In [2]:
```
import pandas as pd
```

In [3]:
```
df1 = pd.DataFrame({'key': ['b', 'b', 'a', 'c', 'a', 'a', 'b'],
 'data1': range(7)})
```

In [4]:
```
df2 = pd.DataFrame({'key': ['a', 'b', 'd'],
 'data2': range(3)})
```

In [5]:
```
df1
```

Out[5]:

	key	data1
0	b	0
1	b	1
2	a	2
3	c	3
4	a	4
5	a	5
6	b	6

In [6]:
```
df2
```

Out[6]:

	key	data2
0	a	0
1	b	1
2	d	2

In [7]:
```
pd.merge(df1,df2)
```

Out[7]:

	key	data1	data2
0	b	0	1
1	b	1	1
2	b	6	1
3	a	2	0
4	a	4	0
5	a	5	0

In [8]:
```
pd.merge(df1,df2 ,on = 'key')
```

Out[8]:

	key	data1	data2
0	b	0	1
1	b	1	1
2	b	6	1
3	a	2	0
4	a	4	0
5	a	5	0

In [9]:
```
pd.merge(df1,df2 ,on = 'key' , how = 'outer')
```

Out[9]:

	key	data1	data2
0	b	0.0	1.0
1	b	1.0	1.0
2	b	6.0	1.0
3	a	2.0	0.0
4	a	4.0	0.0
5	a	5.0	0.0
6	c	3.0	NaN
7	d	NaN	2.0

In [10]:
```
pd.merge(df1,df2 ,on = 'key' , how = 'left')
```

Out[10]:

	key	data1	data2
0	b	0	1.0
1	b	1	1.0
2	a	2	0.0
3	c	3	NaN
4	a	4	0.0
5	a	5	0.0
6	b	6	1.0

In [11]:
```
pd.merge(df1,df2 ,on = 'key' , how = 'right')
```

Out[11]:

	key	data1	data2
0	a	2.0	0
1	a	4.0	0
2	a	5.0	0
3	b	0.0	1
4	b	1.0	1
5	b	6.0	1
6	d	NaN	2

In [ ]:
```

```