

Cloud based Smart Parking System using Mobile Application

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Abstract:- Car parking is a major issue in most of cities in our country. The number of vehicles on road and the parking space available are not in proportion. This has led to the need for efficient parking management systems. Thus we demonstrate the use of IOT based parking management system that allows for efficient parking space utilization using IOT and cloud technology. The system will consist of mobile application for vehicle owner to search and book parking slots. We now use a Wi-Fi modem for internet connectivity. The system displays available parking slot on mobile app and user can book the slot from his app. Also there is one admin interface from where the admin can add parking slots according to location and area information. There is one more mobile app for the officer in charge at the parking who can see the booking status of vehicle and view bill for same. The system will work in real time environment using private cloud network. This allows users to check for available parking spaces online from anywhere and avail hassle free parking. Thus the system solves the parking issue for cities and get users an efficient IOT based parking management system.

Keywords: Resume parser, resume analyser, text mining, K-Mean

I. INTRODUCTION

India is an agricultural country, where most of the people depend on agriculture. Farmers have wide range of diversity to select suitable crop. Diversity in crops causes various diseases which restrict the growth of the plants, quality, quantity and productivity of plants. In order to obtain more good products, a product quality control is basically mandatory. Diseases in plants caused by infectious organisms, can damage the normal state of plants leaves. The diseases may cause by pathogen such as fungi, viral, bacterial and environmental condition. Therefore, the early stage diagnosis of plant disease is an important task. Sometimes farmers call the experts for detecting the diseases but this also time consuming and expensive. The occurrence of the disease on the plant may result in significant lost in both quality as well as quantity of agricultural product. This can produced negative impact on country whose economies are primarily dependent on the agriculture. Hence the detection of the disease in the earlier stages is very important to avoid the loss in terms of quality. Usually the methods that are adopted for monitoring and management of plant leaf disease are manual. Accuracy and patience needed, manually it is a combusive process. One such major approach is naked eye observation. But the requirement of this method is continuous monitoring of the field by a person having superior knowledge about the plants and its corresponding disease. Moreover appointing such a experience person would be prove costly. Another approach is to getting advice from the expert which may add the cost. Also the expert must be available in time otherwise it may result in lost. Automate diagnosis of diseases reduces a lot of work and makes it reliable too. The main aim of this system is to design, implement and evaluate an android based image processing solution for detection and classification of plant leaf disease. The system will be an android application which can be run on any android based smart phone. The application will require an internet connection to detect the disease and suggest remedy for the detected disease. The system will also have an admin who will be responsible for handling the dataset of infected plant leafs and maintain the proper remedy for the same. The farmer can take live picture of infected leaf from his smart phone and submit it for analysis.

1.2 Motivation:

In our daily life the traffic is occurred due to the location of parking slot so, we motivated that is any facility that can help us that we can booking a parking slot and getting a bill for that according to our time consuming and location of that parking.

1.3 Problem Definition:

“To design and develop a system which will allow vehicle owner to search and book parking slot for their vehicle at their intended location using a smart phone application. The system must also calculate in time and checkout time of vehicle and based on that it should calculate the cost of parking the vehicle”.

1.4 Objectives and Scope:

- 1) Using IOT and cloud environment bring all the Parking slots in the city under one roof.
- 2) To reduce time and efforts a vehicle owner needs to spend in searching a parking slot for his vehicle.
- 3) Allow user to pre-book parking slots for their vehicle according to their intended location
- 4) Create an effective parking system which will reduce traffic and fuel consumption in the city.
- 5) To automatically calculate the cost of parking based on vehicle in and out time

II. Literature Review

2.1 Web Based Survey:

This paper introduces the concept of using IOT and Cloud based technology in car parking services in cities. A high-level view of the proposed system is outlined. Our solution makes the ancient parking system smarter by leveraging the power of IOT and embedding it with the latest innovation of electronic sensors & computers. An IOT-based intelligent car parking system is described. A number of software solutions, including Python, PHP web gateway with MySQL database, Cloud based storage and mobile applications, are proposed to provide pleasant parking experience to mobile users. Also, Data generated by the sensors, Image detection cameras and mobile application will be used to gain insights by storing it in cloud foundry and applying Big Data analytics using Hadoop.system analysis.

2.2 PROPOSED SYSTEM:

To overcome the drawbacks of an existing system, We Proposed new system which is an “Cloud based Smart Parking System using Mobile Application”. This system provides the smart Parking System according to the vehicles types with the help of mobile application. So by using this System the problems related to the parking are solve so easily. Using this system the parking slot is automatically save according to the user selection. This system is used in such a places where the parking slots are difficult to find Ex. City mall, Municipal Corporation, Schools, Near Banking Area also, Bus stations, Railway Stations etc. this places have more traffics that occurring by the vehicles. So the system provides the smart parking using mobile application.

