Project Design Phase-I
Proposed Solution Template

Date	22 May 2023
Team ID	NM2023TMID19411
Project Name	Project – AI Enable car parking using open CV

Proposed Solution Template:

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

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	The problem of finding an appropriate parking space is a challenging one, particularly in large cities. With the increase in car ownership, parking spaces have become scarce. The growing demand for these spots coupled with limited availability has led to imbalances between supply and demand. A lack of adequate parking management systems has resulted in many streets being littered with illegally parked cars.
2.	Idea / Solution description	IDEA: The basic idea we used for detecting the parking spots was that all parking spot dividers here are horizontal lines and the parking spots in a column are roughly equally spaced apart. we first used Canny edge detection to get an edge image. SOLUTION: Smart parking solutions detect parking space availability in real-time, helping to optimize on-street parking in cities and in parking garages or surface parking lots such as those in shopping malls, train stations, corporate campuses, and more.
3.	Novelty / Uniqueness	The uniqueness of car parking systems are image capture, image processing and normalization, character recognition, segmentation.
4.	Social Impact / Customer Satisfaction	Smart parking will reduce search traffic on the streets.This will benefit traffic flow and will reduce congestions in neighbourhood with an under capacity in parking space. Therefore there are fewer traffic jams, and drivers will benefit by having less traffic on the streets.
5.	Business Model (Revenue Model)	Drivers take their cars to the entrance of the automatic parking system where all occupants exit the vehicle. From here, the vehicle is moved by mechanical maneuvers to an available space where it is automatically parked or parked by an attendant.

6.	Scalability of the Solution	The Parking Revenue Model developed as a part of the Parking Management programme to determine the estimated annual revenue isspecific to the Regional Transportation District (RTD). Users must exercise a great caution in interpreting model inputs and outputs. It should also be noted that generation of revenue is not the purpose of the Parking Management Programme.