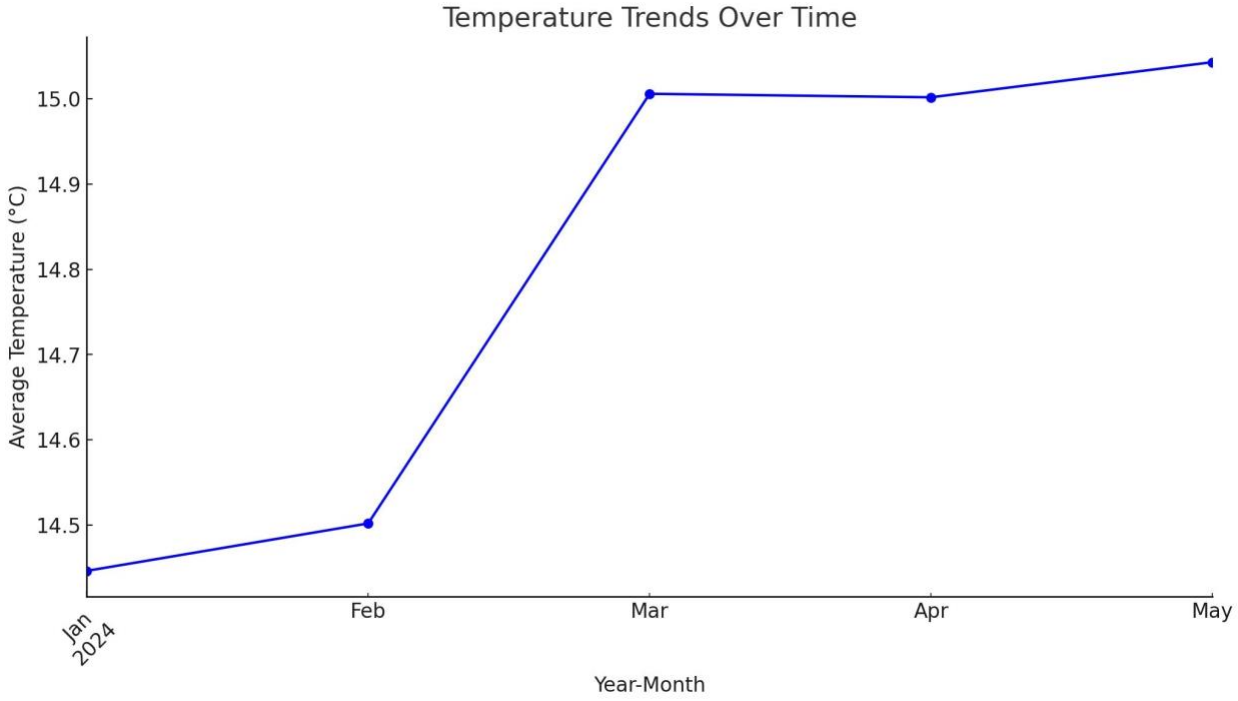
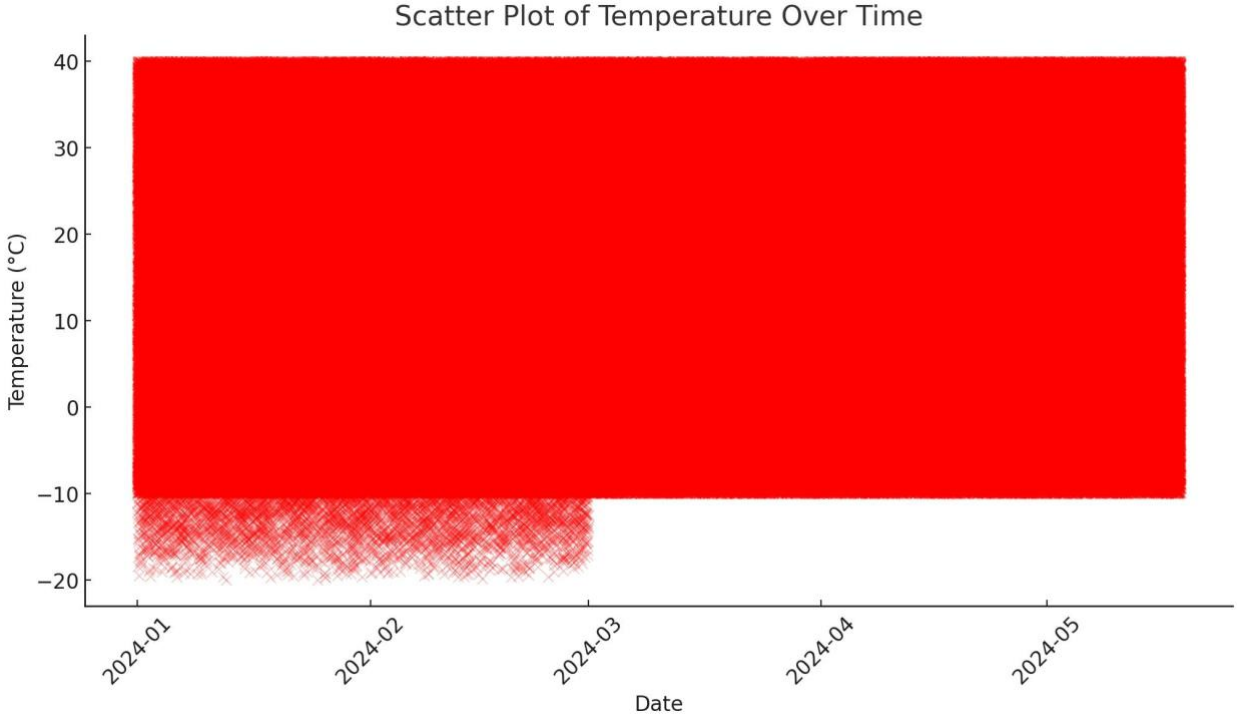
Code:

