HI-TECH INSTITUTE OF ENGINEERING AND TECHNOLOGY

GHAZIABAD

Department of Electronics & Communication Engineering

(Session: 2017-18)

Synopsis

On

Parking Information System

Under the Guidance of

Mrs. Sakshi Mehra
(Assistant Professor-ECE Department)

Submitted To:

Mrs. Anuja Gupta

(Project Coordinator)

(ECE Department)

Submitted By:

Manish Kumar (1422031017)

Rajat Tyagi (1422031023)

Rocky Bhushan (1422031024)

Upendra Kumar Bind (1422031028)

B.Tech 4th Year ECE

INDEX

Sr. No.	Topics	Page No.
1	Introduction	3
2	Research Work	4
3	Block diagram	5
4	Components Used	6
5	Working	7
6	Advantage & Applications	8
7	Future Scope	9

1. INTRODUCTION

This project deals with the Parking Information of vehicle in parking lot. This project is very helpful to both owner of parking lot as well as to the public. Parking information is displayed on server. And it is easily accessible by public.

Now days in many multiplex systems there is a major problem of car parking system. There are many lanes for car parking, so to park a car one has to look for the all lanes. Moreover, there is a lot of labor involved for this process that cost lot of investment. So the need is to develop a system which indicates directly which parking slot is vacant in any lane. The project involves a system including transmitter and receiver in every slot of the parking. So the person entering parking area can view the parking website and can decide which lane to enter so as to park the car.

Conventional, car parking systems does not have any intelligent monitoring system. Parking lots are monitored by human beings. All vehicles enter into the parking and waste time for searching for parking slot. Sometimes it creates blockage. Condition become worse when there are multiple parking lanes and each lane have multiple parking slots. Use of automated system for car parking monitoring will reduce the human efforts. Display unit is installed on website or app of parking lot which will show colors for all Parking slot and for all parking lanes. Empty slot is indicated by the respective Green slot. And occupied slot is indicated by Red slot.

Parking system is based on microcontroller and sensor. This process is quick and efficient. We are going to use

Ultrasonic transmitters and Receivers for each parking slot. The Ultrasonic Sensors are connected to Arduino. Ultrasonic rays are obstructed when a car is parked in any parking slot. Thus, data will be shown on server, which slot is empty and which slot is full.

2. Research Work:

2.1 Existing System Features

- Parking is full or vacant is indicated by Led.
- In most of the cases the Seven segment display at the entry gate, which indicated how much parking if vacant.
- It is very difficult to analyze which parking is full or vacant.

2.2 Purpose

In parking management situations, we are dealing with parking information objectives such as:

1. This project can be used for parking system in any shopping mall, multiplex, industries, commercial offices and education institutes.
2. Save space, time and money.
3. To optimize the allocation of human and material resources towards.
4. To find parking slot in cluster of parking.

2.3 Proposed System Features

In this project we are trying to implement the information of parking lot as the parking is available or not, display in server or website/app. So, it is easy for public to see the parking

information at the website, if parking is available then online payment for the parking lot after that enters into parking lot and park vehicle. And secure our vehicle by barrier. It is a dynamic approach to see the parking information. This leads to save time and money.

