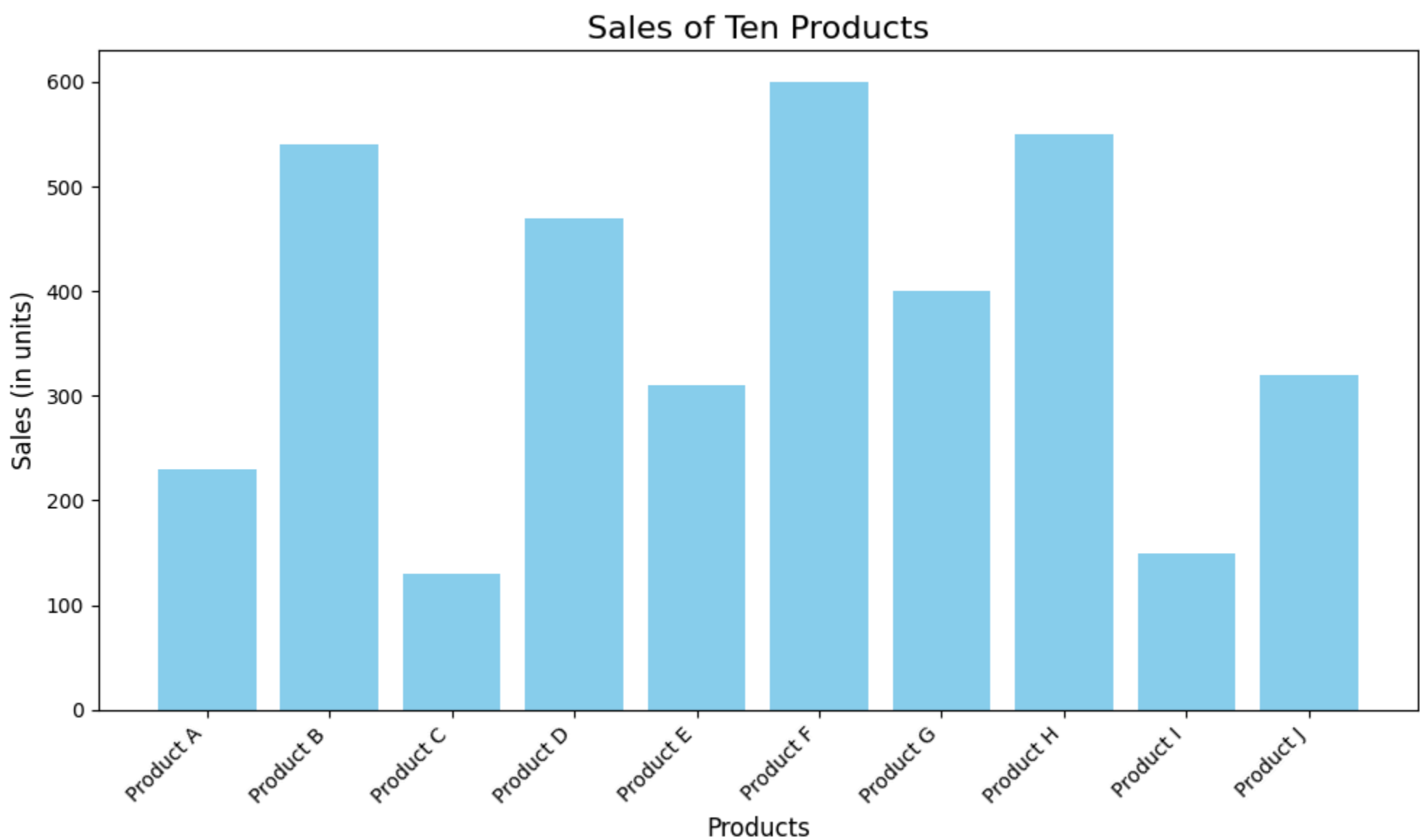


```
In [1]: # 1. Create a bar chart showing the sales of ten products with values .
import matplotlib.pyplot as plt

# Sample data for ten products and their sales values
products = ['Product A', 'Product B', 'Product C', 'Product D', 'Product E', 'Product F', 'Product G', 'Product H', 'Product I', 'Product J']
sales = [230, 540, 130, 470, 310, 600, 400, 550, 150, 320]

# Create the bar chart
plt.figure(figsize=(10,6))
plt.bar(products, sales, color='skyblue')
plt.title('Sales of Ten Products', fontsize=16)
plt.xlabel('Products', fontsize=12)
plt.ylabel('Sales (in units)', fontsize=12)
plt.xticks(rotation=45, ha='right')
plt.tight_layout()

# Show the plot
plt.show()
```



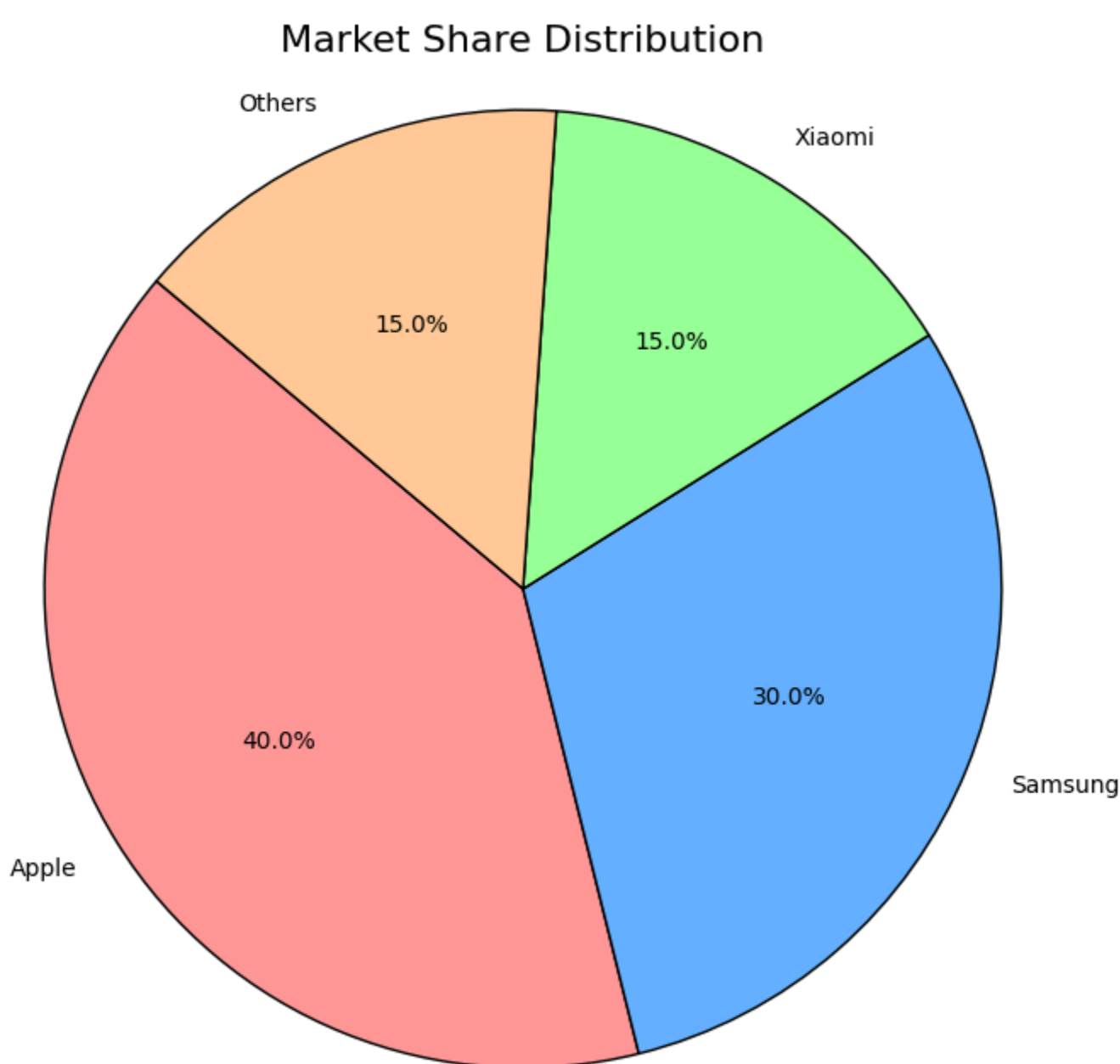
```
In [2]: # 2. Create a pie chart for the following market share data:
