In [15]:
```python
# lab16q1-
import matplotlib.pyplot as plt
regions = ['A','B', 'C', 'D']
population_data = [30000, 35000, 50000, 35000]
total_population = sum(population_data)
percentages = [(pop / total_population) * 100 for pop in population_data]
plt.figure(figsize=(5, 5))
plt.pie(percentages, labels=regions, autopct='%1.1f%%', startangle=140)
plt.title('Population Distribution by Region')
plt.show()
```
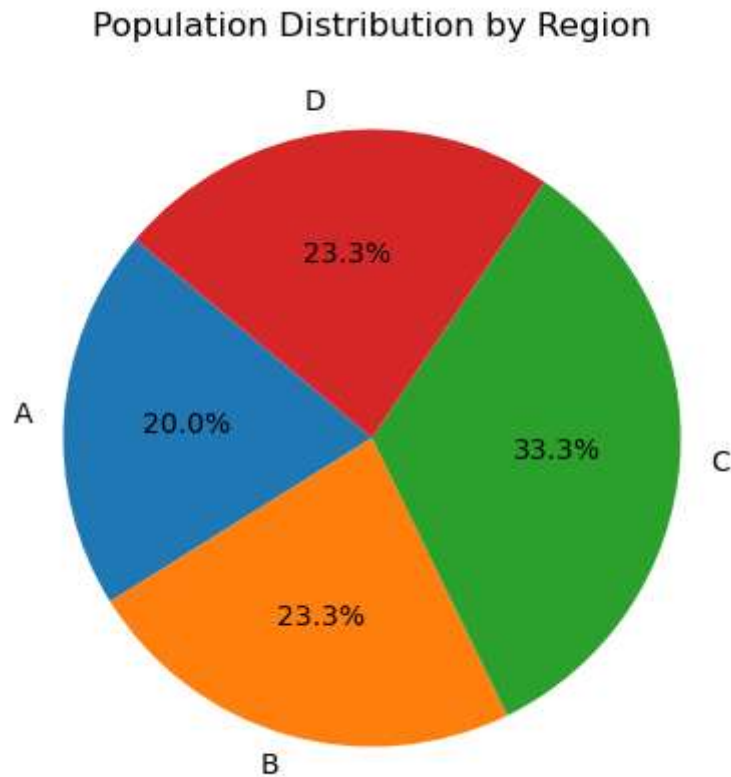

Population Distribution by Region

In [31]:
```python
#lab16q2
import matplotlib.pyplot as plt
import numpy as np
city1_temp = np.array([25, 27, 29, 31, 33, 31, 29, 27, 25, 23, 21, 20])
city2_temp = np.array([22, 24, 26, 28, 30, 28, 26, 24, 22, 20, 18, 17])
time = np.arange(1, 13)  # 1 to 12 for 12 months
plt.figure(figsize=(6, 6))  # Adjust figure size for better readability
plt.plot(time, city1_temp, label="City 1", marker='*')
plt.plot(time, city2_temp, label="City 2", marker='x')
plt.xlabel("Time (Months)")
plt.ylabel("Temperature (°C)")
plt.title("Temperature Comparison:")
plt.xticks(time)
plt.legend()
plt.grid(True, linestyle='--', alpha=0.7)
plt.show()
```

