TC_10_02	Search vendor data by name.	The data display referred by search keys.
TC_10_03	Search vendor data by status.	The data display referred by search keys.
TC_10_04	Click the register vendor button.	Proceed to vendor registration page.

Table 6.13 Update Vendor Registration Approval Test Description

Test ID	Test Case	Expected Result
TC_11_01	Click vendor section at dashboard in admin’s website.	Proceed to vendor details.
TC_11_02	Click pencil icon in action section to update vendor status.	Proceed to approval update page.
TC_11_03	Click update button after change vendor status.	Status updated successfully.

Table 6.14 Search Vendor Job List by Name and Status Test Description

Test ID	Test Case	Expected Result
TC_12_01	Click current job section at dashboard in admin’s website.	Proceed to vendor job list details.
TC_12_02	Search vendor data by name.	The data display referred by search keys.
TC_12_03	Search vendor data by status.	The data display referred by search keys.

6.4.2 Test Data

The system is inspected to ensure that all scenarios function as planned. The sample data for each test case will be used to understand the outcomes. Each test case is given a unique identifier, a title, the actions to be performed, sample data, expected and actual results, a post condition once the processes are completed and a pass or fail status. The outcome is then saved for later analysis. Refer to Appendix B for a complete test cases.

6.5 Test Results and Analysis

Performance test outcome analysis is the most important and technical component of performance testing. To carry out the test result analysis phase and end the testing, a performance tester requires his actual knowledge. The table below shows the results of analyzed testing performed on all test cases.

Table below show the test and result analysis for MTSA. All the activities that has been tested by the different testers are successful. It prove that this system is working properly without any major errors.

Table 6.15 Test and Result Analysis Summary

Activity	Tester	Result	Satisfaction (1-5)
TC_01_01- TC_01_03	End User	Success	4
TC_02_01- TC_02_04	End User	Success	5
TC_03_01- TC_03_05	End User	Success	4
TC_04_01- TC_04_02	System Developer	Success	5
TC_05_01- TC_05_08	System Developer	Success	5
TC_06_01- TC_06_03	System Developer	Success	5
TC_07_01	System Developer	Success	4
TC_08_01- TC_08_03	System Developer	Success	5
TC_09_01- TC_09_03	Test Manager	Success	4
TC_10_01- TC_10_04	Test Manager	Success	4
TC_11_01- TC_11_03	Test Manager	Success	5
TC_12_01- TC_12_03	Test Manager	Success	4

6.6 Conclusion

When developing a system, testing is an important step. Testing enables the project team to assess its system and identify flaws in order to achieve the design specification. Testing entails not just debugging and locating and correcting faults, but also validating, validating procedures and determining reliability. As a result, the system that is delivered will be of higher quality and will meet the criteria.

The conclusion will be in the following chapter. This chapter will describe the discoveries or conclusions made throughout the process, as well as the implications of those findings or decisions.

CHAPTER 7: CONCLUSION

7.1 Observation on Weaknesses and Strengths

Every stage has been completed by the time we reach the end. This project has been completed as planned in the future. Every module and its features have undergone extensive testing. As a result, observations on strengths and weaknesses have been made. This mechanism was created solely to assist people who are experiencing difficulty locating mechanics. Because this method is still new, there may be some advantages and disadvantages to adopting it.

This system can take the place of the manual one. This is because the automated system is faster, more efficient and error-free than the manual system. The family can simply request a service via their mobile device at any time. MTSA is a hybrid application that was created as a web-based and mobile-app. Furthermore, this system can avoid data loss and make data retrieval simple. For example, if a user or vendor loses their phone, all of their information is kept in the database. So that users can just download the application again and get their information. The data will not be lost any more. It requires less capital for the last one. The application company requires less money to operate because it does not need to own anything and instead acts as a middleman, providing services to users and receiving a commission as payment.

On the other hand, every system has several vulnerabilities. This system is in complete disarray. This is due to the fact that some functions are currently being developed. This system also cannot give the exact location to the customer to track the truck driver on the mobile application that has been developed. Furthermore, this system may not work with iOS devices. Because MTSA was created and tested on Microsoft Windows and Android, it may not be compatible with iOS devices.

7.2 Propositions for Improvement

Based on the weaknesses revealed in MTSA, several things needed to be changed in order for the system to work more smoothly and conveniently for the user. In the future version, an iOS compatible version must be built and tested, as this would attract more potential users, which will help the company.