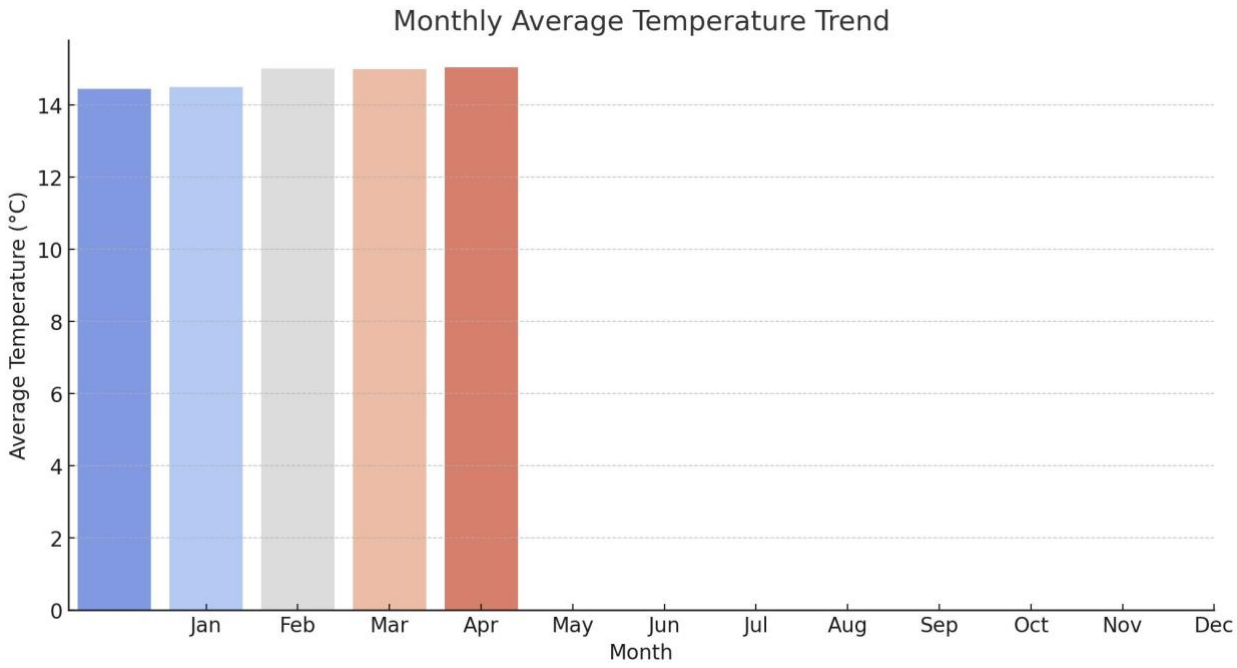
```
import pandas as pd

import matplotlib.pyplot as plt

import seaborn as sns

df = pd.read_csv(“weather.csv”)

df["Date_Time"] = pd.to_datetime(df["Date_Time"])

df["Year"] = df["Date_Time"].dt.year

df["Month"] = df["Date_Time"].dt.month

yearly_temp = df.groupby("Year")["Temperature_C"].mean()

plt.figure(figsize=(12, 6))

sns.barplot(x=yearly_temp.index, y=yearly_temp.values, palette="coolwarm")

plt.xlabel("Year")

plt.ylabel("Average Temperature (°C)")

plt.title("Yearly Average Temperature Trend")

plt.xticks(rotation=45)

plt.show()

lower_threshold = df["Temperature_C"].quantile(0.01)

upper_threshold = df["Temperature_C"].quantile(0.99)

anomalies = df[(df["Temperature_C"] <= lower_threshold) | (df["Temperature_C"] >=
upper_threshold)]

print("Extreme Temperature Anomalies:")

print(anomalies.describe())

monthly_temp = df.groupby("Month")["Temperature_C"].mean()

plt.figure(figsize=(12, 6))

sns.barplot(x=monthly_temp.index, y=monthly_temp.values, palette="coolwarm")

plt.xlabel("Month")
```

```
plt.ylabel("Average Temperature (°C)")
plt.title("Monthly Average Temperature Trend")
plt.xticks(range(1, 13), [
    "Jan", "Feb", "Mar", "Apr", "May", "Jun", "Jul", "Aug", "Sep", "Oct", "Nov", "Dec"
])
plt.show()
location_temp = df.groupby("Location")["Temperature_C"].mean().sort_values()
plt.figure(figsize=(14, 6))
sns.barplot(y=location_temp.index, x=location_temp.values, palette="coolwarm")
plt.xlabel("Average Temperature (°C)")
plt.ylabel("Location")
plt.title("Average Temperature by Location")
plt.show()
```

Output:


Temperature Trends Over Time
Average Temperature (°C)
15.0
14.9
14.8
14.7
14.6
14.5
Jan
2024
Feb
Mar
Apr
May
Year-Month


Scatter Plot of Temperature Over Time
Temperature (°C)
40
30
20
10
0
−10
−20
2024-01
2024-02
2024-03
2024-04
2024-05
Date



Extreme Temperature Anomalies:

The coldest recorded temperature is -19.97°C, while the hottest is 39.99°C