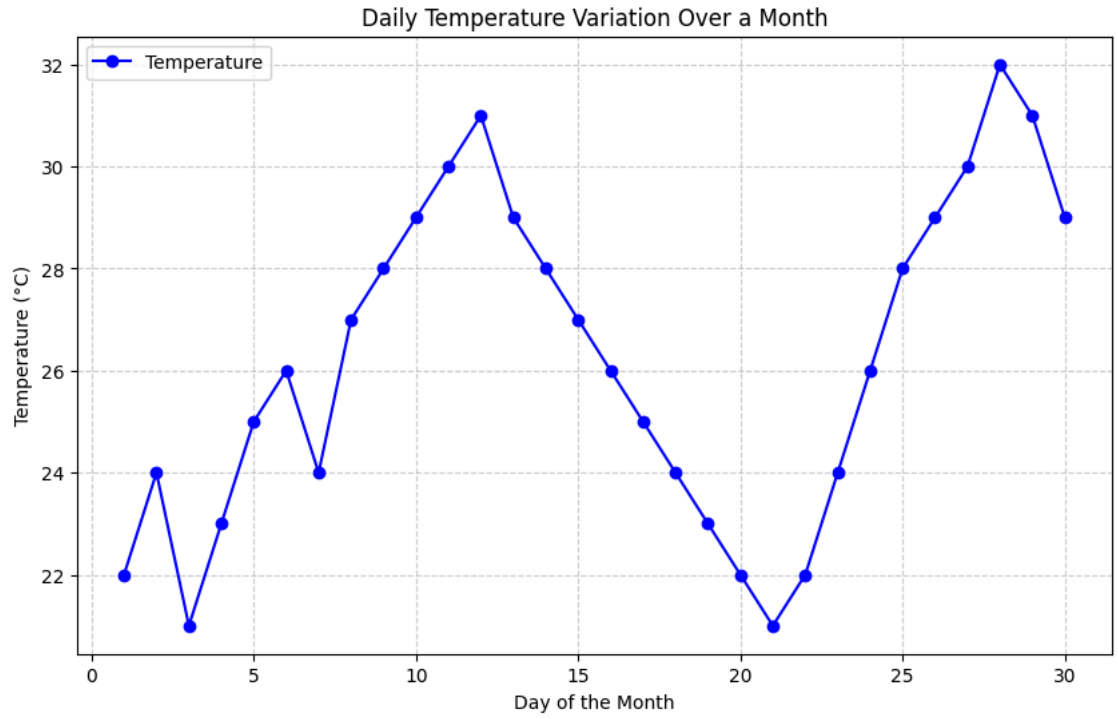
```
import pandas as pd
import matplotlib.pyplot as plt

# ----- Step 1: Create a sample dataset (you can replace this with CSV file) -----
data = {
    "Day": list(range(1, 31)),  # 30 days
    "Temperature": [22, 24, 21, 23, 25, 26, 24, 27, 28, 29,
                    30, 31, 29, 28, 27, 26, 25, 24, 23, 22,
                    21, 22, 24, 26, 28, 29, 30, 32, 31, 29]
}
df = pd.DataFrame(data)

# ----- Step 2: Plot line chart -----
plt.figure(figsize=(10,6))
plt.plot(df["Day"], df["Temperature"], marker="o", linestyle="-", color="b", label="Temperature")

# Add labels, title, grid, legend
plt.xlabel("Day of the Month")
plt.ylabel("Temperature (°C)")
plt.title("Daily Temperature Variation Over a Month")
plt.grid(True, linestyle="--", alpha=0.6)
plt.legend()

# Show the chart
plt.show()

# ----- Step 3: Find hottest & coldest days -----
hottest_day = df.loc[df["Temperature"].idxmax()]
coldest_day = df.loc[df["Temperature"].idxmin()]

print(f"Hottest Day: Day {hottest_day['Day']} with {hottest_day['Temperature']}°C")
print(f"Coldest Day: Day {coldest_day['Day']} with {coldest_day['Temperature']}°C")
```




```
Hottest Day: Day 28 with 32°C
Coldest Day: Day 3 with 21°C
```

QUESTION 2:

```
import pandas as pd
import matplotlib.pyplot as plt

# ----- Step 1: Create a sample dataset (replace with sales_data.csv if available) -----
```

```
data = {
    "Quarter": ["Q1", "Q2", "Q3", "Q4"],
    "Sales": [15000, 22000, 18000, 30000]
}
df = pd.DataFrame(data)

# If you have sales_data.csv, use this instead:
# df = pd.read_csv("sales_data.csv")

# ----- Step 2: Identify peak sales -----
peak_sales = df.loc[df["Sales"].idxmax()]

# ----- Step 3: Plot line chart -----
plt.figure(figsize=(8,5))
plt.plot(df["Quarter"], df["Sales"], marker="o", linestyle="-", color="b", label="Sales")

# Highlight peak sales
plt.scatter(peak_sales["Quarter"], peak_sales["Sales"], color="red", s=100, zorder=5, label="Peak S
plt.text(peak_sales["Quarter"], peak_sales["Sales"]+1000,
         f"Peak: {peak_sales['Sales']}",
         ha="center", color="red", fontsize=10)

# Add labels, title, grid
plt.xlabel("Quarter")
plt.ylabel("Sales ($)")
plt.title("Quarterly Sales Performance")
plt.grid(True, linestyle="--", alpha=0.6)
plt.legend()

# Show chart
plt.show()

# ----- Step 4: Print discussion -----
print("Discussion of Sales Trends:")
print("- Sales gradually increased from Q1 to Q2.")
print("- Slight dip observed in Q3.")
print("- Highest sales recorded in Q4, indicating a strong year-end or holiday season effect.")
```


```
Discussion of Sales Trends:
- Sales gradually increased from Q1 to Q2.
- Slight dip observed in Q3.
- Highest sales recorded in Q4, indicating a strong year-end or holiday season effect.
```