ONLINE PARKING SLOT BOOKING

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Abstract – *With the increasing number of vehicles finding a parking space in most metropolitan areas, especially during the rush hours, is difficult for drivers.*

The idea behind our android application is to help the user analyses area's where parking is available and number of slots free in that area. Additionally, four hours prior to his expected arrival, the user can pre-book a slot in the area he desires if it is available this will help the user to search the parking slot through android application.

Keywords – ***Application (app), ios, Android.***

Introduction

Parking problems are becoming ubiquitous and ever growing at an alarming rate in every major city. Wide usage of android technology with the recent advances in wireless applications, manifests that digital data dissemination could be the key to solve emerging parking problems. Now-a-days there is a steady increase in the number of people using android mobile phones. Online parking slot booking is based on android technology for avoiding the parking problems which provides process of pre-booking the slots through the use of a simple and interactive android application.

The user needs to have an android enabled device to reap the benefits of this application. After installing the "bookmyslot" app, user needs to mandatorily register with the application. Booking of the slot at user's desired location should be done four hours prior to the arrival. Payment services are made available using google wallet in the future.

Literature Survey

In this paper, we mainly focus on designing a new smart parking management system that assists users to find the authorized parking areas in the nearby areas by using the android application. In addition, an important goal of the system is to reduce the traffic searching for parking, hence reduce energy consumption and air pollution.

This paper mainly focuses on helping the user to find the nearby authorized parking areas with ease. The application will also help the parking owner in managing the load. The application will be a middleware for connecting user to the owners of the parking area. This greatly facilitates the user as his parking slot will be confirmed and would not waste time in searching the slot for parking.

This application will help the user to find the parking space when he/she visits the new area or the state. A user new to any city or state can use this app to safely park the vehicle.

The app ensures the safety of the identity of the user by addressing user by username. As the parking slots are under government registration there is no possibility of fake parking area or false slot information. The necessary document photocopy is required for the owner to be submitted while registering. The nearest parking areas to the user are prompted for which MAPS are used. Amongst the suggested area the user gets the choice to select which enhances the usability of the app.

Once the user reaches the parking area then he can park the vehicle in th e confirmed slot. Once user renounces his slot then it appears reserved for other users and after leaving the slot it is shown as 'available' for other user.

System Architecture

System architecture shows six components in the smart parking model, including parking owners, users, internet, application server, server database and the database of parking owner. The parking owner has the dashboard which has its own database of parked and un-parked slots. The user uses API on mobile phone to register for the app using internet. The application server keeps a track of GPS location and matches it to the nearest parking slots. The main sever database keeps the data of all parking owners in an area and their location on GPS.

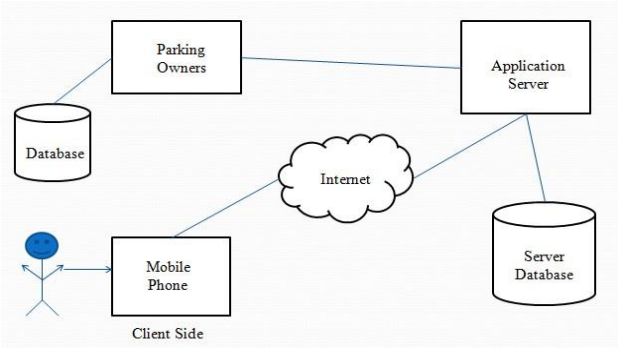

Fig.1 System Architecture

Hardware requirement:-

Platform- Android and IOS
Processor: Dual Core
Display: 4 inches or more
RAM: 1GB

Software requirement:-

Bscjks Platform:

- Operating System: Windows 10(64-bit).
- Front End: Visual Studio 2015.
- Programming Language: DOTNET.
- Database: SQL SERVER 2012.

Implementation Plan

1. Start the application:

The user needs to install the application on his Android based device. After installation, the icon of the app will feature on the Home Screen of the user's device. App welcome screen will be flashed to the user on opening the application.

2. Registration:

Initially, the user has to register his details with the application for the first time. This is a one-time registration. The user has to enter details like user name, gender, phone number and email- id. All this data will be stored on server. Booking for slots mandatory has to be done an hour prior to arrival. On registration the user will get an unique ID. Using this ID are futher processing will be completed.

3. Login:

Once the user registers, he can use his email id and phone number to login in future. This authenticates the user.

4. Selection of location for parking:

The user is provided with multiple parking locations. User has to select one of the locations provided where he desires` used to indicate empty v/s reserved slots. Grey indicates empty slots and Red indicates that currently there are no empty slots for reservation.

5. Enter user's details for slot reservation:

In case the slot is available, the client can proceed further with the reservation process or else he can go back to change the location/vehicle type or else can terminate the entire process.

6. Confirmation to user:

On successful reservation, a confirmation page with user details is shown which is editable and Green is indicated to show user's reserved parking slot.

7. Parking Dashboard:

Parking dashboard provides more efficient distribution of parking slots and by using this dashboard the parking owner can manage their parking slots. The parking owner can allocate or de-allocate a parking slot. The dashboard also shows reserved slots which can be allocated when the corresponding user verifies his details and confirms the selected slot.

Advantages and disadvantages:

Advantages

- It helps the visitors in finding out the availability of a parking slot, get the availability confirmed.
- It helps the parking owner to monitor the vacant slot availability so it can be used by the next person.
- The proposed plan saves the time of visitors in searching and booking a parking slot.
- The tedious job of parking owner to allocate the vacant slot in a methodical and organized manner is simplified as visitor himself chooses the suitable parking place for his vehicle and the process is made more efficient.

Disadvantages

- Continuous Internet connection – Android phones will require a continuous Internet connection alias active connection so that phone is prepared to accept GPRS packet that suits the needs.
- GPS location- GPS facility should be available in the phone so that location of the user can be traced and appropriate parking location can be prompted.

Future Scope:

This app is a small step to make city a 'smart-city'. This can be developed in future for a wide area like a state or a country so that it can help people on large scale. This app can be sold to the government so that the database for number of parking owners and the server capacity can be utilized. This app server data can be used by government for certain crime investigation details.

Conclusions:

As conclusion, the objective of online slot booking system have been achieved. The difficulty of searching available parking lots has been completely eliminated by reserving

lots via the proposed system. Users can get learn about parking areas for particular locations. It saves user time in search of parking space available in such a long parking area.

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