

**BORANG PENGESAHAN STATUS TESIS\***

DEVELOPMENT OF A MAP-BASED MOBILE WEB APPLICATION  
WITH MOBILE PAYMENT GATEWAY FOR PUBLIC TRANSPORT

JUDUL : BOOKING

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**DEVELOPMENT OF A MAP-BASED MOBILE WEB APPLICATION WITH  
MOBILE PAYMENT GATEWAY FOR PUBLIC TRANSPORT BOOKING**

AHMAD SAUFIYUDDIN BIN RAZALI

This report is submitted in partial fulfilment of the requirements for the  
Bachelor of Computer Science (Interactive Media)

FACULTY OF INFORMATION AND COMMUNICATION TECHNOLOGY  
UNIVERSITI TEKNIKAL MALAYSIA MELAKA 2013

## DECLARATION

I hereby declare that this project report entitled  
**DEVELOPMENT OF A MAP-BASED MOBILE WEB APPLICATION WITH  
MOBILE PAYMENT GATEWAY FOR PUBLIC TRANSPORT BOOKING**

is written by me and is my own effort and that no part has been plagiarized  
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## DEDICATION

This final project is dedicated to my beloved parents, for their support and help me when I need it and always pray and give me useful advices.

For my supervisor who has guided and gave me a lot of support,  
Prof Madya Dr. Sazilah binti Salam (UTEM)

For my evaluator, Madam Norazlin Mohamed  
(UTEM)

And lastly to all my beloved friends that always help me from the beginning until the end of my project.

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I have taken efforts in this project. However, it would not have been possible without the kind support and help of many individuals and organizations. I would like to extend my sincere thanks to all of them.

I am highly indebted to Prof Madya Dr. Sazilah Binti Salam for her guidance and constant supervision as well as for providing necessary information regarding the project and also for her support in completing the project.

I would like to express my gratitude towards my father for his kind co-operation and encouragement which help me in completion of this project.

I would like to express my special gratitude and thanks to my friend. My thanks and appreciations also go to my colleague and people who have willingly helped me out with their abilities and for giving me such attention and time.

Thank you

## ABSTRACT

This project is developed using HTML, CSS, PHP, MySQL, jQuery and jQuery Mobile. This project is part of requirement for Projek Sarjana Muda in Bachelor of Computer Science (Interactive Media). The problem statements in this project is lack of real-time data on public services and lack of service to do a payment through mobile application. The objective of this application is to create a map-based mobile website and integrate a payment gateway to the website. Methodology that been used in this project is System Development Life Cycle (SDLC). Target user for this application is public transportation driver and public transportation passenger such as tourists and normal citizens because the outcome of this project is a map-based web with payment gateway that allow user to book and search a public transport and finally doing a payment online.

## ABSTRAK

. Projek ini dibangunkan menggunakan HTML, CSS, PHP, MySQL, jQuery dan jQuery Mobile. Projek ini merupakan sebahagian daripada keperluan Projek Sarjana Muda di dalam bidang Ijazah Sarjana Muda Sains Komputer (Media Interaktif). Pernyataan masalah dalam projek ini ialah kekurangan data yang tepat masanya untuk kenderaan awam and kekurangan servis pembayaran melalui telefon mudah alih. Objektif aplikasi ini adalah untuk membangunkan laman web telefon mudah alih berbasis peta dan mengintegrasikan gerbang pembayaran. Metodologi yang digunakan di dalam projek ini ialah System Development Life Cycle (SDLC). Sasaran pengguna bagi aplikasi ini adalah pemandu kenderaan awam dan juga penumpang atau pelanggan kenderaan awam kerana hasil dari projek ini ialah laman sesawang berbasis peta yang membolehkan pengguna untuk membuat tempahan dan mencari kenderaan awam dan kemudiannya melakukan pembayaran secara online.

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## LIST OF ABBREVIATIONS

PSM	-	Projek Sarjana Muda
SDLC	-	System Development Life Cycle
LAN	-	Local Area Network
GPS	-	Global Positioning System
QR Code	-	Quick Response Code
API	-	Application Programming Interface
SDK	-	Software Development Kit
HTML	-	Hypertext Mark-up Language
CSS	-	Cascading Style Sheet
PHP	-	Personal Hypertext Processor
RDBMS	-	Relational Database Management System
APPS	-	Application
JPEG	-	Joint Photographic Experts Group
PNG	-	Portable Network Graphics

## **CHAPTER I**

### **INTRODUCTION**

#### **1.1 Project Background**

Old way to make a payment online is by opening a personal, then open a browser and open a payment website. What happen if they want to make a payment as soon as possible but the situation didn't allowed them to open their laptop like when they are trapped in traffic jam. That's why almost everyone nowadays are started to migrate from using a laptop to a new technology that so called the Smartphone. It's smaller and easier using Smartphone compare to laptop. Smartphone also provide two ways to browsing whether using mobile web or mobile application.

A mobile application (app) is an application or software designed for use on Smartphones, tablet computers and other mobile devices. By searching or browsing through application distribution platforms, which is usually owned by the creator of the mobile operation system, such as the Google Play, BlackBerry App World, Apple App Store and Windows Phone Store. Certain apps are free to use, while others need to be bought.

A mobile web is usually refering to browng applications or application that accessing an internet for a webpage from a mobile device. Different between normal web and mobile web is mobile web usually consists of more simple interface and functionality as there is limitation in browsing using mobile device compare to a laptop.

For this project, a study will be conducted to develop a mobile web for booking a public transportation such as taxi or bus. A map-based web which detect available public transportation around user will be develop. Then after user choose which public transport they want to book, they can do a payment through this application.

This project can get the response from user how this application help them to get a real-time data about available public transport around them and how it's help them booking the service compare to old way by calling the service center to book a public transport.

So the objective of this project is to develop a map-based mobile web with a payment service for user such as citizen or tourist for them to get a better service in searching and booking public transportation. System Development Life Cycle will be used for the development of this mobile application project.

## **1.2 Problem Statements**

With technology rapidly growing this day, most everyone has their own mobile phone or Smartphone. They use their mobile phone for many purposes and they use it almost every time. For this project, a public transportation booking application will be applied in mobile phone usage. But nowadays, people mostly if they want to book a public transport, usually using traditional style which is by a phone call to the service center. But there are several problem when doing this style for booking a public transportation.

### **1.2.1 Lack of real-time data on public services (transport)**

By using a phone call, it's hard for people to get real-time data on public services (transport). It means people can see where the available public transport around them when they want to. They have to call the service center and the receptionist have to search for them and give the info to them. This situation make it's hard for both party.

### **1.2.2 Lack of service to do a payment through mobile application**

There is lack of service to do a payment through mobile application which sometimes people are looking for public transport outside from their home that hard for them to open a laptop. User nowadays want a faster service, a service that is faster than doing phone call to make public transport booking and easier to make a payment.

### **1.3 Objectives**

In order to ensure that the project working properly, the objectives of the project must be stated clearly. Below are the objectives of developing mobile application:

- To design and develop a map-based public transport booking mobile application.
- To integrate the payment gateway on mobile application.
- To evaluate the user experience for the map-based service and payment service using mobile application.

### **1.4 Research Questions**

Based on the objectives of the project, a few research questions has been develop:

- How to design and develop a map-based public transport booking mobile application?
- How to integrate the payment gateway on mobile application?
- How the user experience for the map-based and payment service using mobile application?

### **1.5 Project Scopes**

The scopes in developing this project are:

#### **i. Target User**

This map-based public booking transport mobile application is targeting all citizen or tourist around Ayer Keroh, Melaka.

## ii. Contents

This project application has two scenario:

- a. Map-based application where it show current available public transport around the user. It will show the length from the public transport place to the user's place. Then user can choose which public transport is nearest to them.
- b. Payment gateway is the part where user can do their payment after they choose the public transport they want to get. Then user can show the payment evidence to the public transport driver so that the driver knows they are the correct user that book their service.

## 1.6 Project Framework

System Development Life Cycle (SDLC)

