**Project – Solution**

**Problem Statement:** You are working for an airline company that wants to analyze its passenger data for the past year. The company has provided you with a CSV file containing the monthly passenger data for each airline. Your task is to use NumPy, Pandas, and Matplotlib to analyze the data and answer the following questions:

1) What is the trend of monthly passenger traffic for each airline? Plot the line graph to show the same.

import pandas as pd

data = pd.read\_csv("airline\_data.csv")

passenger\_traffic = data.pivot\_table(values='passengers', index='month', columns='year')

passenger\_traffic.plot(figsize=(10, 8))

plt.xlabel('Month')

plt.ylabel('Passenger Traffic')

plt.title('Monthly Passenger Traffic Trend for Each Airline')

plt.show()

2) What is the overall monthly passenger traffic trend for all airlines combined? Plot the line graph to show the same.

import pandas as pd

data = pd.read\_csv("airline\_data.csv")

overall\_passenger\_traffic = data.groupby(['month'])['passengers'].sum()

overall\_passenger\_traffic.plot(figsize=(10, 8))

plt.xlabel('Month')

plt.ylabel('Passenger Traffic')

plt.title('Overall Monthly Passenger Traffic Trend')

plt.show()