This system must also make online payment processing simple and secure in accordance with the correct flow. As a result, users have better confidence in their online financial transactions. It is also critical to improve the services provided. This is due to the fact that users have complete control over the services they want. Additionally, it has been made it easy for the vendor to prepare the tools prior to performing the services.

This system also needs a live location to be displayed in customer mobile application. The live location feature allows to share real-time location to customer to make the job request run smoothly.

As a daily system that serves users' daily requirements, guaranteeing user safety and security throughout their interactions with it is paramount. To achieve confidence in a constructed system, a few rules must be implemented. There are still many areas of the system that can be improved. Nonetheless, depending on company needs, requirements may alter from time to time.

7.3 Project Contribution

MTSA can be digitized to improve the efficiency of moving truck services and make truck driver management easier. Any vendor can use the project contribution to administer their mobile vendor services. The primary motivation for developing the system was to assist keep both customers and vendors safe. However, the system has evolved to play a part in supply and demand moving truck service.

On the other hand, MTSA can benefit a broader sector or industry. They can not only provide a moving truck service, but also market their vendor and provide transportation services. To ensure that this system may contribute more broadly, numerous minor or substantial changes must be performed to ensure that it is compatible with the new environment.

7.4 Conclusion

To summarize, MTSA has successfully completed each development phase, despite the fact that it can yet be enhanced in several areas. Three of the objectives appear to have been met, including the creation of a system that reduces people's effort in finding a moving truck service. The company's second goal is to create a smartphone application that allows users to request moving truck service. The ultimate goal is to provide recommendations based on the services supplied by the moving truck company. However, this system still requires a lot of work in order to provide better service to its users.

From chapter one through chapter six, the development process of MTSA is explained and it provides a thorough description of how this system is developed. As a result, this system may be able to provide a more personalized and welcoming service to its users.

REFERENCE

Abd Wahab, M. H. *et al.* (2009) 'Development of integrated E-Parcel management system with GSM network', *ACM International Conference Proceeding Series*, 403(November), pp. 1081–1085. doi: 10.1145/1655925.1656121.

Freeman, P. and Hart, D. (2004) 'A science of design for software-intensive systems', *Communications of the ACM*, 47(8), pp. 19–21. doi: 10.1145/1012037.1012054.

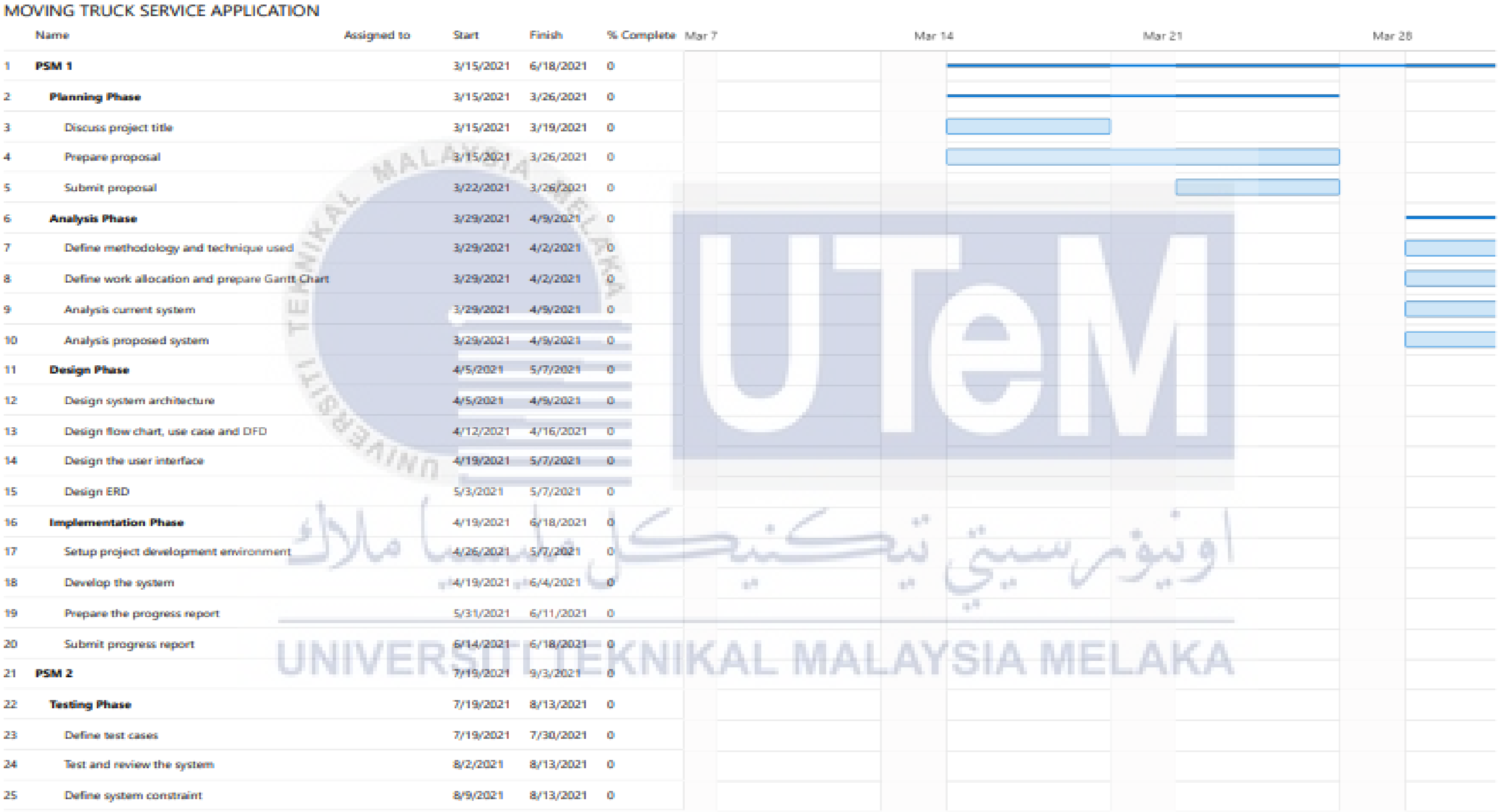
Najibah, F. (2010) 'Delivery Notification System Using Web Based Engineering', *Computer Systems {&} Software Engineering*, pp. 1–24.

