



UNIVERSITI TEKNOLOGI MARA

**INNOVATIVE ENHANCE PARKING
WITH SECURITY SYSTEM**

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ABSTRACT

Outdoor parking has been a problem since the number of vehicles increasing day by day [1]. This causes the parking slot to be limited especially those who stay at apartment area where they have to park outdoor instead of inside the apartment parking which can increase the risk of the car to be stolen due to lack of security. Thus, this project proposes a smart parking system and security. The aim of this project is to reduce the risk of car from been stolen in an open parking lot, to have an ensure parking, and to prevent any unnecessary double parking from happening. This project uses Arduino Mega together with esp-01 module features esp8266 which will act as Wi-Fi module that will be used for Internet of Things (IoT) such as Blynk app. Also, this project uses RFID sensor and IR sensor which will control boom barrier to open and close and a buzzer which will produce sound to avoid unnecessary double parking. With the evolution of technology, the development of RFID expands its range of use and is very efficient where it provides a better level of security [4]. With this project, people would not need to worry about car theft, unnecessary double parking, and also save their time in finding outdoor parking as their parking spot is ensured.

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CHAPTER ONE

INTRODUCTION

1.1 Research Background

In this modern world, the usage of autos is increasing along with the size of the human population. Private vehicles increase in numbers making parking become a big problem [1,5].

Lately, outdoor parking has been people's favourite spot to park their private vehicles especially at housing areas such as apartments where the indoor parking would not be enough. Due to low security, there are many problems that can occur where one of them is the risk of the car to be stolen will be high where outdoor parking is favourite for car theft [3]. Also, double parking can happen where outsiders park their vehicle in front of the parking spot that is occupied which will cause unnecessary traffic since it takes part of the road and could potentially cause air pollution [5]. Additionally, finding an outdoor parking could take someone's time as it is usually full. Hence, people will feel troublesome and unsafe to park their car at outdoor parking. Thus, this thesis is focused on enhancing the security of outdoor parking and the parking system to overcome the problem.