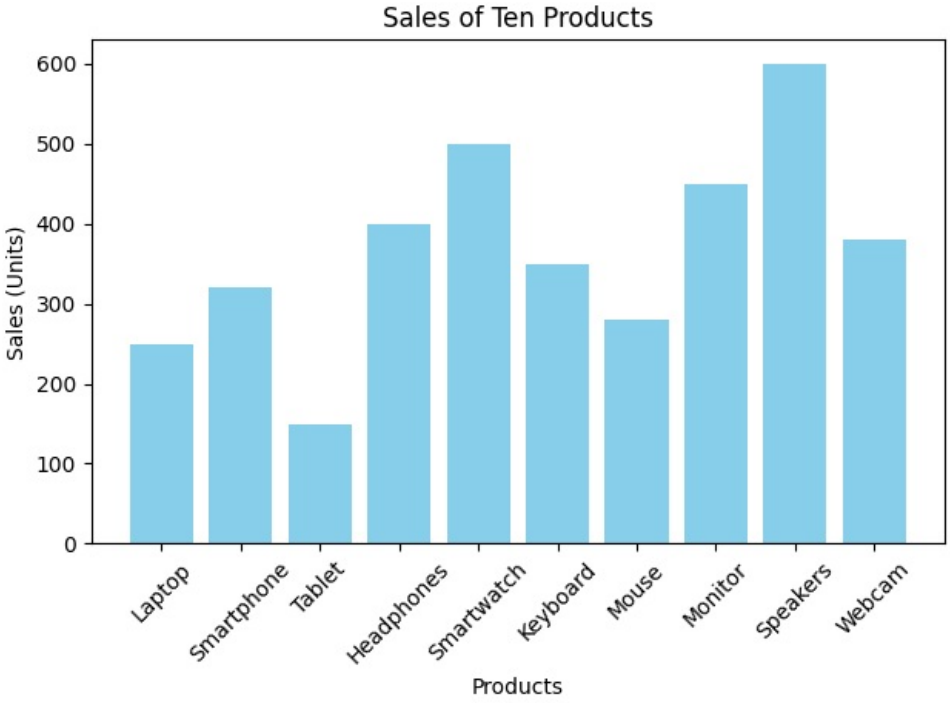
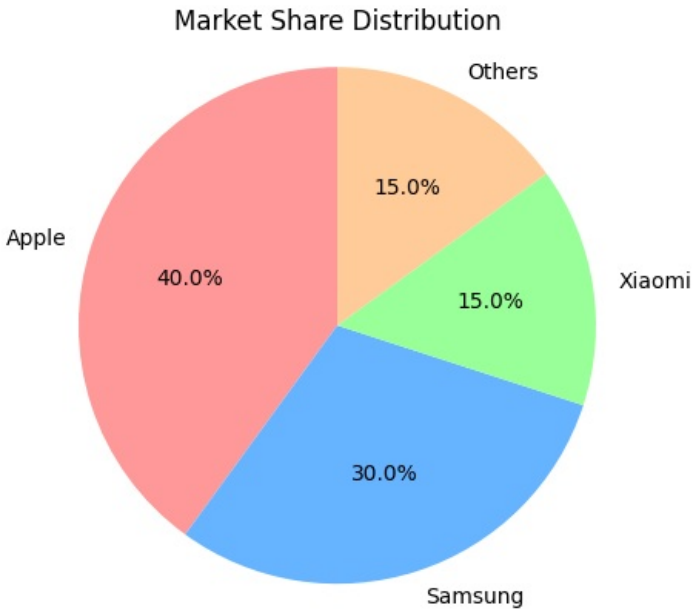
In [2]:
```
# 1.Create a bar chart showing the sales of ten products  with values .

import matplotlib.pyplot as plt

# Product names
products = ['Laptop', 'Smartphone', 'Tablet', 'Headphones', 'Smartwatch',
            'Keyboard', 'Mouse', 'Monitor', 'Speakers', 'Webcam']

# Sales values (for each product)
sales = [250, 320, 150, 400, 500, 350, 280, 450, 600, 380]

# Create a bar chart
plt.bar(products, sales, color='skyblue')

# Add title and labels
plt.title('Sales of Ten Products')
plt.xlabel('Products')
plt.ylabel('Sales (Units)')

# Rotate the product names on x-axis for better readability
plt.xticks(rotation=45)

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

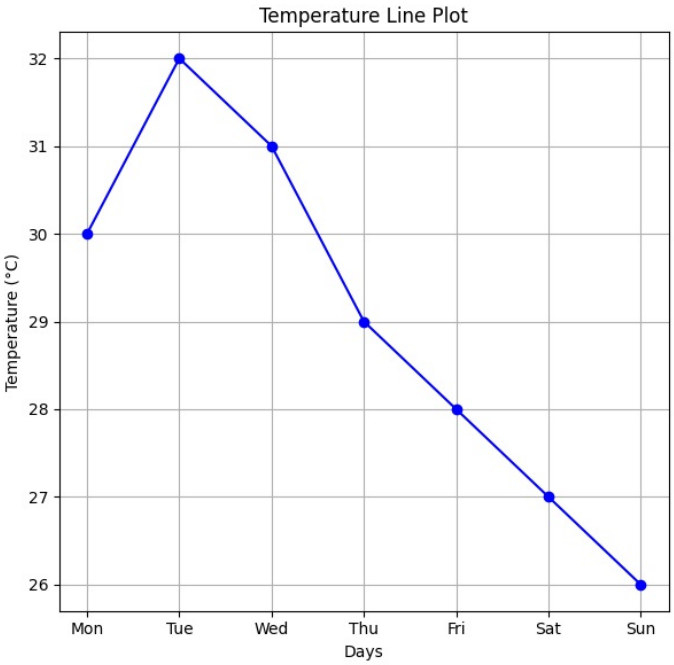


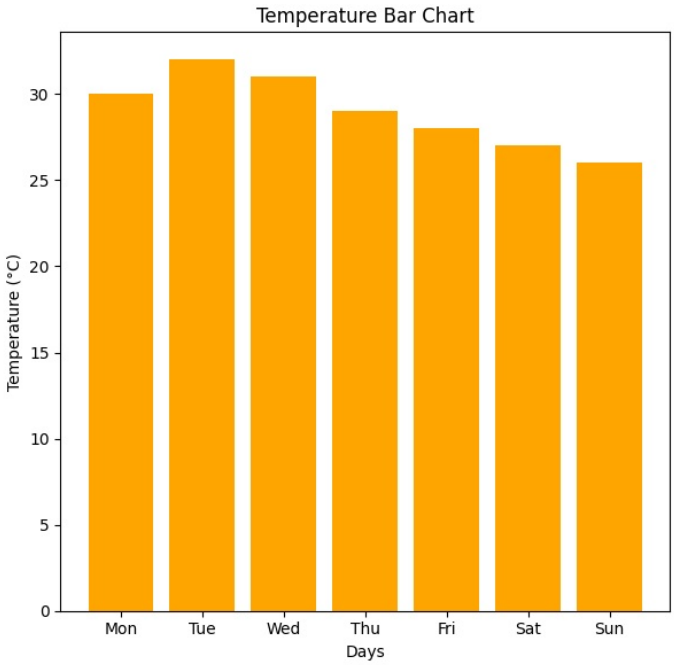
In [3]:
```
# 2. Create a pie chart for the following market share data:

