Vehicle Parking System

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Abstract: *Implementation of wireless technology for vehicle parking system" it provides a way of booking the parking slots through mobile phones to avoid traffic congestion in commercial areas that consumes much time. In this project the user can view various parking slots and check for their availability using the gps technology. This project aims at booking and canceling the slots with 20mims of the payment.the payment is made through online gateway modes. Hence this reduces the users effort and time of searching the parking slot and thus avoids traffic congestion.*

Keywords: Mobile phone, GPS, Car Parks, sensors

1. Introduction

We know that in India traffic is rapidly increasing and hence too much cars, too much traffic.and hence there is not enough parking space. This situation which is seen in the metropolitan cities like Delhi, Chennai, Kolkata. Today people keep roaming on roads for parking space to park their vehicles. Our project provides users a way of booking the parking slots through mobile phones. To avoid the traffic congestion in commercial areas that consumed much time, In this application the users can view various parking slots and check the availability. The payment is made online through online gateway modes such as PAYTM, Airtel wallet etc. Once success of the payment is done the booking of the parking slot is done. Hence this reduced the users effort and also avoid traffic congestion.

The vehicle follows its path towards the starting of the parking area. The user fixes his slots by showing his confirmation details to the concerned person at Parking area. After communicating, the vehicle will further follow its path to the allocated parking slot. After successful parking the slot details are updated simultaneously in the Administrators database. Finally the time to find for an empty parking slot is minimized. The main responsibility of the Wireless technology for Parking System is to help the user to find an area where parking is available and total number of slots free in that area. Thus our proposed methodology reduces the user's effort and time of searching a parking slot.

2. Problem Statement

We know that there are two types of parking management. First is a normal parking system and another is an automatic parking system. automatic parking system-is more efficient and less complex for both drivers and administers. The topic of the research includes as:
1) Determine the presence of cars in the parks
2) Using gps technology
3) Using the application on mobile phones

3. Scope Of Research

The parking space available to the given driver to park the vehicle renews the availability of the parking space when car leaves and it updates the parking control unit. vehicle detection technology is used to detect the entry and exit of the vehicle in the park.the user uses the intelligent parking application on its android phone to book the parking slot which is available.

4. Literature Review

The increase in number of vehicles on roads, traffic congestion increases . The current parking system in India is unable to cope with the increasing number of vehicles. So, it is necessary to a have an efficient parking system in big cities like Delhi, Kolkata, Chennai, Mumbai etc.
The various papers published are as:
- SMART PARKING SYSTEM BASED ON EMBEDDED SYSTEM AND SENSOR NETWORK published in **International journal of computer applications.**
- A-CLOUD BASED SMART PARKING SYSTEM published in **IEEE.**
- AUTOMATIC SMART PARKING SYSTEM USING IOT published in **International journal of scientific and research publications.**
- INTELLIGENT PARKING SYSTEM BASED ON IMAGE PROCESSING published in **World journal of engineering and technology.**

5. Requirements

The important requirements for having sufficient number of car parking mangement system are:
a) The location of the car parked should be easy to find in the street
b) Easy to enter and exit the park
c) It should be user friendly
d) Large park spaces should be available
e) Entrace of the car parks should be easily discovered.

6. Methodology

The method for deciding how to use a intelligent car parking mangement system, a number of genersl princlised are used:

- The drivers should have the ability to choose the most convenient park.
- The information about the availibilty of the parks shuld be given to users over the internet or thourgh the cellular network.
- The system should be cater for multiple users at a time
- Knowledge of number of parks needed shuld be properly known so that car parks are not unnecessarily built.
- It should be flexible.
- Prioritization of the commercial ares should be considered.
- It should be economical
- Security of cars is important
- Comprehenvise analysis is important.
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- Initially the slot selection is made by the user from the mobile phone. he checks the availability of a parking slot-that is nearest to his location it uses the GPS technology.
- If the slot is available he moves to the next page or else goes to the initial state
- It requests for transfer of money using the parking slot.
- The parking control unit gets the slot number
- If the payment is done, then the request slot is reserved by the user.

Figure 1: On screen display

7. Vehicle Detection at Car Parks

To implement a car parking management system sensors are used at entrance and exit of the park. sensors are also placed at cars parks to denote whether the car parks are vacant can be known.since the data, from the sensors may not be immediately known by the computers single processing is required so that signals may be transformed into a form which computer can read. the information received from all the sensors needs to gathered and processed by a computer so that drivers can know where available car parks are.

8. Conclusion

This smart parking is used to book parking slots without any great effort by the user using a mobile phone which works on wireless technology. The user can check the status of parking area and book the parking slot in advance. This will result in overcoming many problems which are being created due to the bad management of the traffic especially in metropolitan cities. . Mobile computing has proven as the best area of work for researchers in the areas of database .

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