

# Intelligent Vehicle Parking Allotment System

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**Abstract-** In urban areas, parking the car is one of the difficult tasks that we are facing in our day to day life. The main issue is providing the sufficient parking system. Nowadays, it is very hard to find the availability of parking slots in the highly rushed places like malls, cinema halls, etc. This calls for the situations of a Smart car parking system. This paper represents a system which is based on local networks and commanded by an Android application. The paper proposed a system of intelligent parking using Android application which provides the user an easy way of booking the parking slots through an application where the user will automatically find the parking space via the server. In addition to this, we can say that it's a new way of communication between humans and the things with the help of new technology based on networking. To avoid the problem of traffic congestion in the urban areas where it consumes unnecessarily amount of times, this paper provides the easy reservation system of parking.

**Keywords—** Intelligent Parking System (IPS), Android based application, Parking, Application.

## I. INTRODUCTION

“Intelligent Parking System” using Android application provides user an easy way of booking the parking slots through an application. In peak times, it becomes almost time consuming and frustrating to the drivers since for drivers it is common to keep circling the parking area and look for the empty space in that area. So, to minimize the difficulty to the drivers, the paper proposes an intelligent system which provides an easy reservation system for the lots in the parking area. In the proposed application, the user can view various parking slots and check for the availability of slots. Whenever a user books a particular slots it will be marked the red and all the available slots will green. The parking slots which are available can be updated on a database so that every user connected with the network can identify free parking slots in a specific location. This propose system present a smart parking system the regulates number of vehicles to the nearest parking space based on the parking space availability. IVPAS is implemented using the operating system Android the user request for the slots in a particular area he wants and, as soon as the user request the available free slots are display to the user. If availability of parking space is conform, the user can book the parking slot and proceed the way. The user fixes the slot and he can show his confirmation to the person at the parking area after successful parking, the slot details are updated in the admin database.

## II. PROPOSED SYSTEM

The system is derived from the idea of networking. The system uses the Global Positioning system (wifi) technology of smart phone for tracking car parking places. Wifi traces the nearest locations of car parking and check for available space for park the car when it get connected to the local network of the router. This system can reduce the time for

searching nearest parking slots. the user can choose the parking space that is nearest to the destination after getting signed and login to the application. After the books the particular slot the administrator updates the status of the respective parking slots to reserved and the payments depends on the time between a car's registration and exit. This system is based on client-server Architecture. The system provides a mechanism to prevent disputes in the car park and helps minimize wasted time in looking for a parking space. Its economically beneficial since it does not require any heavy infrastructure.

## III. WORKING SYSTEM

The system consist of 3 modules

### 1. System network

This is a Web entity that stores the resource information provided by local Network units present at each carpark. The system allows a driver to search and find information on parking spaces from each car park without the need to directly access the local server node by directly accessing the network server.

### 2. Administrator

Admin stores the information of each parking space. The application authenticates the user information and then displays this information on the screen. The local module connects with the server through a network connection to transfer data from the local car park to the server database. It is used to check and authenticate user information and calculate the percentage of total free spaces in each car park.

### 3. Software client

This is an application software system. Running on Android operating system, the users will install it on their smartphones and use it to reserve parking spaces. The users access the system via router connections.

- For developing this system it will require Android Studio and implementation language will be Java. For back end, it

can be going to used MySQL. Above mention software are easily available on internet. So that we can get them easily.

- This system should deployed on host machine for monitoring the user malicious activities. Host machine should be connected to the network

#### INTERFACES:

- Hardware Interfaces:

Our system interacts with the hard disc of the system to read the parking place information the admin.

- User Interface:

Our system interacts with user on the following occasions:

- A. Search nearest place.
- B. Check available space.
- C. Book park place.

#### IV. LITERATURE SURVEY

Renuka R and S.Dhanlakshmi(April 2014),“Androidbasedsmartcarparkingusingslotallocationand reservations” This paper proposes an android application,which is used to implement a prototype of smart car parking system based reservation that allows driver to effectively find and reserves the vacant parking spaces with the help of IOT with slot allocation method and performs automatic billing process. The proposed system guides drivers to find available parking space near them, less number of drivers searching to park, thus it reduces traffic congestion, it a voids air pollution and global warming, it is scalable robust and reliable, it reduce the drivers stress and improves urban area, it provides tools to optimize the parking space management, it is accurately find out the vehicle occupancy in real time. The main contribution of our proposed system is to find out status of parking area and provides secure parking. This work is further extended as a fully automated system using multi-layer parking method, safety measure such as tracing the vehicle number face recognitionofthedriverssoastoavoidthefraudandautomaticbilling processcan also be designed.

D.J.Bonde,Rohit Sunil Shende(Jan 2014),“Automated car parking system commanded by android application” The aim of this paper is to automate the car and the car parking as well. It discusses a project which present a miniature model of an automated car parking that can regulate and manage the number of cars that can be parked in a given space at any given time based on the availability of parking slot. Automated parking is a method of parking and existing cars using sensing devices. The entering to or leaving from the parking lots is commanded by an android based application. The difference between our system and other existing system is that we aim to make our system as less human dependant as possible by automating. KishoreK.Chidella,MuhammadF.Mridha(April 2015) “A Time and Energy efficient parking system using zigbee

communication protocol” This paper proposes a smart parking system for heavy traffic environments using zigbee wireless transmission module. The proposed system is suitable for multi floor building and able to send and send a message to vehicles about the status of parking space.The parking monitoring system continuously collect the data from parking slot detector and then it intiments the vehicle section. We simulate the proposed system using Zigbee and to other popular wireless technologies: Bluetooth and Wi-fi, that Zigbee providestransition time and power advantages over Bluetooth and Wi-Fi. This system can be implemented in the future cars and can be used to avoid the traffic problems in the heavy parking areas like the shopping malls and other busy area. The reduced traffic problems saved the fuel and this reduced the cost and population.

Hongwei wang and wenbo he(Feb 2011) “A Reservation based smart car parking system”

In this paper we design and implement a prototype of reservation based smart car parking system that allow drivers to effectively find and reserve the find vacant parking space. By periodically learning the parking states from the sensor networks, deploy in parking lots, the reservation service is affected by the change of physical parking status. The drivers are allow to access this cyber physical system with their personal communication device. The experiment results show that the proposed reservation based parking policy has the potential to simplify the operation of parking system. We implement parking reservation policy to balance the benefit of service provider and requirements from the user.

#### V. RESULTS

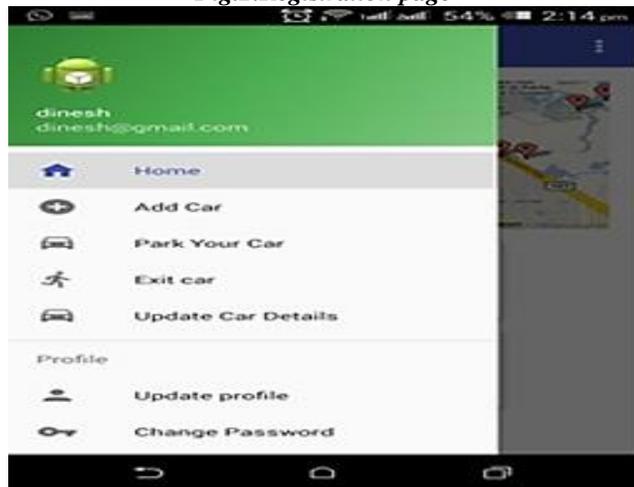


*Fig.1.login page*

This above screenshot is the activity of the application where user have to login or if not sign in to the application to get access to the all the operation about the further proceedings in the application.



**Fig.2.Registration page**



**Fig.3.Administration Function**



**Fig.4.Parking nodes**



**Fig.5.Selection of the slot**

**VI. CONCLUSION**

IVPAS is used to book parking slot without any great effort by the user using an Android device. The allotment of the parking slot by an autonomous searching method makes the parking of vehicles at public places more efficient. The searching and allotment of parking slot, based on the status of available slots, to the appropriate free slot, easier. The proposed system makes use of Android application to facilitate the parking and retrieval of the vehicle, for the user.

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