# 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]

# Create a pie chart
plt.pie(sizes, labels=labels, autopct='%1.1f%%', startangle=90, colors=['#ff9999','#66b3ff','#99ff99','#ffcc99'

# Add title
plt.title('Market Share Distribution')

# Display the pie chart
plt.axis('equal')  # Equal aspect ratio ensures that pie is drawn as a circle.
plt.show()
```



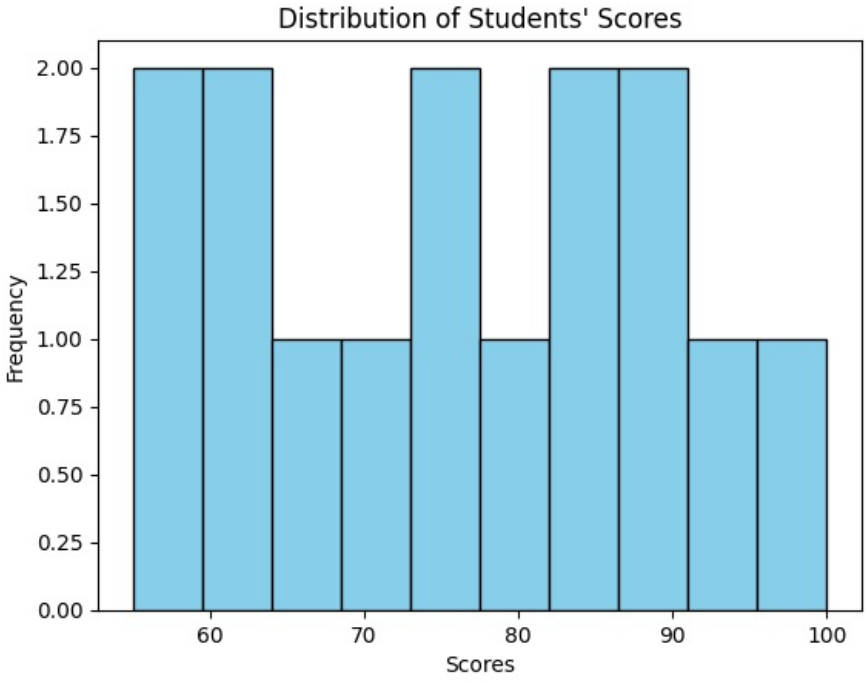
In [4]:

```python
# 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: Temperatures for a week
temperatures = [30, 32, 31, 29, 28, 27, 26]
days = ['Mon', 'Tue', 'Wed', 'Thu', 'Fri', 'Sat', 'Sun']

# Create a figure and two subplots
fig, axes = plt.subplots(1, 2, figsize=(12, 6))  # 1 row, 2 columns

# Line plot on the first subplot
axes[0].plot(days, temperatures, marker='o', color='b', linestyle='-', label='Temperature')
axes[0].set_title('Temperature Line Plot')
axes[0].set_xlabel('Days')
axes[0].set_ylabel('Temperature (°C)')
axes[0].grid(True)

# Bar chart on the second subplot
axes[1].bar(days, temperatures, color='orange', label='Temperature')
axes[1].set_title('Temperature Bar Chart')
axes[1].set_xlabel('Days')
axes[1].set_ylabel('Temperature (°C)')

