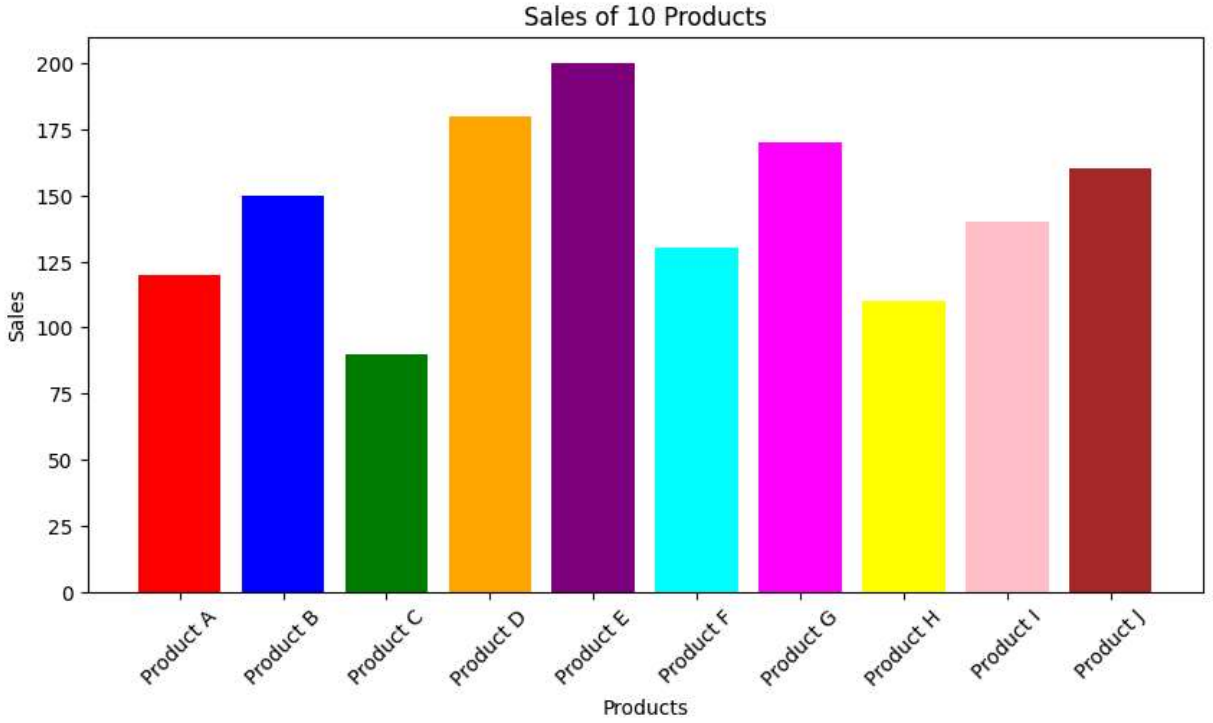
In [83]:
```
import pandas as pd
#1.Create a bar chart showing the sales of ten products with values .
import matplotlib.pyplot as plt
```

In [84]:
```
# Sample data: Product names and sales values
products = ["Product A", "Product B", "Product C", "Product D", "Product E",
            "Product F", "Product G", "Product H", "Product I", "Product J"]
sales = [120, 150, 90, 180, 200, 130, 170, 110, 140, 160]
```

