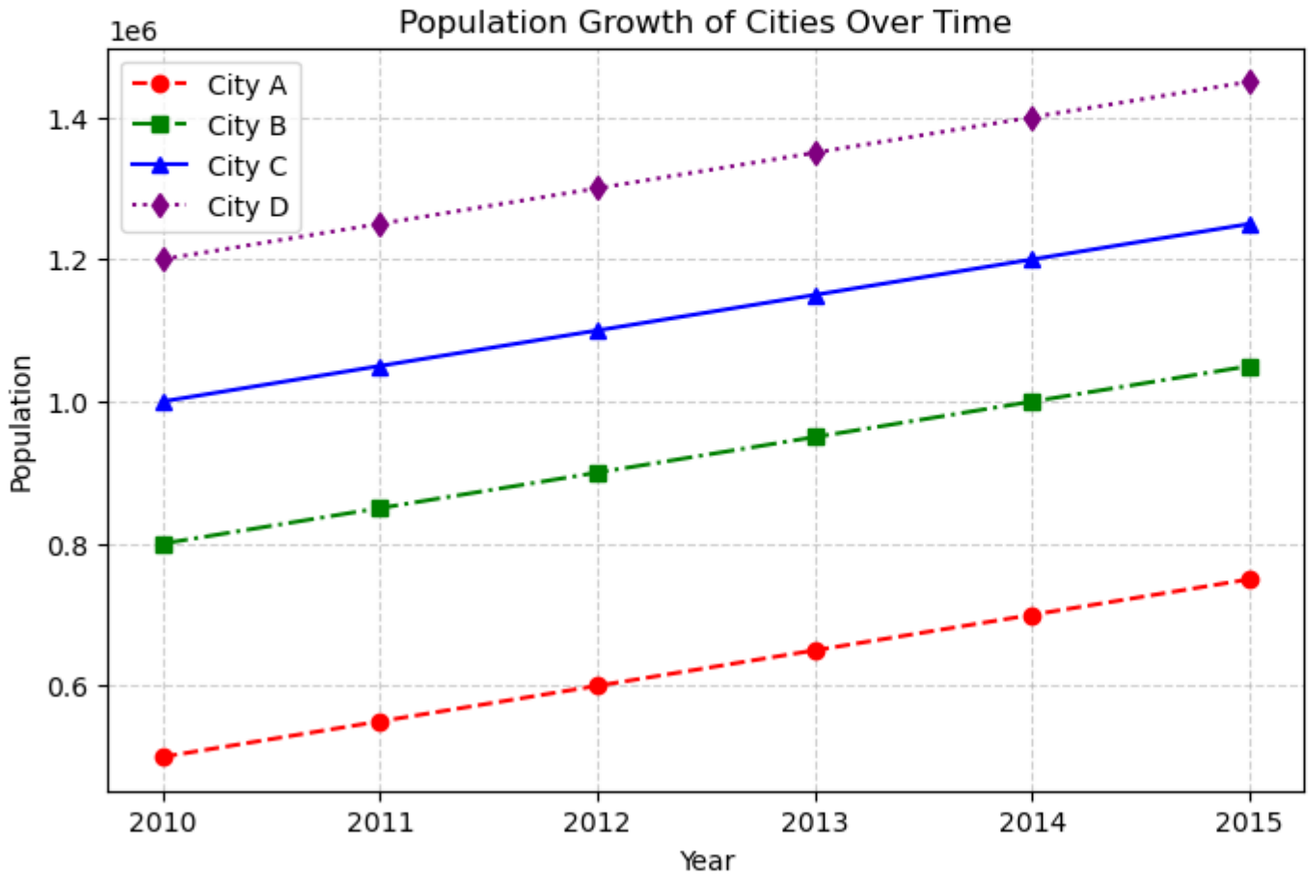
[8]:
```
import matplotlib.pyplot as plt
```