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



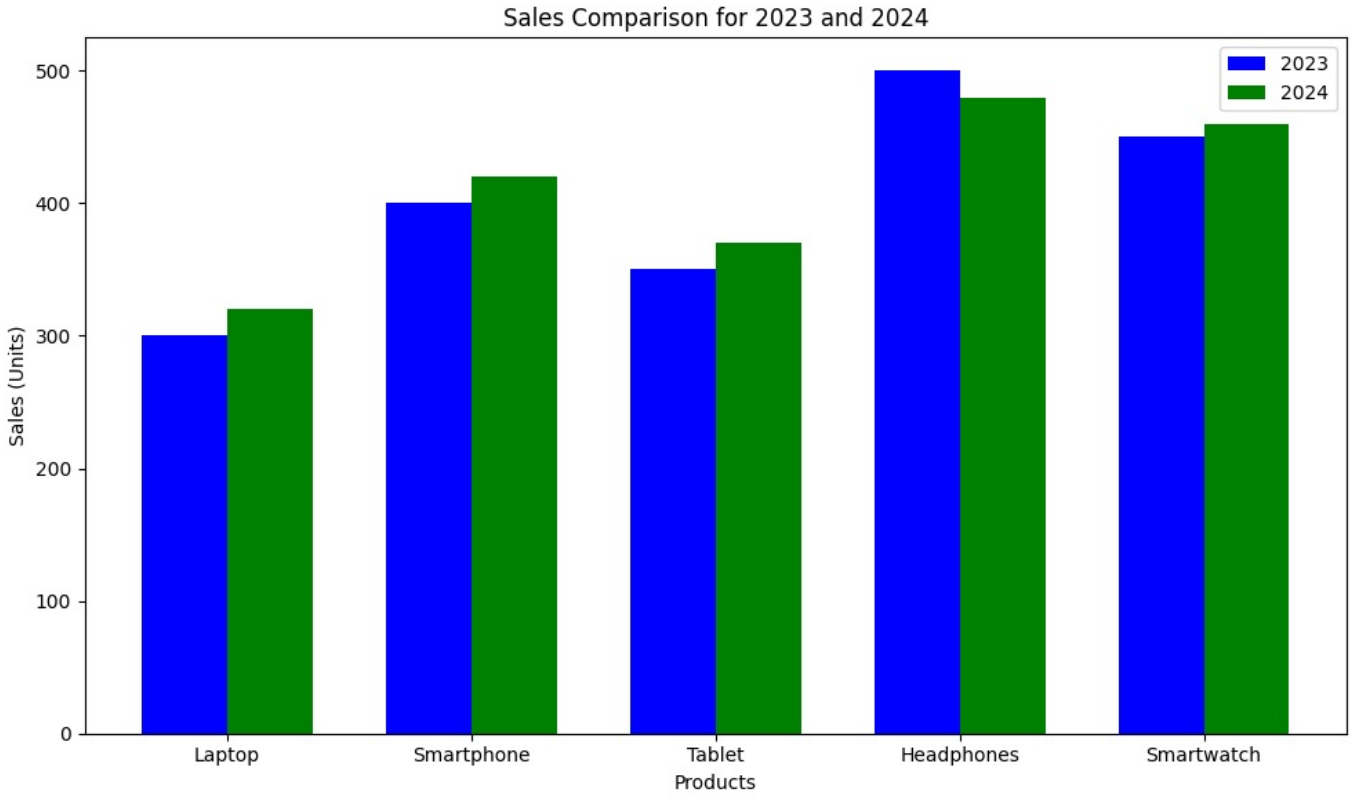


In [5]:
```python
# 4.Generate a histogram showing the distribution of students' scores:

# Scores: [55, 60, 65, 70, 75, 80, 85, 90, 95, 100, 55, 60, 75, 85, 90]



import matplotlib.pyplot as plt

# Scores of students
scores = [55, 60, 65, 70, 75, 80, 85, 90, 95, 100, 55, 60, 75, 85, 90]

# Create the histogram
plt.hist(scores, bins=10, edgecolor='black', color='skyblue')

# Add title and labels
plt.title('Distribution of Students\' Scores')
plt.xlabel('Scores')
plt.ylabel('Frequency')

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



In [10]:
```python
# 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 the sales comparison
products = ['Laptop', 'Smartphone', 'Tablet', 'Headphones', 'Smartwatch']
sales_2023 = [300, 400, 350, 500, 450]
sales_2024 = [320, 420, 370, 480, 460]

# Number of products
n = len(products)

# Bar width and positions
bar_width = 0.35
index = np.arange(n)

# Create the grouped bar chart
fig, ax = plt.subplots(figsize=(10, 6))

# Bars for 2023 sales
bar1 = ax.bar(index, sales_2023, bar_width, label='2023', color='b')

# Bars for 2024 sales (shifted by bar_width)
bar2 = ax.bar(index + bar_width, sales_2024, bar_width, label='2024', color='g')

# Add title and labels
ax.set_title('Sales Comparison for 2023 and 2024')
ax.set_xlabel('Products')
ax.set_ylabel('Sales (Units)')

# Set x-ticks and x-tick labels
ax.set_xticks(index + bar_width / 2)
ax.set_xticklabels(products)

# Add a legend
ax.legend()

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



In [ ]: