In [2]:
```python
import numpy as np
import pandas as pd
import seaborn as sns
titanic = sns.load_dataset('titanic')
titanic.head()
```

Out[2]:

	survived	pclass	sex	age	sibsp	parch	fare	embarked	class	who	adult_male	deck	embark_town	alive	alone
0	0	3	male	22.0	1	0	7.2500	S	Third	man	True	NaN	Southampton	no	False
1	1	1	female	38.0	1	0	71.2833	C	First	woman	False	C	Cherbourg	yes	False
2	1	3	female	26.0	0	0	7.9250	S	Third	woman	False	NaN	Southampton	yes	True
3	1	1	female	35.0	1	0	53.1000	S	First	woman	False	C	Southampton	yes	False
4	0	3	male	35.0	0	0	8.0500	S	Third	man	True	NaN	Southampton	no	True

In [8]:
```python
#to find survival rate on basis of sex and class
titanic.groupby(["sex","class"])["survived"].mean().unstack()
```

Out[8]:

class	First	Second	Third
sex			
female	0.968085	0.921053	0.500000
male	0.368852	0.157407	0.135447

In [9]:
```python
#pivot table syntax
titanic.pivot_table("survived",index="sex",columns="class")
```

Out[9]:

class	First	Second	Third
sex			
female	0.968085	0.921053	0.500000
male	0.368852	0.157407	0.135447

In [16]:
```python
#pd.cut function is used for adding more than two dimensions in pivot table
age=pd.cut(titanic["age"],[0,18,80])
print(titanic.pivot_table("survived",index=["sex",age],columns="class"))
#to add more than 1 column we use qcut
fare=pd.qcut(titanic["fare"],2)
titanic.pivot_table("survived",index=["sex",age],columns=["class",fare])
```

```
class               First     Second     Third
sex    age
female (0, 18]   0.909091  1.000000  0.511628
       (18, 80]  0.972973  0.900000  0.423729
male   (0, 18]   0.800000  0.600000  0.215686
       (18, 80]  0.375000  0.071429  0.133663
```

Out[16]:

	class	First		Second		Third	
	fare	(-0.001, 14.454]	(14.454, 512.329]	(-0.001, 14.454]	(14.454, 512.329]	(-0.001, 14.454]	(14.454, 512.329]
sex	age						
female	(0, 18]	NaN	0.909091	1.000000	1.000000	0.714286	0.318182
female	(18, 80]	NaN	0.972973	0.880000	0.914286	0.444444	0.391304
male	(0, 18]	NaN	0.800000	0.000000	0.818182	0.260870	0.178571
male	(18, 80]	0.0	0.391304	0.098039	0.030303	0.125000	0.192308

In [19]:
```python
#aggfunc in pivot tables
titanic.pivot_table(index="sex",columns="class",aggfunc={"survived":sum,"fare":np.mean})
#aggregate function here is given as a dictionary in which a column is mapped to an aggregate
```

Out[19]:

	fare			survived		
class	First	Second	Third	First	Second	Third
sex						
female	106.125798	21.970121	16.118810	91	70	72
male	67.226127	19.741782	12.661633	45	17	47

In [25]: `#margins function will allow us to compute totals along each grouping`
`titanic.pivot_table("survived",index="sex",columns="class",aggfunc=np.mean,margins=True,margins_name="total")`
`#margin name can be changed with margins_name`

Out[25]:

class	First	Second	Third	total
sex				
female	0.968085	0.921053	0.500000	0.742038
male	0.368852	0.157407	0.135447	0.188908
total	0.629630	0.472826	0.242363	0.383838

In [25]: `#margins function will allow us to compute totals along each grouping`
`titanic.pivot_table("survived",index="sex",columns="class",aggfunc=np.mean,margins=True,margins_name="total")`
`#margin name can be changed with margins_name`