

Smart Parking System Using IOT Prediction United With Algorithm

#¹Annasaheb Bhoge, #²Dipali Dand, #³Komal Darekar, #⁴Sneha Sorde



¹annasaheb.bhoge55@gmail.com

²dipalidand123@gmail.com

³komaldarekar097@gmail.com

⁴s.sorde22@gmail.com

#¹²³⁴BE, Department of Computer Engineering

ICOER, Wagholi, Pune, Maharashtra, India.

ABSTRACT

Today's world is of internet. Internet is a thing which is making our lives easier as well as faster. The use of smart phones has tremendous applications. The IoT (Internet of things) platforms allow us to connect the sensors with the internet. Hence using this we can implement many applications. The parking system is one of them. In the great majority of cities it is difficult and hardly expensive to create more parking space for vehicles in the grate majority of cities it is difficult and hardly expensive to create more parking space for vehicle since they have almost reached its full occupancy combining these problem with an insufficient use of parking space leads to conjugation due to aggregation of parking seeks and regular drivers recent advance in low cost low power embedded system bring the opportunity to develop new application to solve these application in particular smart city greatly in reach there sustainability by introducing new resource management applications that rely in those constrain devices a significant part of the system

Keywords: Internet of things (IoT), Google maps, Raspberry pi 3,RFID Reader, RFID Tag, Sensor, Android App

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I. INTRODUCTION

The "Internet of things" (IoT) is becoming an increasingly growing topic of conversation both in the workplace and outside of it. It's a concept that not only has the potential to impact how we live but also how we work. But what exactly is the "Internet of things" and what impact is it going to have on you, if any? There are a lot of complexities around the "Internet of things" but it is necessary to stick to the basics. Lots of technical and policy-related conversations are being had but many people are still just trying to grasp the foundation of what the heck these conversations are about. The Internet of Things (IoT) is a computing concept that describes a future where every day physical objects will be connected to the Internet and be able to identify themselves to other devices. The term is closely identified with RFID as the method of communication, although it someone don't find the right place for parking, so it may get resulted into frustration. This type of situations may increase accidents, pollution and also can wastes the valuable time of commuters. In the process of searching a parking place, driver has to slow down the speed of vehicles which increases the traffic. Many people avoid taking their own vehicles while going to

market only because they fail to find a place for parking. Also the space finding process consumes lot of fuel. Hence to solve all these problems this paper will give a solution i.e. "Smart Parking System Using IOT United With Prediction Algorithm".

II. LITERATURE SURVEY

Sr. No	Paper Name	Author	Journal	Observations
1.	Parking easier by using context information of a smart city.	• Juan rico • Juan sancho	IEEE 2013 International conference on N/W	• It avoids conflicts between online and onsite concurrent reservation. • Time Consuming
2.	Parking guidance system based on ZigBee and geomagnetic sensor technology	• Fengli Zhou • Qing Li	IEEE 2014 Transaction	• Induction coil replaced by sensors • Complexity(Circuit Board)
3.	IOT based smart parking system.	• Rishi anand • Abhirup khanna	IEEE 2016 International conference on IoT	• Remote Access • No Scalability • No Reusable Area

III. PROBLEM STATEMENTS

In current system of parking we have to go to parking area and see is there any parking available or not this is time consuming sometime we didn't get parking area. For overcoming above problem we are trying to implement system by using which we can book the parking area from remote location.

IV. OVERVIEW

The system which is implementing includes mainly three parts. One is sensor network which will continuously give the information about the availability of the parking places. Second part of the system will be the processing the data we are getting from the sensors and also the location of user requesting for the parking places and algorithm to find the nearest available vacant place. The last and most important part of our system is the user interface which will be the android application. This will be the user friendly application to find the parking place for them. Whenever user wants to search for the parking place, android application will help to find it.

