

## BOOKING PARKING APPLICATION



**UNIVERSITI TEKNIKAL MALAYSIA MELAKA**

## BORANG PENGESAHAN STATUS LAPORAN

JUDUL: **BOOKING PARKING APPLICATION**

SESI PENGAJIAN: 2020 / 2021

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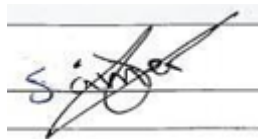
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# BOOKING PARKING APPLICATION

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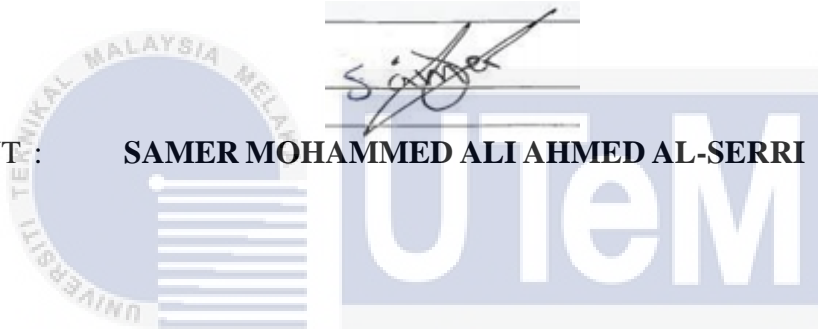
FACULTY OF INFORMATION AND COMMUNICATION TECHNOLOGY  
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Bachelor of Computer Science (Software Development) with Honours.

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Date: 18/09/2021

## DEDICATION

To my beloved parents who supported me throughout the journey, my family, and my supervisor, Ts. AZLIANOR BINTI ABDUL AZIZ for her wise and careful advice and planning.

And to my classmates in BITS, who co-operated with me and shared their innovative ideas in completing the completion of this project.

Thank you so much.



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## ABSTRACT

There are many factors that lead to the crowding where one of the factors is the lack of parking in a crowded city like Kuala Lumpur. The person who goes out by using won caron weekend or holiday to the center of the city, he/she maybe difficult to find parking which can makes them park in the wrong place that will cause narrow road and crowding. To overcome this major problem, Booking Parking Application is developed to allow the user, after authentication, to search for available parking by using Google Maps. The application will show the user the list of parking options near to users current location. For each selected parking, the app will show information about the parking address, the price per hour, and working hours, to the users for make a reservation.. Once the reservation is made with date and time selected, the user just needs to scan the QR on the gate of the parking for authentication and granted the access to the reserved parking. The QR code is actually generated earlier by the application after the parking owner received authentication from the given parking information such as location, the number of parking he offers, working time, and price per hour. This Booking Parking Application will play a big role in our community by providing easy life, save time and reduce crowded as the main goal of this App is to make your life easier with the least effort.

اوتیور سیتی تیکنیکل ملیسیا ملاک

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## ABSTRAK

Terdapat banyak faktor yang membawa kepada kesesakan di mana salah satu faktornya ialah kekurangan tempat letak kenderaan di bandar yang sesak seperti Kuala Lumpur. Orang yang keluar dengan menggunakan kereta pada hujung minggu atau percutian ke pusat bandar, mungkin sukar mencari tempat letak kenderaan yang boleh membuatkan mereka parkir di tempat yang salah yang akan menyebabkan jalan raya sesak dan sesak. Untuk mengatasi masalah besar ini, Aplikasi Parkir Pemesanan (*Booking Parking Application*) dikembangkan untuk membolehkan pengguna, setelah mengesahkan, mencari tempat letak kenderaan yang tersedia dengan menggunakan Peta Google. Aplikasi ini akan menunjukkan kepada pengguna senarai pilihan tempat letak kereta berhampiran dengan lokasi pengguna sekarang. Untuk setiap tempat letak kereta yang dipilih, aplikasi akan menunjukkan maklumat mengenai alamat tempat letak kereta, harga per jam, dan waktu kerja, kepada pengguna untuk membuat tempahan. Setelah tempahan dibuat dengan tarikh dan waktu yang dipilih, pengguna hanya perlu mengimbas QR di pintu tempat letak kereta untuk pengesahan dan diberi akses ke tempat letak kenderaan yang dikhaskan. Kod QR sebenarnya dihasilkan lebih awal oleh aplikasi setelah pemilik tempat letak kenderaan mendapat pengesahan dari maklumat tempat letak kenderaan yang diberikan seperti lokasi, jumlah tempat letak kenderaan yang dia tawarkan, waktu kerja, dan harga per jam. Aplikasi Tempat Letak Kereta Pemesanan ini akan memainkan peranan besar dalam komuniti kami dengan memberikan kehidupan yang mudah, menjimatkan masa dan mengurangkan orang ramai kerana matlamat utama Aplikasi ini adalah untuk menjadikan hidup anda lebih mudah dengan sedikit usaha.