Ralph, P. and Wand, Y. (2009) 'A Proposal for a Formal Definition of the Design Concept', pp. 103–136.

APPENDIX A

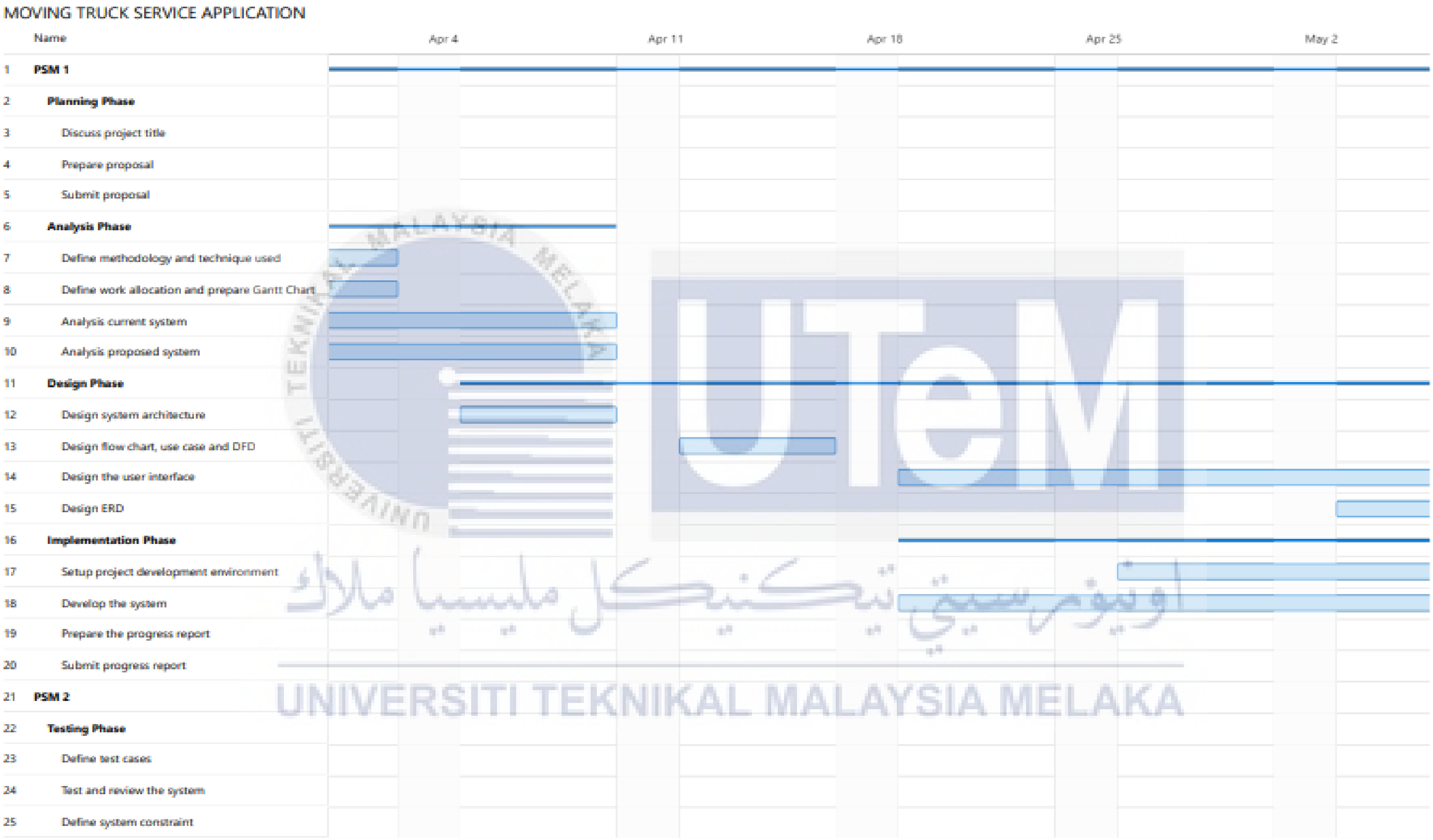
(Gantt Chart)

