**IoT based Smart Parking System**

The project aims at designing an advanced smart parking system using IOT technology. This project enables simplified parking system with display smart phone as display. In this system we use IR obstacle sensors as vehicle presence detection and these sensors are connected to Microcontroller. Microcontroller sends the status of all IR sensors to esp8266 IoT WiFi module (web server). We can connect to this web server using IP address from any other wifi enabled smart phone of laptop. Browser displays the status of parking slots in realtime.

Automation is the most frequently spelled term in the field of electronics. The hunger for automation brought many revolutions in the existing technologies. These had greater importance than any other technologies due to its user-friendly nature. These can be used as a replacement of the existing switches in home which produces sparks and also results in fire accidents in few situations. Considering the advantages of Wi-Fi an advanced automation system was developed to monitor the status of parking slots.

Wi-Fi (Short for **Wi**reless **Fi**delity) is a wireless technology that uses radio frequency to transmit data through the air. Wi-Fi has initial speeds of 1mbps to 2mbps. Wi-Fi transmits data in the frequency band of 2.4 GHz. It implements the concept of frequency division multiplexing technology. Range of Wi-Fi technology is 40-300 feet.

The controlling device for the monitoring in the project is a Microcontroller. The data collected by the Microcontroller. Microcontroller reads the data and sends the data over wifi to the IOT web page. The Microcontroller is programmed used embedded ‘C’ language.

The Major building blocks of this system are:

1. PIC Microcontroller with Regulator Power Supply
2. IR obstacle sensors
3. Esp8266 as WiFi IoT module
4. 20MHz Crystall Oscillator
5. LED Indicators

**Block Diagram:**