Temperature Comparison:
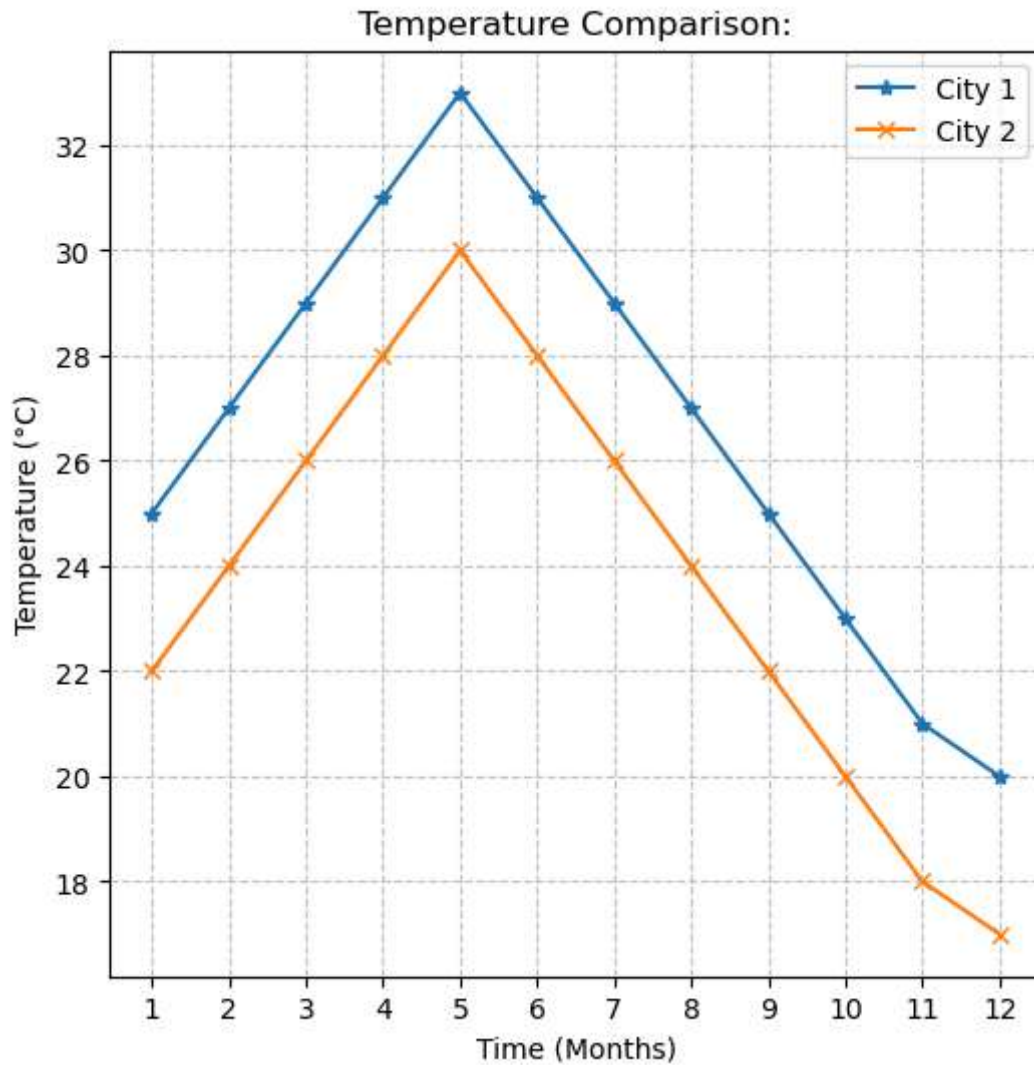
In [29]:
```python
#lab16q3
import matplotlib.pyplot as plt
daily_visitors = [ 190, 220, 250, 300, 280, 270, 310, 330,
                   290, 260, 240, 230, 200, 180, 160, 140, 130, 120, 150, 170,
                   200, 220, 260, 300, 310, 320]
plt.figure(figsize=(4, 5))
plt.hist(daily_visitors, bins=10, color='green', edgecolor='black')
plt.xlabel("Number of Visitors")
plt.ylabel("Frequency")
plt.title("Distribution of Daily Website Visitors")
plt.show()
```

