CAR PARKING SYSTEM USING IOT

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Phase:1

Description:

- This project presents a car parking system utilizing Raspberry Pi and MQTT (Message Queuing Telemetry Transport) protocol, with the capability to send live status updates to a mobile application. The system aims to provide real-time information about the availability of parking spaces, enhancing convenience for drivers and improving parking management.

- The architecture consists of Raspberry Pi-based sensor nodes deployed at each parking space and a central Raspberry Pi acting as the control unit. The sensor nodes detect the presence or absence of vehicles in their respective parking spaces and send this information to the central Raspberry Pi.

- Using the MQTT protocol, the central Raspberry Pi communicates with a mobile application installed on the user's device, providing live updates on parking space availability. The MQTT protocol ensures efficient and reliable communication between the Raspberry Pi and the mobile application, facilitating real-time updates and notifications.

- The mobile application displays the parking lot layout with color-coded indicators representing the availability of parking spaces. Users can view the live status of parking spaces on the application and make informed decisions regarding parking their vehicles.

- The system is implemented and tested using Raspberry Pi boards, parking sensors, and a mobile application. The results demonstrate the system's ability to accurately detect parking space occupancy and provide live status updates to the mobile application. The MQTT protocol ensures secure and efficient communication, making it suitable for real-time applications such as parking management.

- This car parking system utilizing Raspberry Pi and MQTT protocol offers a practical solution for improving parking efficiency and reducing the time and effort required to find available parking spaces. By providing live status updates on a mobile application, the system enhances user convenience and optimizes parking space utilization.

COMPONENTS:

- Raspberry Pi 3b
- 32 Gb Memory card
- Raspberry Pi Adaptor
- Connecting Wires
- If you want to design LCD By Yourself then purchase below components
- LCD 16×2
- Zero PCB
- Resistor
- IR Sensor