

Android Based Parking Booking System

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ABSTRACT: The proposed work is a parking booking system that provides customers an easy way of reserving a parking space online. It overcomes the problem of finding a parking space in commercial areas that consumes time. Hence the work offers a slot reservation system where users can view various parking areas and select the space to view whether space is available or not. If the booking space is available then he can book it for specific time slot. The booked space will be marked red and will not be available for anyone else for the specified time. The system provides an additional feature of cancelling the bookings. User can cancel their booked space anytime. Users can even make payment online via credit card. After booking the slot users will get a sms on his/her phone with unique parking number. Dijkstra's algorithm and Hungarian method were used for finding a shortest path to source vertex to destination vertex and for solving the queries of parking slots.

KEYWORDS: Slot reservation, Parking areas, Bookingspace, Parking slots.

I. INTRODUCTION

A Parking lot is cleared area that is intended for parking vehicles. Usually, the term refers to a dedicated area that has been provided with a durable or semi-durable surface. In most countries where cars are the dominant mode of transportation, parking lots are a feature of every city and suburban area. Shopping malls, Sports stadiums, and similar venues often feature parking lots of immense area.

Smart parking is a parking strategy that combines technology and human innovation in an effort to use as few resources as possible such as fuel, time and space to achieve faster, easier and denser parking of vehicles for the majority of time they remain idle.

As the population increases in the metropolitan cities, the usage of vehicles got increases. In urban areas, where number of vehicles is higher as compared to availability of parking spaces, a lot of time being wasted in searching for parking locations. Thus we need to provide sufficient parking space coupled with plenty of slots to help the user park their vehicle safely. Currently most of the existing parking system is manually managed and a little inefficient. Parking booking system is a proposing method that users can reserve their parking places using android.

The main motivation is to reduce the traffic congestion that occurs in and around the urban areas which is caused by vehicles searching for parking. In the newspapers, we can able to see many articles regarding the parking problem all over India like Delhi, Mumbai, Chennai, Bangalore and many metropolitan cities. Growing population has created many problems; parking problem is one of the big problems in our day to day life. In a recent survey, researchers have found that for one year, car cruising for parking created the equivalent of 38 times trips around the world, burning 177914.8 litres of fuel and producing 730 tons of CO₂. To reduce all these factors we go for the smart parking system.

Over the past 20 years, traffic authorities in many cities have developed a model called Parking Guidance and Information (PGI) system for good parking management. PGI systems, tells about the dynamic information of parking in the controlled area and guides the users to the vacant parking slots. Parking information will be displayed in the VMS (Variable-message sign) board at major roads, streets and at the intersections. The parking guidance system has several shortcomings, hence to overcome all these problems we go for smart parking.

Use of automobiles is increasing day by day which leads to various parking issues. Vehicular population is shooting out the roof, no amount of space is sufficient to accommodate stationary vehicles. Management of parking has grown to large extent. The main problem is to manage parking in congested areas. One of the congested area is college campus .However improving parking on campus is important. The problem is parking spaces are either insufficient

according to the demands of students or these spaces are poorly allocated. Colleges have to try almost every possible way to deal with problem of campus parking. Parking on campus needs improvement. Users entering the university are allowed to have a car on campus. With every new freshmen entering parking possess a problem in campus. Problems in parking campus results in users inconvenience, which results in frustration.

II. RELATED WORK

Smart parking system to solve the problem of unnecessary time consumption in finding parking spot in commercial car park areas. A parking reservation system is developed in such a way that users book their parking spots through short message services (SMS)[1]. As the numbers of vehicles on the road are increasing day by day parking problems are bound to exist. Problems which arise due to insufficient parking space are traffic congestion, driver frustration and air pollution. The price for expanding parking area is extremely high. So that modify original WSN and use of RFID and Zigbee technology and its result are obtained when it is applied to parking garages[2][5]. Online vehicle parking reservation system (VOPBS) that is designed to make it easier for people to book parking spaces online. 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. As they need, and to set the period of availability can add many types of vehicle seats as VOPBS administrator[3]. During the early stages of such research, a number of parking models were built to understand and replicate parking choice behavior, such as CLAMP, PARKSIM, PARKAGENT, multilayer, and others. In most of these models, competitive alternatives are reasonably well known in advance to the decision maker (driver)[4][6].

III. METHODOLOGY

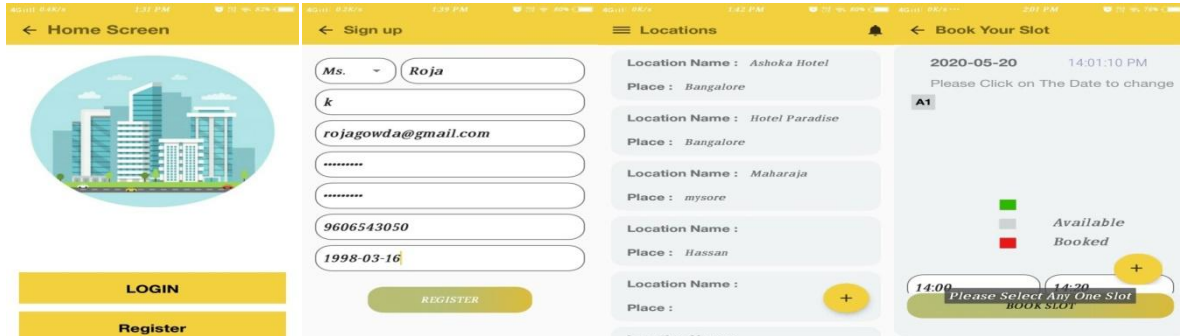
Slot reservation is a easy way of reserving a slot for vehicle of the users to park safely which is also save the time of the user in searching of an empty slot for parking of their vehicle. There is a wastage of time in searching the empty slot in the large parking area near by the user current location to avoid this we implement an app by using android application in such a way that admin as the previlage to add the new parking areas in the city and add number of slot for users parking vehicle in that parking area and user as the previlage to select the parking slot in particular parking area in any city for particular time period.

IV. EXPERIMENTAL RESULTS

Figure.1 shows the Admin side functionalities like (a) shows the Home Page. (b) it shows the Admin login page. (c) it shows Adding New Parking Place. (d) it shows the create the slot by the Admin.



Figure.2 shows the user side functionalities (a) shows the admin/user login page. (b) it shows the Registration Page. (c) it shows the Parking Locations in this page user can view the location, book the slots for particular time period and get the notification after user booked the slot.



(a)

(b)

(c)

(d)



(e)

(f)

(g)

(h)

VI. CONCLUSION

The difficulty of searching available parking slots will be eliminated by reserving slots in the proposed system. Users can get to know about parking areas for particular locations. It saves user time in finding the parking space available in a parking area. The benefits of smart parking go well beyond avoiding time wasting. Enables cities to develop fully integrated multimodal intelligent transportation systems with great security and efficiency. Developing smart parking solutions within a city solves the vandalism and population problem and fuel saving.

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