PYTHON ASSIGNMENT - 8 : DATA VISUALIZATION

Exercise 1:
Create a line plot using matplotlib pyplot that displays the population of four different cities over time. Each city should have its own line, and the x-axis should represent years (e.g. 2010, 2011, 2012,
etc.) while the y-axis should represent the population.
The data for the four cities is provided below:
City A: [500000, 550000, 600000, 650000, 700000, 750000, 800000]
City B: [800000, 850000, 900000, 950000, 1000000, 1050000, 1100000]
City C: [1000000, 1050000, 1100000, 1150000, 1200000, 1250000, 1300000]
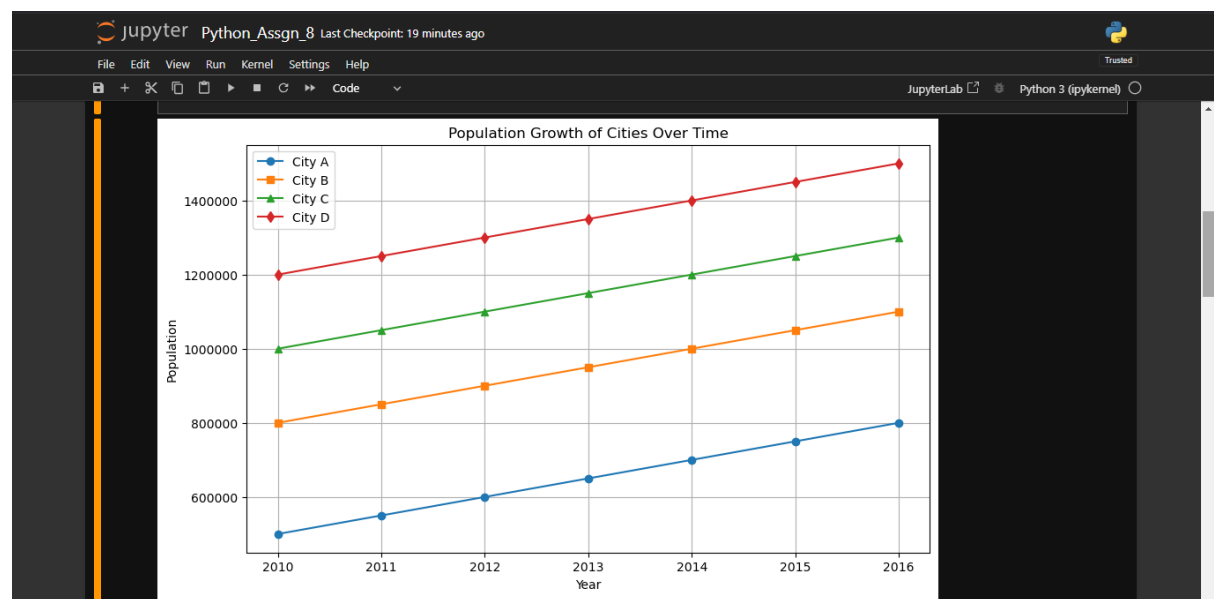City D: [1200000, 1250000, 1300000, 1350000, 1400000, 1450000, 1500000]

Exercise 2:
Create a scatter plot using seaborn that shows the relationship between the number of hours studied and the test scores obtained by a group of students. Use the following data:
Hours Studied: [1, 2, 3, 4, 5, 6, 7, 8, 9, 10]
Test Scores: [93, 57, 61, 54, 51, 53, 87, 81, 83, 85]


```python
[3]: # Exercise 2:
# Create a scatter plot using seaborn that shows the relationship between the number of hours
# studied and the test scores obtained by a group of students. Use the following data:
# Hours Studied: [1, 2, 3, 4, 5, 6, 7, 8, 9, 10]
# Test Scores: [93, 57, 61, 54, 51, 53, 87, 81, 83, 85]

import seaborn as sns
import matplotlib.pyplot as plt

hours_studied = [1, 2, 3, 4, 5, 6, 7, 8, 9, 10]
test_scores = [93, 57, 61, 54, 51, 53, 87, 81, 83, 85]

plt.figure(figsize=(8, 6))
sns.scatterplot(x=hours_studied, y=test_scores)

plt.xlabel('Hours Studied', fontsize=12)
plt.ylabel('Test Scores', fontsize=12)
plt.title('Relationship Between Hours Studied and Test Scores', fontsize=14, fontweight='bold')

plt.show()
```
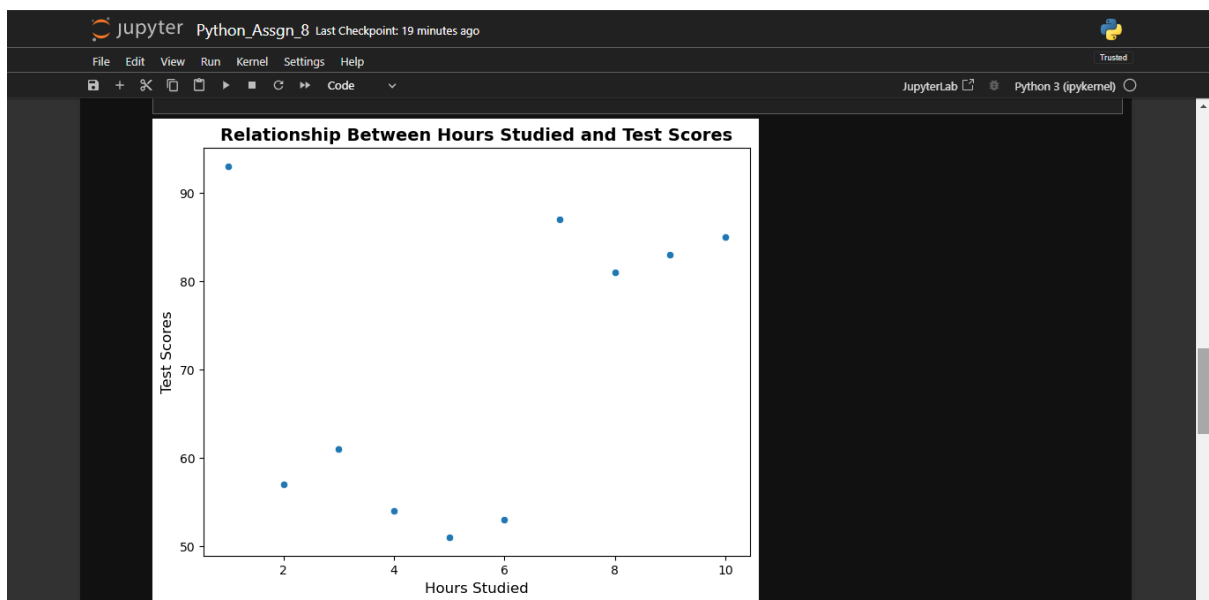
Exercise 3:
Create a bar chart using matplotlib pyplot that shows the total sales for each month of the year. Use the following data:
Month: ["Jan", "Feb", "Mar", "Apr", "May", "Jun", "Jul", "Aug", "Sep", "Oct", "Nov", "Dec"]
Sales: [11860, 10480, 4997, 5523, 13965, 6011, 13158, 9533, 5158, 9058, 11346, 6675]


```python
# Exercise 3:
# Create a bar chart using matplotlib pyplot that shows the total sales for each month of the year. Use
# the following data:
# Month: ["Jan", "Feb", "Mar", "Apr", "May", "Jun", "Jul", "Aug", "Sep", "Oct", "Nov", "Dec"]
# Sales: [11860, 10480, 4997, 5523, 13965, 6011, 13158, 9533, 5158, 9058, 11346, 6675]

import matplotlib.pyplot as plt

months = ["Jan", "Feb", "Mar", "Apr", "May", "Jun", "Jul", "Aug", "Sep", "Oct", "Nov", "Dec"]
sales = [11860, 10480, 4997, 5523, 13965, 6011, 13158, 9533, 5158, 9058, 11346, 6675]

plt.figure(figsize=(10, 6))
plt.bar(months, sales, color='royalblue')

plt.xlabel('Month', fontsize=12)
plt.ylabel('Total Sales', fontsize=12)
plt.title('Total Sales Per Month', fontsize=14, fontweight='bold')

plt.show()
```