III. SYSTEM REQUIREMENTS SPECIFICATION

3.1 Hardware Requirements:

Hardware	Specification
Processor	Intel Pentium 4 Onwards
HardDisk	As per OS500MB of free hard disk space
RAM	512 MB

3.2 Software Requirements:

Software	Specification
Operating System	Windows-XP ,Windows 7 etc.
Developing Tool	Net beans IDE, Android Studio
Database	Serilization

IV. SYSTEM DESIGN

4.1 Block Diagram

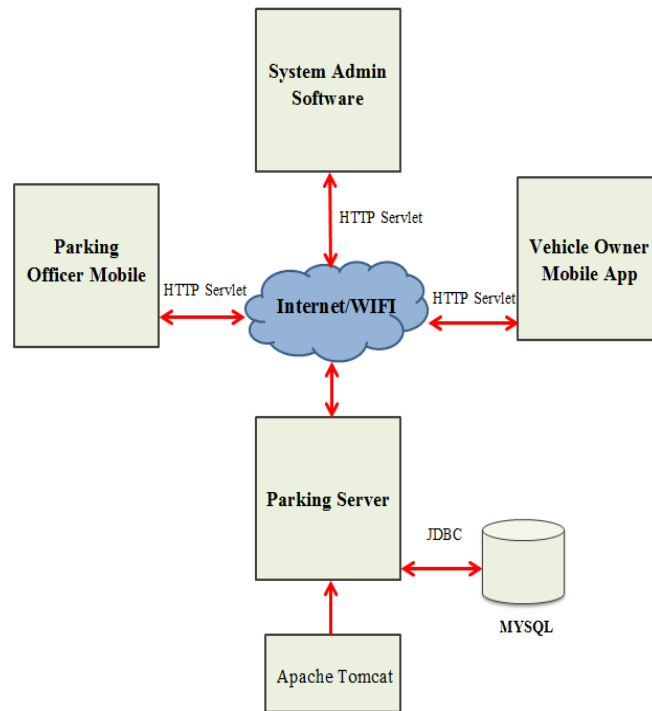


FIGURE 1 : BLOCK DIAGRAM OF SYSTEM

There are Three main Components in the System.

- 1) Admin Login
- 2) Add new parking slot
- 3) Edit previously added parking slots
- 4) Add Officer for parking slot
- 5) View reports

1] Admin login:

The Admin can login to the system. The Admin will manage the parking officer. The Admin will manage the remedy related to various slot.

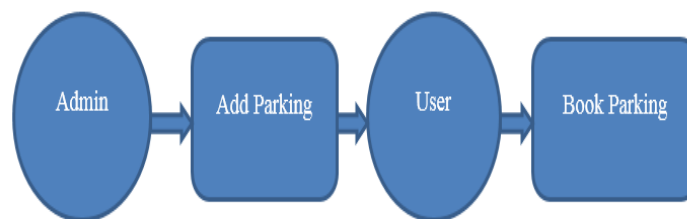
2] Add new parking slot:

The parking officer will be added from the admin side and the officer will get a username and password.

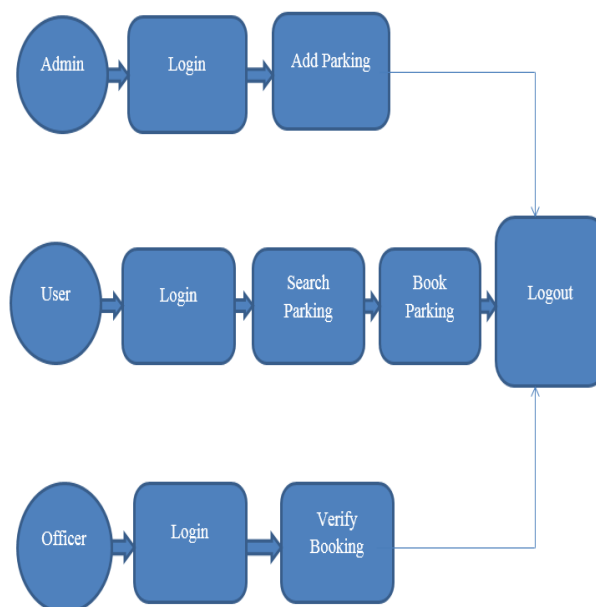
3] Server:

At the server side the processing on the infected leaf will be done.

4.2 DFD Diagram



In level 0 DFD input is an leaf Image then analysis process is done on that infected leaf the output result is as parking result



In level 1 DFD Admin is login to the system for to add the parking slot. After that the User can login to the Smart parking application for to search the parking slot to book it. Also, officer can login to the system for verify if the slot is allocated or not. After that Admin, User and Officer can logout from the system with the help of mobile application.

V. IMPLEMENTATION DETAILS

5.1 Implementation Details:

5.1.1 Methodologies Used:

1. User verification unit: The verification of the User is done here; a Smart Parking Application is given after the verification.
2. Login: Username & password for security purpose.
3. Authentication: Is done for to check the details of the system
4. Mobile Application: Is used for to GUI interaction.
5. Admin is used for to add the User and Officer login in the system to access the System Information
6. Server is used for to checking the details of the Admin, User and Officer to update the database.

CONCLUSION

Increase in use of vehicle has greatly affected the traffic and fuel consumption in country. The increase in number of vehicle has direct effect on the traffic system of the city. This gives rise to the problem of vehicle parking in cities and vehicle owner or drivers need to fetch the parking slots throughout city without any knowledge whether the area they are visiting has space for parking their vehicle or not. This increases chances of more traffic on road and more fuel consumption. Thus our proposed system aims at solving this aspect of society by providing a mobile application to vehicle owners or drivers via which they can easily find place for their vehicle for parking. The proposed architecture will greatly contribute in reducing the unwanted vehicle parking at road side and will contribute in lowering the traffic rate. Also vehicle owner or driver if knows the location where he need to park his/her vehicle in advance will reduce his traveling time and fuel consumption.

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