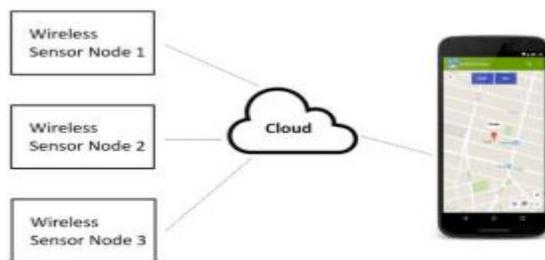


Fig. 1 Overview of the system

V. METHODOLOGY

The project consists of three main modules.

1. Data Collection Module
2. Data Processing Module
3. Data Display Module

A. Data Collection Module: This is the first module in our system. In this module, wireless sensor nodes are used to collect the data. Wireless sensor node consists of ultrasonic sensor, power supply, GPS module and Raspberry pi. At each place, this wireless sensor node is placed to detect the vehicle. Whenever there is a car in front of the node, it cuts the ultrasonic waves from the node and the waves get reflected back to the node indicating that there is a vehicle. These values are then uploaded on the cloud i.e. on Thing speak.

B. Data Processing Module: Next module is the data processing module. In this, Thing speak gets the sensor values from the node and it processes it to display the graphs of availability and no availability of the places. Cloud finds the coordinat of the vacant places only and it

sends that coordinates to Android application. The coordinates of vacant places are useful for the next module to display the vacant places on Android application.

C. Data Display Module: This is the last and most important module in our system.

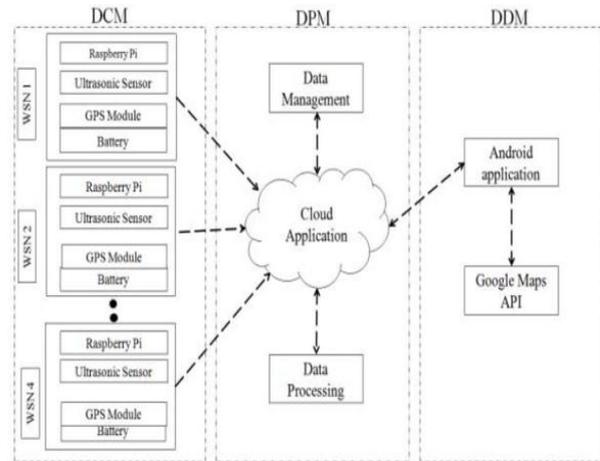


Fig.2 Block diagram

This is the user interface module. Whatever we have done in last two modules, that module's output should be accessible to the user so that user can easily find the vacant places. Android application maps the values from the cloud with the Google map and it will display the user friendly information regarding vacant places. As Raspberry pi is a newly introduced device which operates with the operating system. Very less information sources are available on It.

VI. ARCHITECTURE

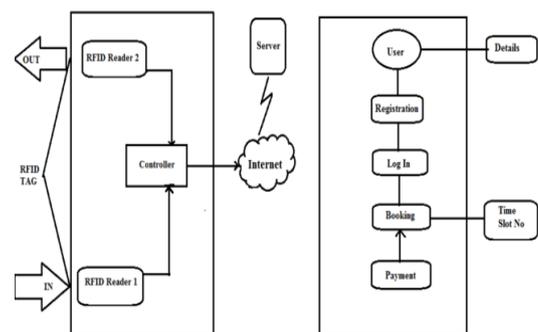


Fig: Architecture Diagram

VII.RESULT

With the advancement in new technologies in embedded system like introduction of various microcontrollers and evolution of new domain 'Internet of Things', it is feasible to have a system which can resolve the problem of parking of two wheelers or four wheelers in crowded areas. With this system, user will come to know about the parking availability by using our android application.

VIII. CONCLUSION

The integration of different technologies into a single application increase the functionalities served and help to dynamically update the application so as to be more accurate than existing solutions. The mechanisms dened for allowing on line reservation are based on updated information thus avoiding conicts between on line and on site concurrent reservations.

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