IOT Based Reserved Car Parking Slot Using Android Application

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Abstract- *Parking conflict has been continuously concerned as analytical problem issue and raised to be solved in the car parking system. Not even the mobile parking guidance-emerged during the last two year , have paid much more effort to solve this problem as well.There are several guidance techniques proposed in the research community however parking conflict resolution have not yet well prepared. Therefore, this paper proposes a reserved car parking system using android application and presents that it can tolerate to the parking conflict or reduce the parking conflict problem. Moreover, an experiment of testing the proposed recommendation with the previous guidance techniques - including Content-based and constraint-based recommendation was conducted in order to ensure that it can reduce the parking conflict as well as enhance the capability in recommending a parking lot in the mobile car parking system. A parking system has become a pivot system and necessary for all community and workplace-especially, convention hall, office building and department store, the functional development of system.*

Keywords- Android application; parking lot system; parking guidance.

I. INTRODUCTION

Now a days parking system has become a major problem and necessary for all workplace-especially, convention hall, office building, theatres, malls, colleges and department store, The functional development of this system has been evolved not only to serve operational staff but also car driver as user who really wants to use this system as well. However, an appropriate infrastructure of parking area should be set up properly and easily access. Especially in the parking system, accessing to the system for finding a parking lot is required several times. In the system using Android application save the several time and reduce human efforts. Therefore, the mobile application is initiated for facilitating the users to send and receive parking lot information, faster. However in addition to the access for asking parking lot, the users usually want to access this system for notifying their problems.

This system is used to show the status of every parking available by applying this system we can reduce the stress and time for the driver where looking for the parking.

We need to have a parking which is coming with the sensors and this sensor is going to connect the data to a certain cloud system to see the parking available.

We have to used four parking lot and every parking we can see the status of that parking. When one car is park now the information is display an Android application mean the parking lot is busy. We use an ultrasonic sensor for every parking lot when car was park the it shows that it is busy show on Android application.

II. LITERATURE SURVEY

[1] "User preference recomndation on mobile car parking application,"Author:B.SeizureC.Wan,D.Saelim,P.Meechoosup and K.Mar Win, This paper proposes a mobile car parking application that can recommend a parking slot to the car driver. We studied that which the user preference was the suitable content used in recommending of the parking system context and implemented it to ensure that it could work with the acceptable performance. An experiment was set up to verify entire functional accuracy, especially for the recommendation module. [2] "An Improved Localization System with RFID Technology for a Mobile Robot" Author: Joon -Woo Lee, and Ju-Jang Lee. This paper proposes an improved localization scheme for self-localization of an mobile robot by fusing RFID localization system and ultrasonic measurements. The novel localization system for an indoor mobile robot is proposed to improve the efficiency of mobile robot system. [3] RFID-Based Intelligent Parking Management System with Indoor Positioning and Dynamic Tracking Author: Yuan-Tsung Chang, Timothy K.Shih*In this paper we present a novel intelligent parking management system. The proposed system uses RFID wireless technology, real-time license plate recognition, automatic gates with PLC control, and integrate parking guidance systems. [4]Localization and Map-building of Mobile Robot Based on RFID Sensor Fusion System Author: Byoung-Suk Choi*,

Joon-Woo Lee and Ju-Jang Lee, In this paper, we propose an improved localization system for an indoor mobile robot using RFID (Radio Frequency IDentification) system and wheel encoders. Nowadays, RFID technology is widely used in the robot field. We investigate recent RFID localization system based on (passive) tag-floor for mobile robot, and analyze the problems and limitation of previous researches. [5] RFID Security and Privacy: A Research Survey Author: Ari Juels. This paper surveys recent technical research on the problems of privacy and security for radio frequency identification (RFID). RFID tags are small, wireless devices that help identify objects and people. [6]Tracking Autonomous Entities using RFID Technology Author:Ricardo Tesoriero, José A. Gallud, María D. Lozano, Víctor M. R. Penichet In this article we propose a tracking indoor system based on passive RFID technology that is able to accurately locate autonomous entities, such as robots, people, etc, within a defined surface. In order to validate the proposal, we compared our system technology performance against other alternatives built on different technologies (Wi-Fi, Bluetooth, IrDA, ultrasound, etc).

III. PROPOSED SYSTEM

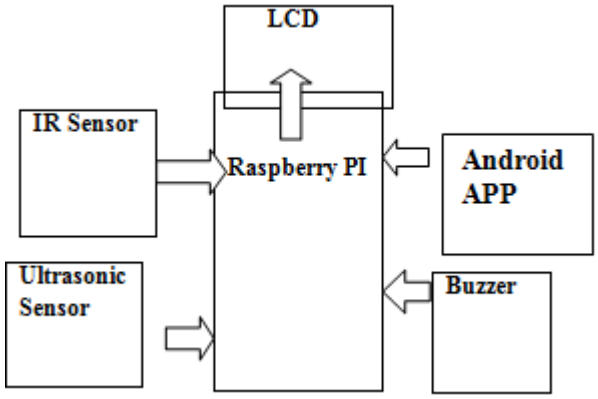

Fig.1 Block Diagram of Parking Slot

Fig.1 shows the block diagram of parking slot. The basic operation of the parking system is explained as: when a vehicle in the parking lot, LCD displays, if the space is available in parking lot or not. The IR sensor used to detect car in parking. If car is present then it shows on cloud as that parking slot is allowed if not allowed then it will shows that parking slot empty. Using the IR sensor in each parking slot, it detect the presence or absence of a vehicle. IR sensors are placed inside the parking slot to detect the presence of the vehicle in slot. An Ultasonic sensor is used to measures distance to an object. Ultrasonic sensors are place at the slot of the parking to detect the cars entrance and leaving the slots. Ultrasonic sensor placed at the parking slots send signal to controller with information about empty or full slots. Buzzer serves as the output indicators of the device. When sensor detected a vehicle, then the controller will blink the red LED and activate the buzzer alarm. If any other person parking their car in booked slot then alarm will get buzzed periodically for some time as per set. Using Android application we can reserve the parking lot. We can reserve parking slot from any location.

IV. RESULT AND DISCUSSION

Fig.2 shows the parking lot. In this work, IOT based smart parking system has been proposed which integrates several physical devices to check the parking slot availability. Fig.3 shows the login and registration page of Android application. In figure shows on the Android application starting page user login and registration. We use the Android application for reserving the parking slot. We can see the parking area from any location and also reserved this area from any location. Application modules are registration, login, parking slots selection. App also supports current booking and advance booking. In this Android application parking slot allocation as well as registration process can be done. In Android application we used four parking lots first of all there are the registration and login page which have to register and then used. Then we have four parking lots if we want to reserve parking lot1 then click on parking lot1 and reserve and this was how the parking lot is reserved.

For future purpose storing the history of every parking is very important here in our application we have a report which can be generated and is lifetime report recorded all the information for future reference.

Fig.2 Diagram of Parking Slot

Login page

Registration page

Fig.3 Login and Registration Page of Android application

V. CONCLUSION

Intelligent parking guidance system is a very complex and huge system, so it is difficult to carry out the system of testing. Therefore, the system is only testing in the simulation of the parking environment, and achieves the desired results. The limitation of this system is that the sensor nodes are few, and the map of parking lot is simple .The future work is to increase the number of sensor nodes, to find some of the relatively small parking in the test experiments, while continuing to beautify and improve the parking management interface, which can further test the practicability of the system.

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