

Day-22 Lab

(PN: ChatGPT exercise is mandatory)

Install matplotlib

To install Matplotlib, you can use Python's package manager, pip. Here are the steps to install Matplotlib:

Open a Terminal or Command Prompt: On Windows, you can open the Command Prompt by pressing Win + R, typing "cmd," and pressing Enter.

On macOS or Linux, you can open the Terminal from your Applications or by searching in your system menu.

Install Matplotlib: To install Matplotlib, run the following command:

pip install matplotlib

Check the Installation: To verify that Matplotlib has been installed successfully, you can run a simple test script:

python -c "import matplotlib; print(matplotlib.__version__)"

If Matplotlib is installed, this command should print the installed version of Matplotlib.

Output:

```
C:\Users>python -c "import matplotlib; print(matplotlib.__version__)"
3.7.2
```

That's it! You have successfully installed Matplotlib. You can now start using it for data visualization and creating various types of charts and plots in Python.

How to import matplotlib

To import Matplotlib in your Python script or interactive environment, you can use the import statement. Here's how to do it:

```
import matplotlib.pyplot as plt
```

this example, we import the matplotlib.pyplot module and give it the alias plt for convenience. This is a common practice because it makes it easier to reference Matplotlib functions and classes when creating plots and charts.

Once you've imported Matplotlib, you can use plt to create visualizations and customize your plots. For example, you can use plt.plot() to create a line plot, plt.scatter() for scatter plots, plt.bar() for bar charts, and so on.

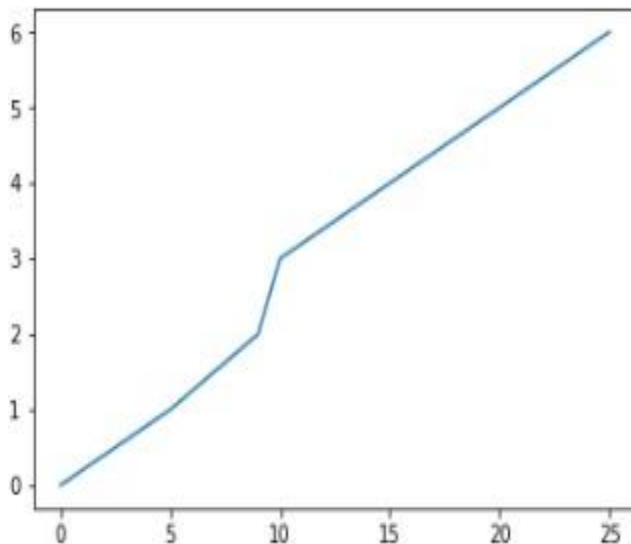
1. Execute the below code and find the output

```
import numpy as np
import matplotlib.pyplot as plt

x = [0, 5, 9, 10, 15, 20, 25]
y = [0, 1, 2, 3, 4, 5, 6]

plt.plot(x, y)
plt.show()
```

Output:



Using ChatGPT generate the python code to solve the same problem

Hi! I have two column Date and sales with some dummy data. Can you please generate a line chart based on these two columns ?

```
import matplotlib.pyplot as plt
```

```
# Dummy data for Date and Sales
```

```
date = ['2024-11-01', '2024-11-02', '2024-11-03', '2024-11-04', '2024-11-05']
```

```
sales = [200, 150, 300, 250, 400]
```

```
# Plotting the line chart
```

```
plt.figure(figsize=(10, 5))
```

```
plt.plot(date, sales, marker='o', linestyle='-', color='b')
```

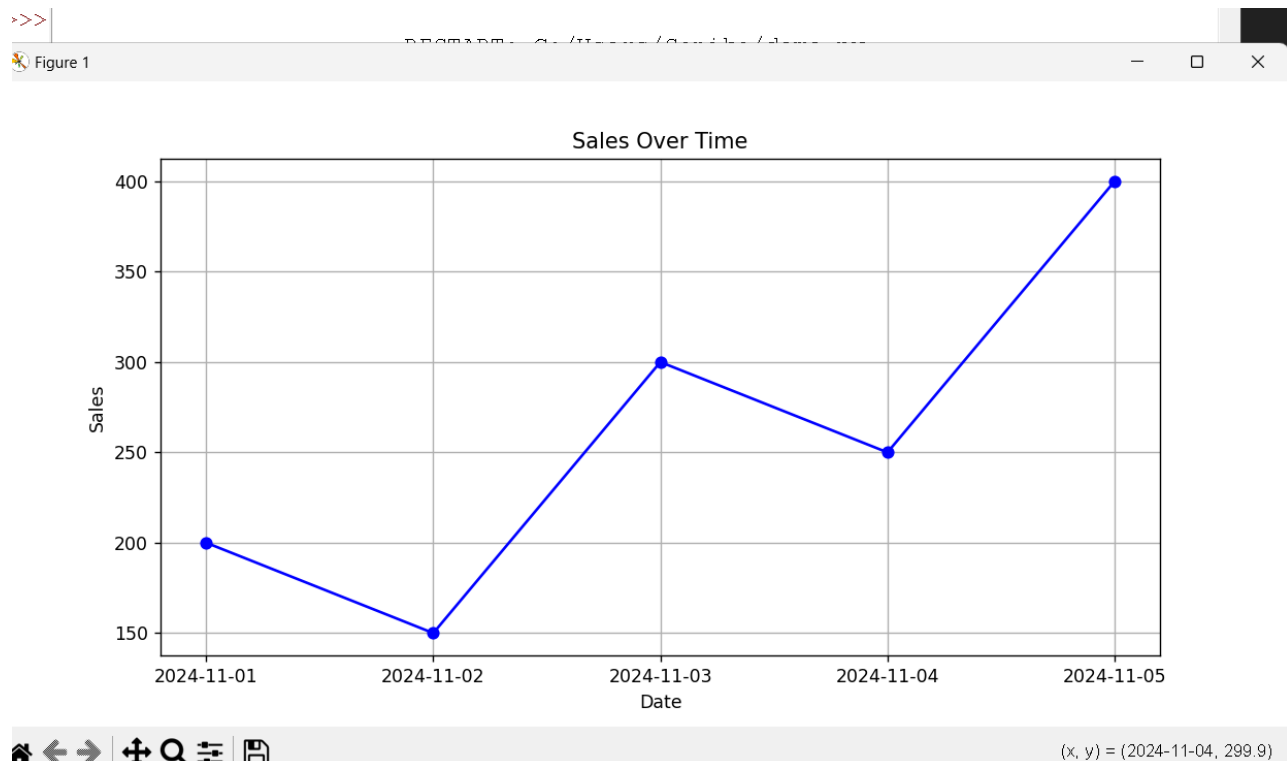
```
plt.title('Sales Over Time')
```

```
plt.xlabel('Date')
```

```
plt.ylabel('Sales')
```

```
plt.grid(True)
```

```
plt.show()
```



After generating the code using chatgpt, run the code, display the output and explain

the conclusion

Explanation:

1. Importing Matplotlib:

matplotlib.pyplot is imported to handle plotting. It's given an alias plt for convenience.

2. Data Creation:

- date represents the x-axis values (dates).
- sales represents the y-axis values (sales figures).

3. Plotting:

- plt.plot() is used to create a line chart with markers at each data point.
- The chart is customized with titles and labels for better readability.
- plt.grid(True) adds a grid for easier interpretation.

4. Displaying:

- plt.show() displays the generated chart