```
from google.colab import files


uploaded = files.upload()
import pandas as pd
```

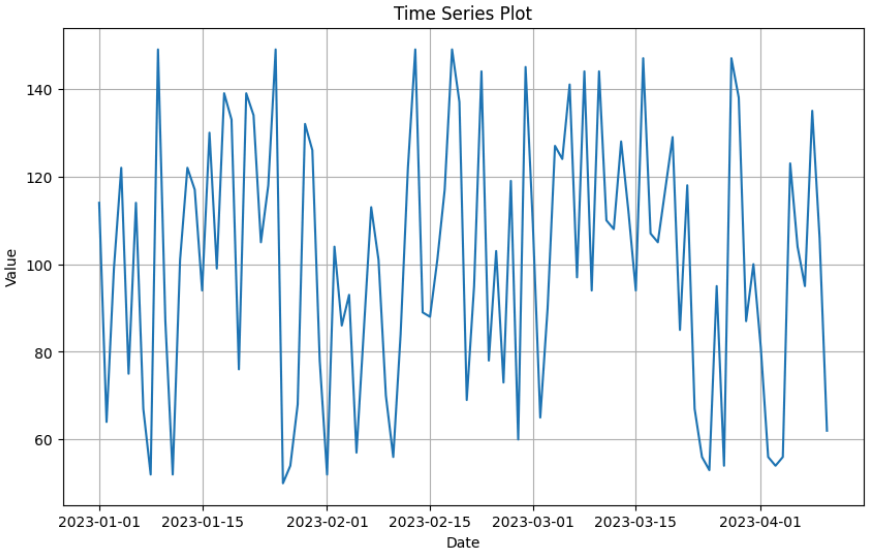
```
Choose Files time_series_data.csv
• time_series_data.csv(text/csv) - 1464 bytes, last modified: 2/3/2025 - 100% done
Saving time_series_data.csv to time_series_data (2).csv
```

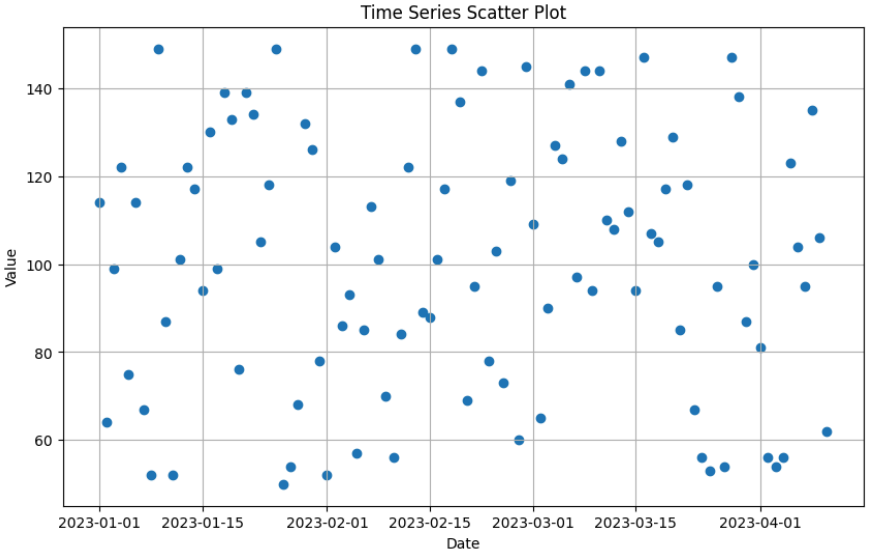
```
import io

df = pd.read_csv(io.BytesIO(uploaded[ 'time_series_data (2).csv']))
print(df)
```

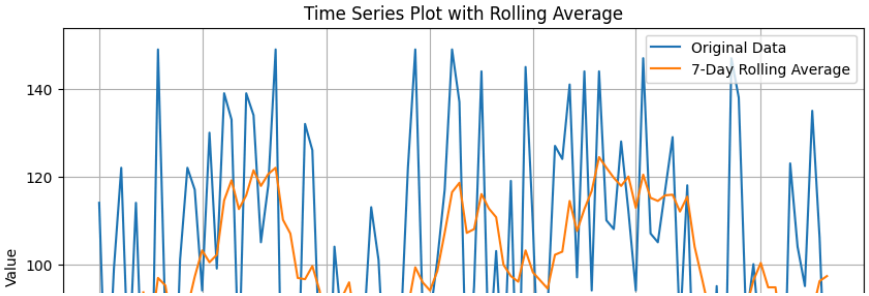
```
           Date  Value
0   2023-01-01    114
1   2023-01-02     64
2   2023-01-03     99
3   2023-01-04    122
4   2023-01-05     75
..         ...    ...
95  2023-04-06    104
96  2023-04-07     95
97  2023-04-08    135
98  2023-04-09    106
99  2023-04-10     62

[100 rows x 2 columns]
```

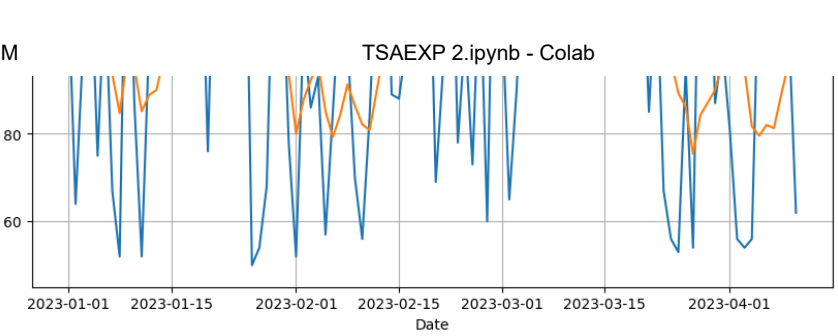
```
# Assuming your time series data has a 'Date' or 'Time' column and a 'Value' column
# Replace 'Date' and 'Value' with your actual column names if different

# Convert the date column to datetime objects if it's not already
try:
    df['Date'] = pd.to_datetime(df['Date'])
except KeyError:
    print("Error: 'Date' column not found in the dataframe. Please ensure your CSV file has
    exit()
except ValueError:
    print("Error: Could not convert 'Date' column to datetime objects.")
    exit()

# Basic line plot
plt.figure(figsize=(10, 6))
plt.plot(df['Date'], df['Value'])
plt.xlabel('Date')
plt.ylabel('Value')
plt.title('Time Series Plot')
plt.grid(True)
plt.show()

# Scatter plot
```

```
plt.figure(figsize=(10, 6))
plt.scatter(df['Date'], df['Value'])
plt.xlabel('Date')
plt.ylabel('Value')
plt.title('Time Series Scatter Plot')
plt.grid(True)
plt.show()


# You can customize these plots further by:
# - Adding more data series to the plot
# - Changing the colors, line styles, and markers
# - Adding legends and annotations
# - Using different plot types like bar charts, area charts, etc.
# - Adding rolling averages or other statistical measures


# Example of adding a rolling average
df['Rolling_Average'] = df['Value'].rolling(window=7).mean() # 7-day rolling average
plt.figure(figsize=(10, 6))
plt.plot(df['Date'], df['Value'], label='Original Data')
plt.plot(df['Date'], df['Rolling_Average'], label='7-Day Rolling Average')
plt.xlabel('Date')
plt.ylabel('Value')
plt.title('Time Series Plot with Rolling Average')
plt.grid(True)
plt.legend()
plt.show()
```


Time Series Plot
Value
Date
140
120
100
80
60
2023-01-01
2023-01-15
2023-02-01
2023-02-15
2023-03-01
2023-03-15
2023-04-01


Time Series Scatter Plot
Value
Date
140
120
100
80
60
2023-01-01
2023-01-15
2023-02-01
2023-02-15
2023-03-01
2023-03-15
2023-04-01


Time Series Plot with Rolling Average
Original Data
7-Day Rolling Average
Value
140
120
100


80
60
2023-01-01
2023-01-15
2023-02-01
2023-02-15
2023-03-01
2023-03-15
2023-04-01
Date