**IOT Parking System**

Car parking is a major issue in modern congested cities of today. There simply are too many vehicles on the road and not enough parking space. This has led to the need for efficient parking management systems. Thus, we demonstrate the use of IOT based parking management system that allows for efficient parking space utilization using IOT technology.

**Minimum requirements [25 marks]: you must put all things in a simple model/maquette.**

1. Detect if each parking area is empty or not (only 2 parking area) [5 marks].

2. If parking area empty so the led will be turned on so that you can park your car in any of the lightened areas [5 marks].

3. There is a door for the garage which is closed by default and if there’s no lightened parking areas [5 marks].

4. Open the door when a car wants to enter the parking and there are empty parking area and when a car wants to leave the parking [5 marks].

5. Mobile/Web app to display and monitor the parking [5 marks]. Any innovation or creativity will be regarded and graded as bonus.

Any innovation or creativity will be regarded and graded as bonus.

**Hardware Components:**

1. **ESP32 Development Board**
2. **IR Sensors** (for detecting parking space occupancy)
3. **LEDs** (for indicating available parking spaces)
4. **Servo Motor** (for simulating the garage door)
5. **Relay Module** (for controlling the garage door)
6. **Ultrasonic sensor**
7. **Power Supply**