Table A.1 Project Schedule and Milestone for Final Year Project



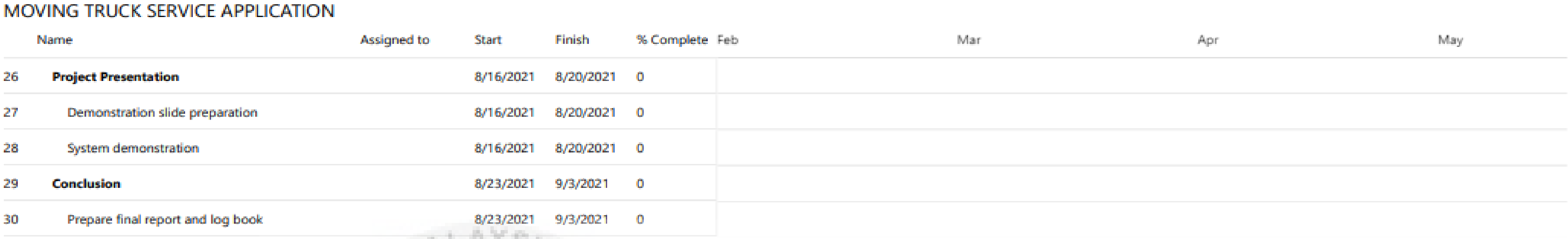
MOVING TRUCK SERVICE APPLICATION

	Name	Assigned to	Start	Finish	% Complete
1	**PSM 1**		3/15/2021	6/18/2021	0
2	**Planning Phase**		3/15/2021	3/26/2021	0
3	Discuss project title		3/15/2021	3/19/2021	0
4	Prepare proposal		3/15/2021	3/26/2021	0
5	Submit proposal		3/22/2021	3/26/2021	0
6	**Analysis Phase**		3/29/2021	4/9/2021	0
7	Define methodology and technique used		3/29/2021	4/2/2021	0
8	Define work allocation and prepare Gantt Chart		3/29/2021	4/2/2021	0
9	Analysis current system		3/29/2021	4/9/2021	0
10	Analysis proposed system		3/29/2021	4/9/2021	0
11	**Design Phase**		4/5/2021	5/7/2021	0
12	Design system architecture		4/5/2021	4/9/2021	0
13	Design flow chart, use case and DFD		4/12/2021	4/16/2021	0
14	Design the user interface		4/19/2021	5/7/2021	0
15	Design ERD		5/3/2021	5/7/2021	0
16	**Implementation Phase**		4/19/2021	6/18/2021	0
17	Setup project development environment		4/26/2021	5/7/2021	0
18	Develop the system		4/19/2021	6/4/2021	0
19	Prepare the progress report		5/31/2021	6/11/2021	0
20	Submit progress report		6/14/2021	6/18/2021	0
21	**PSM 2**		7/19/2021	9/3/2021	0
22	**Testing Phase**		7/19/2021	8/13/2021	0
23	Define test cases		7/19/2021	7/30/2021	0
24	Test and review the system		8/2/2021	8/13/2021	0
25	Define system constraint		8/9/2021	8/13/2021	0



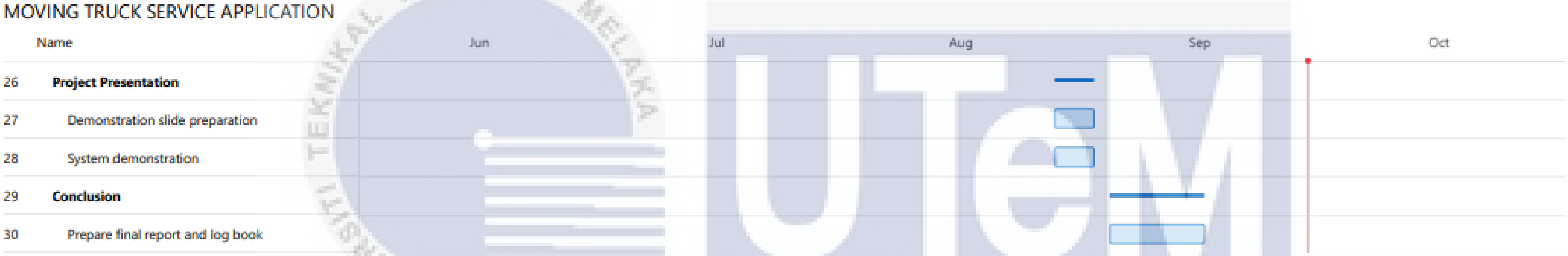
MOVING TRUCK SERVICE APPLICATION

	Name
1	**PSM 1**
2	**Planning Phase**
3	Discuss project title
4	Prepare proposal
5	Submit proposal
6	**Analysis Phase**
7	Define methodology and technique used
8	Define work allocation and prepare Gantt Chart
9	Analysis current system
10	Analysis proposed system
11	**Design Phase**
12	Design system architecture
13	Design flow chart, use case and DFD
14	Design the user interface
15	Design ERD
16	**Implementation Phase**
17	Setup project development environment
18	Develop the system
19	Prepare the progress report
20	Submit progress report
21	**PSM 2**
22	**Testing Phase**
23	Define test cases
24	Test and review the system
25	Define system constraint



MOVING TRUCK SERVICE APPLICATION

	Name	Assigned to	Start	Finish	% Complete
26	**Project Presentation**		8/16/2021	8/20/2021	0
27	Demonstration slide preparation		8/16/2021	8/20/2021	0
28	System demonstration		8/16/2021	8/20/2021	0
29	**Conclusion**		8/23/2021	9/3/2021	0
30	Prepare final report and log book		8/23/2021	9/3/2021	0



MOVING TRUCK SERVICE APPLICATION

	Name
26	**Project Presentation**
27	Demonstration slide preparation
28	System demonstration
29	**Conclusion**
30	Prepare final report and log book

APPENDIX B

(Test Cases)

Table B.1 Customer Registration Test Case

	Project Name:	Moving Truck Service Application	**Test Designed by:**	Nur Afiqah Binti Md Nasir
	Module Name:	Customer Registration	**Test Designed by:**	20/07/2021
	Release Version:	1.0	**Test Executed by:**	Nur Afiqah Binti Md Nasir
			Test Execution Date:	23/07/2021
Pre- Condition:	Customer not have any registered account			
Dependencies:	-			
Test Priority:	High			

Test Case ID	Test Steps	Partition Tested	Expected Output	System Output	Status: Pass/Fail
TC_01_01	Verify that the fields that are required or mandatory have a * against the field.	Accepting registration request.	Proceed to register customer.	Proceed to register customer.	Pass
TC_01_02	Check validation on name, email and password field.	Verification and validation data.	Proper error message must be displayed if did not follow the format.	Display the error when name, email and password did not follow the format.	Pass
TC_01_03	Verify when entering the register button without fill anything on the mandatory field.	Verify the blank space.	Proper error must be displayed if has blank fields.	Display the error when get blank fields.	Pass

