Project Design Phase-I
Proposed Solution

Team ID	PNT2022TMID13112
Project Name	Project- Crude Oil Price Prediction

Proposed Solution

S.No.	Parameter	Description
1.	Problem Statement	Crude oil demand is inelastic, therefore the rise in price will increase the revenue of Oil investors. Oil importers will have a high purchasing cost on the rise of crude oil prices. Oil is the largest traded commodity, the effects are quite significant. A rising oil price can even shift economic/political power from oil importers to oil exporter. Therefore, an accurate crude oil price prediction mechanism is needed to allow researchers and stakeholders to understand and predict future crude oil prices
2.	Idea	● For prediction problems, traditional neural network models like Recurrent Neural Networks (RNN) can be used. ● But RNN suffers from the vanishing gradient problem ● Advanced versions of RNN like Long short term memory (LSTM) with a small window to reference from can be used ● Attention mechanism can be incorporated with the neural network model to solve the vanishing gradient problem ● It has an infinite window to reference from, It has the capacity to map a word with its related word to increase the remembrance
3.	Novelty	● Long Short term memory (LSTM) is used ● LSTM works well on the time series data ● LSTMs solve the problem of vanishing gradient using a unique additive gradient structure that includes direct access to the forget gate's activations, enabling the network to encourage desired behavior from the error gradient using frequent gates update on every time step of the learning process

		● Two layers are used for optimizing the structure of the neural network.
4.	Social Impact	● It is majorly used in the supply and demand ● The oil importers has to meet the demand of oil exporters, so it is important for the oil importers to understand the price fluctuations ● Oil exporters must also be ready to meet the downfall of prices before making investments
5.	Business Model	● The business models are retailers, manufacturers.
6.	Scalability of the Solution	● Economic growth is the important factor. ● The accuracy of the model can be improved.