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Python | Introduction to Matplotlib

Matplotlib is an amazing visualization library in Python for 2D plots of arrays. Matplotlib is a multi-platform data visualization library built on NumPy arrays and designed to work with the broader SciPy stack. It was introduced by John Hunter in the year 2002.

One of the greatest benefits of visualization is that it allows us visual access to huge amounts of data in easily digestible visuals. Matplotlib consists of several plots like line, bar, scatter, histogram etc.

Installation :

Windows, Linux and macOS distributions have matplotlib and most of its dependencies as wheel packages. Run the

following command to install matplotlib package :

```
python -mpip install -U matplotlib
```

Importing matplotlib :

```
from matplotlib import pyplot as plt  
or  
import matplotlib.pyplot as plt
```

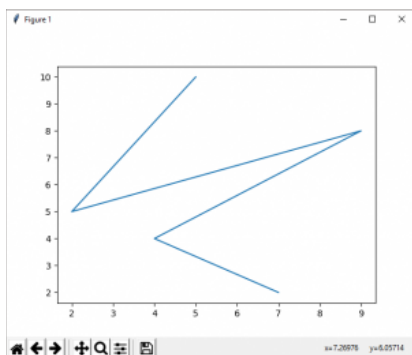
Basic plots in Matplotlib :

Matplotlib comes with a wide variety of plots. Plots helps to understand trends, patterns, and to make correlations. They're typically instruments for reasoning about quantitative information. Some of the sample plots are covered here.

Line plot :

```
# importing matplotlib module  
from matplotlib import pyplot as plt  
  
# x-axis values  
x = [5, 2, 9, 4, 7]  
  
# Y-axis values  
y = [10, 5, 8, 4, 2]  
  
# Function to plot  
plt.plot(x,y)  
  
# function to show the plot  
plt.show()
```

Output :



Bar plot :

```
# importing matplotlib module
from matplotlib import pyplot as plt

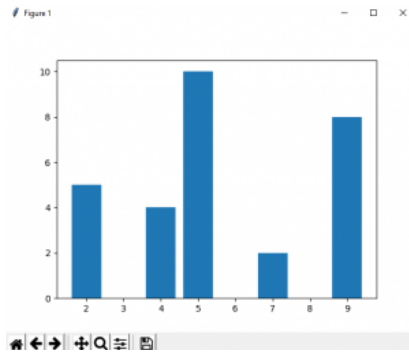
# x-axis values
x = [5, 2, 9, 4, 7]

# Y-axis values
y = [10, 5, 8, 4, 2]

# Function to plot the bar
plt.bar(x,y)

# function to show the plot
plt.show()
```

Output :



Histogram :

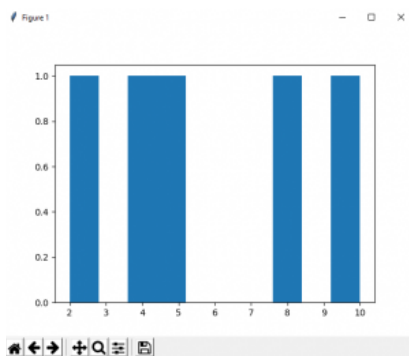
```
# importing matplotlib module
from matplotlib import pyplot as plt

# Y-axis values
y = [10, 5, 8, 4, 2]

# Function to plot histogram
plt.hist(y)

# Function to show the plot
plt.show()
```

Output :



Scatter Plot :

```
# importing matplotlib module
from matplotlib import pyplot as plt

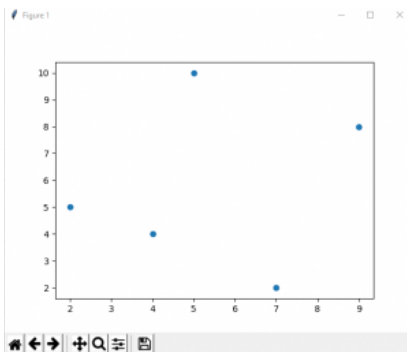
# x-axis values
x = [5, 2, 9, 4, 7]

# Y-axis values
y = [10, 5, 8, 4, 2]

# Function to plot scatter
plt.scatter(x, y)

# function to show the plot
plt.show()
```

Output :



Reference : [Matplotlib Documentation](#).



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