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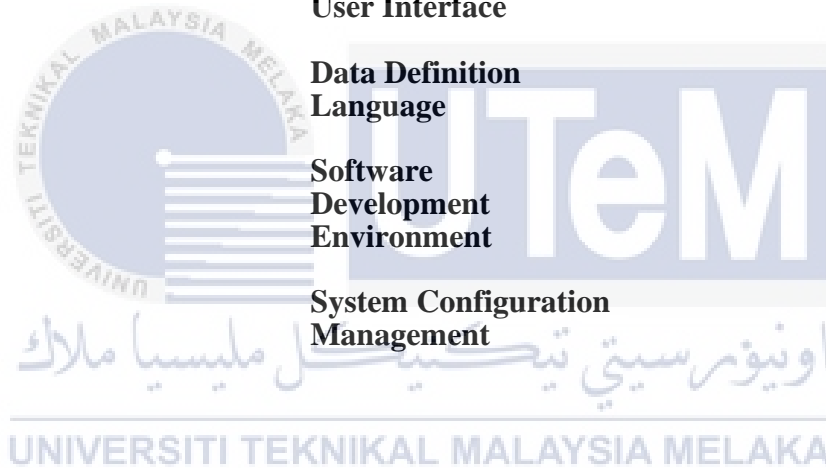
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**LIST OF ABBREVIATIONS**

<b>FYP</b>	- <b>Final Year Project</b>
<b>SDLC</b>	<b>Software Developmet Life Cycle Production</b>
<b>ERD</b>	<b>Entity Relationship Diagram</b>
<b>HLD</b>	<b>High-level Design</b>
<b>UI</b>	<b>User Interface</b>
<b>DDL</b>	<b>Data Definition Language</b>
<b>SDE</b>	<b>Software Development Environment</b>
<b>SCM</b>	<b>System Configuration Management</b>





## CHAPTER 1: INTRODUCTION

### 1.1 Introduction

Booking Parking Application is designed to decrease the crowd because of cars increasing day by day. One of the factors that lead to the crowding is the lack of parking in a crowded city like Kuala Lumpur. The person who goes out by his/her car on weekend or holiday to the center of the city, he/she maybe will not find parking so he/she will park in the wrong place which will cause narrow road and crowding. To overcome this major problem, you should book parking prior to going out. Therefore, Booking Parking Application is proposed to allow the user after authentication to search for parking by using Google Maps the application will show him the list of options for parking near to him. When the user selects one from the list, it will show the address, the price per hour, and working hours then he/she can make reservations. To book parking you need to select the date and time, the user just needs to scan the QR on the gate of the parking and the parking will be opened. Also, the owner after authentication should enter parking information such as location, the number of parking he offers, working time, and price per hour also each approval parking will have unique QR owner will print it on the gate of the parking. The Administrator will be responsible for the entire application such as approve or reject parking registered by the owner, and view the income for each owner, number of owner register, and number of parking approval for each owner. This Booking Parking Application will play a big role in our community by providing easy life, save time and reduce crowded. The main goal of this App is to make your life easier with the least effort.

### 1.2 Problem Statements

1- Traffic congestion due to no parking reservation.

Due to no previous booking parking, he/she will reach to parking which already full so he/she will be parking on wrong places.

2- Difficulty in checking the valid reservation manually.

It will cause traffic congestion if checking valid reservation done manually because it takes time to check that.

- 3- Missing reservation data by booking parking manually.

Data of parking, and check-in/check-out-time more likely to be lost not like saving data digitally.

### 1.3 Objectives

1. With the reservation service, the customers can find and reserve their parking spaces quickly.

User after select location will be able to view the list of parking near to his/her location then select date and time of reservation.

2. By QR code you can scan easily to check the valid reservation.

The user just needs to scan the QR to check-in into the parking as long as he/she had already book parking.

3. All reservation data will be saved digitally.

The data in the booking parking application will be stored digitally using firebase.

### 1.4 Project scope

The project scope will define the boundaries of Booking Parking Application, which include application system function modules and users involved.

#### 1.4.1 Scope Module.

- Authentication module - This module will register user and owner information to the database. It will check if users enter the appropriate information and validation verification his/her information.
- Manage the system module - The administrator has the authority to approve or reject the owner and update admin, owner, and user profile.
- Booking module - The user after select location will be able to view the list of parking near to his/her location then select date and time to book.
- QR code module - Each parking will have unique QR code scan image after admin approve the parking.
- Dashboard Reporting module - The administrator can get a summary of data analysis. Which is the number of owners registered, how many parking for each owner, and the income for each owner.

### 1.4.2 User Scope

- i. Administrator
  - Add (approve) the parking
  - Delete (reject) the parking
  - Update the information
  - Login/logout

- ii. Customer
  - Search for the parking
  - Book parking
  - Update his/her information
  - View history of booking
  - Login/logout

- iii. Owner
  - Add parking
  - Delete parking
  - Update parking, and profile information
  - View history for each parking
  - Login/logout

### 1.5 Project Significance

The importance of this application is to help our community to reduce traffic congestion. Customers will not search for parking in the middle of traffic congestion and the owner will register his parking information easily. this Application could make life easy, save time and reduce crowded by providing easy booking parking application.

## 1.6 Expected Output

This Booking Parking Application will automate the existing system of manually maintained records of booking, avoid wasting time by going to the parking which is already full. So, by having this application you can check if there is an available parking slot, user can view his history of booking, and update his information from the profile. Also, it would help the owner to register his parking information easily and edit his information such as name and mobile number. This app also will avoid fake owner parking because the owner cannot be the owner until the admin approves him/her.

## 1.7 Conclusion

In this chapter, there were explanations about the application details including problem statements, objectives and significant of the Booking Parking App. The application users need to install the application and create an account by entering information such as full name, email, and phone number. QR code will be generated once the user has successfully book parking slot. The application will accept the owner after admin approval.

## CHAPTER 2: LITERATURE REVIEW AND PROJECT METHODOLOGY

### 2.1 Introduction

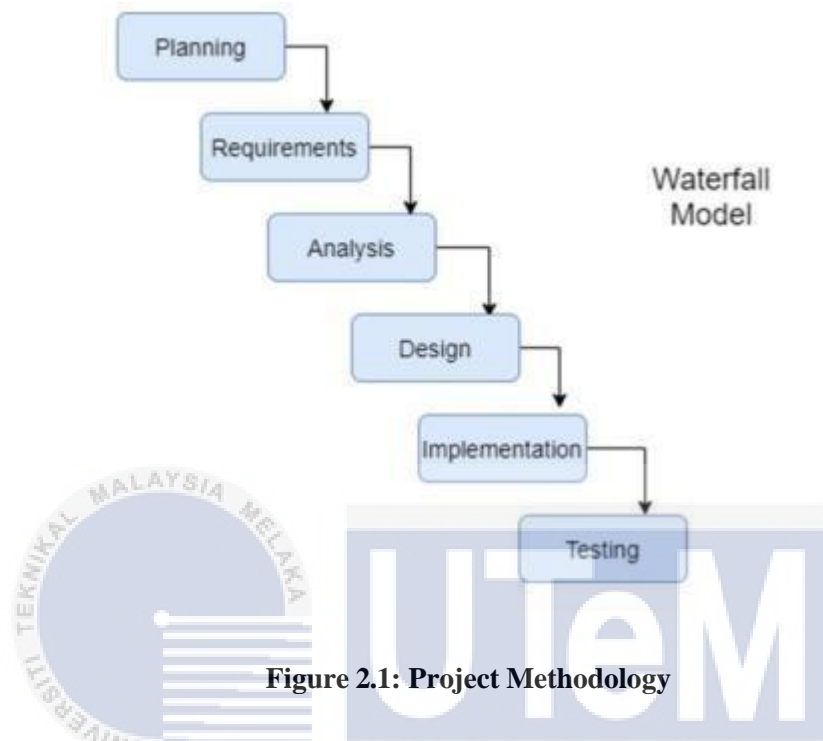
The literature review included finding, gathering, evaluating, and drawing a conclusion from all topic issues presented by the related body of literature. Whereas the project process includes the strategy and methods used to execute the project. This chapter is a paper describing the results, procedures, and strategies that can be used in the implementation of the Booking Parking Application. The evidence and results are evaluated by describing the goals, the present situation, and the tools available. Booking Parking Application allows user to select his location then the application will show the nearest parking to his location then the user can book after determining the date and time. When the user reaches the parking, he will scan the parking code then he will enter the parking slot. The owner will register all parking information. After the admin approves the parking, the owner can get the QR code of the parking. The owner also can add, delete, update the information on parking. Admin will be able to approve or reject the owner and see all information include the total income for each owner.