# Apple: 40%
# Samsung: 30%
# Xiaomi: 15%
# Others: 15%

import matplotlib.pyplot as plt

# Market share data
labels = ['Apple', 'Samsung', 'Xiaomi', 'Others']
sizes = [40, 30, 15, 15]
colors = ['#ff9999', '#66b3ff', '#99ff99', '#ffcc99']

# Create the pie chart
plt.figure(figsize=(8,8))
plt.pie(sizes, labels=labels, autopct='%1.1f%%', colors=colors, startangle=140, wedgeprops={'edgecolor': 'black'})
plt.title('Market Share Distribution', fontsize=16)
plt.axis('equal') # Equal aspect ratio ensures that pie is drawn as a circle.

# Show the plot
plt.show()
```



```
In [3]: # 3.Create a subplot with two graphs:
# A line plot for temperatures in a week: [30, 32, 31, 29, 28, 27, 26]
# A bar chart for the same data.

import matplotlib.pyplot as plt

# Data for temperatures
days = ['Monday', 'Tuesday', 'Wednesday', 'Thursday', 'Friday', 'Saturday', 'Sunday']
temperatures = [30, 32, 31, 29, 28, 27, 26]

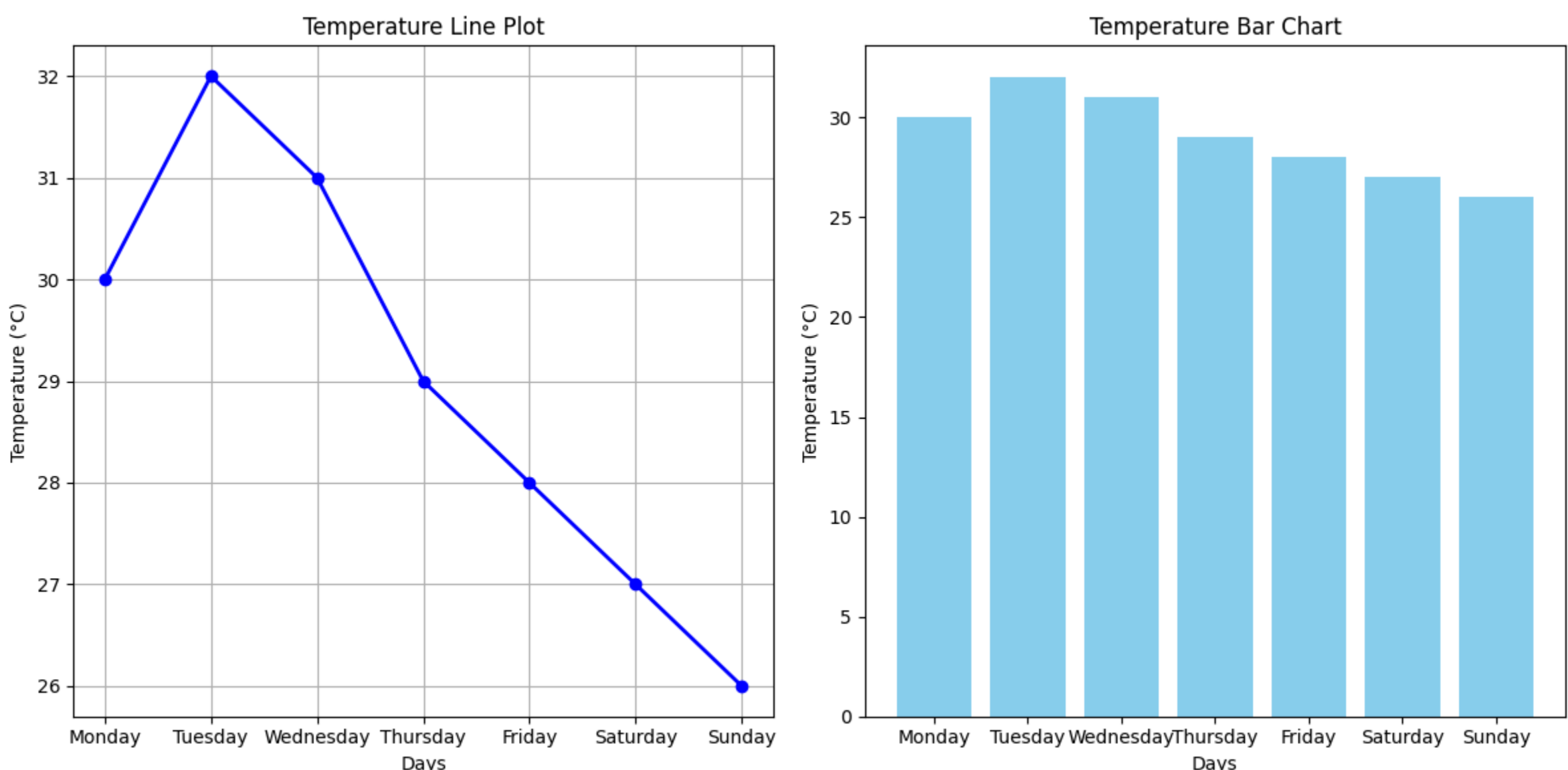
# Create a subplot with 2 graphs
fig, (ax1, ax2) = plt.subplots(1, 2, figsize=(12, 6))

# Line plot
ax1.plot(days, temperatures, marker='o', color='b', linestyle='-', linewidth=2, markersize=6)
ax1.set_title('Temperature Line Plot')
ax1.set_xlabel('Days')
ax1.set_ylabel('Temperature (°C)')
ax1.grid(True)

# Bar chart
ax2.bar(days, temperatures, color='skyblue')
ax2.set_title('Temperature Bar Chart')
ax2.set_xlabel('Days')
ax2.set_ylabel('Temperature (°C)')

# Adjust layout
plt.tight_layout()

# Show the plot
plt.show()
```



