

How to install matplotlib,

Using pip,
pip install matplotlib

How to import matplotlib.pyplot

In Python,
import matplotlib.pyplot as plt

How to plot two arrays

Plot the two arrays using Plot function

Example:

```
import matplotlib.pyplot as plt
x = [0,1,2,3,4,5,6]
y = [9,10,11,12,13,14,15]
# Plots the x and y
plt.plot(x,y)
# Display the plot
plt.show()
```

Additional arguments to Plot function:

marker_symbol: to draw each point with a specified marker

Syntax:

```
plt.plot(x_points, y_points, marker=marker_symbol)
```

marker_symbol can be 'o','*','+','s','d' etc

line_symbol: to connect different points

Syntax:

```
plt.plot(x_points, y_points, linestyle=line_symbol)
```

line_symbol can be '-',':','--' etc

color_symbol: Color of the plot

Syntax:

```
plt.plot(x_points, y_points, color=color_symbol, linestyle=line_symbol, marker=marker_symbol)
```

color_symbol can be 'r','g','b' etc

Shortcut Syntax for all arguments:

```
plt.plot(x_points, y_points, 'marker_color_line_style')
#marker: color_symbol, linestyle, marker_symbol
```

Create Labels for Plot

xlabel() and ylabel() functions to set a label for the x-axis and y-axis. 3]

title() function to set the title for the plot

Syntax:

```
plt.title(title)
plt.xlabel(x_label)
plt.ylabel(y_label)
```

Additional arguments to Labels function:

Add font details to labels() function

Syntax:

```
font = {'family' : 'font_type', 'color' : 'color', 'size' : font_size}
```

Example:

```
font = {'family' : 'serif', 'color' : 'b', 'size':30}
plt.title(title, fontdict=font)
```

Grid of the plot

grid() function to add grid lines to the plot.

Syntax:

```
plt.grid() - Gridlines in x and y axis
plt.grid(axis='x') - Gridlines in x axis alone
plt.grid(axis='y') - Gridlines in y axis alone
```

Display the multiple subplot

subplot() function you can draw multiple plots in single figure itself

Syntax:

```
plt.subplot(rows, columns, index)
#rows - Total number of rows in figure
#columns - Total number of cols in figure
#index - Index of the current plot
```

Example:

```
import matplotlib.pyplot as plt
#plot 1
x = [1, 2, 3, 4]
y = [1, 2, 3, 4]
#First subplot
plt.subplot(2, 1, 1)
plt.plot(x,y)
#plot 2
```

Display the multiple subplot (cont)

```
y = [0, -1, -2, -3]
#Second subplot
plt.subplot(2, 1, 2)
plt.plot(x,y)
plt.show()
```

Different plot types

Scatter plot:

```
plt.scatter(x,y, color_symbol, size)
```

Bar plot:

```
plt.bar(x,y, width=width, color_symbol)
```

Vertical plot

```
plt.bar(x,y, width=width, color_symbol)
```

Horizontal plot:

Syntax:

```
plt.barh(x,y, width=width, color_symbol)
```

Histogram:

Histogram is a graph showing frequency distribution

Syntax:

```
plt.hist(x)
```

Pie chart:

Syntax:

```
plt.pie(x, labels = labels_list)
```



By kamalasubha

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