Table B.2 Vendor Registration Test Case

	Project Name:	Moving Truck Service Application	**Test Designed by:**	Nur Afiqah Binti Md Nasir
	Module Name:	Vendor Registration	**Test Designed by:**	20/07/2021
	Release Version:	1.0	**Test Executed by:**	Nur Afiqah Binti Md Nasir
			Test Execution Date:	23/07/2021
Pre- Condition:	Vendor not have any registered account			
Dependencies:	-			
Test Priority:	High			

Test Case ID	**Test Steps**	**Partition Tested**	**Expected Output**	**System Output**	**Status: Pass/Fail**
TC_02_01	Verify that the fields that are required or mandatory have a * against the field.	Accepting registration request.	Proceed to register vendor.	Proceed to register vendor.	Pass
TC_02_02	Verify that photo can be uploaded by vendor.	Upload the profile photo.	Profile photo uploaded.	Profile photo uploaded.	Pass
TC_02_03	Check validation on email and password field.	Verification and validation data.	Proper error message must be displayed if did not follow the format.	Display the error when email and password did not follow the format.	Pass
TC_02_04	Verify when entering the register button without fill anything on the mandatory field.	Verify the blank space.	Proper error must be displayed if has blank fields.	Display the error when get blank fields.	Pass

Table B.3 Login and Logout Test Case

	Project Name:	Moving Truck Service Application	**Test Designed by:**	Nur Afiqah Binti Md Nasir
	Module Name:	Login and Logout	**Test Designed by:**	20/07/2021
	Release Version:	1.0	**Test Executed by:**	Nur Afiqah Binti Md Nasir
			Test Execution Date:	23/07/2021
Pre- Condition:	Users have already registered			
Dependencies:	-			
Test Priority:	High			

Test Case ID	Test Steps	Input Test Data	Expected Output	System Output	Status: Pass/Fail
TC_03_01	Verify if users are able to login successfully.	**Email:** syahmiafiq19 @gmail.com **Password:** Sy@hmi1997	Users must successfully login to mobile application or website.	Users successfully login to mobile application or website.	Pass
TC_03_02	Verify with registered email and empty password.	**Email:** syahmiafiq19 @gmail.com **Password: -**	Popup message will be appeared and users need to login again.	Error message will be appeared.	Pass
TC_03_03	Verify empty email and empty password.	**Email: -** **Password: -**	Popup message will be appeared and users need to fill the valid email and password on the blank space.	Popup message will be appeared and users need to fill in the blank space with valid email and password.	Pass
TC_03_04	Verify the login	None	Login must fail saying	Login failed.	Pass

	function handles case sensitivity.		incorrect username or password.		
TC_03_05	Verify the users is able to logout successfully.	None	User must successfully logout from the web page.	User successfully logout from the web page.	Pass

Table B.4 Recovery Password Test Case

	Project Name:	Moving Truck Service Application	**Test Designed by:**	Nur Afiqah Binti Md Nasir
	Module Name:	Recovery Password	**Test Designed by:**	20/07/2021
	Release Version:	1.0	**Test Executed by:**	Nur Afiqah Binti Md Nasir
			Test Execution Date:	23/07/2021
Pre- Condition:	Customer have already registered			
Dependencies:	-			
Test Priority:	High			

Test Case ID	Test Steps	Input Test Data	Expected Output	System Output	Status: Pass/Fail
TC_04_01	Fill in the email that has been registered and click reset button.	**Email:** syahmiafiq19 @gmail.com **Password:** -	Customer will receive the email that provide a link to proceed to the reset password page.	Customer receive the email that provide a link to proceed to the reset password page.	Pass
TC_04_02	Test with an empty email to change the password.	**Email:** - **Password:** -	Popup message will be appeared and users need to enter the email.	Error message will be appeared.	Pass

Table B.5 Edit Customer’s Profile Test Case

	Project Name:	Moving Truck Service Application	**Test Designed by:**	Nur Afiqah Binti Md Nasir
	Module Name:	Edit Customer’s Profile	**Test Designed by:**	25/07/2021
	Release Version:	1.0	**Test Executed by:**	Nur Afiqah Binti Md Nasir
			Test Execution Date:	27/07/2021
Pre- Condition:	Customer have account			
Dependencies:	-			
Test Priority:	High			

