

Online Parking Booking System

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Abstract - With the increasing number of vehicles, finding a parking space in most areas is difficult for drivers. The common method of finding a free space is manual. This method takes time and effort. Hence, this project offers an online reservation system where the users can view various parking areas and select the available space. If the booking space is available then he/she can book it for specific time slot. The booked space will be marked red and will not be available for anyone else for that specified time. In this system cancelling the bookings is also an feature. User can remove their booked space anytime. Online payment can be done. After making payment, user will get a notification on his/her phone with unique parking number.

Key Words: Application (app), ios, Android

1. INTRODUCTION

Our online reservation system to reserve parking spaces in the immediate parking, additional services and home purchase will increase your website by enabling customers to pay or go online. It is designed to make it easier for people to book parking spaces online. In today's parking lots there are no standard system to check for parking spaces. Searching for a vacant parking space in a metropolitan area is the daily concern for most people and it is time consuming. It commonly results more traffic load and air pollution in certain area only for an available parking space.

1.1 SPECIFICATION

A. Hardware Specification

- Arduino UNO Platform
- AVR ATmega328 Controller
- 16 x 2 LCD MATRIX
- Motor Driver Circuit L293D
- Accelerometer ADXL-335

B. Software Specification

- Arduino IDE
- Android App

2. LITERATURE SURVEY

Robin Grodi et.al [1] has done that how vehicle will occupy in the particular allocated place. RFID sensors detect the presence of a vehicle or other objects. Once a vehicle is detected, the system needs a way to notify drivers or a parking spot being occupied. The disadvantage is, the parking place will be detected only to nearby places there is no GPS sensor to search parking slots from the far place.

Alirezahassani et.al [2] had implemented this system using a mobile application that is connected to the cloud. The user will set the time for when he is going to allocate the place. If he didn't occupy later the alarm will be given to the user. The app will show the number of allocated and the empty spaces in the parking slots. The disadvantage is, after allocating if another user request for the same place then he is unable to allocate that place so it is the waste of space if first user cancel later, waste of time and money.

DharminiKanteti et.al [3] have developed a Smart Parking System in case of pre-registered users IP cameras would capture the vehicle registration number and they can proceed without interruptions. As per their details like parking time estimate, their place of visit etc. For pre-registered users, the amount will be deducted from E-wallet and there by users will be notified. A similar pricing system will be followed for new users but payment is offline. The disadvantages is, the system could serve all the parking requests but beyond 80 it couldn't accommodate more cars since the parking is full.

Georgios Tsaramirsis et.al [4] make use of wired sensors systems. There are two categories intrusive and non-intrusive sensors. Intrusive sensors are most commonly installed directly on pavement surfaces or holes in the roads surface. In turn, on-intrusive sensors can also be described as above ground sensors, which are mounted above traffic lane and are monitoring on either side of the road. The disadvantage is, intrusive sensors type are the decreases of pavement life due to the requirement of pavement cut for installation

Rosario Salpietro et al [5] implemented automatic detection of parking actions performed by users, through the analysis of smart-phone embedded sensors' and of the Bluetooth connectivity. Once the parking event has been detected, an adaptive strategy allows the disseminating the information over the target scenario, using the combination of internet connection to a remote server, and device-to-device connection over wifi direct links.

3. METHODOLOGY

The system shows three components in this architecture include parking zones, users and the admin. As a result, the state of parking resources is changed by users parking decisions. The management system broadcast live parking availability information to users (also drivers). Upon receiving parking information, the user selects desired parking lot and reserves a space. User can have their username, login id, phone number, email and address. Admin can collect the whole data from database system.

User-defined API software architecture designed mainly shows Android applications, user applications and functions allocated to the central control system and the structure of the host system application point location.

The first is to create a user account to be able to use the service provided. After creating an account, the user username, and password can login to his mobile phone.

The user can select the proper parking lot and check availability free spaces are available so the user can go to a space reservation. A user is only allowed to reserve a space.

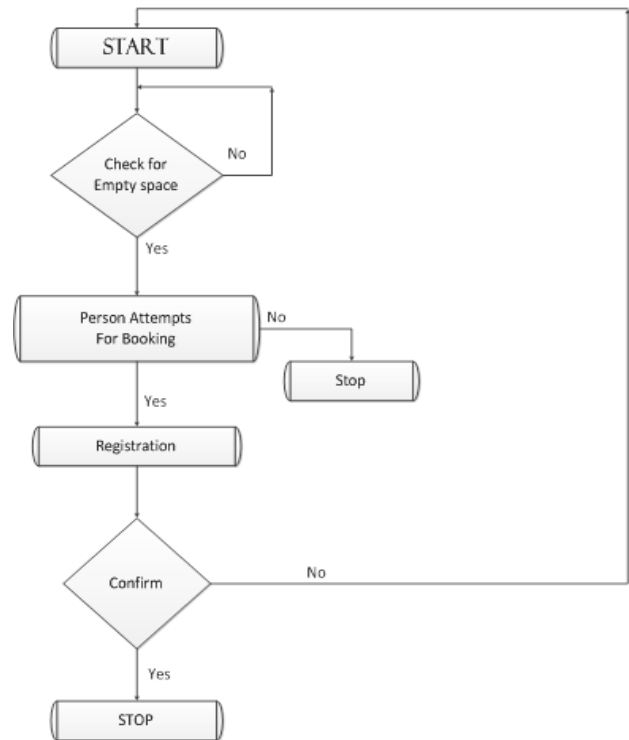


Fig-1: Shows flow of how whole mechanism will work.



Fig. 1.1 IOT Car parking Android Application

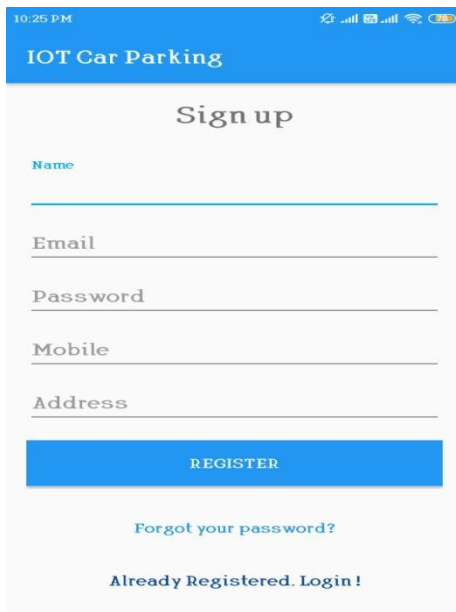


Fig. 1.2 Registration Page

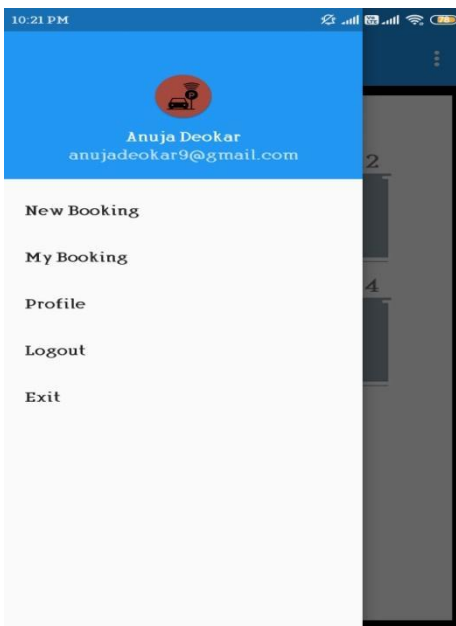


Fig. 1.3 Profile of user

4. CONCLUSION

A conclusion, the objective of online booking parking system have been achieved. The difficulty of searching available parking lots has been completely eliminated by reserving lots via proposed system. Users can get learn about parking areas for the particular locations. It saves user time in search of the parking space available in such a long parking area.

5. LIMITATIONS & FUTURE

❖ Limitations

- The Range of the Bluetooth Transmitter – Receiver is limited.
- The number of the devices that can be connected and controlled cannot exceed 30
- Touch Screen is sensitive and susceptible to get damage easily.

❖ Future Scope

- A fully functional touch screen operated system can be built that would be able to control any number of device.
- The range of the device can be enhanced.
- Voice controlled system can also be incorporated in already existing mechanism.

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