# Smart Parking System

In recent research in metropolitan cities the parking management problem can be viewed from various angles such as high vehicle density on roads. This results in annoying issues for the drivers to park their vehicles as it is very difficult to find a parking slot. The drivers usually waste time and effort in finding parking space and end up parking their vehicles finding a space on the street which further leads to space congestion. In worst case, people fail to find any parking space especially during peak hours and festive season.So our project gives the solution of that problem. It will has informed to driver in advance about the free parking slot on Web Application.

NodeMCU, IR sensors, and servo motors are the main component of this project. One IR sensor is used at entry and exit gate to detect the car while two IR sensors are used to detect the parking slot availability. Servo motors are used to open and close the gates according to the sensor value.As soon as the IR sensors get the presence of a car in front of the entrance, it will send signal to the NodeMCU to check if there is an empty slot inside the parking lot. When NodeMCU acknowledges that there is an empty slot or more then it will send a signal to the dc servo motor which will open the main entrance. On the other hand if an NodeMCU encounters no empty slots at the time of a car trying to make an entrance, the gate will just not open. In addition, there will be a website linked with the NodeMCU board to show the number of parking.

The main proposed of this project is to reduce the traffic jam that occurs in the urban areas which are caused by vehicles searching for parking.This parking system can be implemented in all of the major buildings in the cities such as malls, bus stands,metro and railway stations,court and collages etc. This would help us in reducing and managing the space congestion and fuel wastage problems which have become the major problems we are facing.This system consist of IR sensors to monitor the empty space for parking.

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