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DataFrames and Visualization

In [4]:

```
import pandas as pd
df11=pd.DataFrame({'HPI':[80,85,88,85],
                   'INT_RATE':[2,3,2,2],
                   'US_GDP_Thousands':[50,55,65,55]},
                  index=[2001,2002,2003,2004])

df12=pd.DataFrame({'HPI':[80,85,88,85],
                   'INT_RATE':[2,3,2,2],
                   'US_GDP_Thousands':[50,55,65,55]},
                  index=[2005,2006,2007,2008])

df13=pd.DataFrame({'HPI':[80,85,88,85],
                   'UNEMPLOYMENT':[7,8,9,6],
                   'Low_tier_HPI':[50,55,65,55]},
                  index=[2005,2006,2007,2008])

print(pd.merge(df11,df12,on=['HPI','INT_RATE']))
```

	HPI	INT_RATE	US_GDP_Thousands_x	US_GDP_Thousands_y
0	80	2	50	50
1	85	3	55	55
2	88	2	65	65
3	85	2	55	55

In [5]:

```
df14=pd.DataFrame({'YEAR':[2001,2002,2003,2004],
                   'INT_RATE':[2,3,2,2],
                   'US_GDP_Thousands':[50,55,65,55]})

df15=pd.DataFrame({'YEAR':[2005,2006,2007,2008],
                   'INT_RATE':[5,7,8,5],
                   'US_GDP_Thousands':[50,55,65,55]})

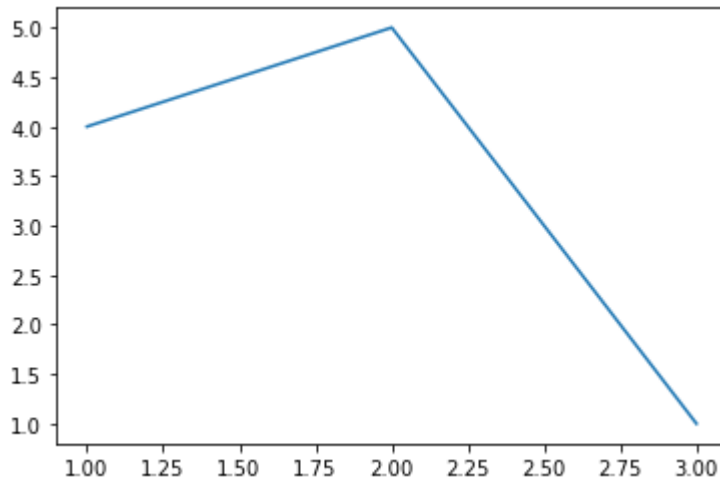
merged=pd.merge(df14,df15,on='YEAR',how='left')
merged.set_index('YEAR',inplace=True)
print(merged)

#left,right,inner,outer alignemnt
```

	INT_RATE_x	US_GDP_Thousands_x	INT_RATE_y	US_GDP_Thousands_y
YEAR				
2001	2	50	NaN	NaN
2002	3	55	NaN	NaN
2003	2	65	NaN	NaN
2004	2	55	NaN	NaN

In [6]:

```
from matplotlib import pyplot as plt
plt.plot([1,2,3],[4,5,1])
plt.show()
```



In [7]:

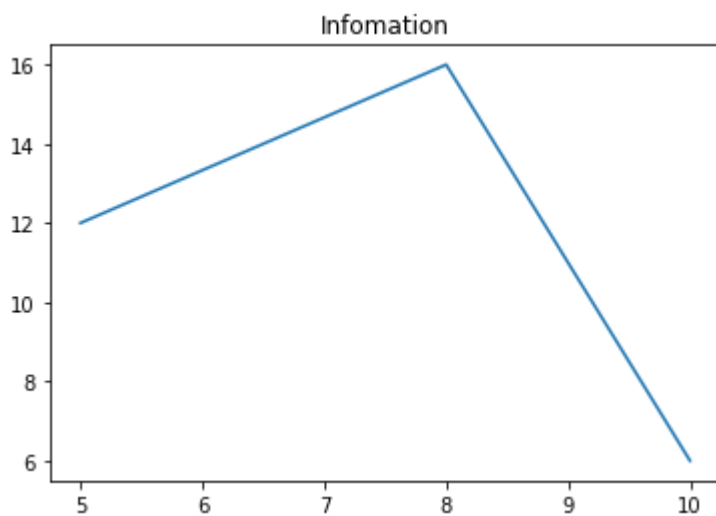
```
from matplotlib import pyplot as plt
x=[5,8,10]
y=[12,16,6]
(x,y)

plt.plot(x,y)

plt.title('Infomation')
```

Out[7]:

Text(0.5, 1.0, 'Infomation')



In [8]:

```
from matplotlib import pyplot as plt
from matplotlib import style

style.use('ggplot')

x1=[5,8,10]
y1=[12,16,6]

x2=[6,9,11]
y2=[6,15,7]

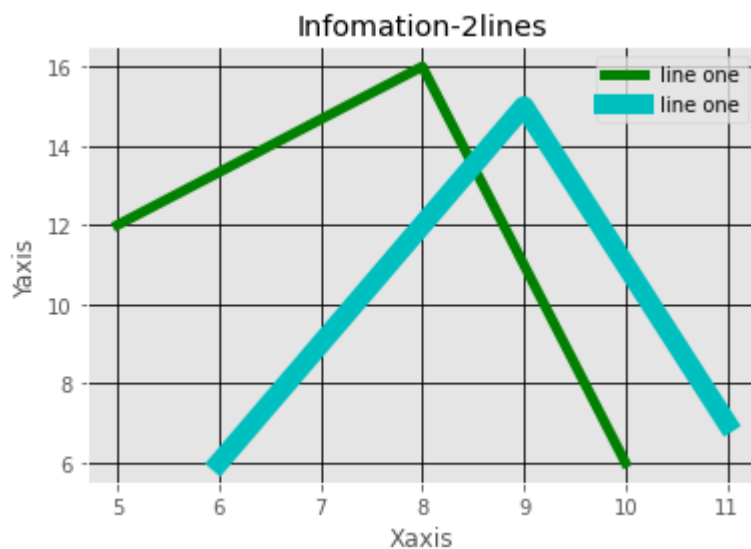
plt.plot(x1,y1,'g',label='line one',linewidth=5)
plt.plot(x2,y2,'c',label='line one',linewidth=10)

plt.title('Infomation-2lines')
plt.ylabel("Yaxis")
plt.xlabel("Xaxis")

plt.legend()

plt.grid(True,color='k')

plt.show()
```



In [9]:

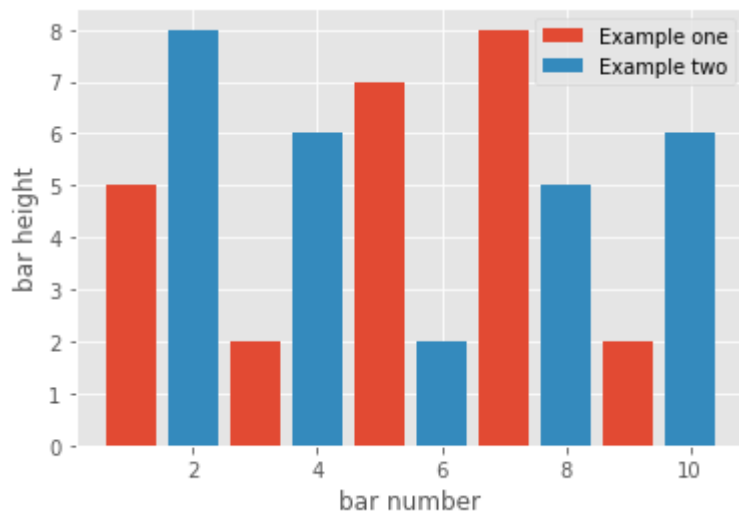
```
import matplotlib.pyplot as plt

plt.bar([1,3,5,7,9],[5,2,7,8,2],label="Example one")
plt.bar([2,4,6,8,10],[8,6,2,5,6],label="Example two")

plt.legend()

plt.xlabel('bar number')
plt.ylabel('bar height')

plt.show()
```



In [10]:

```
import matplotlib.pyplot as plt

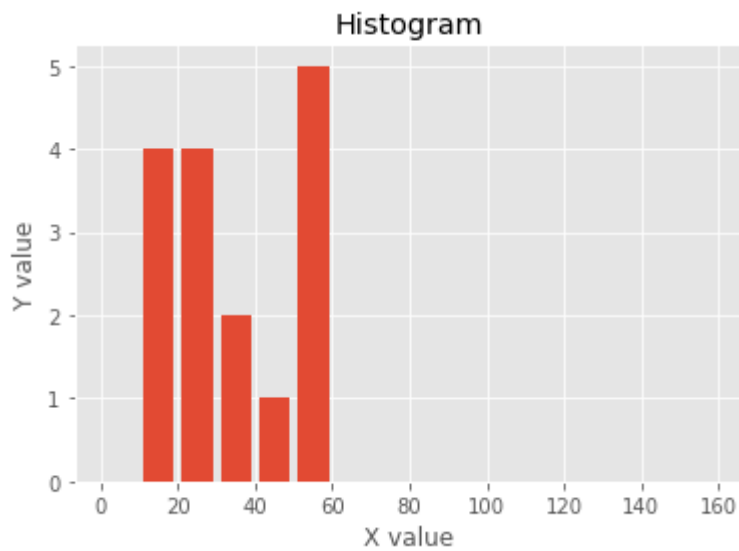
population_ages=[22,44,33,12,52,32,55,53,57,22,52,23,19,18,17,26]

bins=[0,10,20,30,40,50,60,70,80,90,100,110,120,130,140,150,160]

plt.hist(population_ages,bins,histtype="bar",rwidth=0.8)

plt.xlabel('X value')
plt.ylabel('Y value')
plt.title('Histogram')

plt.show()
```