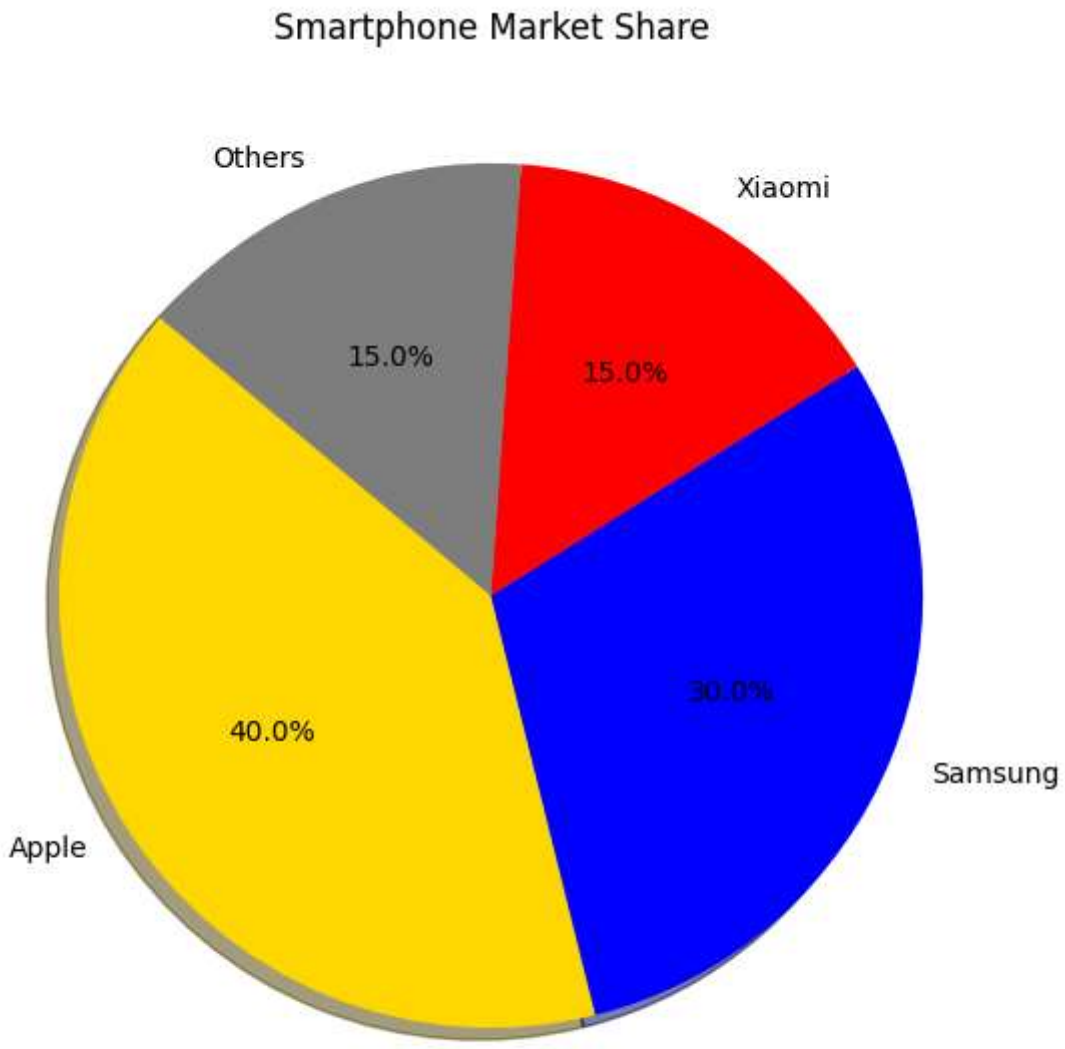
In [85]:
```
# Create bar chart
plt.figure(figsize=(10, 5))

# Define different colors for each bar
colors = ["red", "blue", "green", "orange", "purple",
          "cyan", "magenta", "yellow", "pink", "brown"]

plt.bar(products, sales, color=colors)

# Labels and title
plt.xlabel("Products")
plt.ylabel("Sales")
plt.title("Sales of 10 Products")
plt.xticks(rotation=45)  # Rotate product names for better visibility

# Show chart
plt.show()
```



In [86]:
```
#2.Create a pie chart for the following market share data:
# Apple: 40%
# Samsung: 30%
```

```
# Xiaomi: 15%
# Others: 15%
```