### 2.2 Facts and findings

There is a lot of parking still using a manual way so when the customer user reaches to the parking. the owner will give him a card, this card includes the time of check-in and when the user wants to check-out will give back the card to the owner, then the owner will calculate the time and give the price. all this process is done manually. This kind of system will face a lot of issues sometimes customers will lose the card. Not like in this application which all process of booking done digitally customer user will no need to hold a card in his pocket just select the date and time of booking then check-in into the parking by scan the QR, the owner also will be more comfortable because owner needs just to print the QR at the gate of parking, and if the owner needs the history of the customer will check it digitally not on paper like the previous system.

## 2.3 Project Methodology

This section presents the research methodology used in the study, the research design, and the data collection process.



**Figure 2.1: Project Methodology**

Figure 2.1 illustrates the approach chosen for the execution of this app. This methodological approach is also useful for software development, using limited preparation in lieu of fast prototypes. The practical module is designed in parallel as a concept in the Software Development Life Cycle Production (SDLC) approach and is implemented to create a full system for quicker product delivery.

### 2.3.1 Activities in the Software Development Life Cycle

Both operations during the construction of this project in-phase or process shall be described on a rapid model basis. To make further progress on this method, here are identified an appropriate strategy to be practiced in the development of the Booking Parking Application. The Waterfall Life Cycle Model will be presented in detail in this chapter.

### 2.3.1.1 Planning

Now, the organization of the application begins. after search on the internet about the right strategy to build an application. need to draw wireframe to determine how to navigate between the pages, need to solve issue that another book parking system facing so you will reduce the possibility of repeat the same issue, then draw you the ERD of booking parking application.

### 2.3.1.2 Requirement

Summary of tasks during the preparation process of the requirement:

- Identify the functional requirement and non-functional requirement of the application.
- Analyze all requirements and definitions in the modules.
- Create a diagram and a specification for each module specifications.

### 2.3.1.3 Design

List of activities during the Design phase:

- Pre-design make sure you get off to the right start with the design and development of booking parking application to ensure a great final product.
- Design the interface of Booking Parking Application.
- Create the database on firebase.

### 2.3.1.4 Implementation

Writing computer programs in this application is split into the programming language React Native as front-end and Firebase as back-end. this will boost device architecture.

### 2.3.1.5 Testing

List of activities during the testing phase:

- Collect bugs, debug, and document the corrective actions.
- When the error occurs, a solution will be found to overcome the problem.
- Run testing and document the result.

## 2.4 Project Requirements

### 2.4.1 Software Requirement

In order to develop booking parking application, need to have this:

Development Tools:

- Visual studio code
- Android emulator
- Adobe Photoshop and Adobe Photoshop
- Microsoft Office Visio
- Microsoft Office
- Firebase

### 2.4.2 Hardware Requirement

Personal computer is used to prepare this system. The following are specification.

- Operating System: Window 10 Home Single Language
- Processing: Intel Core i7-7200U CPU @2.50GHz
- Memory (RAM): 8GB
- Type of System: 64-bit Operating System

### 2.4.3 Other Requirement

Other requirements depict user support for the needs of software, hardware, and network that will be used to develop this application.