```
In [4]: # 4.Generate a histogram showing the distribution of students' scores:
# Scores: [55, 60, 65, 70, 75, 80, 85, 90, 95, 100, 55, 60, 75, 85, 90]

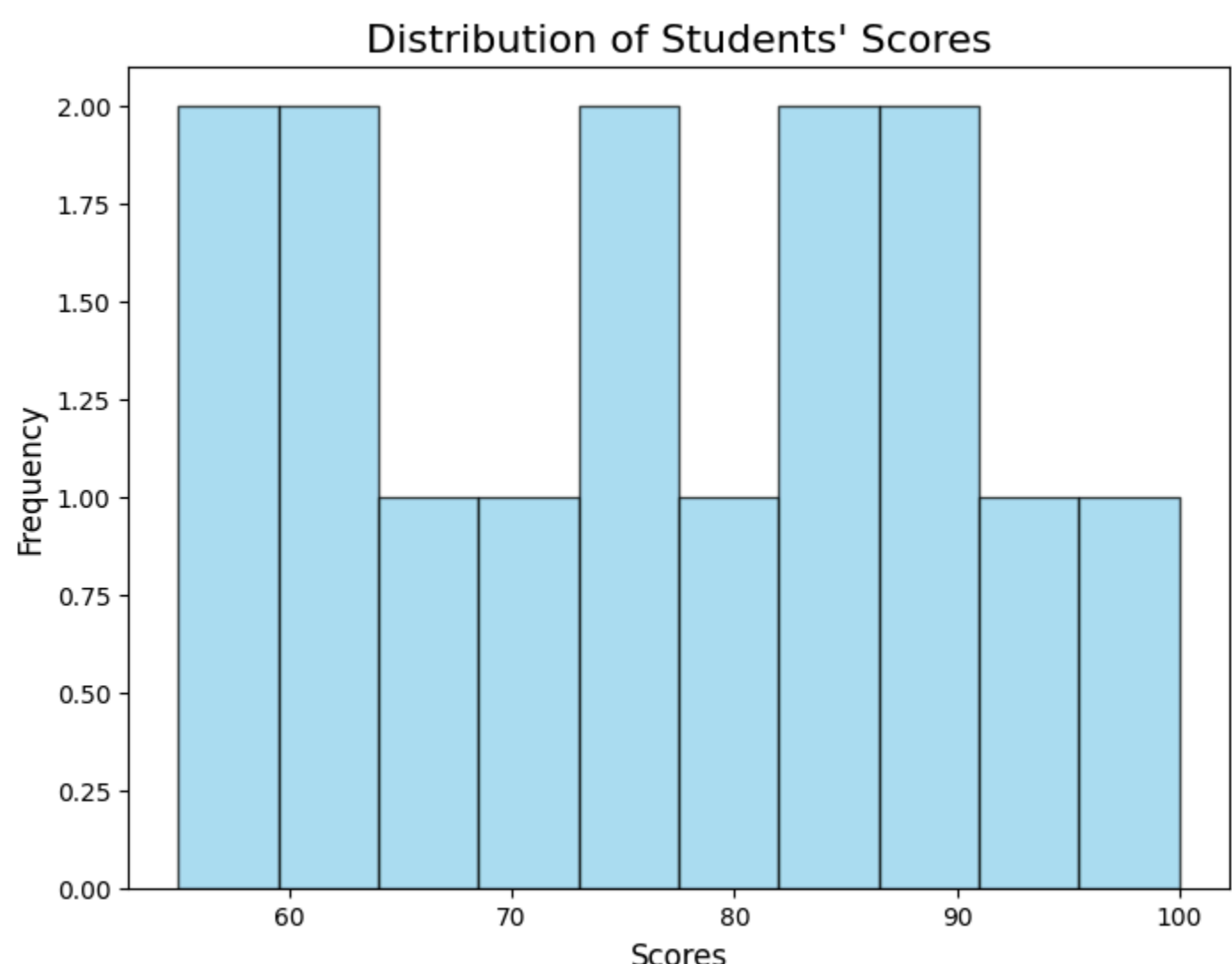
import matplotlib.pyplot as plt

# Data for student scores
scores = [55, 60, 65, 70, 75, 80, 85, 90, 95, 100, 55, 60, 75, 85, 90]

# Create a histogram
plt.figure(figsize=(8, 6))
plt.hist(scores, bins=10, color='skyblue', edgecolor='black', alpha=0.7)

# Title and labels
plt.title('Distribution of Students\' Scores', fontsize=16)
plt.xlabel('Scores', fontsize=12)
plt.ylabel('Frequency', fontsize=12)

# Show the plot
plt.show()
```



```
In [5]: # 5.Create a Matplotlib plot that compares the sales data of two years (2023 and 2024)
# for five products using a grouped bar chart.

import matplotlib.pyplot as plt
import numpy as np

# Data for sales of five products in two years (2023 and 2024)
products = ['Product A', 'Product B', 'Product C', 'Product D', 'Product E']
sales_2023 = [230, 540, 130, 470, 310]
sales_2024 = [250, 580, 150, 500, 340]

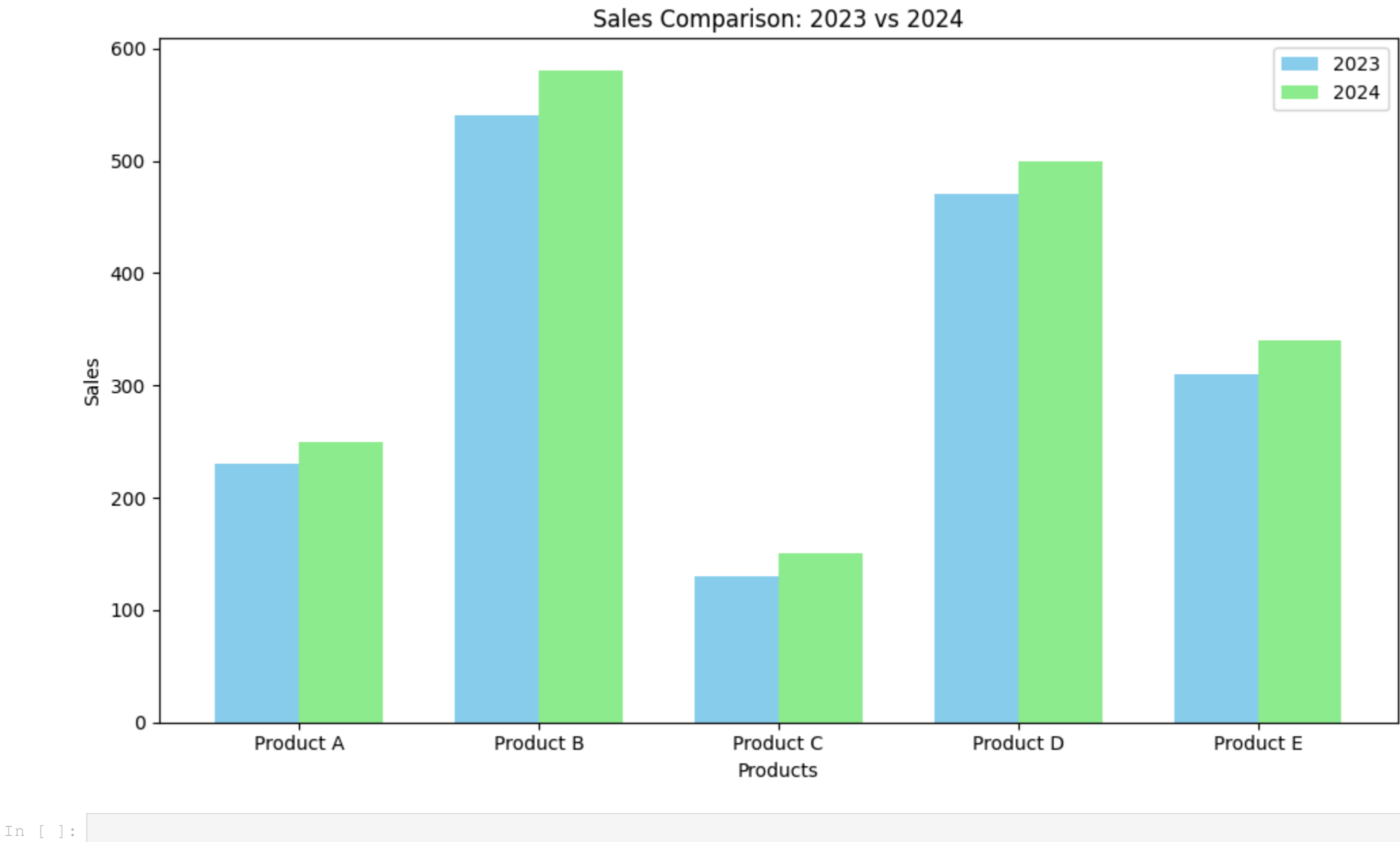
# Set positions for the bars
x = np.arange(len(products))
width = 0.35 # width of the bars

# Create the grouped bar chart
fig, ax = plt.subplots(figsize=(10,6))
bars1 = ax.bar(x - width/2, sales_2023, width, label='2023', color='skyblue')
bars2 = ax.bar(x + width/2, sales_2024, width, label='2024', color='lightgreen')

# Add labels and title
ax.set_xlabel('Products')
ax.set_ylabel('Sales')
ax.set_title('Sales Comparison: 2023 vs 2024')
ax.set_xticks(x)
ax.set_xticklabels(products)
ax.legend()

# Show the plot
plt.tight_layout()
plt.show()
```





In []: