KGiSL INSTITUTE OF TECHNOLOGY
co-KreateyourGenius

PYEXPO25

Genius innovation leaves behind a legacy...

Team ID: T024

Team Name: Code Crackers

PS Number: PY040

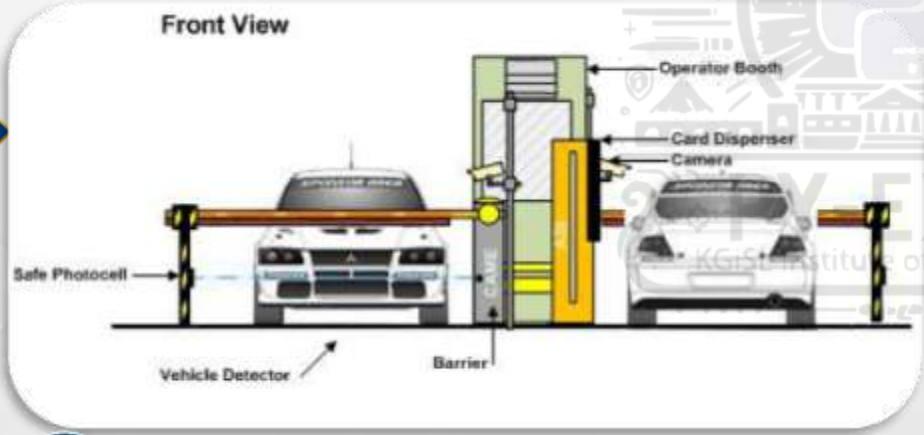
PS Title: Parking Space Detection System

Domain: AI/ML

Category: Software

Problem Statement:

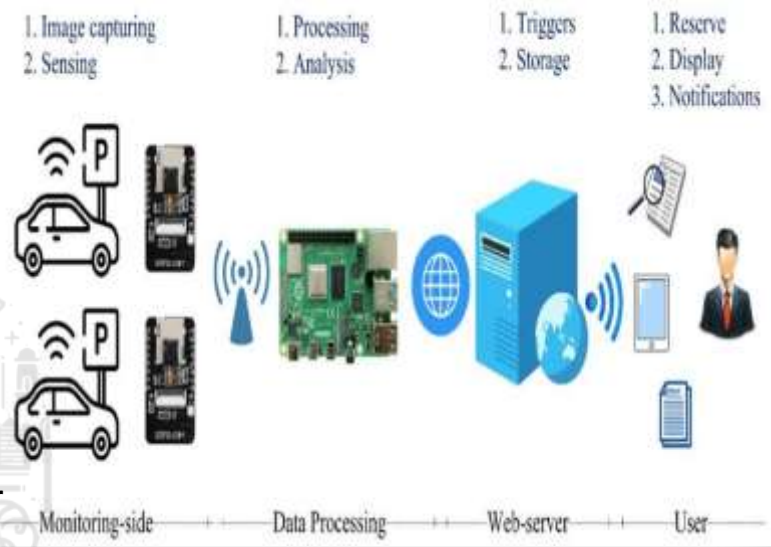
- Smart Parking System **(Computer Vision)**.
- The goal is to create real time parking space detection system.
- The objective is to find the availability of unoccupied parking spaces.



- Using **Computer Vision**, recorded pictures and videos are analyzed to spot occupancy status.
- This is crucial for infrastructure management in urban cities.

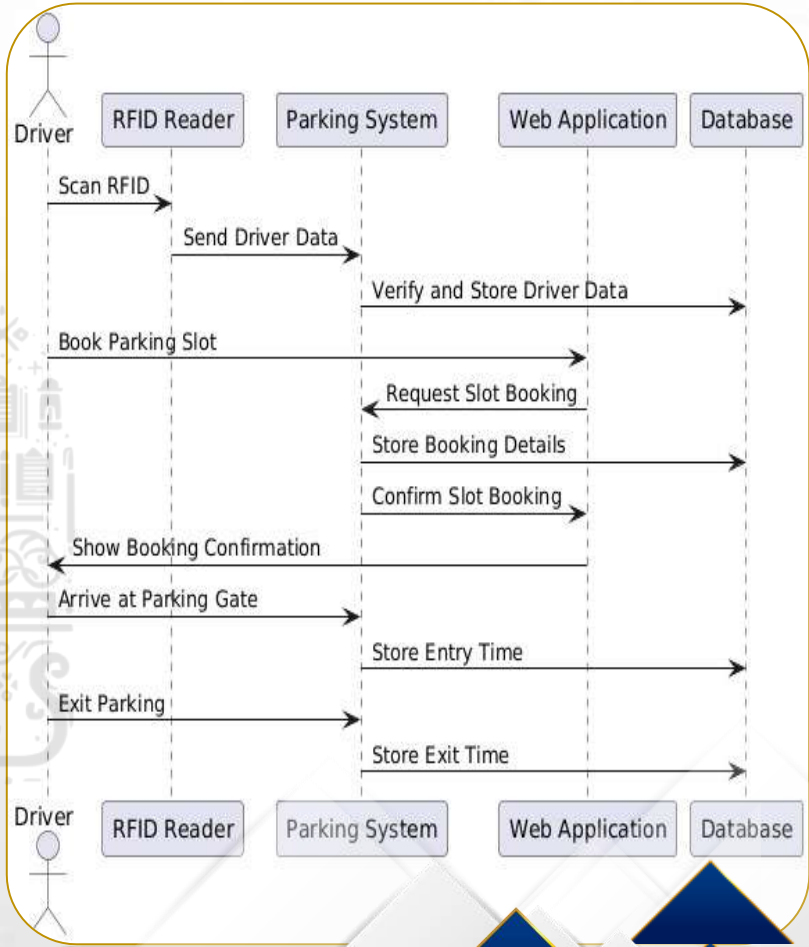
Proposed Solution and overview:

- Detects the parking space in real time
- User friendly application shows real time parking availability
- Parking guidance system that directs to available parking slots(**Route Map**)
- Convenient access to parking information for user
- Less time spent searching for parking can alleviate (**Reduce**) traffic congestion
- Allows user to pay for parking directly through the application



Data And Model :

- **HTML, JavaScript** - User friendly access for parking and booking information.
- **My SQL** - A data base to store entry and exit time of the parking vehicle.
- **FLASK** - Request and return response to the user.
- **CV(YOLOv8)** - A real time object detecting and image segmenting **ML model**.
- **RFID** - Used to get the user details for identification.
- **Optical Sensor** - To detect the car entry and exit.



Impacts:

- Drastically reduce the time on space searching.
- Saving vehicle fuel.
- Providing a more convenient overall packing experience.
- Busy employees can benefit from faster parking access.

Benefits:

- Provides traffic less parking.
- Reduces carbon footprint(pollution).
- Decreases management costs by optimizing parking.
- Helps drivers to navigate to their parking slots by route maps.

Ethical Considerations & Real-world Applications:

- Ensuring equitable access
- Protecting user privacy
- Maintaining transparency in pricing and policies
- Preventing discriminatory practices

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Team Member Details:

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THANK YOU !