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

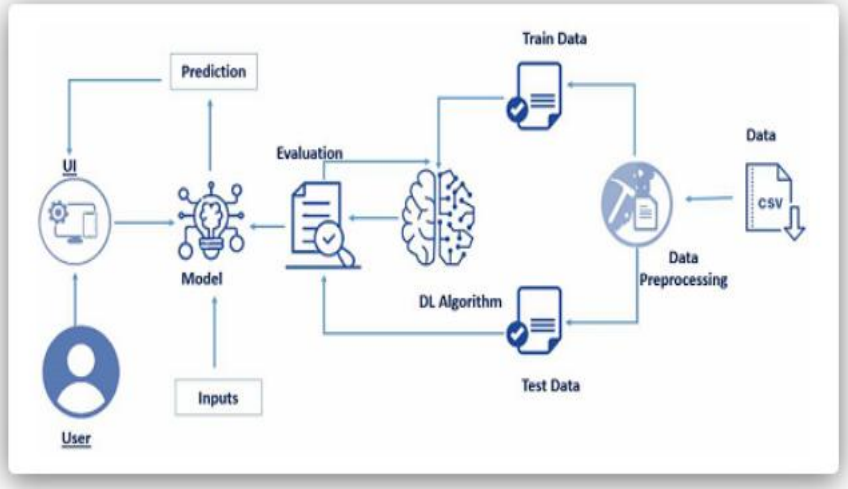
Date	03 October 2022
Team ID	PNT2022TMID38707
Project Name	Crude Oil Price Prediction
Maximum Marks	4 Marks

Technical Architecture:

The Deliverable shall include the architectural diagram as below and the information as per the table1 & table 2

Crude Oil Price Prediction

Technical Architecture:



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	How user interacts with application e.g. Web UI, Mobile App, Chatbot etc.	HTML, CSS, JavaScript ,image etc.
2.	Application Logic-1	Logic for a process in the application	Python-Flask Application
3.	Application Logic-2	Logic for a process in the application	Python, RNN ,
4.	Application Logic-3	Logic for a process in the application	IBM Watson Studio,IBM cloud
5.	Database	Data Type, Configurations etc.	MySQL, etc.
6.	Cloud Database	Database Service on Cloud	IBM DB2, IBM Cloud etc.
7.	File Storage	File storage requirements	IBM Block Storage or Other Storage Service or Local File system
8.	External API-1	Purpose of External API used in the application	IBM Weather API, etc.
9.	External API-2	Purpose of External API used in the application	Aadhar API, etc.
10.	Machine Learning Model	Purpose of Machine Learning Model	Object Recognition Model, LSTM model etc.
11.	Infrastructure (Server / Cloud)	Application Deployment on Local System / Cloud Local Server Configuration: Cloud Server Configuration :	Local, Cloud Foundry, etc.

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	List the open-source frameworks used	Python-Flask of Open source framework
2.	Security Implementations	List all the security / access controls implemented, use of firewalls etc.	SHA-256,IAM controls,IBM Cloud.
3.	Scalable Architecture	Justify the scalability of architecture (3 – tier, Micro-services)	Python,RNN with LSTM
4.	Availability	Justify the availability of application (e.g. use of load balancers, distributed servers etc.)	app.py - contains the actual python code that will import the app and start the development server.
5.	Performance	Design consideration for the performance of the application (number of requests per sec, use of Cache, use of CDN's) etc.	LSTM model weights file that will be generated when the model is trained.