Quiz -1

Loading the dataset and prepocessing :

Quiz_code.ipynb

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```
import pandas as pd
from sklearn.preprocessing import MinMaxScaler
from tensorflow.keras.models import Sequential
from tensorflow.keras.layers import LSTM, Dropout, Dense
import matplotlib.pyplot as plt
url = "https://raw.githubusercontent.com/jbrownlee/Datasets/master/airline-passengers.csv"# Load and preprocess dataset
data =pd.read_csv(url, header=0, parse_dates=[0], index_col=0)# Replace 'data.csv' with your dataset
scaler = MinMaxScaler()
```

Splitting into training and testing sets :

```
train_size_sri= int(len(data_normalized) * 0.8) # splitting the dataset
train_data, test_data = data_normalized[:train_size_sri], data_normalized[train_size_sri:]
```

Model Building :

```
# Defiining the model
model = Sequential()
model.add(LSTM(units=50, return_sequences=True, input_shape=(X_train.shape[1], 1)))
model.add(Dropout(0.2))
model.add(LSTM(units=50, return_sequences=False))
model.add(Dropout(0.2))
model.add(Dense(units=1))
```

Training the model:

```
history = model.fit(X_train, y_train, epochs=100, batch_size=32, validation_data=(X_test, y_test))# Training the model
```

Evaluting the model:

```
loss = model.evaluate(X_test, y_test)# Evaluating model
```

Results:

```
4/4 [==============================] - 0s 40ms/step - loss: 0.0084 - val_loss: 0.0295
Epoch 97/100
4/4 [==============================] - 0s 37ms/step - loss: 0.0076 - val_loss: 0.0278
Epoch 98/100
4/4 [==============================] - 0s 41ms/step - loss: 0.0077 - val_loss: 0.0287
Epoch 99/100
4/4 [==============================] - 0s 41ms/step - loss: 0.0073 - val_loss: 0.0333
Epoch 100/100
4/4 [==============================] - 0s 42ms/step - loss: 0.0076 - val_loss: 0.0343
1/1 [==============================] - 0s 35ms/step - loss: 0.0343
1/1 [==============================] - 1s 1s/step
1/1 [==============================] - 1s 1s/step
```