Test Case ID	**Test Steps**	**Input Test Data**	**Expected Output**	**System Output**	**Status: Pass/Fail**
TC_05_01	Click customer’s profile navigation button.	None.	Proceed to customer’s profile page successfully and customer’s information is display	Proceed to customer’s profile page successfully and customer’s information is display	Pass
TC_05_02	Click edit data button.	None.	Edit profile confirmation box appear.	Edit profile confirmation box appear.	Pass
TC_05_03	Click cancel button in the edit profile confirmation box.	None.	Profile data field is unable to edit.	Profile data field is unable to edit.	Pass
TC_05_04	Click confirm button in the edit profile confirmation box.	None.	Profile data field is available to edit.	Profile data field is available to edit.	Pass
TC_05_05	Edit all the data.	**Name:** Muhamad Afiq Syahmi Bin Mohd Rasnila	Customers can edit all the data.	Customers can edit all the data.	Pass

		Email: syahmiafiq19@gmail.com **Password:** Sy@hmi1234 **Reconfirm Password:** Sy@hmi1234 **Phone Number:** 0101997123 **Address:** No. 19, Jalan Desa Idaman 9, Taman Sejati **State:** Melaka **Postcode:** 76100			
TC_05_06	Click confirm edit data button.	None.	Confirm change profile data confirmation box will appear.	Confirm change profile data confirmation box appeared.	Pass
TC_05_07	Click cancel button in change data confirmation box.	None.	Go back to edit data page.	Go back to edit data page.	Pass
TC_05_08	Click confirm in change data confirmation box.	None.	Updated profile data will be update on database.	Updated profile data will be update on database.	Pass

Table B.6 Edit Vendor’s Profile Test Case

	Project Name:	Moving Truck Service Application	**Test Designed by:**	Nur Afiqah Binti Md Nasir
	Module Name:	Edit Vendor’s Profile	**Test Designed by:**	25/07/2021
	Release Version:	1.0	**Test Executed by:**	Nur Afiqah Binti Md Nasir
			Test Execution Date:	27/07/2021
Pre- Condition:	Vendor have account			
Dependencies:	-			
Test Priority:	High			

Test Case ID	Test Steps	Partition Tested	Expected Output	System Output	Status: Pass/Fail
TC_06_01	Go to vendor’s profile page.	Vendor need to login first and go to profile page.	Vendor profile page is displayed.	Vendor profile page is displayed.	Pass
TC_06_02	Vendor upload profile photo.	Must be in PNG and JPG.	The picture will displayed and upload successfully.	The picture displayed and upload successfully.	Pass
TC_06_03	Vendor edit profile.	Vendor need to fill in all the required information.	Data can be updated.	The data has been updated successfully.	Pass

Table B.7 Customer Request Job Test Case

	Project Name:	Moving Truck Service Application	**Test Designed by:**	Nur Afiqah Binti Md Nasir
	Module Name:	Customer Request Job	**Test Designed by:**	29/07/2021
	Release Version:	1.0	**Test Executed by:**	Nur Afiqah Binti Md Nasir
			Test Execution Date:	30/07/2021
Pre- Condition:	Customer have account			
Dependencies:	-			
Test Priority:	High			

Test Case ID	Test Steps	Partition Tested	Expected Output	System Output	Status: Pass/Fail
TC_07_01	Location is filled or pinned.	Customer need to login first, filled or pinned the current location and click sent button to send location to the vendor.	Location will be sent to the vendor and request job will appeared on request job.	Location has been sent to the vendor and request job appeared on request job.	Pass

Table B.8 Customer Top-up Test Case

	Project Name:	Moving Truck Service Application	**Test Designed by:**	Nur Afiqah Binti Md Nasir
	Module Name:	Customer Top-up	**Test Designed by:**	29/07/2021
	Release Version:	1.0	**Test Executed by:**	Nur Afiqah Binti Md Nasir
			Test Execution Date:	30/07/2021
Pre- Condition:	Customer e-Wallet balance is insufficient			
Dependencies:	-			
Test Priority:	High			

Test Case ID	**Input data**	**Partition Tested**	**Expected Output**	**System Output**	**Status: Pass/Fail**
TC_08_01	5	0 < Top Up Value < 10	Error message popup.	Error message popup.	Pass
TC_08_02	20	Top Up Value > 10	Proceed to the card detail page.	Proceed to the card detail page.	Pass
TC_08_03	0	Top Up Value <= 0	Error message popup.	Error message popup.	Pass

