

Project Design Phase-I
Proposed Solution Template

Date	12 November 2023
Team ID	Team-591796
Project Name	AI Enable car parking using OpenCV
Maximum Marks	2 Marks

Proposed Solution Template:

Project team shall fill the following information in the proposed solution template.

Parameter	Description
Problem Statement (Problem to be solved)	The problem at hand revolves around the challenges faced by drivers in crowded urban areas when searching for parking spaces, leading to frustration, anxiety, and potential delays. The need is to streamline and automate the parking process using AI and computer vision.
Idea / Solution description	The proposed solution involves implementing an AI-enabled car parking system using OpenCV, a computer vision library. A camera captures live video footage of the parking lot, and the system employs image processing techniques to identify and count empty parking spaces. The solution integrates with Flask, a web framework, to provide a user interface for accessing the parking information.

Novelty / Uniqueness	The uniqueness of this solution lies in its combination of computer vision, AI, and web technology to create an intelligent parking management system. The use of OpenCV for real-time video processing, coupled with a Flask-based web interface, distinguishes this solution in its holistic approach to address the parking problem.
Social Impact / Customer Satisfaction	AI-powered parking revolutionizes the driving and parking experience, aligning with sustainability goals. It reduces search times, frustration, and emissions. It improves traffic management, reduces congestion, and promotes a sustainable urban environment. The integration of AI in parking solutions enhances customer satisfaction and aligns with sustainability objectives.
Business Model (Revenue Model)	The parking solution powered by AI minimizes the requirement of manual staff for managing parking spaces, simplifying operations and reducing labor expenses. It is designed specifically for parking and effectively manages the parking process, enhancing resource utilization. Its adaptable and user-friendly design is suitable for various urban environments, ensuring easy access and future adaptability.
Scalability of the Solution	The solution is highly scalable, leveraging widely adopted technologies like OpenCV and Flask for easy deployment in diverse urban environments. Its horizontal scalability accommodates additional parking facilities, and a lightweight, web-based interface ensures accessibility across various devices. The modular architecture supports future enhancements and seamless integration with emerging technologies.