

## Project Development Phase Model Performance Test

Date	10 November 2022
Team ID	PNT2022TMID09704
Project Name	Project - Crude oil price prediction
Maximum Marks	10 Marks

### Model Performance Testing:

S.No.	Parameter	Values	Screenshot
1.	Metrics	<b>RNN with LSTM Model:</b> MAE -5.56 MSE - 9.92	<pre>False</pre> <pre>63]: from sklearn.metrics import mean_absolute_error mae = float(mean_absolute_error(test_set[timesteps:len(y_test)], y_test[0:len(y_test) - timesteps])) print(mae) import math from sklearn.metrics import mean_squared_error rmse = math.sqrt(mean_squared_error(test_set[timesteps:len(y_test)], y_test[0:len(y_test) - timesteps])) print(rmse)</pre> <pre>5.508182944217671 9.915449330124693</pre> <pre>64]: regressor_mae.save("Crude_oil_LSTM_prediction.h5")</pre> <pre>65]: # compress the file !tar -zcvf crudeoil_prediction_model.tgz Crude_oil_LSTM_prediction.h5</pre> <pre>Crude oil LSTM prediction.h5</pre>

2.	Tune the Model	Hyperparameter Tuning - 120 epochs Validation Method - Testing data	<div data-bbox="771 210 1534 409"><pre>for i in range(epochs): #epochs=120     print("Epoch: " + str(i))     regressor_mae.fit(X_train, y_train, validation_data=(X_test, y_test), shuffle=False, epochs = 1, batch_size = batch_size)     regressor_mae.reset_states()</pre></div> <div data-bbox="771 420 1534 1291"><p>Epoch: 91 102/102 [=====] - 2s 19ms/step - loss: 0.0279</p><p>Epoch: 92 102/102 [=====] - 2s 18ms/step - loss: 0.0279</p><p>Epoch: 93 102/102 [=====] - 2s 15ms/step - loss: 0.0278</p><p>Epoch: 94 102/102 [=====] - 2s 20ms/step - loss: 0.0277</p><p>Epoch: 95 102/102 [=====] - 2s 17ms/step - loss: 0.0277</p><p>Epoch: 96 102/102 [=====] - 2s 16ms/step - loss: 0.0277</p><p>Epoch: 97 102/102 [=====] - 1s 14ms/step - loss: 0.0276</p><p>Epoch: 98 102/102 [=====] - 2s 17ms/step - loss: 0.0275</p><p>Epoch: 99 102/102 [=====] - 2s 20ms/step - loss: 0.0274</p><p>Epoch: 100 102/102 [=====] - 3s 30ms/step - loss: 0.0272</p><p>Epoch: 101 102/102 [=====] - 2s 21ms/step - loss: 0.0272</p><p>Epoch: 102 102/102 [=====] - 2s 21ms/step - loss: 0.0279</p><p>Epoch: 103</p></div>
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