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

Date	20 October 2022
Team ID	PNT2022TMID06799
Project Name	Project – Crude Oil Prediction
Maximum Marks	4 Marks

Technical Architecture:
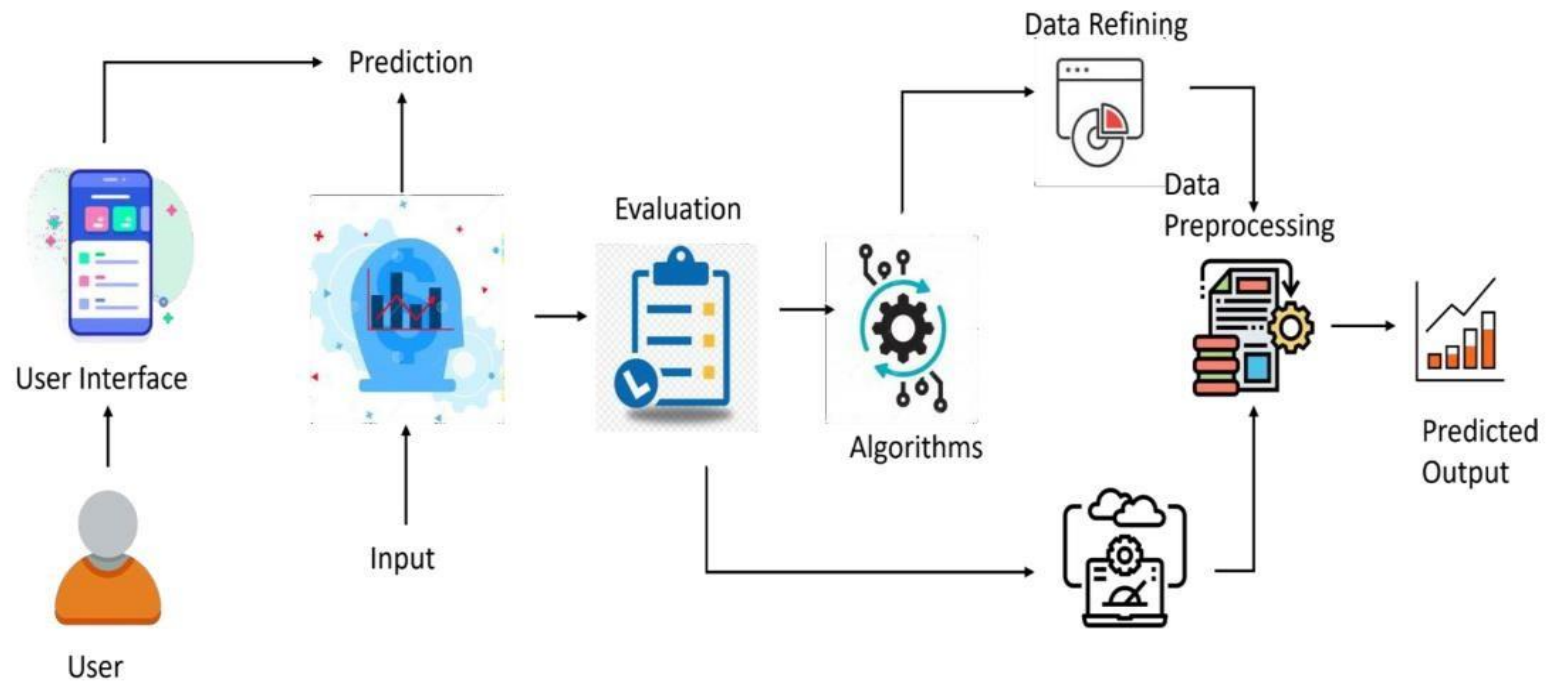
Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	Through a web UI, the user can engage with the application.	HTML, CSS, JavaScript / Angular Js / React Js etc.
2.	Application Logic-1	It has many in built libraries which helps in machine learning.	Python
3.	Application Logic-2	It helps to build machine learning model.	IBM Watson Jupyter Notebook service
4.	Application Logic-3	It is fast and accurate.	IBM Watson Assistant
5.	Database	MySQL is used to store the user information and warehouse the crude oil price.	MySQL
6.	Cloud Database	IBM Db2 is reliable and scalable.	IBM DB2
7.	File Storage	Maintain files easily.	Local File System
8.	External API-1	Aadhar and customer KYC verification takes a little amount of time.	Aadhar API etc.
9.	Machine Learning Model	To recognise the patterns and trends	Sequential, Dense & LSTM Model
10.	Infrastructure (Server / Cloud)	Application Deployment on Local System / Cloud Local Server Configuration: Cloud Server Configuration :	Local System and IBM Watson

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Tensor flow-Implements model building and training. Flask-Can handle multiple user request simultaneously. Scikit learn- Contains model for classification, regression, clustering.	Tensorflow, Flask, Scikit learn.
2.	Security Implementations	SHA-256 doesn't have any known vulnerabilities.	SHA-256
3.	Scalable Architecture	MySQL can store huge amount of data and it is easily scalable.	MySQL
4.	Availability	This application can be accessed from anywhere easily and it is easily scalable.	IBM Watson Cloud
5.	Performance	Flask can handle multiple user request simultaneously.	Flask