Project Design Phase-II
Technology Stack (Architecture & Stack)

Date	20 October 2022
Team ID	PNT2022TMID27379
Project Name	Machine Learning Based Vehicle Performance Analyzer
Maximum Marks	4 Marks

Technical Architecture:

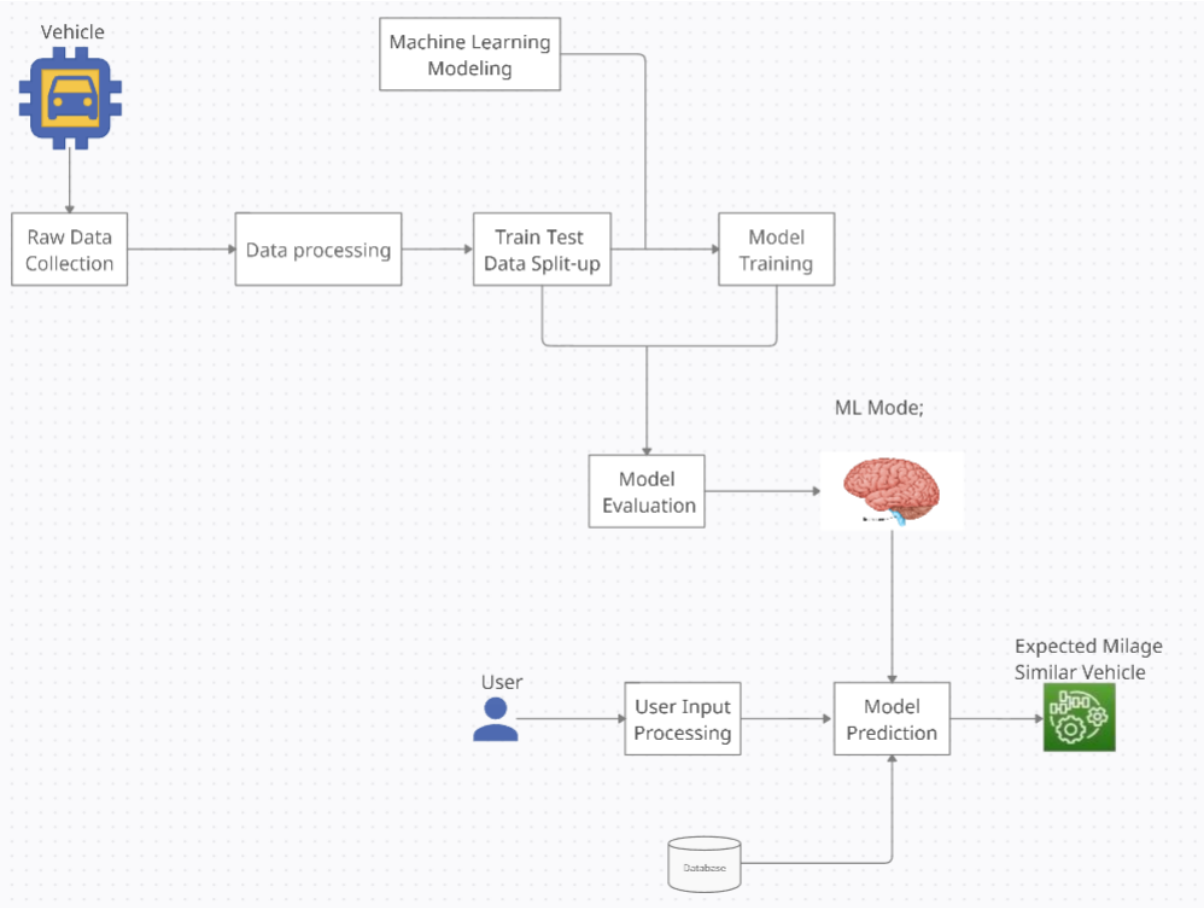

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	The user interacts with the application through a Web Application that is responsive to the device that is being used.	React Js
2.	Application Logic-1	The process collects the user input data that is collected via a form to the server as a JSON Object.	RESET API

3.	Application Logic-2	Use the data collected from the user to make predictions on the mileage expected.	IBM Watson ML
4.	Application Logic-3	Send the predictions along with suggestions to the user as JSON Object.	RESET API
5.	Database	Database contain user information such as name, email, vehicle basic information, mileage predicted over time.	MySQL
6.	Cloud Database	Database Service on Cloud	IBM DB2
7.	File Storage	Vehicle Details Database.	IBM Block Storage or Other Storage Service or Local Filesystem
8.	External API-1	The machine learning model is used to predict mileage from the user inputs.	Regression Modelling.
9.	External API-2	Application Deployment on Local System / Cloud Local Server Configuration: Core i5, 8GB RAM Cloud Server Configuration.	Local, Docker
10.	Machine Learning Model	Purpose of Machine Learning Model	Object Recognition Model, etc.
11.	Infrastructure (Server / Cloud)	Application Deployment on Local System / Cloud Local Server Configuration: Cloud Server Configuration:	Local, Cloud Foundry, Kubernetes, etc.

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	React Js, Flask, Sci-kit Learn.	Javascript, Python
2.	Security Implementations	Identity and Access Management, OAUTH, WAF	IBM Cloud
3.	Scalable Architecture	3 Tier Architecture, Model-View-Controller implementation.	Model - SQL DB, View - ReactJS, Controller - Flask Server
4.	Availability	Proxy servers, Load Balancers to help balance traffic among servers to help improve uptime.	IBM Cloud load balancers
5.	Performance	The frontend is detached from the Business logic server reducing requests sent to the server.	Nginx proxy