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

Date	03 October 2022
Team ID	PNT2022TMID10046
Project Name	Project – Crude Oil Price Prediction
Maximum Marks	4 Marks

Technical Architecture:

The Technology Architecture for Crude Oil Price Prediction Project is given below,
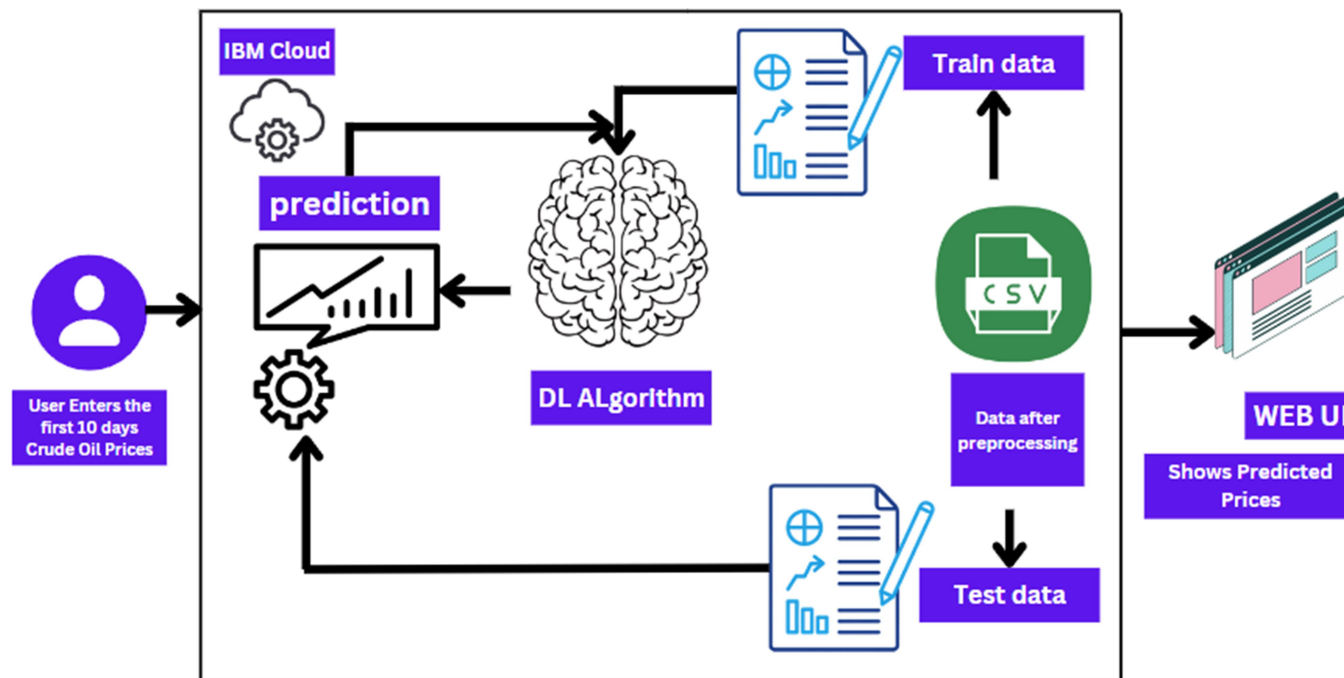
Crude Oil Price Prediction:

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	How user interacts with application e.g. Web UI	HTML, CSS, JavaScript
2.	Application Logic-1 (Predicting the Future Crude Oil Prices)	The user enters the first 10 days crude oil prices and then clicks on the predict button and the trained model is used to predict the future prices	Python Flask Framework and RNN and LSTM for prediction model training
3.	Application Logic-2 (Training the model for prediction of future prices)	RNN and LSTM model is trained upon training data	RNN and LSTM
4.	File Storage	File storage requirements	IBM Block Storage or Other Storage Service or Local Filesystem
5.	External API-1 (API from IBM Cloud)	Use of this IBM Cloud Project Deployed API to predict the future price	IBM Cloud deployed API
6.	Machine/Deep Learning Model	To Predict the future Crude Oil Prices	RNN and LSTM
7.	Infrastructure (Server / Cloud)	Application Deployment on Local System / Cloud Local Server Configuration: Flask Integration locally Cloud Server Configuration : IBM Cloud Integration	Local, IBM Cloud, etc.

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Data Collection and Pre-Processing Libraries Used, RNN and LSTM	RNN, LSTM and some Python open source libraries
2.	Security Implementations	Built in Cloud Security provided by IBM Cloud	IBM Cloud Security
3.	Scalable Architecture	Integration and Deployment in IBM Cloud	IBM Cloud Integration
4.	Availability	Dynamic allocation with respect to traffic from IBM Cloud	IBM Cloud
5.	Performance	The performance is based on the deployment of project in IBM Cloud	IBM Cloud