

Project Design Phase-I
Proposed Solution

Date	19 September 2022
Team ID	PNT2022TMID35529
Project Name	Project - Machine Learning based Vehicle Performance Analyzer
Maximum Marks	2 Marks

Proposed Solution Template:

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

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	Predicting the performance level of a vehicle is an important and interesting problem. The main goal is to predict the performance of the vehicle to improve certain behaviours of the vehicle. This can significantly help to improve the system's fuel consumption and increase efficiency.
2.	Idea / Solution description	The performance analysis of the vehicle is based on the engine type, no of engine cylinders, fuel type, horsepower, etc. These are the factors on which the health of the car can be predicted. It is an ongoing process of obtaining, researching, analyzing, and recording health based on the above three factors. The performance objectives like mileage, dependability, flexibility and cost can be grouped together to play a vital role in the prediction engine and engine management system. This approach is a very important step towards understanding the vehicle's performance.
3.	Novelty / Uniqueness	We will give the option to users to input their preferred choice of vehicle. If the data is available on the internet, web scraping is done to fetch the appropriate feature values and then with these inputs the model will give the performance efficiency as the output.
4.	Social Impact / Customer Satisfaction	> Can help the customers by reducing their expenses on services and improve the life of the vehicle and its important parts. >Can help the environment by reducing the fuel consumption, avoid air pollution and prevent wastage of resources by suggesting methods to use the vehicle efficiently.

5.	Business Model (Revenue Model)	Create a monthly subscription-based model of revenue that allows the user access to all or partial features based on the type of user account (basic/premium). Connect dealers with the consumer through the service for parts and repairs and charge a commission for each interaction.
6.	Scalability of the Solution	The solution could be done in a federated learning model which offloads most of the computation to the edge solutions, reducing the need for massive data storage, also decreasing the role of the server to gradient aggregation and averaging.