Project Design Phase-I Solution Architecture

Date:	23 Oct 2023
Team ID:	Team-592328
Project Name:	AI ENABLE CAR PARKING USING OPENCV

1. Data Collection: Gather video or image data of the parking area using cameras, serving as input for the AI system.

2. Data Preprocessing: Process and clean the collected data, including resizing images or videos to a consistent format, normalizing the data, and performing data augmentation to enhance the dataset's diversity, crucial for effective model training.

3. Object Detection: Implement an OpenCV-based object detection model using deep learning techniques to recognize cars and parking spots.

4. Parking Spot Management: Develop a real-time system to manage and monitor parking spots, potentially utilizing a database to track available and occupied spaces, combining sensors with the object detection model.

5. Testing and Validation: Validate system accuracy and reliability by testing it with real data. Evaluate the object detection model's performance, real-time parking status updates, and user interface.

6. Optimization and Fine-tuning: Enhance system performance and user experience by improving the object detection model's accuracy, optimizing the web application's speed, and refining the user interface.

7. Deployment: Deploy the system as a webpage using Flask.