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

Date	11 November 2022
Team ID	PNT2022TMID27545
Project Name	Machine Learning Based Vehicle Performance Analyzer
Maximum Marks	4 Marks

Technical Architecture:

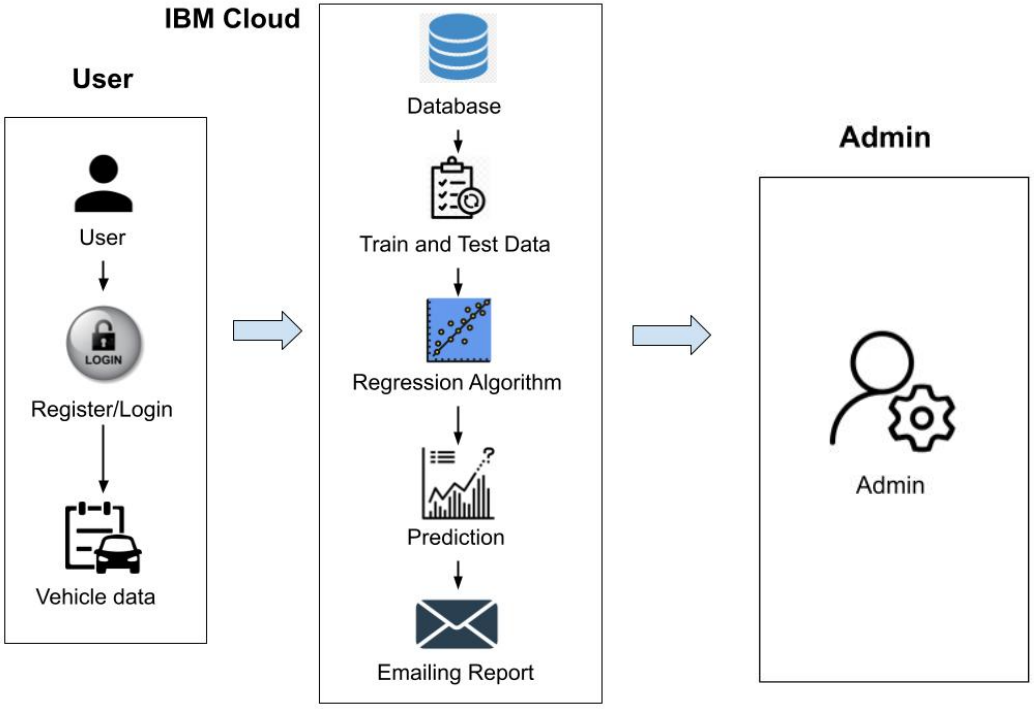

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	Web applications that are responsive to devices are used to interact with the application that is being used.	React Js
2.	Get User data	A JSON object is created with the user input data that is collected via a form.	REST API
3.	Model Prediction	Predict mileage based on the collected data from the user.	IBM Watson ML
4.	Application Logic-3	Deliver predictions and suggestions as JSON objects to the user.	REST API
5.	Database	Among the data contained in the database are user information, such as name, email, basic vehicle information, as well as mileage predictions over time.	MySQL
6.	Cloud Database	Database Service on Cloud.	IBM DB2
7.	External API-1	Vehicle Details Database	IBM DB
8.	Machine Learning Model	Using the machine learning model, mileage can be predicted based on user inputs.	Regression Modelling
9.	Infrastructure (Server / Cloud)	Application Deployment on Local System / Cloud Local Server Configuration: Core i5, 8GB RAM Cloud Server Configuration :	Local, Docker

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	Proxy