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Team ID	PNT2022TMID46457
Project Name	Crude Oil Price Prediction
Maximum Marks	4 Marks

IDEATION

The evaporative nature of crude oil, its price prediction becomes extremely difficult and it is hard to be precise with the same. Several different factors that affect crude oil prices. We propose a contemporary and innovative method of predicting crude oil prices using the artificial neural network (ANN). The main advantage of this approach of ANN is that it continuously captures the unstable pattern of the crude oil prices which have been incorporated by finding out the optimal lag and number of the delay effect that controls the prices of crude oil. Variation of lag in a period of time has been done for the most optimum and close results, we then have validated our results by evaluating the root mean square error and the results obtained using the proposed model have significantly outperformed.

Crude oil market is an immensely complex and dynamic environment and thus the task of predicting changes in such an environment becomes challenging with regards to its accuracy. A number of approaches have been adopted to take on that challenge and machine learning has been at the core in many of them. There are plenty of examples of algorithms based on machine learning yielding satisfactory results for such type of prediction. In this paper, we have tried to predict crude oil prices using Long Short-Term Memory (LSTM) based recurrent neural networks. We have tried to experiment with different types of models using different epochs, look backs and other tuning methods.

The results obtained are promising and presented a reasonably accurate prediction for the price of crude oil in near future. architectures. LSTM introduces the memory cell, a unit of computation that replaces traditional artificial neurons in the hidden layer of the network. With these memory cells, networks are able to effectively associate memories and input remote in time, hence suit to grasp the structure of data dynamically over time with high prediction capacity. The paper is further organized into the following sections. Section II discusses the related works done in this field and provides background for the proposed network. Section III introduces the proposed architecture of the network based on LSTM. The results obtained from the study are discussed in Section IV and Section V concludes the paper and discusses the future scope of the work .Oil demand is in elastic, therefore the rise in price is good news for producers because they will see an increase in their revenue.

Oil importers, however, will experience increased costs of purchasing oil. Because 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 exporters. The crude oil price movements are subject to diverse influencing factors. This Guided Project mainly focuses on applying Neural Networks to predict the Crude Oil Price. This decision helps us to buy crude oil at the proper time. Time series analysis is the best option for this kind of prediction because we are using the Previous history of crude oil prices to predict future crude oil. So we would be implementing RNN(Recurrent Neural Network) with LSTM(Long Short Term Memory) to achieve the task.