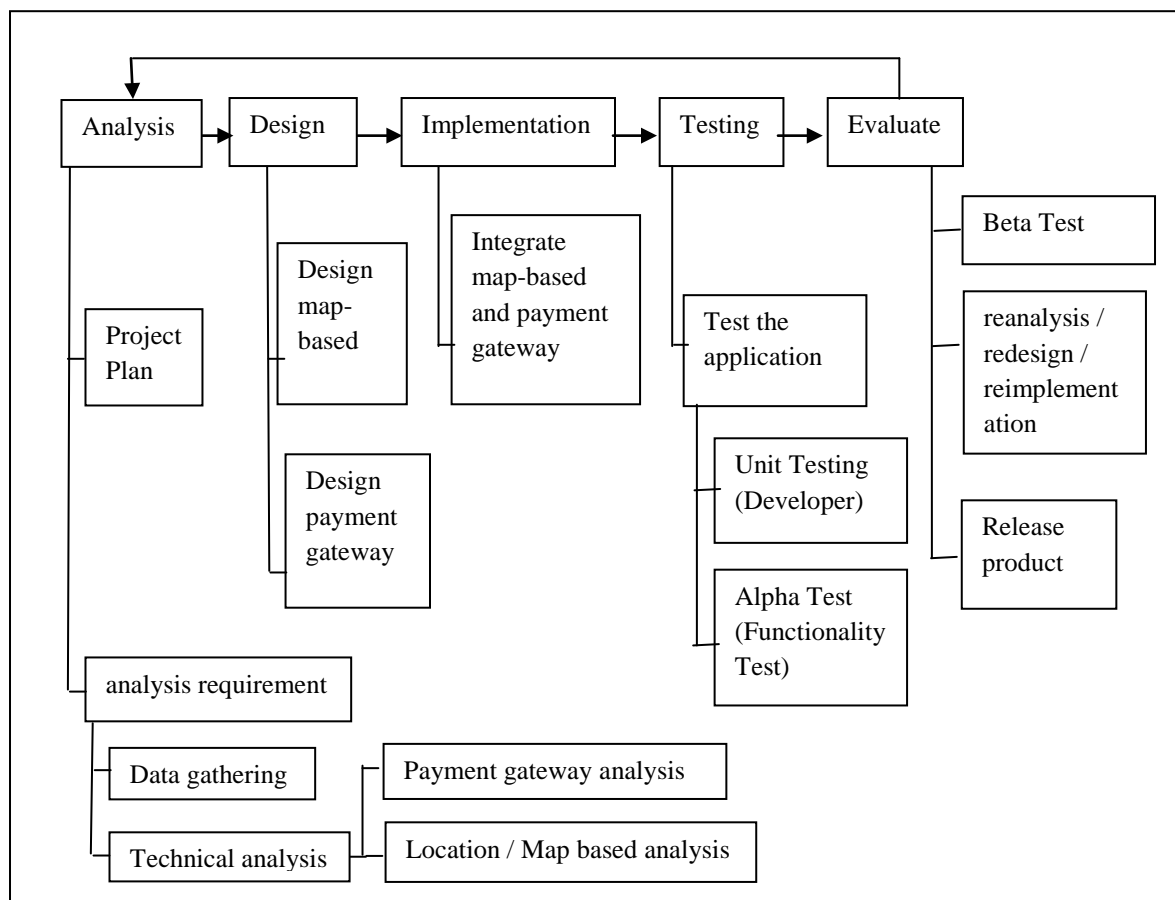


Figure 1.1 : Project Framework

## **1.7 Project Significance**

In this project, citizen who frequently using public transport and also tourist are the one who will get most benefit from this mobile application. This mobile application helps citizen and tourist make their booking smoother and faster. It also can help tourist who is first time coming to Ayer Keroh, Melaka get an information what public transportation available around there.

In this project too, a map-based public transportation booking mobile application with integration of secure payment gateway will be develop and can be used among citizen or tourist and public transportation driver. User of this application will get a real-time data for public transportation booking. They can make a payment through this application to book the public transportation.

## **1.8 Summary**

This chapter explains overview about the project of map-based public transportation booking mobile application which provide a service for user to get a real-time data about public transportation and make booking and payment.

In project background, there is an explanation about what the project is about, what it will do, the benefit of the project. In problem statement, there are detail explanation about what the problem with older public transportation booking application or older style of public booking transportation. From the problem statement, it can be stated the objectives for this project and thus create research questions. Then in scope section, there are explanations about target user and contents of this project. Then who will get benefit from this project is explained in project significant section.

Discussion about literature review, area of study, current system or tools and comparison of existing systems will be in detail in chapter two.

## **CHAPTER II**

### **LITERATURE REVIEW**

#### **2.0 Introduction**

This chapter reviews literatures for the any previous project that has connection with this project. A comparisons will be made between this project and previous projects and it based on the domain of the project, current technology been used, technique to develop the project which is mobile application development technique, different type of multimedia skill and combining the mobile application development technique with management skill to achieve learning experience.

#### **2.1 Area of Study**

A study about map-based in mobile application and a payment gateway through mobile application will be conduct to get more understanding about how to create and integrate both in one same mobile application to build a public transportation booking mobile application.

##### **2.1.1 Map-based application**

Recent developments of wireless communication (such as wireless LAN) and localization means (such as the Global Positioning System (GPS)) increased the pace of mobile guides and navigational assistants developments progress. New generation of mobile phones which provide a higher bandwidth also help much in the

developments. Despite that, new generation of mobile phones also allow for a more precise localization.

Map-based application provide a location-based services where user can use it to know where and when they need them. One of location-based service is mobile phone navigational assistance or Global Position System (GPS). However, this convenience does come at a cost. For example, if user is riding a fast car, navigational instructions should differ from those pedestrian user. Unfortunately, there is no technology that can measure the current position precisely at all times. Hence, mobile guides should be able to work with different positional information with variety of quality.

### **2.1.2 Payment Gateway**

In an attempt to join in the online payment system the client and the business company should have an Internet and firstly they need to register to the payment service provider. The provider will then prepares the payment gateway which the gateway can be achieved or been used from both public network and the private network. In this situation the gateway's role is as the connection between the online payment infrastructure and the traditional payment infrastructure. On the other hand client and the business company will have their accounts at the bank which is the gateway will connect it to the network.

The payment instrument is actually issued by the client bank which is the instruments is the one the client uses for his payment. The acquiror bank will get or obtain the records of the payment. (Vesna Hassler, 2001).

When the services and goods is purchased by the client, he has an option whether to pay through his debit or credit card. Before the goods been delivered by the business company, the business company asks payment gateway to authorize the client's identity and his payments. Then the payment gateway will call the issuer bank to change the status clear. If everything is fine the money from the client account will be withdraw by the payment gateway and deposits it into the business company account and then it will sends a message to the business company to said it was clear. Then only the business company delivers the goods and services to the client.