

SMART PARKING SYSTEM FOR CIT CAMPUS

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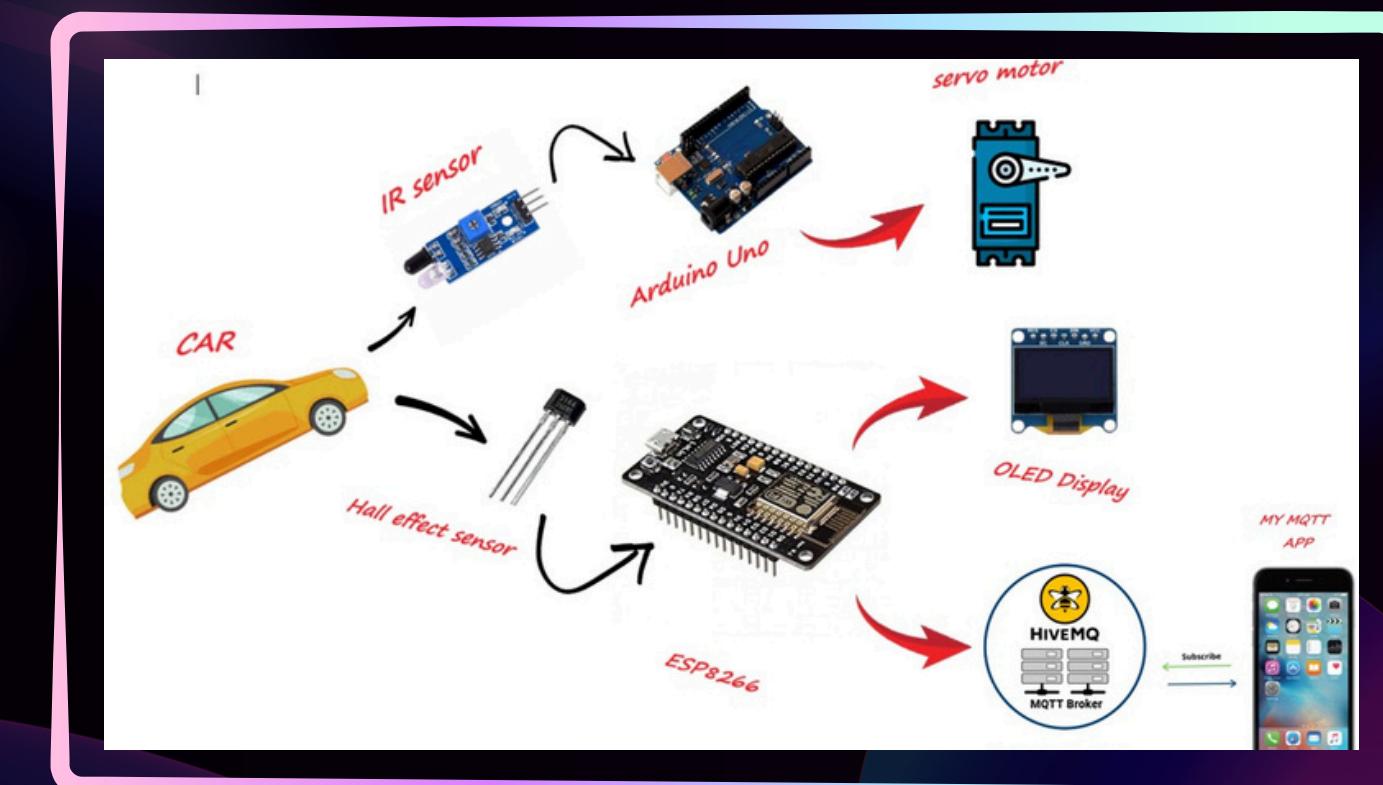
ABSTRACT

This project presents a Smart Parking System using IoT technology to optimize parking management on the CIT campus. The system utilizes A3144 Hall effect sensors to detect vehicle presence in parking slots, with an ESP8266 microcontroller transmitting data via MQTT. An Arduino controls the entry system, utilizing two IR sensors placed at the entrance and exit to count vehicles entering and leaving the parking area. A servo motor, activated by the IR sensors, opens automatically to allow cars in. An OLED display shows real-time parking availability, and a MyMQTT app enables users to check and spots remotely. This solution reduces search time, enhances space utilization, and integrates seamlessly into the campus infrastructure for improved traffic management and sustainability

WORKING

To build the Smart Parking System, you'll need an ESP8266 NodeMCU for wireless communication, an Arduino Uno to handle additional components, six A3144 Hall effect sensors to monitor parking slot occupancy, two IR sensors at the entrance and exit for vehicle counting, and a servo motor to control the entry gate.

The Hall effect sensors connect to the ESP8266 on pins D3-D8, while the IR sensors and servo motor interface with the Arduino. Data from the sensors is sent via MQTT, displaying real-time parking availability on an OLED screen and a mobile app. The system automates entry by opening the servo gate when the entrance IR sensor detects a vehicle and updates the parking availability both on-campus and through the app, optimizing space utilization and reducing traffic congestion.



PROPOSED SYSTEM

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PROS

- Optimized space utilization
- Reduced search time
- Convenient mobile app integration
- Automated entry system
- Real-time data transmission
- Improved traffic management
- Scalability and flexibility
- Energy efficiency and sustainability

OUTPUT