

PRESENTATION

Smart Car Parking System

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INTRODUCTION

- Traditional parking systems are inefficient and manual.
- Smart car parking uses sensors and automation to manage parking efficiently.
- Aim: Automatically detect vehicle entry/exit, open/close gate, and update the vehicle count.

OBJECTIVES

- Automate the entry and exit gate system.
- Display available parking space in realtime.
- Reduce human intervention.

COMPONENTS

- Ultrasonic Sensors - for car detection.
- LCD Display / LED Board - vehicle count display.
- Microcontroller (e.g., Arduino/Raspberry Pi) - control logic.
- Servo Motor - gate movement.

WORKFLOW DIAGRAM

- The entry sensor detects a vehicle, triggering the microcontroller to open the gate, resulting in a +1 count of vehicles in the parking system.
- Similarly, the exit sensor detects a vehicle leaving, prompting the microcontroller to open the gate, leading to a -1 count of vehicles.

ADVANTAGES

- Reduces manual errors.
- Saves time for users.
- Live data of parking availability.
- Scalability.

REAL-LIFE APPLICATIONS

- Shopping malls
- Airports
- Hospitals
- Office buildings
- Smart cities etc

CHALLENGES

- Sensor misreadings in fog/rain.
- Power failures can halt system.
- Maintenance of electronics.



THANK YOU