Table B.9 Accept Request Job and Job Progress Test Case

	Project Name:	Moving Truck Service Application	**Test Designed by:**	Nur Afiqah Binti Md Nasir
	Module Name:	Accept Request Job and Job Progress	**Test Designed by:**	01/08/2021
	Release Version:	1.0	**Test Executed by:**	Nur Afiqah Binti Md Nasir
			Test Execution Date:	03/08/2021
Pre- Condition:	Customers already have account and make a request			
Dependencies:	-			
Test Priority:	High			

Test Case ID	**Test Steps**	**Partition Tested**	**Expected Output**	**System Output**	**Status: Pass/Fail**
TC_09_01	Accept the job request by the customer.	Request page.	Proceed to make a payment for requested job by customer.	Proceed to make a payment for requested job by customer.	Pass
TC_09_02	Waiting for customer do the payment for the request job.	None.	Payment success by customer.	Payment success by customer.	Pass
TC_09_03	Check if the vendor confirmation works successfully.	Accept the payment by the customer.	Vendor e-Wallet will updated.	Vendor e-Wallet updated.	Pass

Table B.10 Vendor Details Test Case

	Project Name:	Moving Truck Service Application	**Test Designed by:**	Nur Afiqah Binti Md Nasir
	Module Name:	Vendor Details	**Test Designed by:**	01/08/2021
	Release Version:	1.0	**Test Executed by:**	Nur Afiqah Binti Md Nasir
			Test Execution Date:	03/08/2021
Pre- Condition:	Vendor has registered			
Dependencies:	-			
Test Priority:	High			

Test Case ID	**Test Steps**	**Partition Tested**	**Expected Output**	**System Output**	**Status: Pass/Fail**
TC_10_01	Preview the vendor details.	Vendor details page.	Proceed to vendor status update.	Proceed to vendor status update.	Pass
TC_10_02	Search vendor data by name.	Search data by name.	The data display referred by search keys.	The data display referred by search keys.	Pass
TC_10_03	Search vendor data by status.	Search data by status.	The data display referred by search keys.	The data display referred by search keys.	Pass
TC_10_04	Click the register vendor button.	None.	Proceed to vendor registration page.	Proceed to vendor registration page.	Pass

Table B.11 Update Vendor Registration Approval Test Case

	Project Name:	Moving Truck Service Application	**Test Designed by:**	Nur Afiqah Binti Md Nasir
	Module Name:	Update Vendor Registration Approval	**Test Designed by:**	08/08/2021
	Release Version:	1.0	**Test Executed by:**	Nur Afiqah Binti Md Nasir
			Test Execution Date:	10/08/2021
Pre- Condition:	Vendor did not have approval from Admin			
Dependencies:	-			
Test Priority:	High			

Test Case ID	Test Steps	Partition Tested	Expected Output	System Output	Status: Pass/Fail
TC_11_01	Click vendor section at dashboard in admin's website.	Vendor details page.	Proceed to vendor details.	Proceed to vendor details.	Pass
TC_11_02	Click pencil icon in action section to update vendor status.	None.	Proceed to approval update page.	Proceed to approval update page.	Pass
TC_11_03	Click update button after change vendor status.	Verified the vendor registration.	Status updated successfully.	Status updated successfully.	Pass

Table B.12 Search Vendor Job List by Name and Status Test Case

S	**Project Name:**	Moving Truck Service Application	**Test Designed by:**	Nur Afiqah Binti Md Nasir
	Module Name:	Search Vendor Job List by Name and Status	**Test Designed by:**	08/08/2021
	Release Version:	1.0	**Test Executed by:**	Nur Afiqah Binti Md Nasir
			Test Execution Date:	10/08/2021
Pre- Condition:	Vendor has been approved by Admin			
Dependencies:	-			
Test Priority:	High			

Test Case ID	Test Steps	Input Test Data	Expected Output	System Output	Status: Pass/Fail
TC_12_01	Click current job section at dashboard in admin's website.	None.	Proceed to vendor job list details.	Proceed to vendor job list details.	Pass
TC_12_02	Search vendor data by name.	**Search:** Afiq	The data display referred by search keys.	The data display referred by search keys.	Pass
TC_12_03	Search vendor data by status.	**Search:** Verified	The data display referred by search keys.	The data display referred by search keys.	Pass