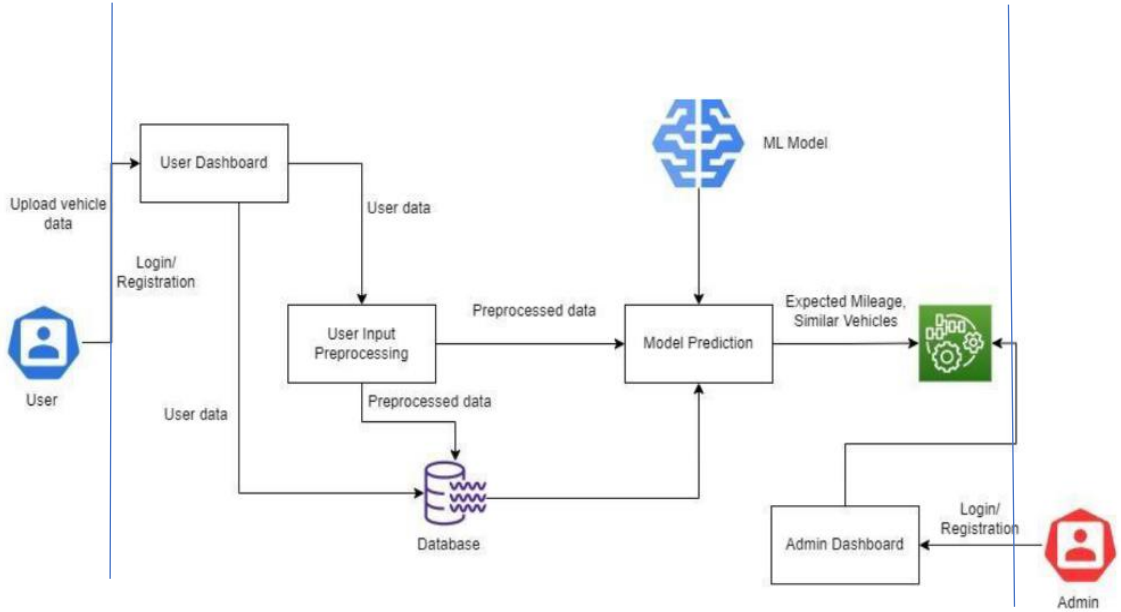
Project Design Phase-II
Technology Stack (Architecture & Stack)

Date	19 October 2022
Team ID	PNT2022TMID36219
Project Name	Project – Machine Learning based Vehical Performance Analyzer
Maximum Marks	4 Marks

Technical Architecture:

user **IBM Cloud** **Admin**



Guidelines:

1. Include all the processes (As an application logic / Technology Block)
2. Provide infrastructural demarcation (Local / Cloud)
3. Indicate external interfaces (third party API's etc.)
4. Indicate Data Storage components / services
5. Indicate interface to machine learning models (if applicable)

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	The user interacts with the application through a Web . .	HTML, CSS etc.
2.	Get User Data	The process collects the user input data .	Python
3.	Model Prediction	Use the data collected from the user to make predictions on the mileage expected.	IBM Watson ML
4.	Send User Report	Send the predictions along with suggestions to the user	Rest 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	File storage requirements	IBM Block Storage or Local Filesystem
8.	External API-1	Purpos	IBM Weather API, etc.
9.	Machine Learning Model	Purpose of Machine Learning Model	Object Recognition Model, etc.
10.	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