In [11]:

```
from matplotlib import pyplot as plt

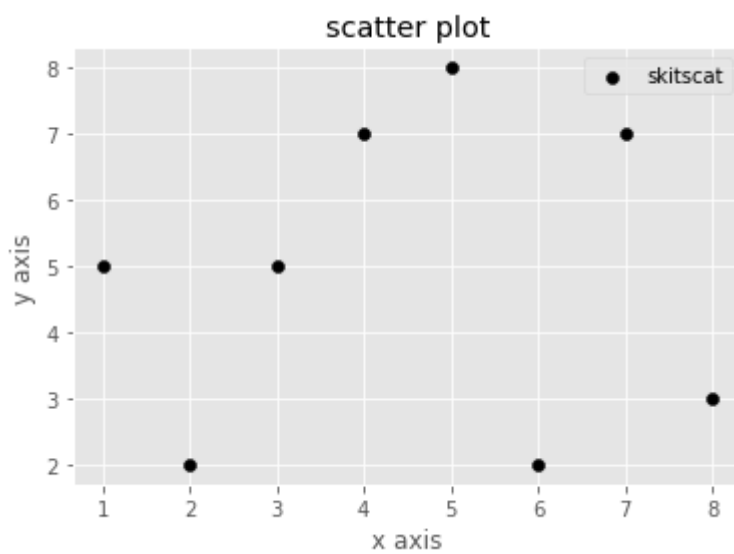
x=[1,2,3,4,5,6,7,8]
y=[5,2,5,7,8,2,7,3]

plt.scatter(x,y,label='skitscat',color='k')

plt.legend()

plt.xlabel('x axis')
plt.ylabel('y axis')
plt.title('scatter plot')

plt.show()
```



In [12]:

```
from matplotlib import pyplot as plt

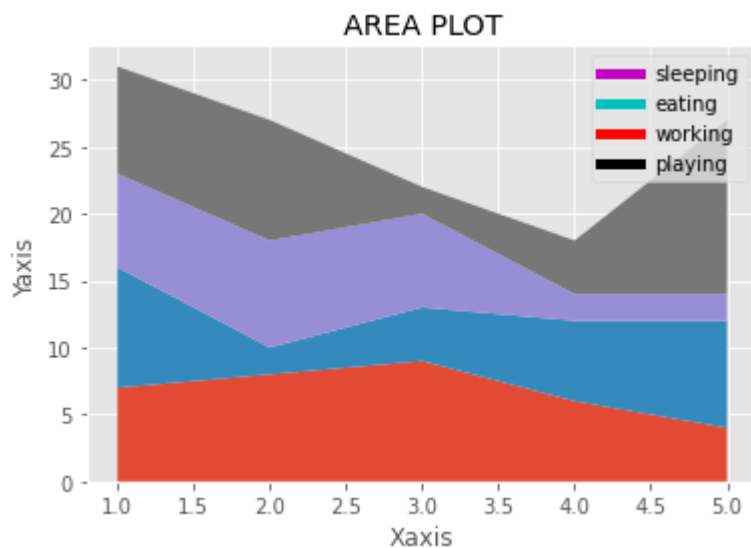
days=[1,2,3,4,5]

sleeping=[7,8,9,6,4]
eating=[9,2,4,6,8]
working=[7,8,7,2,2]
playing=[8,9,2,4,13]

plt.plot([],[],color='m',label='sleeping', linewidth=5)
plt.plot([],[],color='c',label='eating', linewidth=5)
plt.plot([],[],color='r',label='working', linewidth=5)
plt.plot([],[],color='k',label='playing', linewidth=5)

plt.stackplot(days,sleeping,eating,working,playing)

plt.title('AREA PLOT')
plt.xlabel('Xaxis')
plt.ylabel('Yaxis')
plt.legend()
plt.show()
```



In []: