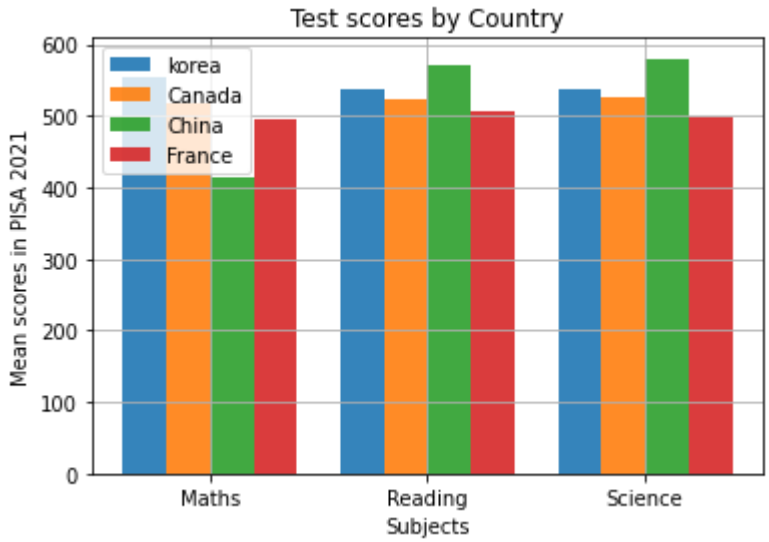
```
import matplotlib.pyplot as plt
```

+ Code + Text

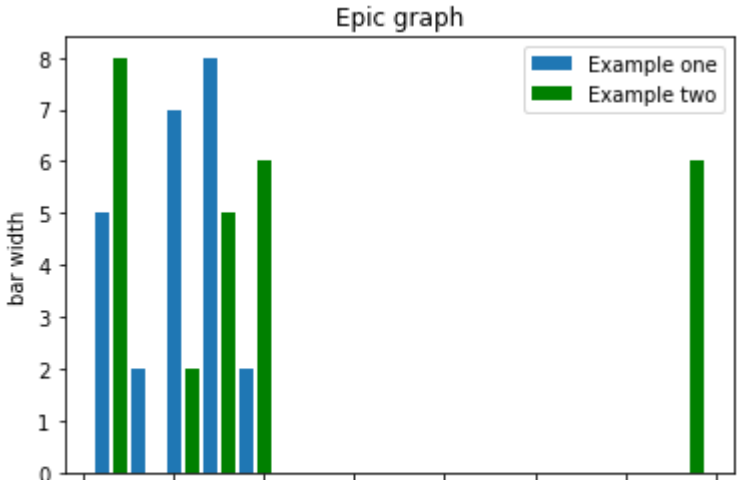
```
import numpy as np


korea_scores = (554,536,538)
canada_scores = (518,523,525)
china_scores = (413,570,580)
france_scores = (495,505,499)
index = np.arange(3)
bar_width = 0.2
k1 = plt.bar(index,korea_scores,bar_width,alpha = 0.9,label = 'korea')
c1 = plt.bar(index+bar_width,canada_scores,bar_width,alpha = 0.9,label = 'Canada')
ch1 = plt.bar(index+bar_width*2,china_scores,bar_width,alpha = 0.9,label = 'China')
f1 = plt.bar(index+bar_width*3,france_scores,bar_width,alpha = 0.9,label = 'France')
plt.xticks(index + 0.3,('Maths','Reading','Science'))
plt.ylabel('Mean scores in PISA 2021')
plt.xlabel('Subjects')
plt.title('Test scores by Country')
plt.grid(True)
plt.legend()
```

```
<matplotlib.legend.Legend at 0x7f8d6f17be90>
```




```
plt.bar([1,3,5,7,9],[5,2,7,8,2],label='Example one')
plt.bar([2,34,6,8,10],[8,6,2,5,6],label='Example two',color='green')
plt.legend()
plt.ylabel('bar width')
plt.xlabel('bar number')
plt.title('Epic graph')
```

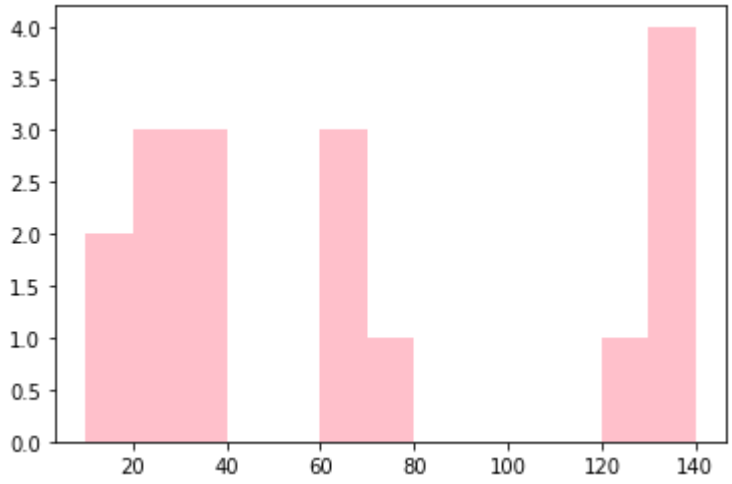
```
Text(0.5, 1.0, 'Epic graph')
```



Histogram

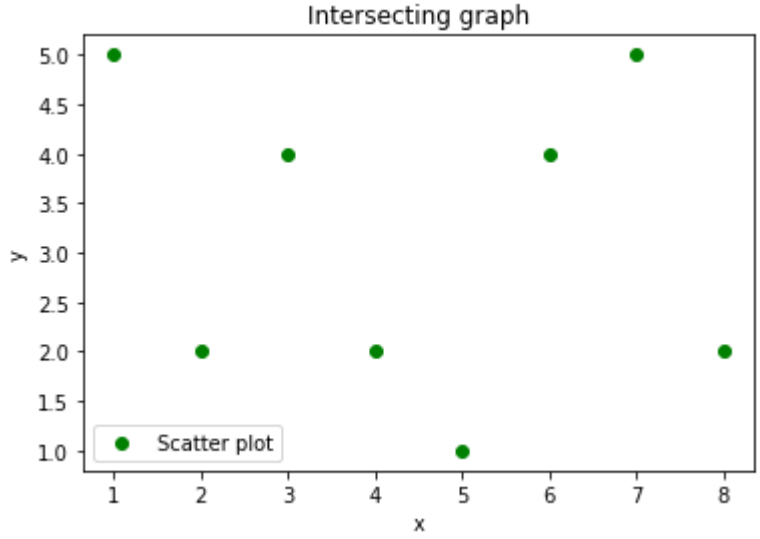
```
population_ages = [12,34,31,23,122,15,145,543,135,135,134,351,134,351,63,24,72,151,63,24,62,3
bins =[10,20,30,40,50,60,70,80,90,100,110,120,130,140]
plt.hist(population_ages,bins,color='pink')
```

```
(array([2., 3., 3., 0., 0., 3., 1., 0., 0., 0., 0., 1., 4.]),
 array([ 10,  20,  30,  40,  50,  60,  70,  80,  90, 100, 110, 120, 130,
        140]),
 <a list of 13 Patch objects>)
```



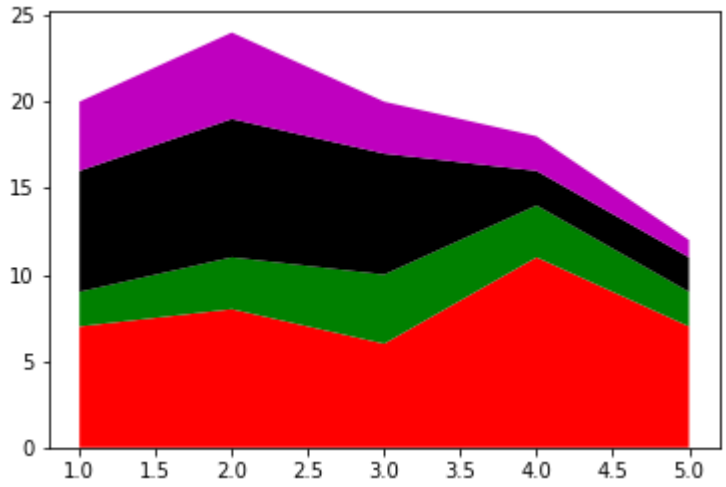

```
#scatter plot


x =[1,2,3,4,5,6,7,8]
y =[5,2,4,2,1,4,5,2]
plt.scatter(x,y,label='Scatter plot',color='g')
plt.ylabel('y')
plt.xlabel('x')
plt.title('Intersecting graph')
plt.legend()
```

```
<matplotlib.legend.Legend at 0x7f8d6e8b83d0>
```




```
#stackplot


days=[1,2,3,4,5]
sleeping=[7,8,6,11,7]
eating=[2,3,4,3,2]
working=[7,8,7,2,2]
playing=[4,5,3,2,1]
plt.stackplot(days,sleeping,eating,working,playing,colors= ['r','g','k','m'])
```

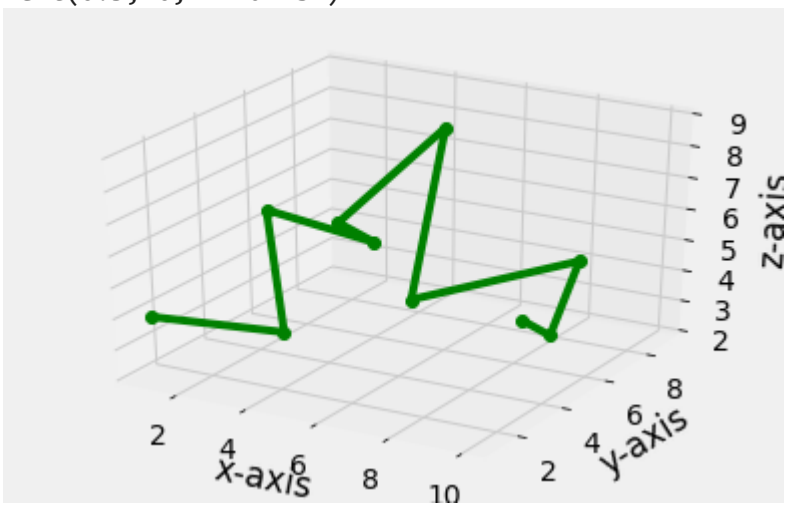
```
[<matplotlib.collections.PolyCollection at 0x7f8d6e5f2610>,
 <matplotlib.collections.PolyCollection at 0x7f8d6e5f2910>,
 <matplotlib.collections.PolyCollection at 0x7f8d6e5f2c50>,
 <matplotlib.collections.PolyCollection at 0x7f8d6e5f2f90>]
```



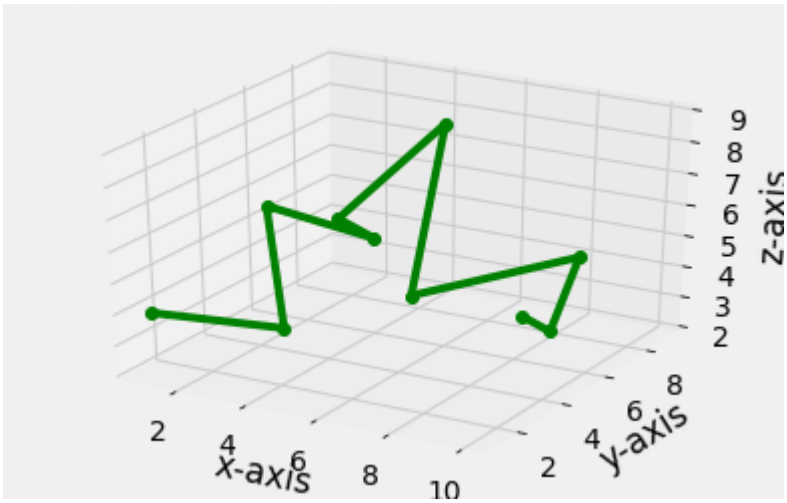
```
#line 3d plot


from mpl_toolkits.mplot3d import axes3d
import matplotlib.pyplot as plt
from matplotlib import style
```

```
style.use('fivethirtyeight')
fig = plt.figure()
ax1 = fig.add_subplot(111,projection='3d')

x=[1,2,3,4,5,6,7,8,9,10]
y=[1,5,3,6,3,6,3,9,6,3]
z=[4,2,7,5,7,9,5,4,3,5]

ax1.plot(x,y,z,c = 'g',marker = 'o')

ax1.set_xlabel('x-axis')
ax1.set_ylabel('y-axis')
ax1.set_zlabel('z-axis')
```

```
Text(0.5, 0, 'z-axis')
```



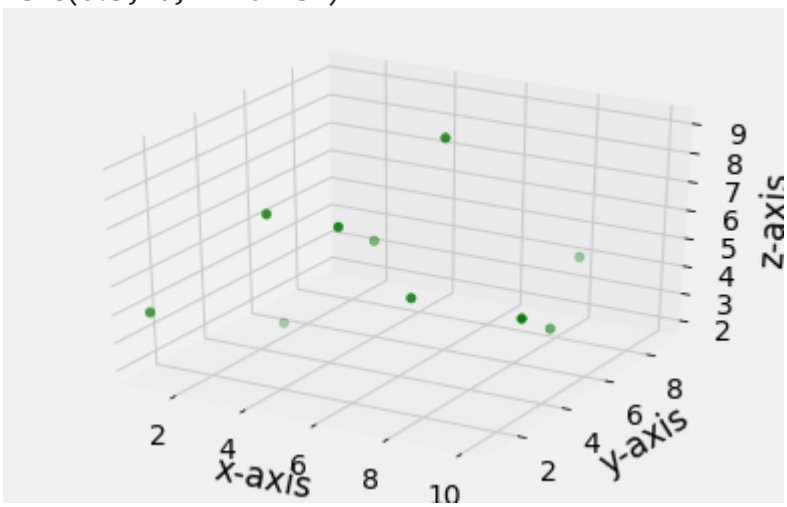

```
Text(0.5, 0, 'z-axis')
```




```
style.use('fivethirtyeight')
fig = plt.figure()
ax1 = fig.add_subplot(111,projection='3d')

x=[1,2,3,4,5,6,7,8,9,10]
```

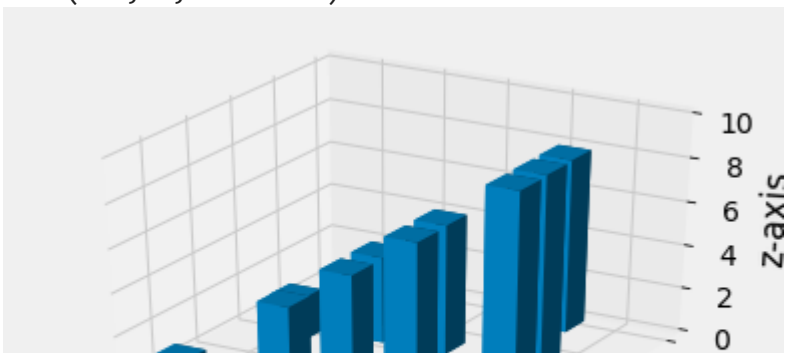
```
y=[1,5,3,6,3,6,3,9,6,3]
z=[4,2,7,5,7,9,5,4,3,5]

ax1.scatter(x,y,z,c = 'g',marker = 'o')

ax1.set_xlabel('x-axis')
ax1.set_ylabel('y-axis')
ax1.set_zlabel('z-axis')
```

```
Text(0.5, 0, 'z-axis')
```




```
style.use('fivethirtyeight')
fig = plt.figure()
ax1 = fig.add_subplot(111,projection='3d')

x=[1,2,3,4,5,6,7,8,9,10]
y=[1,5,3,6,3,6,3,9,6,3]
z=np.zeros(10)

dx=np.ones(10)
dy=np.ones(10)
dz=[1,2,3,4,5,6,7,8,9,10]

ax1.bar3d(x,y,z,dx,dy,dz)

#ax1.plot(x,y,z,c = 'g',marker = 'o')

ax1.set_xlabel('x-axis')
ax1.set_ylabel('y-axis')
ax1.set_zlabel('z-axis')
```

```
Text(0.5, 0, 'z-axis')
```




```
from mpl_toolkits.mplot3d import axes3d
import matplotlib.pyplot as plt
from matplotlib import style

style.use('fivethirtyeight')

fig = plt.figure()
ax1 = fig.add_subplot(111,projection = '3d')

x,y,z = axes3d.get_test_data()
ax1.plot_wireframe(x,y,z,rstride = 3,cstride = 3)

ax1.set_xlabel('x-axis')
ax1.set_ylabel('y-axis')
ax1.set_zlabel('z-axis')
```

```
Text(0.5, 0, 'z-axis')
```