Distribution of Daily Website Visitors
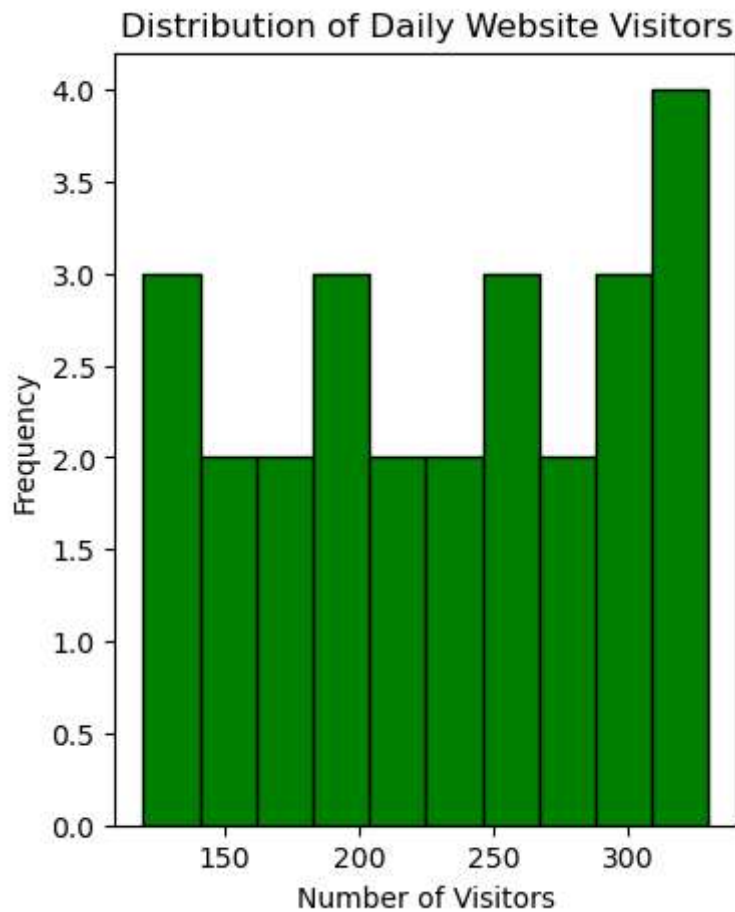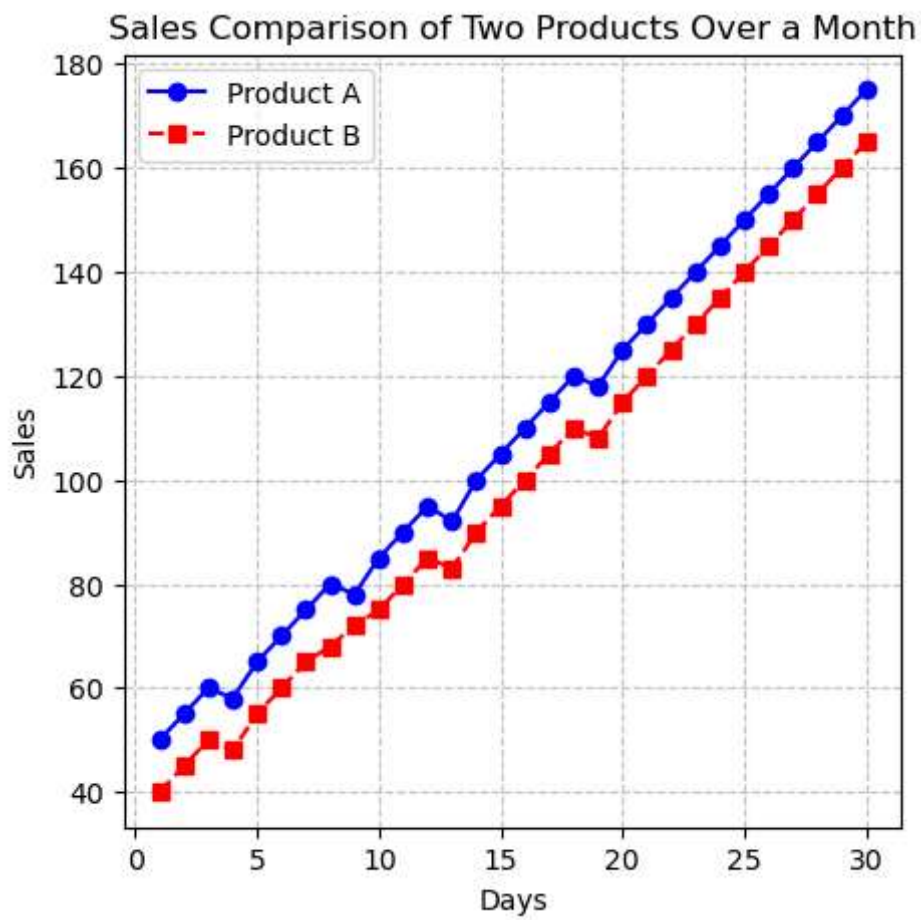


```
In [43]: #Lab16q4
         import matplotlib.pyplot as plt
         sales = [ 2000, 3000, 4000, 5500, 6000, 7000, 8000, 9000, 10000]
         profit = [400, 600, 800, 1200, 1400, 1600, 1800, 2000, 2200]
         plt.figure(figsize=(5, 5))
         plt.scatter(sales, profit, color='yellow', marker='o')
         plt.grid(True, linestyle='--', alpha=0.7)
         plt.xlabel("Sales ($)")
         plt.ylabel("Profit ($)")
         plt.title("Relation")
```