3. Block Diagram:

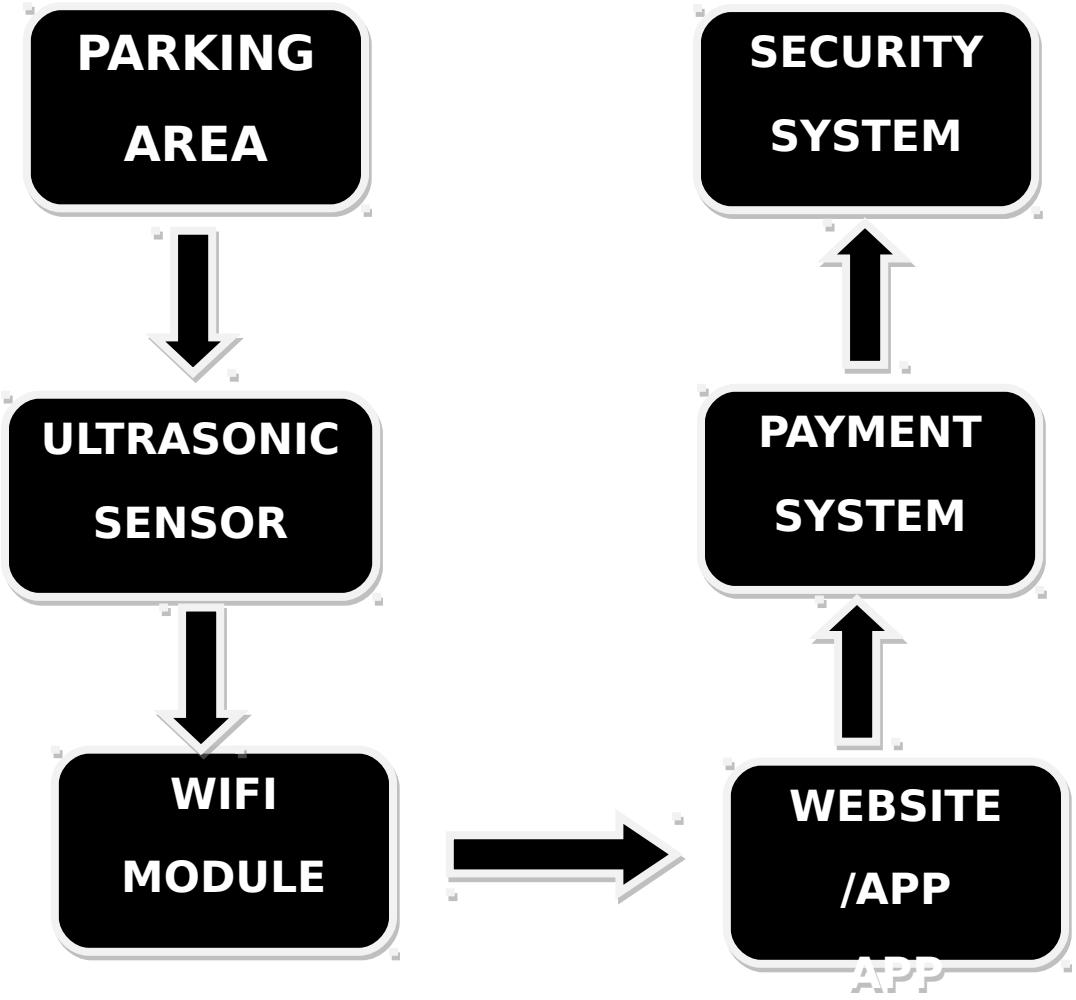

Fig. Block diagram of parking information system

4. Components Used:

4.1 Hardware Used

1. Arduino Uno
2. Esp8266 Wi-Fi module
3. LD33V (3.3V voltage regulator)
4. Ultrasonic Sensor
5. Node MCU Module
6. Stepper Motor

4.2 Software Used

1. Thingspeak Channel
2. HTML Language
3. Java Script
4. PHP
5. Payment Gateway

5. Working:

In this project we are trying to implement the information of parking lot as the parking is available or not, display in website or android app. So, it is easy for public to see the parking information at the website, if parking is available then online payment for the parking lot after that enters into parking lot and park vehicle. And secure our vehicle by barrier. It is a dynamic approach to see the parking information. This leads to save time and money.

Parking system is based on microcontroller and sensor. This process is quick and efficient. We are going to use Ultrasonic transmitters and Receivers for each parking slot. The Ultrasonic Sensors are connected to Arduino. And Arduino is connected with Wi-Fi module. Ultrasonic rays are obstructed when a car is parked in any parking slot. And signal is sent to Arduino. With the help of Wi-Fi module data is sent to server.

We are using thingspeak Write API for uploading the data on thingspeak channel. Website will indicate directly which parking slot is vacant in any lane. Empty slot is indicated by Green and occupied slot is indicated by Red.

So the person entering parking area can view the parking website, if parking is vacant then he/she will online pay for parking slot, then enter into parking lot and park its vehicle. A security features is also available. You can secure your vehicles by barrier. Once you pay for parking, a button is available on parking website; onclick the button the barrier will activate and secure your vehicles.

This project can be used for parking system in any shopping mall, multiplex, industries, commercial offices and education institutes.

6. Advantages & Applications :

1. Save space, time and money.
2. This project can be used for parking system in any shopping mall, multiplex.
3. Can be used for industries, commercial offices and educational institutes.
4. Important factor in traffic areas.
5. Automated without human being.
6. Online payment for parked vehicles.
7. Security increases for parked vehicles
8. Optimize management of Parking slot.

7. Future Scope :

1. This can be expanded in the sense of security. Using CCTV cameras security of the parking area can be enhanced.

2. We can add pick and place facility to park the cars automatically.

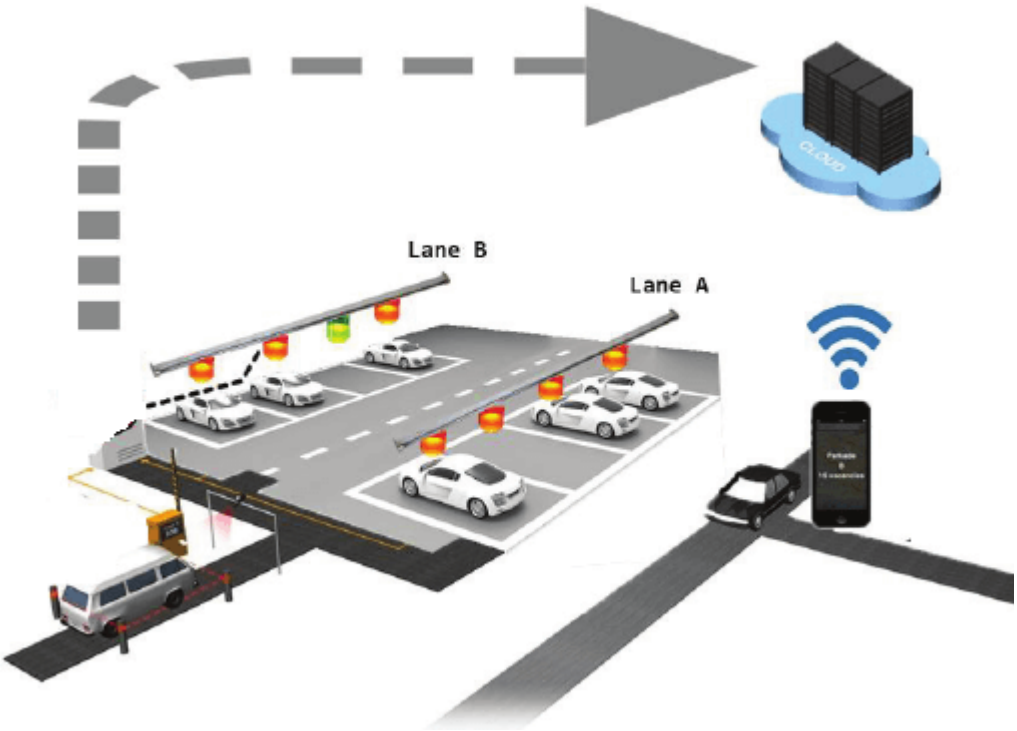

Fig. Parking information system