[9]:
```
# Data
years = [2010, 2011, 2012, 2013, 2014, 2015]
city_a = [500000, 550000, 600000, 650000, 700000, 750000]
city_b = [800000, 850000, 900000, 950000, 1000000, 1050000]
city_c = [1000000, 1050000, 1100000, 1150000, 1200000, 1250000]
city_d = [1200000, 1250000, 1300000, 1350000, 1400000, 1450000]

# Create figure
plt.figure(figsize=(8, 5))

# Plot with different styles
plt.plot(years, city_a, marker='o', linestyle='--', color='red', label="City A")
plt.plot(years, city_b, marker='s', linestyle='-.', color='green', label="City B")
plt.plot(years, city_c, marker='^', linestyle='-', color='blue', label="City C")
plt.plot(years, city_d, marker='d', linestyle=':', color='purple', label="City D")

# Labels, title, and grid
plt.xlabel("Year")
plt.ylabel("Population")
plt.title("Population Growth of Cities Over Time")
plt.legend()
plt.grid(True, linestyle='--', alpha=0.6)

# Show plot
plt.show()
```

```
plt.show()
```



[4]:
```
plt
```

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Code

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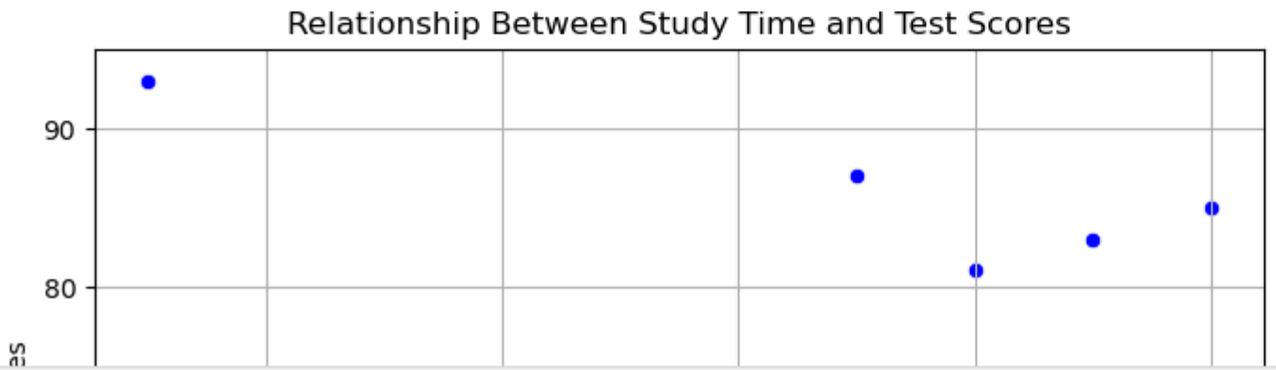
[5]:
```
import seaborn as sns
import matplotlib.pyplot as plt

# 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]

# Plot
plt.figure(figsize=(8, 5))
sns.scatterplot(x=hours_studied, y=test_scores, color='blue')

# Labels and Title
plt.xlabel("Hours Studied")
plt.ylabel("Test Scores")
plt.title("Relationship Between Study Time and Test Scores")
plt.grid(True)
plt.show()
```



