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Importing The Model Building Libraries

Initializing The Model

Adding LSTM Layers

Adding Output Layers

Model: "sequential"

Layer (type)	Output Shape	Param #
lstm (LSTM)	(None, 10, 50)	10400
lstm_1 (LSTM)	(None, 10, 50)	20200

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Model Evaluation

In [25]:
train_predict=model.predict(X_train)
test_predict=model.predict(X_test)

In [26]:
train_predict = scaler.inverse_transform(train_predict)
test_predict = scaler.inverse_transform(test_predict)

In [27]:
import math
from sklearn.metrics import mean_squared_error
math.sqrt(mean_squared_error(y_train,train_predict))

Out[27]: 28.897064147559757

Save The Model

In [28]:
from tensorflow.keras.models import load_model
model.save("Crude_oil.h5")

In [29]:
Is
Crude_oil.h5

In [30]:
!tar -zcvf crude-oil-predict-model.tar.gz Crude_oil.h5

Crude_oil.h5

Test The Model

In [31]:
look_back = 0
trainPredictPlot = np.empty_like(data_oil)
trainPredictPlot[:, :] = np.nan
trainPredictPlot[look_back:len(train_predict) + look_back, :] = train_predict

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In [22]:

model.add(Dense(1))
model.summary()

Model: "sequential"

Layer (type)	Output Shape	Param #
lstm (LSTM)	(None, 10, 50)	10400
lstm_1 (LSTM)	(None, 10, 50)	20200
lstm_2 (LSTM)	(None, 50)	20200
dense (Dense)	(None, 1)	51

Total params: 50,851
Trainable params: 50,851
Non-trainable params: 0

Configure The Learning Process

In [23]:

model.compile(loss='mean_squared_error', optimizer = 'adam')

Train The Model

In [24]:

model.fit(X_train, y_train, validation_data = (X_test, ytest), epochs = 10, batch_size = 64, verbose = 1)

Epoch 1/10
84/84 [-----] - 7s 34ms/step - loss: 0.0020 - val_loss: 0.0011
Epoch 2/10
84/84 [-----] - 2s 23ms/step - loss: 1.2802e-04 - val_loss: 9.2217e-04
Epoch 3/10
84/84 [-----] - 2s 21ms/step - loss: 1.3292e-04 - val_loss: 0.0010

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