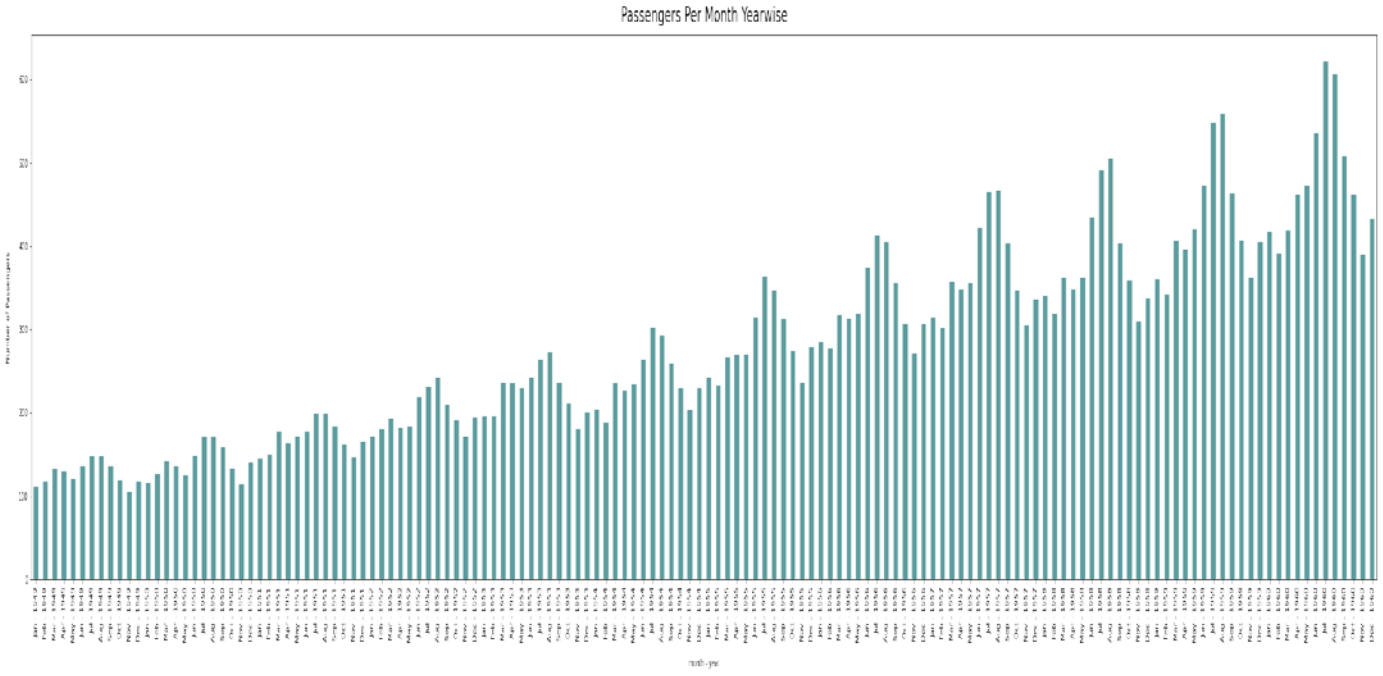
HOMEWORK 5 REPORT

Submitted by

Madhu Sowmya Bandi

Question 1

Part a)



Part b)

From the above plot depicting Number of passengers vs Month and Year for the years (1949 to 1960), It can be observed that The trend of the number of passengers is increasing for the months between DECEMBER and MARCH, The number passengers is decreasing after March and again improves July, After July the number of passengers decreases again until November.

Long term temporal pattern for increase in the number of passengers is between NOVEMBER and MARCH

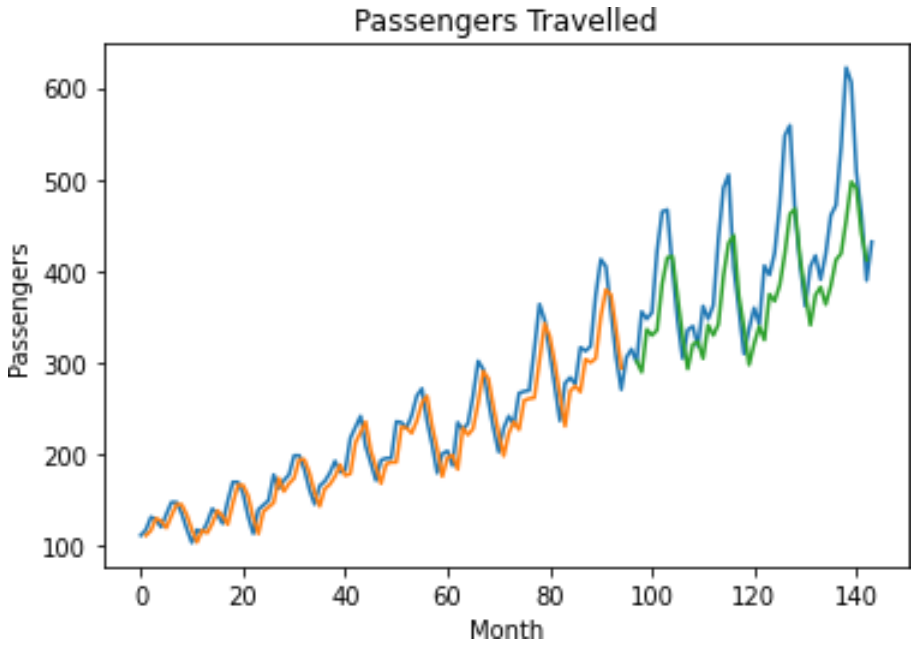
Short term temporal pattern for increase in the number of passengers is between JUNE and AUGUST

Part c) LSTM model is built for 67% and 33% train test split data

for t = 1 , that means time step will be 1

Root mean square error:

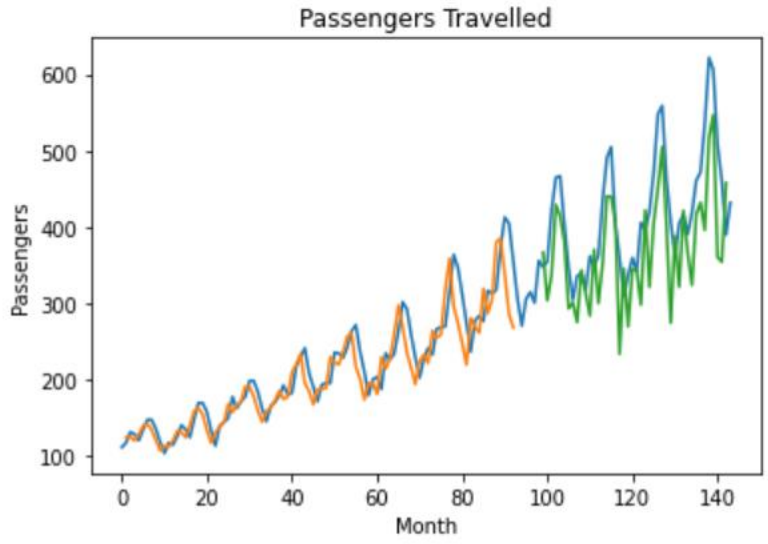
Train Score: 22.77 RMSE
Test Score: 53.22 RMSE
The below plot explains the plot for depicting Number of passengers vs Month and Year, where blue pattern describes the ground truth, orange color depicts the train data (67%) and green depicts: predicted number of passengers.



Part d) LSTM model is built for 67% and 33% train test split data

for t = 3 , that means time step will be 3

for 3 time steps next month 's number of passengers are predicted for each month in traindata and test data



Train Score: 23.24 RMSE

Test Score: 70.43 RMSE

The below plot explains the plot for depicting Number of passengers' vs Month and Year, where blue pattern describes the ground truth, orange color depicts the predicted train data (67%) andgreen depicts: predicted number of passengers for test data (33%).