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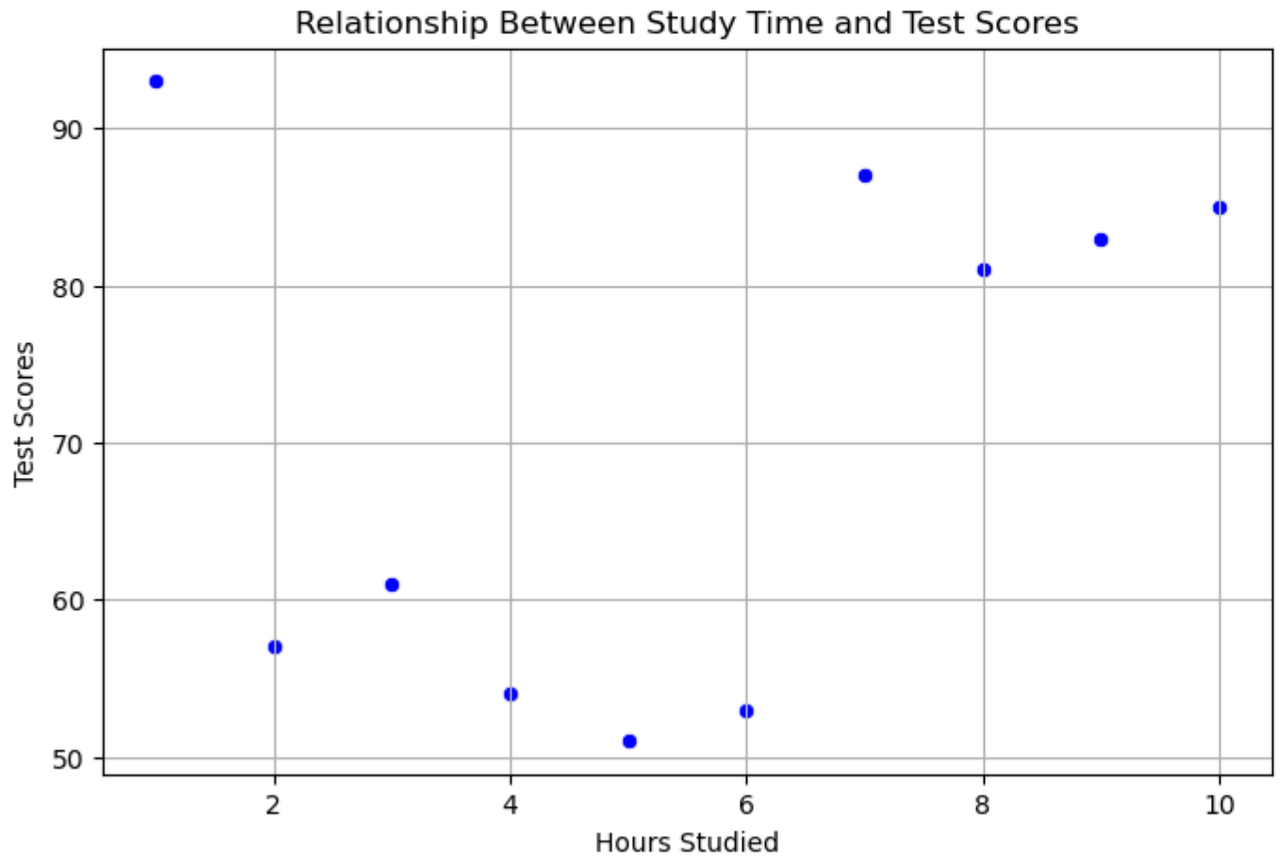
```
plt.grid(True)
plt.show()
```




```
[6]: import matplotlib.pyplot as plt
```

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Code

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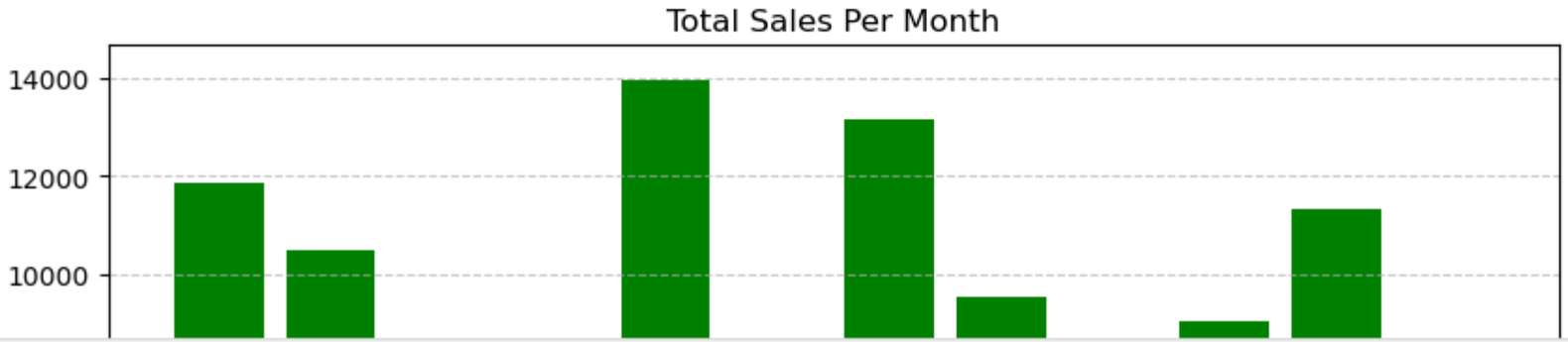
Hours Studied

[10]:
```
import matplotlib.pyplot as plt

# Data
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]

# Plot
plt.figure(figsize=(10, 5))
plt.bar(months, sales, color='GREEN')

# Labels and Title
plt.xlabel("Month")
plt.ylabel("Total Sales")
plt.title("Total Sales Per Month")
plt.xticks(rotation=45)
plt.grid(axis='y', linestyle='--', alpha=0.7)
plt.show()
```



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```
plt.grid(axis='y', linestyle='--', alpha=0.7)
plt.show()
```