

SMART PARKING

Team Name : The Boys

Domain : Automobile and Mobility Solutions

Theme : Smart Parking

PROBLEM STATEMENT

People finding difficulty in finding a free space feasible to them and difficulty in payment of parking bills without a fair price.

SOLUTION

- ❖ To build a system that makes the person choose and find his parking lot in his gate of arrival and be known about his fairly priced bill and exit with fairly billed by paying without any hassle and tension of having the exact amount of change by paying via cashless payment.
- ❖ The solution to the parking problem can vary greatly depending on the specific context and location, but there are several unique aspects and innovative approaches that can be implemented to address this issue effectively. Here's a detailed explanation of some of these aspects
- ❖ These innovative features, algorithms, and technologies collectively contribute to more efficient, user-friendly, and sustainable parking solutions that can significantly alleviate parking problems in urban areas and beyond. The choice of which technologies to incorporate depends on the specific goals and challenges of the parking solution and the urban environment in question

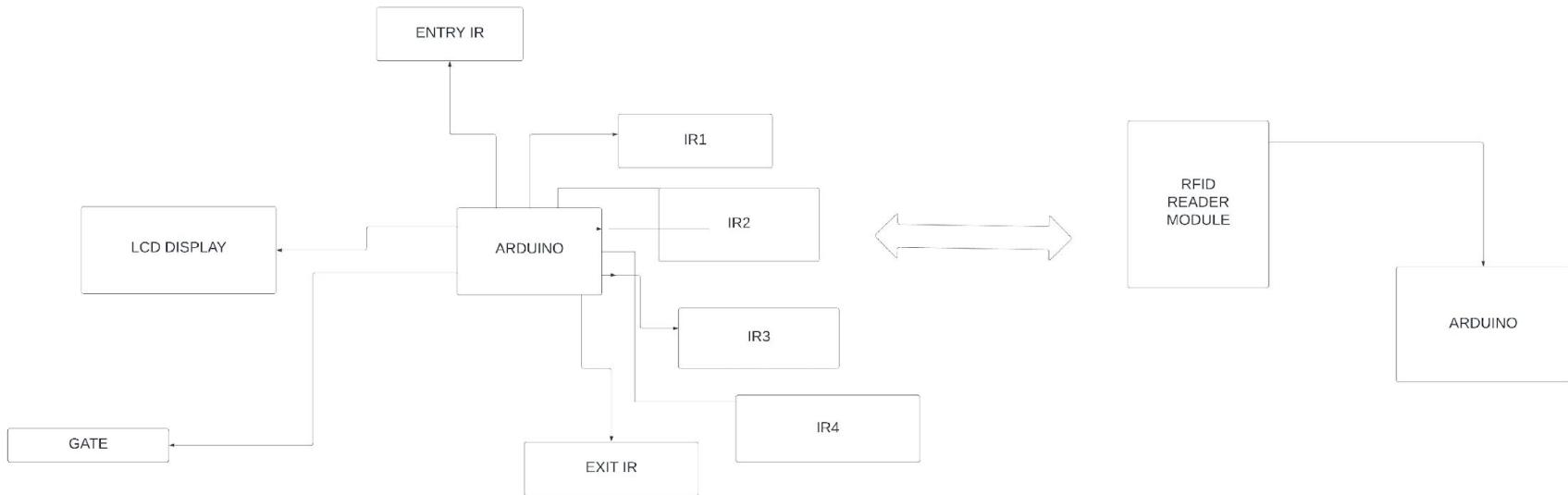
REQUIREMENT ANALYSIS

- FUNCTIONAL REQUIREMENTS:
 1. Sensor senses the RFID and the servo (entry gate) opens.
 2. The sensor in the slot senses the vehicle and changes the status of the slot.
 3. The exit gate opens when RFID accepts the card and once payment is done.
- NON-FUNCTIONAL REQUIREMENTS:
 1. The RFID and sensor pushes the entry and exit time of the vehicle and pushes the data to the database.
 2. The gate opens and closes after the vehicle passes the sensor.

TECHNOLOGY

- RFID: Radio-frequency identification (RFID) can be used for contactless entry and exit from parking facilities.
- Data Analytics: Advanced data analytics tools process parking data to optimize space allocation, pricing, and operational efficiency.
- Dynamic Signage: Digital signage displays real-time parking availability and directions to open spaces.
- Electric Vehicle (EV) Charging Infrastructure: EV charging stations are integrated into parking facilities to support electric vehicle adoption.
- The specific technologies chosen for a smart parking solution will depend on factors like budget, location, scalability requirements, and the goals of the project. Integrating a combination of these technologies can create a comprehensive and effective smart parking system.

SYSTEM DESIGN (ARCHITECTURE - BLOCK DIAGRAM)



SOCIAL IMPACT (APPLICATION)

Here are some of the social impacts of smart parking:

- Reduced Traffic Congestion
- Improved Air Quality
- Enhanced Safety
- Increased Accessibility
- Economic Benefits
- Optimized Land Use

SCENARIOS WHERE SMART PARKING SOLUTIONS CAN BRING ABOUT A POSITIVE CHANGE:

- Airports
- Work space and corporate campus
- Residential communities
- Universities and schools
- Electric vehicle charging stations

FUTURE SCOPE / IMPLEMENTATION / UPGRADABILITY

- Enhanced data analytics
- Integration and autonomous vehicle
- Multi modal integration
- Accessibility features