Out[43]: Text(0.5, 1.0, 'Relation')

Relation
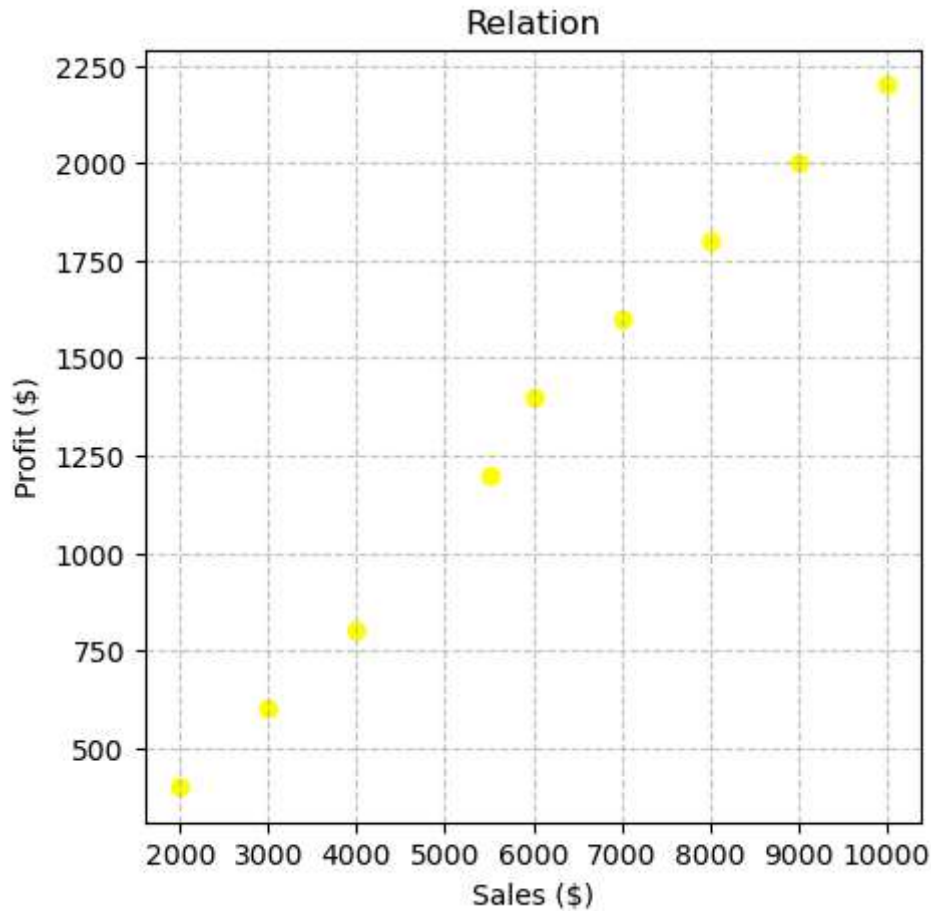

```
In [53]:  #Lab16q5
          import matplotlib.pyplot as plt
          days = list(range(1, 31))
          product_A_sales = [50, 55, 60, 58, 65, 70, 75, 80, 78, 85, 90, 95, 92, 100, 105,
                             110, 115, 120, 118, 125, 130, 135, 140, 145, 150, 155, 160, 165,
          product_B_sales = [40, 45, 50, 48, 55, 60, 65, 68, 72, 75, 80, 85, 83, 90, 95,
                             100, 105, 110, 108, 115, 120, 125, 130, 135, 140, 145, 150, 155,
          plt.figure(figsize=(5, 5))
          plt.plot(days, product_A_sales, marker='o', linestyle='-', color='blue', label='Pro
          plt.plot(days, product_B_sales, marker='s', linestyle='--', color='red', label='Pro
          plt.xlabel("Days")
          plt.ylabel("Sales")
          plt.title("Sales Comparison of Two Products Over a Month")
          plt.legend()
          plt.grid(True, linestyle='--', alpha=0.7)
          plt.show()
```

Sales Comparison of Two Products Over a Month

In [ ]: