Project Development Phase
Model Performance Test

Date	10 November 2022
Team ID	PNT2022TMID38707
Project Name	Project - Crude Oil Price Prediction
Maximum Marks	10 Marks

Model Performance Testing:

Project team shall fill the following information in model performance testing template.

<table>
<tr><th>S.No.</th><th>Parameter</th><th>Values</th><th>Screenshot</th></tr>
<tr><td>1.</td><td>Metrics</td><td>Regression Model:
MAE - , MSE - , RMSE - ,
R2 score

Classification Model:
Confusion Matrix - , Accuracy Score- & Classification Report -</td><td>
<table>
<tr><th></th><th>RMSE</th><th>MAE</th><th>R2-SCORE</th></tr>
<tr><td>1</td><td>12.08626473</td><td>0.5738016561</td><td>7.6429788</td></tr>
<tr><td>2</td><td>9.147314047</td><td>0.9047892679</td><td>5.03809031</td></tr>
<tr><td>3</td><td>1.452734461</td><td>0.99798563</td><td>0.8729176886</td></tr>
</table>
RMSE for different models used in our project
Linear Regression : 19.3533662859143
Decision Tree Regression : 9.14731404717267
Random Forest Regression : 1.45273446145987
R2 Score for different models used in our project :
Linear Regression : 0.57380165610804
Decision Tree Regression : 0.90478926790260
Random Forest Regression : 0.997598562970117

Calculate RMSE performance metrics

Accuracy : 29.347830443269938
</td></tr>
<tr><td>2.</td><td>Tune the Model</td><td>Hyper parameter Tuning -
Validation Method -</td><td>Hyper parameter tuning

In the case of over fitting, some inclusion of regularization and further hyper parameter tuningfor the training process must be considered. A good model should be based on a compromise between capturing the essential patterns in the data without</td></tr>
</table>

			over fitting to the training data. This can be achieved with regularization parameters such as L1 and L2 in for example Lasso,Ridge and Elastic Net regression . Inclusion of the dropout strategy for regularization to prevent over fitting will be discussed further in chapter 3.5 about Recurrent Neural Networks. The dropout method is also a common technique used for fully connected dense networks. Other possibilities like adjusting learning rate, increasing or decreasing the number of nodes, and increasing or decreasing the number of hidden layers is commonly used in this step.