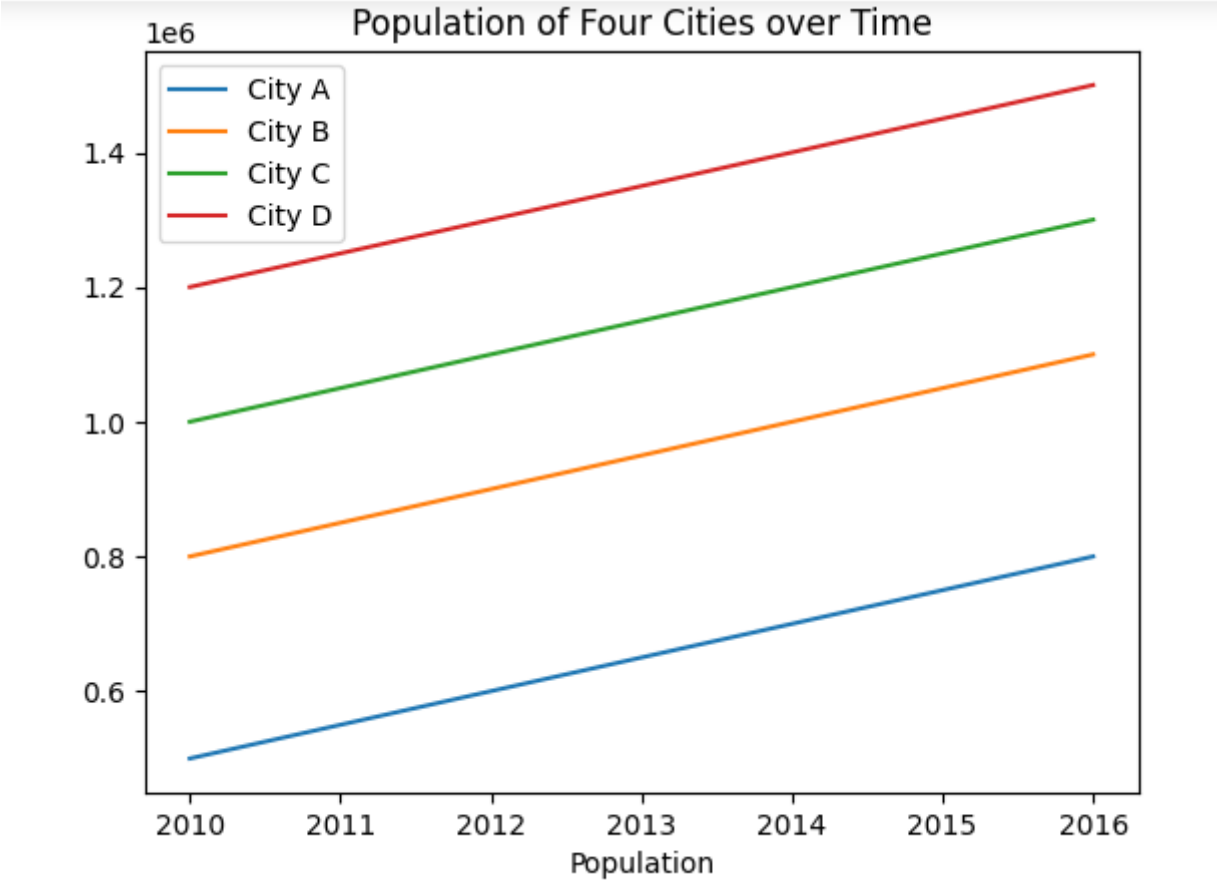
Exercise 1:
Create a line plot using matplotlib pyplot that displays the population of four different cities over time. Each city should have its own line, and the x-axis should represent years (e.g. 2010, 2011, 2012, etc.) while the y-axis should represent the population.
The data for the four cities 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]

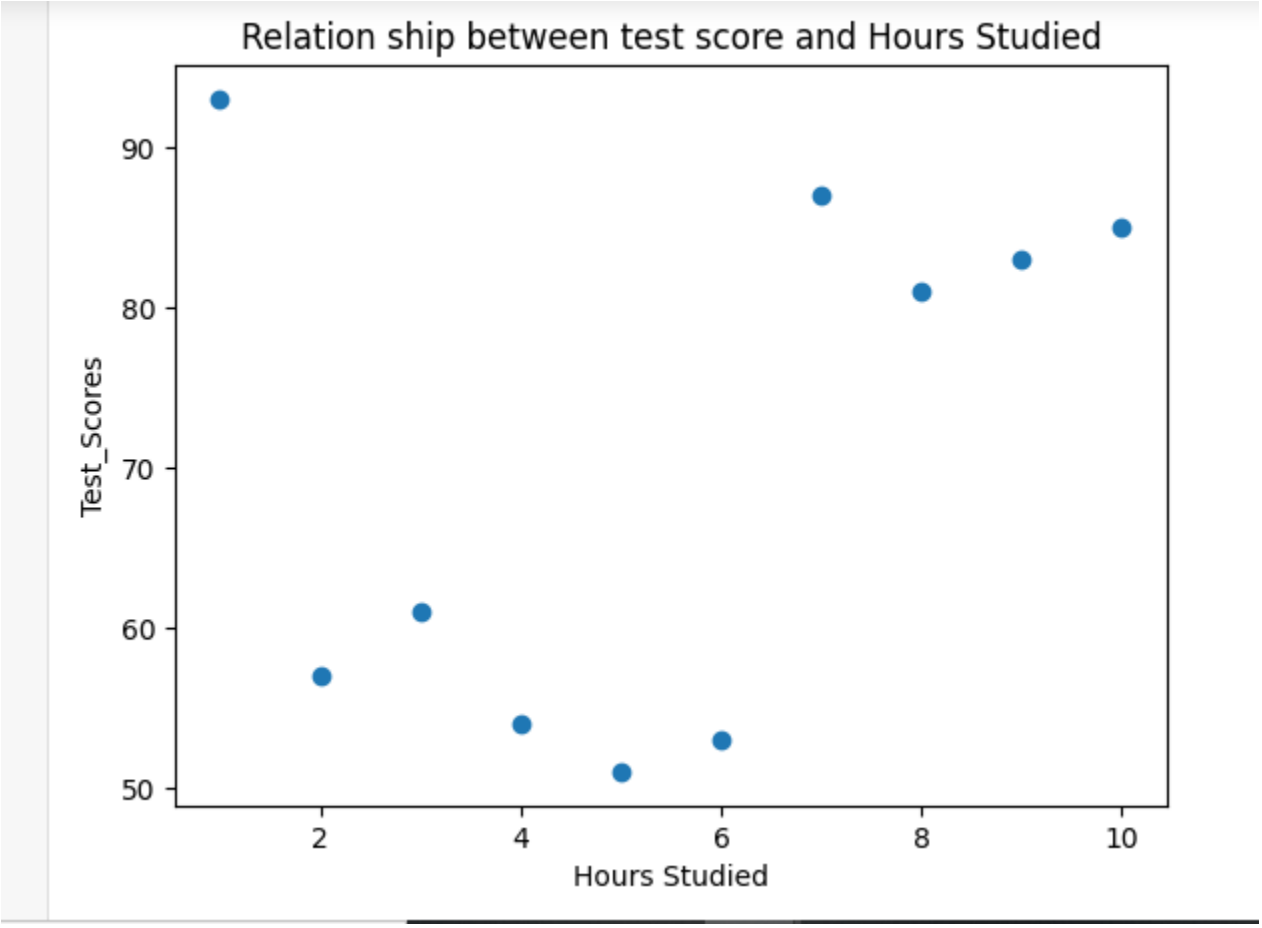
In [7]:
```
import matplotlib.pyplot as plt
years = [2010, 2011, 2012, 2013, 2014, 2015, 2016]
City_a = [500000, 550000, 600000, 650000, 700000, 750000, 800000]
City_b = [800000, 850000, 900000, 950000, 1000000, 1050000, 1100000]
City_c = [1000000, 1050000, 1100000, 1150000, 1200000, 1250000, 1300000]
City_d = [1200000, 1250000, 1300000, 1350000, 1400000, 1450000, 1500000]
```

In [8]:
```
plt.plot(years,City_a, label = 'City A')
plt.plot(years,City_b, label = 'City B')
plt.plot(years,City_c, label = 'City C')
plt.plot(years,City_d, label = 'City D')

plt.xlabel('Years')
plt.xlabel('Population')
plt.title('Population of Four Cities over Time')

plt.legend()
plt.show()
```



Exercise 2:
Create a scatter plot using matplotlib pyplot 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]

In [9]:
```
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.scatter(hours_studied,test_scores)
plt.title('Relation ship between test score and Hours Studied')
plt.xlabel('Hours Studied')
plt.ylabel('Test_Scores')
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]

```
In [10]: 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]

         plt.bar(Month,Sales)
         plt.xlabel('Month')
         plt.ylabel('Total Sales')
         plt.title('Relationship Between Month and Sales')
         plt.show()
```