Matplotlib:

Exercise 1.1:

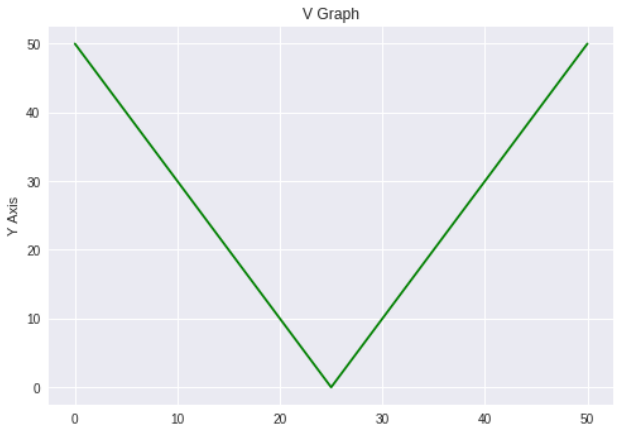
Plot the following using Matplotlib

a(0,50,100)

b(50,050)

- Give the title "V graph"
- Give green color to the graph

```
[ ]  ### START CODE HERE ###  (10-11 lines of code
    y = np.linspace(-50,50,101)
    y1 = np.absolute(y)
    #print(y_)
    x = np.linspace(0,50,101)
    plt.plot(x,y1,'g')
    plt.xlabel('X Axis')
    plt.ylabel('Y Axis')
    plt.title('V Graph')
    plt.show()
```

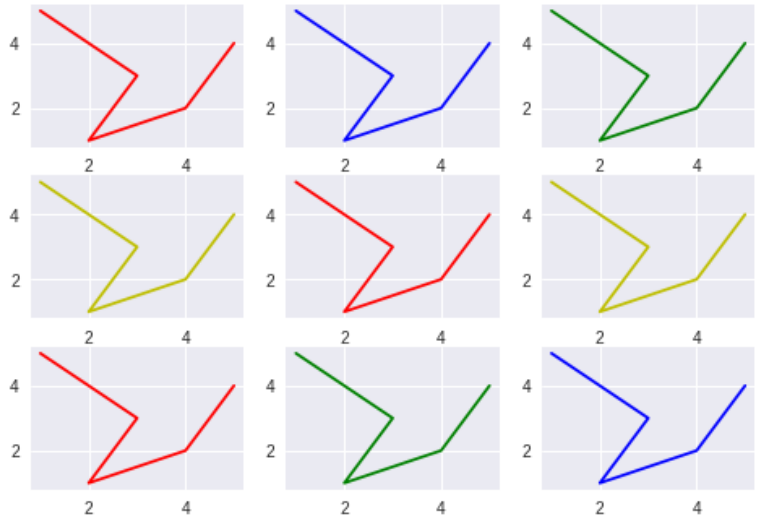


Exercise 1.2:

Create a 3x3 grid of plot for :

x(5,4,2,3,1) and **y(4,2,1,3,5)**

```
[ ]  ### START CODE HERE ###  (15-20 lines of code)
    import matplotlib.pyplot as plt
    x = [5,4,2,3,1]
    y = [4,2,1,3,5]
    plt.subplot(3,3,1)
    plt.plot(x,y,'r')
    plt.subplot(3,3,2)
    plt.plot(x,y,'b')
    plt.subplot(3,3,3)
    plt.plot(x,y,'g')
    plt.subplot(3,3,4)
    plt.plot(x,y,'y')
    plt.subplot(3,3,5)
    plt.plot(x,y,'r')
    plt.subplot(3,3,6)
    plt.plot(x,y,'y')
    plt.subplot(3,3,7)
    plt.plot(x,y,'r')
    plt.subplot(3,3,8)
    plt.plot(x,y,'g')
    plt.subplot(3,3,9)
    plt.plot(x,y,'b')
    plt.show()
```



Exercise 1.3:

Create a 2x2 grid of plots using object oriented approach for :

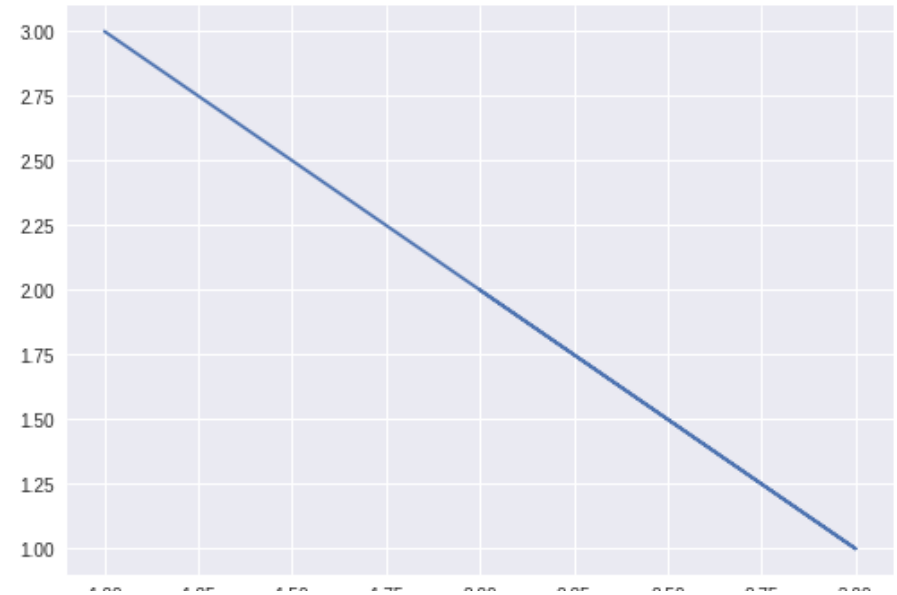
x(2,3,1) and **y(2,1,3)**

```
[ ]  ### START CODE HERE ### (6-7 lines of code)
     import matplotlib.pyplot as plt

     grid = plt.figure()
     axes = grid.add_axes([0.1, 0.1, 0.8, 0.8])
     x=[2,3,1]
     y = [2,1,3]
     axes.plot(x,y)


     ### END CODE HERE ###
```

```
[<matplotlib.lines.Line2D at 0x7f2ac8d556a0>]
```

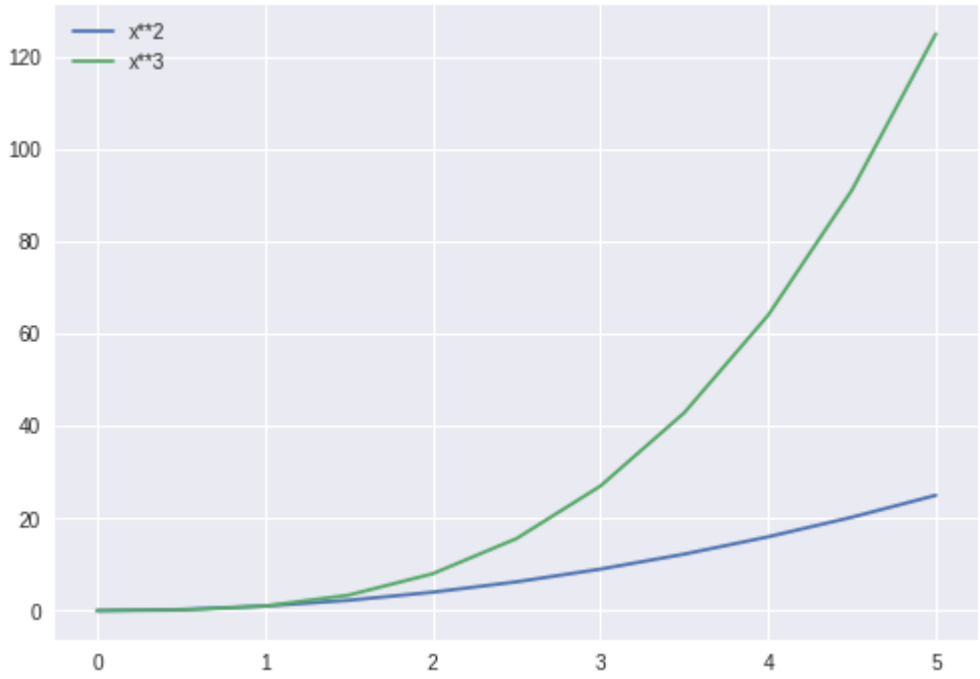


Exercise 1.4:

Write a Python program to plot two or more lines on same plot with suitable legends of each line.

```
[ ]  ### START CODE HERE ### (8-10 lines of code)
     import matplotlib.pyplot as plt
     import numpy as np
     fig = plt.figure()
     axes = fig.add_axes([0.1, 0.1, 0.8, 0.8])
     x = np.linspace(0, 5, 11)
     axes.plot(x, x**2, label="x**2")
     axes.plot(x, x**3, label="x**3")
     axes.legend()


     ### END CODE HERE ###
```



Exercise 1.7:

Write a Python program to plot two or more lines and set different line markers.

```
[ ]  ### START CODE HERE ### (8-10 lines of code )
     import matplotlib.pyplot as plt



     fig, ax = plt.subplots()
     ax.plot(x, x**2, color="blue", lw=3, linestyle='-', label='x**2', markersize=2)
     ax.plot(x, x**3,color="green", lw=6, linestyle='-', label='x**3', markersize=4)

     ax.legend()
```

```
<matplotlib.legend.Legend at 0x7f2ac675e898>
```