

**DESIGN OF SMART PARKING SYSTEM
USING IOT FOR MULTI-STOREY PARKING
LOT**

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ABSTRACT

Internet of things (IoT) is defined as the extension of internet connectivity into physical devices and everyday objects. The components which embedded with the internet connectivity, sensors or other form of electronics devices that can be connected and communicate with each other over the internet. Then, by using IoT concept also can easily monitored and controlled the system or hardware especially during troubleshoot the problems occur. So that, with the help of IoT concept, it can be applied to things like transportation network such as to develop a smart city which can help us to reduce waste and improve efficiency for things such as energy use. Next, smart city also can improve the parking system to be more efficient and user friendly to make sure there is no traffic congestion occur during peak hour especially at the famous place.

Furthermore, this paper presents the Smart Parking System using IoT concept to resolve the issue of limited number of parking space or lot for multi-storey building in UiTM. Within this project, the Internet of Things (IoT) concept was demonstrated using Bluetooth device which is HC-06 to connect with the Blynk apps. By using this concept, it can assist the drivers to easily find an available parking space. Furthermore, the management can monitor the parking with this apps. The findings were compared between the car to park with the system and without the system. The results show that with the help of Smart Parking system can help to minimize the time taken needed for the drivers to find an available parking space without wasting their time which is estimated less than 3 minutes. Compared to the parking without this system, drivers needed to spend more time to find parking space especially in the crowded area. All the data for the time taken needed for the drivers spent can be calculated by using an equation.

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CHAPTER ONE

INTRODUCTION

1.1 Research Background

The first automobile was created and introduced in 1885 which to make people living happier and more comfortable with the help of the new technologies. Therefore, we have so many sophisticated technologies now that we never thought that it could develop a nation to become more advanced and we also never thought that the existence of new technology would cause problems. The example of the problems that will arise if the automotive industry produces too much vehicle per year are the limited parking space for the drivers to park their vehicle. Next, the automotive industry also developed so many inventions in the automobile market that we forgot the place to store them.

Nowadays, the production of vehicles is rapidly increasing with variety design per years. There are many initiatives from organization or any of institution to find the way by brainstorm the idea to come up an innovative idea to solve the parking problems. The reality is the more the drivers spend their time to find parking space can be equated with the drivers steering in a jammed state. So that, to minimize or overcome this problem, the parking needs a proper solution with a creative and innovative idea by using advanced technology such as advance sensor to be implemented and embedded into the parking system.

Furthermore, the fact that we know the increasing the number of populations in each country will make the increasing the number of vehicle's user. So that, the escalation in the number of vehicles on the road will create the parking problems because of the number of parking space provided were not enough to cover the number of vehicles. Then, the parking problems also can be related to the traffic congestion occurs in the parking area. So that, the designer needs to design and develop an automated smart parking management system. With this system, it can help the drivers to find parking space easily and can avoid the traffic congestion from occurs at parking area. Next, with this new system also can help to reduce air pollution by reducing the fuel consumption.