**Class Project Report**

**“Parking Reservation System with The License Plate Recognition”**

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**Group 7**

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**CHAPTER 1**

**INTRODUCTION**

* 1. **Background**

In recent years, parking a car has become a serious problem in large cities with increasing rate of private vehicles. With the emerging problem of parking cars, the ordinary parking system that does not provide any information about available parking areas would not be able to handle the problem effectively. The typical car park system would only be able to provide information of available parking locations or another system would require human resources to determine and provide information about the location of the available parking locations. These types of parking systems would only provide minimal information on the available parking locations and would not be able to handle the parking issues effectively. As such these systems would get the drivers to search the parking areas on their own and thus create a problem where there would be too many cars in the car park area.

Parking of cars in a parking area is becoming a difficult task as the number of cars increases while the number of parking spaces is finite. As a result, people would spend a certain amount of time looking for parking space and thus cause a situation where the traffic would be slowed down and cause congestion. In order to address the problem of parking effectively, “Parking Reservation” App can provide information of available parking areas. In this app, users also can reserve that available parking area for them. In the entry gate of parking area, there is a system that can indicate the vehicle which allowed to enter the parking area. It can be indicated by checking the license number of the vehicle with the number that have been listed in the database. Therefore, this “Parking Reservation” system can make it easier for drivers to find some areas for park their vehicles.

* 1. **General Purpose**

To make an autonomous parking system that can makes it easy to reserves a special space for parking with the license plate recognition gate to indicating the vehicles that will be allowed into the parking area.

* 1. **Objectives**
* To help drivers reserve a space for parking
* To help drivers
* To complete Software Engineering Class Project
  1. **User’s Target**

The target of the “Parking Reservation” system for the drivers in the metropolitan city and also the parking service providers.

* 1. **Tools**
     1. **Software**

We will use these software,

* Programming : Visual Studio Code, Dev-C++, Android Studio
* Graphic : Adobe Photoshop, Corel Draw
* Project Management : Github, Line Application
  + 1. **Hardware**

For the hardware, we will use these tools to support the specific task,

* PC, to coding, designing, and testing the project
* Smartphone, to test the parking app/web
* Raspberry Pi or Arduino, to process the image recognition for the gate
* Servo Motor, to be a dummy of parking gate
* Camera, to capture the image of license plate
  1. **System Plan**
  2. **Risk Analysis**