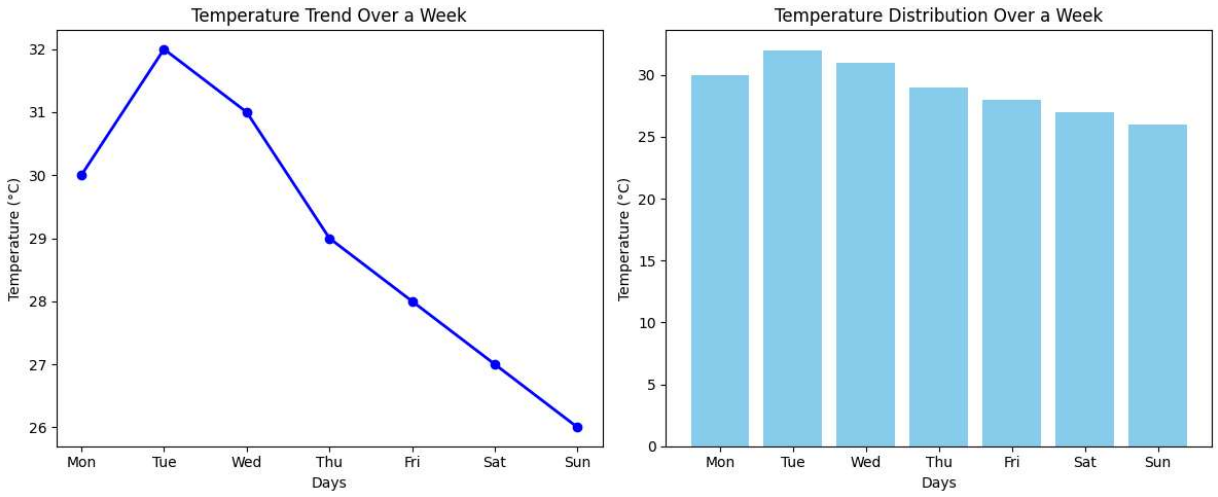
In [87]:
```
# Market share data
brands = ["Apple", "Samsung", "Xiaomi", "Others"]
market_share = [40, 30, 15, 15]
colors = ["gold", "blue", "red", "gray"]  # Custom colors

# Create the pie chart
plt.figure(figsize=(7, 7))
plt.pie(market_share, labels=brands, colors=colors, autopct="%1.1f%%", startangle=1

# Title of the chart
plt.title("Smartphone Market Share")

# Show chart
plt.show()
```



In [88]:
```
#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.
```

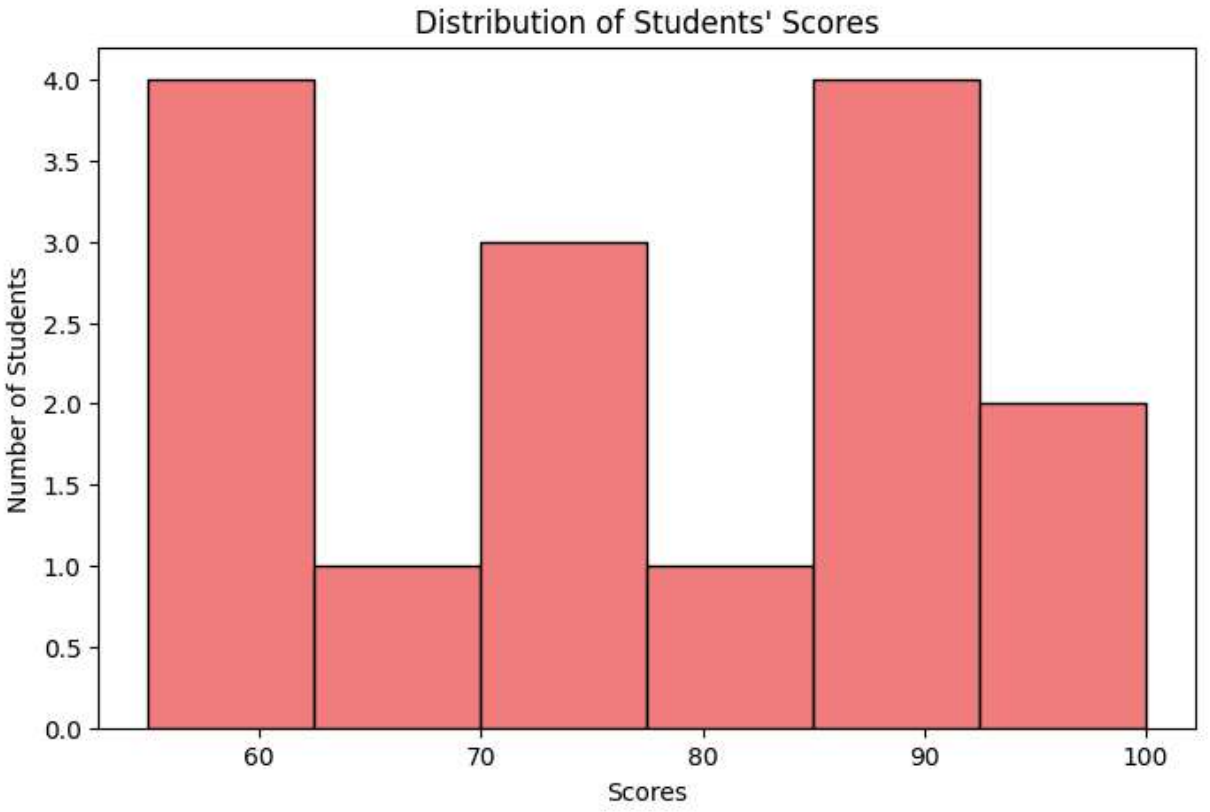
In [89]:
```
import matplotlib.pyplot as plt

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

# Create a figure with two subplots
plt.figure(figsize=(12, 5))

# Subplot 1: Line Plot
plt.subplot(1, 2, 1)  # (rows, columns, position)
plt.plot(days, temperatures, marker="o", linestyle="-", color="b", linewidth=2)
plt.xlabel("Days")
plt.ylabel("Temperature (°C)")
plt.title("Temperature Trend Over a Week")

# Subplot 2: Bar Chart
plt.subplot(1, 2, 2)
plt.bar(days, temperatures, color="skyblue")
plt.xlabel("Days")
plt.ylabel("Temperature (°C)")
plt.title("Temperature Distribution Over a Week")

# Adjust layout and show the plots
plt.tight_layout()
plt.show()
```



