

# **RFID TAG SMART DEPLOYMENT AND ELECTRONIC BROADCASTING**

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## **ABSTRACT**

This project's primary goal is to develop a solution for parking problems that arise in public areas, such as shopping centers, multiplexes, etc. especially during the weekends. The objective is to do this through the use of the Internet of Things (IOT) concept, in which an Android application is developed for the user, whose information is continuously updated by the local hardware/server. Each automobile has a unique identification number, available parking spaces are displayed on the cell program, bookings can be made for the same, and a database is maintained (for the management).

**Keywords: IR Sensors, Esp 32, Wi-Fi, Servo motor, Rfid &Internet of Things.**

## **I.INTRODUCTION**

The parking problem causes air pollution and traffic congestion. In today's scenario, parking space is hard to search in a day to day life for the people. According to the recent survey, there will be a rapid increase in the vehicle's population of over 1.6 billion around 2035. Around one million barrels of world's oil is being burnt everyday. Thus, smart parking system is the key solution to reduce the waste stage of the fuel. The solution for the problems that is being raised. The smart parking can be a solution to minimize user's time and efficiency as well as the overall cost of the fuel burnt in search of the parking space. In this, the data is collected from the sensor and through analyzing and processing, the output is obtained.

## **II. LITERATURE SURVEY**

S.Pandikumar and R.S. Vetrivel, presents GSM based outline of smart home controlling framework in IoT Condition.

This framework empowers the clients to control and screen savvy gadgets through internet and furthermore it creates an interface amongst clients and savvy home by utilizing GSM what's more, web advances, or it can state that it makes GSM based remote correspondence from the web server into the savvy home. Clients give charges through web then the clients sources of info are changed over into GSM-SMS charges, at that point these summons are sent to embedded system module. This installed framework straightforwardly interface with gadgets through GSM network , lastly the client summons are parsed and executed by microcontroller to control any electronic articles like home machines, lights, and so on and it sends the acknowledgement.

GauravTiwari and RiyazKazi, exhibit Autonomic Shrewd Sensor Interface for Industry in IOT Environment. Sensors are for the most part compelled by the device due to the present connect number, sampling rate, and signal types. In the event that required to associate gadgets required to compose confused and cumbersome information gathering programming code. This issue is tackled by outlining the shrewd sensor interface for mechanical WSN in IoT condition, in this field programmable gate array (FPGA) is received as a core-controller.

S. Liet.al this paper introduces an EIS combination plot in cloud administrations. The advances in hybrid wireless networks and cloud computing technologies makes it conceivable to build up a coordinated plan that can flawlessly incorporate these new advances into existing EISs. In this article,

by taking the elements of half and half remote systems and distributed computing into thought, they propose a cloud-based administration arranged undertaking data framework, which incorporates frontend layer, center layer, and backend layers associated to IP EISs. In light of a communitarian design, a cloud administrations administration structure and process outline is exhibited. In our future works, we will execute the proposed system over Swan Mesh stage by incorporating the UPnP standard into an enterprise information system.

### III.EXISTING METHOD

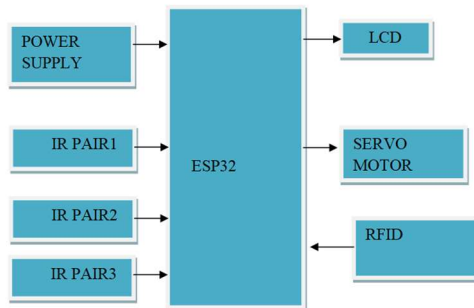
In advance structures presence of a system was vital for control of parking slots i.e. for checking to be had parking slots, occupied parking slots, allotment of slots for brand spanking new coming vehicles etc. As this is done manually this may once in a while be misguided and time eating manner. There are many problems faced by using the customers. Some of them needed to watch for a long time for the allotment of slots, whilst parking visitor's increases manifold. This might also growth outdoor visitors as nicely. The other trouble isn't any proper prices. Details of number of cars getting into and leaving the parking region may additionally or won't be to be had with the parking group of workers. This reasons inconvenience to the customers as well as group of workers managing the system.

### IV.PROPOSED METHOD:

In this paper, the aim is to achieve proper parking system by using the concept of Internet of Things (IOT), wherein an

Android Application is created for the customer, whose details are constantly updated by the hardware/server at the location. The features include unique identification for each vehicle, display of available parking slots on the mobile application, possibility of making reservations for the same, maintenance of a database (for the management).

## V.BLOCK DIAGRAM



## ESP 32



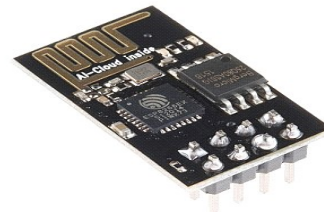
ESP32 based boards come in a variety of shapes and sizes and pinout of each board is different to other. Also, not all pins of the ESP32 Microcontroller SoC will be available on a development board as some

pins might be permanently tied to a dedicated function.

One such case is the Flash Memory. We know that all ESP32 boards come with 4 MB of Flash Memory to store the programs. So, some of the GPIO Pins (6 to be specific) are connected to SPI Flash IC and those pins cannot be used as regular GPIO Pins.

Hence, it is important to understand the pinout of popular ESP32 boards so that you will know what pins are available for use in projects.

## WIFI MODULE ESP8266



The ESP8266 WiFi Module is a self contained SOC with integrated TCP/IP protocol stack that can give any microcontroller access to your WiFi network. The ESP8266 is capable of either hosting an application or offloading all WiFi networking functions from another application processor. Each ESP8266 module comes pre-programmed with an AT command set firmware, meaning, you can simply hook this up to your Arduino device and get about as much WiFi-ability as a WiFi Shield offers (and that's just out of the box)! The ESP8266 module is an extremely cost effective board with a huge, and ever growing, community.

This module has a powerful enough on-board processing and storage capability that allows it to be integrated with the sensors and other application specific devices through its GPIOs with minimal development up-front and minimal loading during runtime. Its high degree of on-chip integration allows for minimal external circuitry, including the front-end module, is designed to occupy minimal PCB area. The ESP8266 supports APSD for VoIP applications and Bluetooth co-existence interfaces; it contains a self-calibrated RF allowing it to work under all operating conditions, and requires no external RF part.

### RFID (radio frequency identification)



RFID (radio frequency identification) is a form of wireless communication that incorporates the use of electromagnetic or electrostatic coupling in the radio frequency portion of the electromagnetic spectrum to uniquely identify an object, animal or person. Use cases for RFID technology

include healthcare, manufacturing, inventory management, shipping, retail sales and home use.

RFID and barcode technology are used in similar ways to track inventory, but three important differences make each one a better choice in certain situations:

- RFID tags do not require a direct line of sight to be read.
- Data stored in an RFID tag can be updated in real-time. In contrast, bar code data is read-only and cannot be changed.
- RFID tags require a power source. In contrast, bar codes only require the technology reading the bar code to have a power source.

### SERVO MOTOR:



A **servo motor** is a type of motor that can rotate with great precision. Normally this type of motor consists of a control circuit that provides feedback on the current position of the motor shaft, this feedback allows the servo motors to rotate with great precision. If you want to rotate an object at some specific angles or distance, then you use a servo motor. It is just made up of a simple motor which runs through a **servo mechanism**. If motor is powered by

a DC power supply then it is called DC servo motor, and if it is AC-powered motor then it is called AC servo motor. For this tutorial, we will be discussing only about the **DC servo motor working**. Apart from these major classifications, there are many other types of servo motors based on the type of gear arrangement and operating characteristics. A servo motor usually comes with a gear arrangement that allows us to get a very high torque servo motor in small and lightweight packages. Due to these features, they are being used in many applications like toy car, RC helicopters and planes, Robotics, etc.

Servo motors are rated in kg/cm (kilogram per centimeter) most hobby servo motors are rated at 3kg/cm or 6kg/cm or 12kg/cm. This kg/cm tells you how much weight your servo motor can lift at a particular distance. For example: A 6kg/cm Servo motor should be able to lift 6kg if the load is suspended 1cm away from the motors shaft, the greater the distance the lesser the weight carrying capacity. The position of a servo motor is decided by electrical pulse and its circuitry is placed beside the motor.

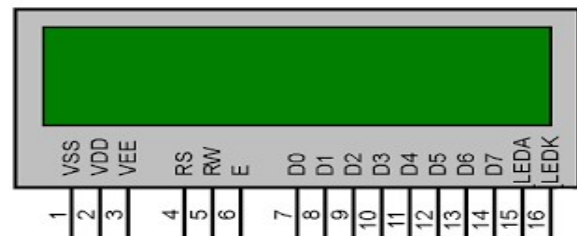
## IR SENSOR



An infrared sensor is an electronic device, which emits in order to sense some aspects

of the surroundings. An IR sensor can measure the heat of an object as well as detects the motion. These types of sensors measure only infrared radiation, rather than emitting it that is called a passive IR sensor. Usually, in the infrared spectrum, all the objects radiate some form of thermal radiation. These types of radiations are invisible to our eyes that can be detected by an infrared sensor. The emitter is simply an IR LED (Light Emitting Diode) and the detector is simply an IR photodiode that is sensitive to IR light of the same wavelength as that emitted by the IR LED. When IR light falls on the photodiode, the resistances and the output voltages will change in proportion to the magnitude of the IR light received.

## LCD



It is called Liquid Crystal Display. We are going to use 16x2 characters LCD. This will be connected to microcontroller. The job of LCD will be to display all the system generated messages coming from the controller. LCD will provide interactive user interface. This unit requires +5VDC for it proper operation. This module is used for display the present status of the system.

## VI.RESULT



The demand of smart parking system is increasing significantly. This allows user to involve real time access of the availability of the parking space. The existing system in today's world doesn't contain the facilities of parking reservation and parking slot availability checker. The existing system was vision-based monitoring system [7] which estimates the number of the parking slots available in the area by counting the number of incoming and outgoing cars which consumes lot of time and efforts.

The next existing system was sensor-based system which uses ultrasonic sound waves for detecting the presence of vehicles and then two-tier parking came into existence which used the concept of parking cars one above another. The result of the paper is to make the parking area connected with the world as well as reduces time and can be cost effective for the user. The result of this paper is to reduce car theft. This paper

reduces overall fuel energy of the vehicle which is consumed in the search of the car.

## VII.CONCLUSION

Smart city ideas have long been a pipe dream. The concept of a smart city has become a reality thanks to developments during the last few years. The development of cloud computing and the internet of things has opened up new opportunities for smart cities. The foundation of building smart cities has always been intelligent parking infrastructure. The parking space information and process are provided in real time by the system. The performance of saving users time in finding a suitable parking spot is improved by this study. It aids in the solution of the escalating traffic congestion issue. In the future, users will be able to reserve a parking spot from a distance. In the future, GPS, reservation capabilities, and a license plate reader may be included.

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