In [90]:
```
# 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]
```

In [91]:
```
# Data: Students' scores
scores = [55, 60, 65, 70, 75, 80, 85, 90, 95, 100, 55, 60, 75, 85, 90]

# Create histogram
plt.figure(figsize=(8, 5))
plt.hist(scores, bins=6, color="lightcoral", edgecolor="black")

# Labels and title
```

```
plt.xlabel("Scores")
plt.ylabel("Number of Students")
plt.title("Distribution of Students' Scores")

# Show histogram
plt.show()
```



In [92]:
```
#5.Create a Matplotlib plot that compares the sales data of two years (2023 and 202
# for five products using a grouped bar chart.
```

In [93]:
```
# Load the Excel file
df = pd.read_excel(r"E:\Sales Data.xlsx")
df
```

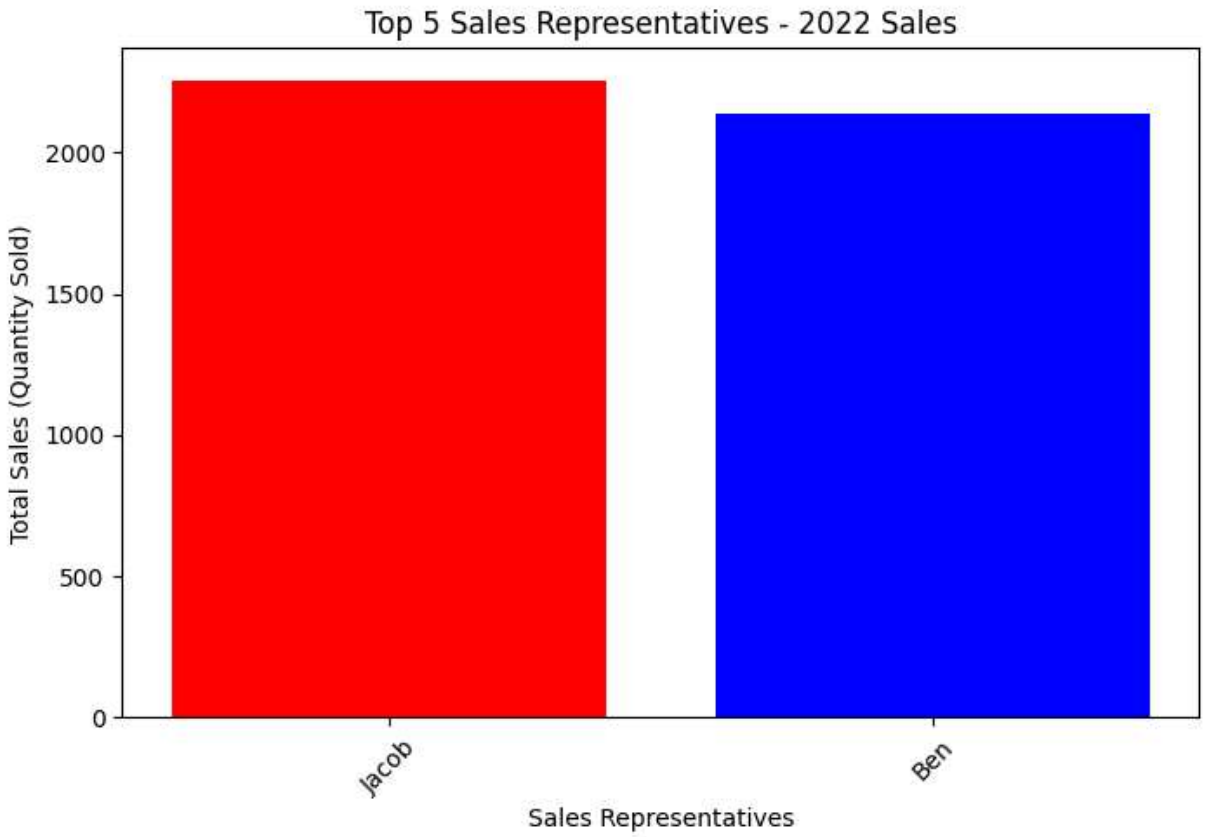
Out[93]:

	Date	Sales Rep	Shift	Cost Price	Selling Price	Quantity Sold	Quantity Sold wise sales	Profit	Weekday
0	44743	Ben	Night	1112.94	1288.00	13	16744.00	175.06	5
1	44743	Jacob	Day	1095.50	1250.75	12	15009.00	155.25	5
2	44746	Ben	Night	1120.94	1295.00	34	44030.00	174.06	1
3	44746	Jacob	Day	1509.73	1687.75	11	18565.25	178.02	1
4	44747	Ben	Day	1235.33	1412.25	23	32481.75	176.92	2
...	...	...	...	...	...	...	...	...	...
83	44802	Jacob	Day	774.20	946.25	45	42581.25	172.05	1
84	44803	Ben	Day	1350.48	1509.50	37	55851.50	159.02	2
85	44803	Jacob	Night	1053.37	1136.25	89	101126.25	82.88	2
86	44804	Ben	Night	1161.92	1237.00	76	94012.00	75.08	3
87	44804	Jacob	Day	951.93	1136.00	66	74976.00	184.07	3

88 rows × 9 columns

In [94]:

```
# Convert 'Date' column to datetime format and extract the year
df["Date"] = pd.to_datetime(df["Date"], origin="1899-12-30", unit="D")
df["Year"] = df["Date"].dt.year

# Filter data for the year 2022
df_2022 = df[df["Year"] == 2022]

# Aggregate sales by Sales Rep (assuming 'Quantity Sold' exists)
sales_by_rep = df_2022.groupby("Sales Rep")["Quantity Sold"].sum()

# Select the top 5 Sales Reps based on sales
top_5_reps = sales_by_rep.nlargest(5)

# Create a bar chart
plt.figure(figsize=(8, 5))
plt.bar(top_5_reps.index, top_5_reps.values, color=["red", "blue", "green", "orange

# Labels and title
plt.xlabel("Sales Representatives")
plt.ylabel("Total Sales (Quantity Sold)")
plt.title("Top 5 Sales Representatives - 2022 Sales")
plt.xticks(rotation=45)

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


Top 5 Sales Representatives - 2022 Sales
Total Sales (Quantity Sold)
2000
1500
1000
500
0
Jacob
Ben
Sales Representatives

In [ ]: