In [3]:

```python
import pandas as pd
```

In [73]:

```python
bond=pd.read_csv("jamesbond.csv")
bond.head()
```

Out[73]:

	Film	Year	Actor	Director	Box Office	Budget	Bond Actor Salary
0	Dr. No	1962	Sean Connery	Terence Young	448.8	7.0	0.6
1	From Russia with Love	1963	Sean Connery	Terence Young	543.8	12.6	1.6
2	Goldfinger	1964	Sean Connery	Guy Hamilton	820.4	18.6	3.2
3	Thunderball	1965	Sean Connery	Terence Young	848.1	41.9	4.7
4	Casino Royale	1967	David Niven	Ken Hughes	315.0	85.0	NaN

.set_index() and .reset_index()-inplace

In [76]:

```python
bond.set_index("Film").head()
```

Out[76]:

	Year	Actor	Director	Box Office	Budget	Bond Actor Salary
Film						
Dr. No	1962	Sean Connery	Terence Young	448.8	7.0	0.6
From Russia with Love	1963	Sean Connery	Terence Young	543.8	12.6	1.6
Goldfinger	1964	Sean Connery	Guy Hamilton	820.4	18.6	3.2
Thunderball	1965	Sean Connery	Terence Young	848.1	41.9	4.7
Casino Royale	1967	David Niven	Ken Hughes	315.0	85.0	NaN

In [77]:

```python
bond.set_index("Film",inplace=True)
```

In [78]:

```python
bond.head()
```

Out[78]:

Film	Year	Actor	Director	Box Office	Budget	Bond Actor Salary
Dr. No	1962	Sean Connery	Terence Young	448.8	7.0	0.6
From Russia with Love	1963	Sean Connery	Terence Young	543.8	12.6	1.6
Goldfinger	1964	Sean Connery	Guy Hamilton	820.4	18.6	3.2
Thunderball	1965	Sean Connery	Terence Young	848.1	41.9	4.7
Casino Royale	1967	David Niven	Ken Hughes	315.0	85.0	NaN

In [80]:

```python
bond.set_index("Year",inplace=True)
```

In [83]:

```python
bond.head()#lost Film column because of new set column year
```

Out[83]:

Year	Actor	Director	Box Office	Budget	Bond Actor Salary
1962	Sean Connery	Terence Young	448.8	7.0	0.6
1963	Sean Connery	Terence Young	543.8	12.6	1.6
1964	Sean Connery	Guy Hamilton	820.4	18.6	3.2
1965	Sean Connery	Terence Young	848.1	41.9	4.7
1967	David Niven	Ken Hughes	315.0	85.0	NaN

In [84]:

```
bond=pd.read_csv("jamesbond.csv")
bond.head()
```

Out[84]:

	Film	Year	Actor	Director	Box Office	Budget	Bond Actor Salary
0	Dr. No	1962	Sean Connery	Terence Young	448.8	7.0	0.6
1	From Russia with Love	1963	Sean Connery	Terence Young	543.8	12.6	1.6
2	Goldfinger	1964	Sean Connery	Guy Hamilton	820.4	18.6	3.2
3	Thunderball	1965	Sean Connery	Terence Young	848.1	41.9	4.7
4	Casino Royale	1967	David Niven	Ken Hughes	315.0	85.0	NaN

In [85]:

```
bond.set_index("Film",inplace=True)
```

In [86]:

```
bond.head()
```

Out[86]:

	Year	Actor	Director	Box Office	Budget	Bond Actor Salary
Film						
Dr. No	1962	Sean Connery	Terence Young	448.8	7.0	0.6
From Russia with Love	1963	Sean Connery	Terence Young	543.8	12.6	1.6
Goldfinger	1964	Sean Connery	Guy Hamilton	820.4	18.6	3.2
Thunderball	1965	Sean Connery	Terence Young	848.1	41.9	4.7
Casino Royale	1967	David Niven	Ken Hughes	315.0	85.0	NaN

In [87]:

```python
#to change the index to Year without losing Film
bond.reset_index(inplace=True)
bond.set_index("Year",inplace=True)
bond.head()
```

Out[87]:

Year	Film	Actor	Director	Box Office	Budget	Bond Actor Salary
1962	Dr. No	Sean Connery	Terence Young	448.8	7.0	0.6
1963	From Russia with Love	Sean Connery	Terence Young	543.8	12.6	1.6
1964	Goldfinger	Sean Connery	Guy Hamilton	820.4	18.6	3.2
1965	Thunderball	Sean Connery	Terence Young	848.1	41.9	4.7
1967	Casino Royale	David Niven	Ken Hughes	315.0	85.0	NaN

Retrieve rows by index label with .loc[] accesor

In [90]:

```python
bond=pd.read_csv("jamesbond.csv",index_col="Film")
bond.sort_index(inplace=True)
bond.head()
```

Out[90]:

Film	Year	Actor	Director	Box Office	Budget	Bond Actor Salary
A View to a Kill	1985	Roger Moore	John Glen	275.2	54.5	9.1
Casino Royale	2006	Daniel Craig	Martin Campbell	581.5	145.3	3.3
Casino Royale	1967	David Niven	Ken Hughes	315.0	85.0	NaN
Diamonds Are Forever	1971	Sean Connery	Guy Hamilton	442.5	34.7	5.8
Die Another Day	2002	Pierce Brosnan	Lee Tamahori	465.4	154.2	17.9

In [92]:

```
bond.loc["A View to a Kill"]
```

Out[92]:

```
Year                    1985
Actor             Roger Moore
Director            John Glen
Box Office              275.2
Budget                   54.5
Bond Actor Salary         9.1
Name: A View to a Kill, dtype: object
```

In [93]:

```
bond.loc["Casino Royale"]
```

Out[93]:

Film	Year	Actor	Director	Box Office	Budget	Bond Actor Salary
Casino Royale	2006	Daniel Craig	Martin Campbell	581.5	145.3	3.3
Casino Royale	1967	David Niven	Ken Hughes	315.0	85.0	NaN

In [105]:

```
bond.loc["Casino Royale":"Diamonds Are Forever"]#slicing
```

Out[105]:

Film	Year	Actor	Director	Box Office	Budget	Bond Actor Salary
Casino Royale	2006	Daniel Craig	Martin Campbell	581.5	145.3	3.3
Casino Royale	1967	David Niven	Ken Hughes	315.0	85.0	NaN
Diamonds Are Forever	1971	Sean Connery	Guy Hamilton	442.5	34.7	5.8

In [96]:

```
bond.loc["Casino Royale":"Diamonds Are Forever":2]
```

Out[96]:

Film	Year	Actor	Director	Box Office	Budget	Bond Actor Salary
Casino Royale	2006	Daniel Craig	Martin Campbell	581.5	145.3	3.3
Diamonds Are Forever	1971	Sean Connery	Guy Hamilton	442.5	34.7	5.8

In [97]:

```
bond.loc["Skyfall":]
```

Out[97]:

Film	Year	Actor	Director	Box Office	Budget	Bond Actor Salary
Skyfall	2012	Daniel Craig	Sam Mendes	943.5	170.2	14.5
Spectre	2015	Daniel Craig	Sam Mendes	726.7	206.3	NaN
The Living Daylights	1987	Timothy Dalton	John Glen	313.5	68.8	5.2
The Man with the Golden Gun	1974	Roger Moore	Guy Hamilton	334.0	27.7	NaN
The Spy Who Loved Me	1977	Roger Moore	Lewis Gilbert	533.0	45.1	NaN
The World Is Not Enough	1999	Pierce Brosnan	Michael Apted	439.5	158.3	13.5
Thunderball	1965	Sean Connery	Terence Young	848.1	41.9	4.7
Tomorrow Never Dies	1997	Pierce Brosnan	Roger Spottiswoode	463.2	133.9	10.0
You Only Live Twice	1967	Sean Connery	Lewis Gilbert	514.2	59.9	4.4

In [98]:

```
bond.loc[:"Moonracker"]
```

Out[98]:

Film	Year	Actor	Director	Box Office	Budget	Bond Actor Salary
A View to a Kill	1985	Roger Moore	John Glen	275.2	54.5	9.1
Casino Royale	2006	Daniel Craig	Martin Campbell	581.5	145.3	3.3
Casino Royale	1967	David Niven	Ken Hughes	315.0	85.0	NaN
Diamonds Are Forever	1971	Sean Connery	Guy Hamilton	442.5	34.7	5.8
Die Another Day	2002	Pierce Brosnan	Lee Tamahori	465.4	154.2	17.9
Dr. No	1962	Sean Connery	Terence Young	448.8	7.0	0.6
For Your Eyes Only	1981	Roger Moore	John Glen	449.4	60.2	NaN
From Russia with Love	1963	Sean Connery	Terence Young	543.8	12.6	1.6
GoldenEye	1995	Pierce Brosnan	Martin Campbell	518.5	76.9	5.1
Goldfinger	1964	Sean Connery	Guy Hamilton	820.4	18.6	3.2
Licence to Kill	1989	Timothy Dalton	John Glen	250.9	56.7	7.9
Live and Let Die	1973	Roger Moore	Guy Hamilton	460.3	30.8	NaN

In [104]:

```
bond.loc[["Licence to Kill","Casino Royale"]]#multiple  indices
```

Out[104]:

Film	Year	Actor	Director	Box Office	Budget	Bond Actor Salary
Licence to Kill	1989	Timothy Dalton	John Glen	250.9	56.7	7.9
Casino Royale	2006	Daniel Craig	Martin Campbell	581.5	145.3	3.3
Casino Royale	1967	David Niven	Ken Hughes	315.0	85.0	NaN

In [100]:

```
bond.loc[["Licence to Kill","not available"]]
```

```
---------------------------------------------------------------------------
KeyError                                  Traceback (most recent call last)
<ipython-input-100-ced515ded694> in <module>
----> 1 bond.loc[["Licence to Kill","not available"]]

~\.conda\envs\pandas_pg\lib\site-packages\pandas\core\indexing.py in __getit
em__(self, key)
    929
    930                maybe_callable = com.apply_if_callable(key, self.obj)
--> 931                return self._getitem_axis(maybe_callable, axis=axis)
    932
    933        def _is_scalar_access(self, key: tuple):

~\.conda\envs\pandas_pg\lib\site-packages\pandas\core\indexing.py in _getite
m_axis(self, key, axis)
   1151                        raise ValueError("Cannot index with multidimensi
onal key")
   1152
-> 1153                return self._getitem_iterable(key, axis=axis)
   1154
   1155            # nested tuple slicing

~\.conda\envs\pandas_pg\lib\site-packages\pandas\core\indexing.py in _getite
m_iterable(self, key, axis)
   1091
   1092            # A collection of keys
-> 1093            keyarr, indexer = self._get_listlike_indexer(key, axis)
   1094            return self.obj._reindex_with_indexers(
   1095                {axis: [keyarr, indexer]}, copy=True, allow_dups=True

~\.conda\envs\pandas_pg\lib\site-packages\pandas\core\indexing.py in _get_li
stlike_indexer(self, key, axis)
   1312                keyarr, indexer, new_indexer = ax._reindex_non_unique(ke
yarr)
   1313
-> 1314            self._validate_read_indexer(keyarr, indexer, axis)
   1315
   1316            if needs_i8_conversion(ax.dtype) or isinstance(

~\.conda\envs\pandas_pg\lib\site-packages\pandas\core\indexing.py in _valida
te_read_indexer(self, key, indexer, axis)
   1375
   1376                not_found = list(ensure_index(key)[missing_mask.nonzero(
)[0]].unique())
-> 1377                raise KeyError(f"{not_found} not in index")
   1378
   1379

KeyError: "['not available'] not in index"
```

In [101]:

```python
"Licence to Kill" in bond.index
```

Out[101]:

True

In [102]:

```python
"Licence to Kill" in bond
```

Out[102]:

False

In [103]:

```python
"Licence need to Kill" in bond.index
```

Out[103]:

False

In [106]:

```python
bond.head()
```

Out[106]:

	Year	Actor	Director	Box Office	Budget	Bond Actor Salary
Film						
A View to a Kill	1985	Roger Moore	John Glen	275.2	54.5	9.1
Casino Royale	2006	Daniel Craig	Martin Campbell	581.5	145.3	3.3
Casino Royale	1967	David Niven	Ken Hughes	315.0	85.0	NaN
Diamonds Are Forever	1971	Sean Connery	Guy Hamilton	442.5	34.7	5.8
Die Another Day	2002	Pierce Brosnan	Lee Tamahori	465.4	154.2	17.9

In [107]:

```
bond[1]
```

```
---------------------------------------------------------------------------
KeyError                                  Traceback (most recent call last)
~\.conda\envs\pandas_pg\lib\site-packages\pandas\core\indexes\base.py in get
_loc(self, key, method, tolerance)
   3360             try:
-> 3361                 return self._engine.get_loc(casted_key)
   3362             except KeyError as err:

~\.conda\envs\pandas_pg\lib\site-packages\pandas\_libs\index.pyx in pandas._
libs.index.IndexEngine.get_loc()

~\.conda\envs\pandas_pg\lib\site-packages\pandas\_libs\index.pyx in pandas._
libs.index.IndexEngine.get_loc()

pandas\_libs\hashtable_class_helper.pxi in pandas._libs.hashtable.PyObjectHa
shTable.get_item()

pandas\_libs\hashtable_class_helper.pxi in pandas._libs.hashtable.PyObjectHa
shTable.get_item()

KeyError: 1

The above exception was the direct cause of the following exception:

KeyError                                  Traceback (most recent call last)
<ipython-input-107-0b7940e15311> in <module>
----> 1 bond[1]

~\.conda\envs\pandas_pg\lib\site-packages\pandas\core\frame.py in __getitem_
_(self, key)
   3453             if self.columns.nlevels > 1:
   3454                 return self._getitem_multilevel(key)
-> 3455             indexer = self.columns.get_loc(key)
   3456             if is_integer(indexer):
   3457                 indexer = [indexer]

~\.conda\envs\pandas_pg\lib\site-packages\pandas\core\indexes\base.py in get
_loc(self, key, method, tolerance)
   3361                 return self._engine.get_loc(casted_key)
   3362             except KeyError as err:
-> 3363                 raise KeyError(key) from err
   3364
   3365         if is_scalar(key) and isna(key) and not self.hasnans:

KeyError: 1
```

Retrieve rows by index label with .iloc[] accesor

In [115]:

```python
bond=pd.read_csv("jamesbond.csv")
bond.sort_index(inplace=True)
bond.head()
```

Out[115]:

	Film	Year	Actor	Director	Box Office	Budget	Bond Actor Salary
0	Dr. No	1962	Sean Connery	Terence Young	448.8	7.0	0.6
1	From Russia with Love	1963	Sean Connery	Terence Young	543.8	12.6	1.6
2	Goldfinger	1964	Sean Connery	Guy Hamilton	820.4	18.6	3.2
3	Thunderball	1965	Sean Connery	Terence Young	848.1	41.9	4.7
4	Casino Royale	1967	David Niven	Ken Hughes	315.0	85.0	NaN

In [116]:

```python
bond.iloc[0]
```

Out[116]:

```
Film                    Dr. No
Year                      1962
Actor            Sean Connery
Director        Terence Young
Box Office               448.8
Budget                     7.0
Bond Actor Salary          0.6
Name: 0, dtype: object
```

In [117]:

```python
bond.iloc[[0,24]]
```

Out[117]:

	Film	Year	Actor	Director	Box Office	Budget	Bond Actor Salary
0	Dr. No	1962	Sean Connery	Terence Young	448.8	7.0	0.6
24	Skyfall	2012	Daniel Craig	Sam Mendes	943.5	170.2	14.5

In [119]:

```python
bond.iloc[0:10]#index number upper bound is excluded
```

Out[119]:

	Film	Year	Actor	Director	Box Office	Budget	Bond Actor Salary
0	Dr. No	1962	Sean Connery	Terence Young	448.8	7.0	0.6
1	From Russia with Love	1963	Sean Connery	Terence Young	543.8	12.6	1.6
2	Goldfinger	1964	Sean Connery	Guy Hamilton	820.4	18.6	3.2
3	Thunderball	1965	Sean Connery	Terence Young	848.1	41.9	4.7
4	Casino Royale	1967	David Niven	Ken Hughes	315.0	85.0	NaN
5	You Only Live Twice	1967	Sean Connery	Lewis Gilbert	514.2	59.9	4.4
6	On Her Majesty's Secret Service	1969	George Lazenby	Peter R. Hunt	291.5	37.3	0.6
7	Diamonds Are Forever	1971	Sean Connery	Guy Hamilton	442.5	34.7	5.8
8	Live and Let Die	1973	Roger Moore	Guy Hamilton	460.3	30.8	NaN
9	The Man with the Golden Gun	1974	Roger Moore	Guy Hamilton	334.0	27.7	NaN

In [120]:

```python
bond.set_index("Film",inplace=True)
bond.sort_index(inplace= True)
```

In [121]:

```
bond.head()
```

Out[121]:

Film	Year	Actor	Director	Box Office	Budget	Bond Actor Salary
A View to a Kill	1985	Roger Moore	John Glen	275.2	54.5	9.1
Casino Royale	2006	Daniel Craig	Martin Campbell	581.5	145.3	3.3
Casino Royale	1967	David Niven	Ken Hughes	315.0	85.0	NaN
Diamonds Are Forever	1971	Sean Connery	Guy Hamilton	442.5	34.7	5.8
Die Another Day	2002	Pierce Brosnan	Lee Tamahori	465.4	154.2	17.9

In [122]:

```
bond.iloc[:4]
```

Out[122]:

Film	Year	Actor	Director	Box Office	Budget	Bond Actor Salary
A View to a Kill	1985	Roger Moore	John Glen	275.2	54.5	9.1
Casino Royale	2006	Daniel Craig	Martin Campbell	581.5	145.3	3.3
Casino Royale	1967	David Niven	Ken Hughes	315.0	85.0	NaN
Diamonds Are Forever	1971	Sean Connery	Guy Hamilton	442.5	34.7	5.8

In [123]:

```
bond.iloc[1:4]
```

Out[123]:

Film	Year	Actor	Director	Box Office	Budget	Bond Actor Salary
Casino Royale	2006	Daniel Craig	Martin Campbell	581.5	145.3	3.3
Casino Royale	1967	David Niven	Ken Hughes	315.0	85.0	NaN
Diamonds Are Forever	1971	Sean Connery	Guy Hamilton	442.5	34.7	5.8

In [125]:

```
bond.iloc[[1,2,4]]#mul indices
```

Out[125]:

Film	Year	Actor	Director	Box Office	Budget	Bond Actor Salary
Casino Royale	2006	Daniel Craig	Martin Campbell	581.5	145.3	3.3
Casino Royale	1967	David Niven	Ken Hughes	315.0	85.0	NaN
Die Another Day	2002	Pierce Brosnan	Lee Tamahori	465.4	154.2	17.9

Passing second param to loc and iloc acces(row ind,colum ind)

In [126]:

```
bond=pd.read_csv("jamesbond.csv",index_col="Film")
bond.sort_index(inplace=True)
bond.head()
```

Out[126]:

Film	Year	Actor	Director	Box Office	Budget	Bond Actor Salary
A View to a Kill	1985	Roger Moore	John Glen	275.2	54.5	9.1
Casino Royale	2006	Daniel Craig	Martin Campbell	581.5	145.3	3.3
Casino Royale	1967	David Niven	Ken Hughes	315.0	85.0	NaN
Diamonds Are Forever	1971	Sean Connery	Guy Hamilton	442.5	34.7	5.8
Die Another Day	2002	Pierce Brosnan	Lee Tamahori	465.4	154.2	17.9

In [127]:

```
bond
```

Out[127]:

Film	Year	Actor	Director	Box Office	Budget	Bond Actor Salary
A View to a Kill	1985	Roger Moore	John Glen	275.2	54.5	9.1
Casino Royale	2006	Daniel Craig	Martin Campbell	581.5	145.3	3.3
Casino Royale	1967	David Niven	Ken Hughes	315.0	85.0	NaN
Diamonds Are Forever	1971	Sean Connery	Guy Hamilton	442.5	34.7	5.8
Die Another Day	2002	Pierce Brosnan	Lee Tamahori	465.4	154.2	17.9
Dr. No	1962	Sean Connery	Terence Young	448.8	7.0	0.6
For Your Eyes Only	1981	Roger Moore	John Glen	449.4	60.2	NaN
From Russia with Love	1963	Sean Connery	Terence Young	543.8	12.6	1.6
GoldenEye	1995	Pierce Brosnan	Martin Campbell	518.5	76.9	5.1
Goldfinger	1964	Sean Connery	Guy Hamilton	820.4	18.6	3.2
Licence to Kill	1989	Timothy Dalton	John Glen	250.9	56.7	7.9
Live and Let Die	1973	Roger Moore	Guy Hamilton	460.3	30.8	NaN
Moonraker	1979	Roger Moore	Lewis Gilbert	535.0	91.5	NaN
Never Say Never Again	1983	Sean Connery	Irvin Kershner	380.0	86.0	NaN
Octopussy	1983	Roger Moore	John Glen	373.8	53.9	7.8
On Her Majesty's Secret Service	1969	George Lazenby	Peter R. Hunt	291.5	37.3	0.6
Quantum of Solace	2008	Daniel Craig	Marc Forster	514.2	181.4	8.1
Skyfall	2012	Daniel Craig	Sam Mendes	943.5	170.2	14.5
Spectre	2015	Daniel Craig	Sam Mendes	726.7	206.3	NaN
The Living Daylights	1987	Timothy Dalton	John Glen	313.5	68.8	5.2
The Man with the Golden Gun	1974	Roger Moore	Guy Hamilton	334.0	27.7	NaN
The Spy Who Loved Me	1977	Roger Moore	Lewis Gilbert	533.0	45.1	NaN
The World Is Not Enough	1999	Pierce Brosnan	Michael Apted	439.5	158.3	13.5
Thunderball	1965	Sean Connery	Terence Young	848.1	41.9	4.7
Tomorrow Never Dies	1997	Pierce Brosnan	Roger Spottiswoode	463.2	133.9	10.0

	Year	Actor	Director	Box Office	Budget	Bond Actor Salary
Film						
You Only Live Twice	1967	Sean Connery	Lewis Gilbert	514.2	59.9	4.4

In [128]:

```
bond.loc["Thunderball","Director"]
```

Out[128]:

```
'Terence Young'
```

In [129]:

```
bond.loc["Moonraker",["Director","Box Office"]]
```

Out[129]:

```
Director       Lewis Gilbert
Box Office             535.0
Name: Moonraker, dtype: object
```

In [130]:

```
bond.loc[["Thunderball","Moonraker"],"Director"]
```

Out[130]:

```
Film
Thunderball     Terence Young
Moonraker       Lewis Gilbert
Name: Director, dtype: object
```

In [139]:

```
bond.loc[["Thunderball","Moonraker"],["Director","Actor"]]
```

Out[139]:

	Director	Actor
Film		
Thunderball	Terence Young	Sean Connery
Moonraker	Lewis Gilbert	Roger Moore

In [133]:

```
bond.iloc[0,[0,1,2]]
```

Out[133]:

```
Year                    1985
Actor           Roger Moore
Director          John Glen
Name: A View to a Kill, dtype: object
```

In [134]:

```
bond.iloc[[0,1,2],1]
```

Out[134]:

```
Film
A View to a Kill      Roger Moore
Casino Royale        Daniel Craig
Casino Royale         David Niven
Name: Actor, dtype: object
```

In [135]:

```
bond.iloc[[0,1,2],[0,1]]
```

Out[135]:

Film	Year	Actor
A View to a Kill	1985	Roger Moore
Casino Royale	2006	Daniel Craig
Casino Royale	1967	David Niven

In [150]:

```
bond.iloc[12,2:4]
```

Out[150]:

```
Director      Lewis Gilbert
Box Office            535.0
Name: Moonraker, dtype: object
```

In [152]:

```
bond.iloc[:2,[0,1]]
```

Out[152]:

Film	Year	Actor
A View to a Kill	1985	Roger Moore
Casino Royale	2006	Daniel Craig

In [154]:

```
bond.iloc[:2,:4]
```

Out[154]:

Film	Year	Actor	Director	Box Office
A View to a Kill	1985	Roger Moore	John Glen	275.2
Casino Royale	2006	Daniel Craig	Martin Campbell	581.5

In [145]:

```
bond.loc["Thunderball","Director":"Bond Actor Salary"]#Special type
```

Out[145]:

```
Director            Terence Young
Box Office                  848.1
Budget                       41.9
Bond Actor Salary             4.7
Name: Thunderball, dtype: object
```

In [147]:

```
bond.loc["Skyfall":"Thunderball","Director":"Bond Actor Salary"]#Special type
```

Out[147]:

Film	Director	Box Office	Budget	Bond Actor Salary
Skyfall	Sam Mendes	943.5	170.2	14.5
Spectre	Sam Mendes	726.7	206.3	NaN
The Living Daylights	John Glen	313.5	68.8	5.2
The Man with the Golden Gun	Guy Hamilton	334.0	27.7	NaN
The Spy Who Loved Me	Lewis Gilbert	533.0	45.1	NaN
The World Is Not Enough	Michael Apted	439.5	158.3	13.5
Thunderball	Terence Young	848.1	41.9	4.7

In [149]:

```
bond.loc["Octopussy",:"Bond Actor Salary"]#Special type
```

Out[149]:

Film	Year	Actor	Director	Box Office	Budget	Bond Actor Salary
A View to a Kill	1985	Roger Moore	John Glen	275.2	54.5	9.1
Casino Royale	2006	Daniel Craig	Martin Campbell	581.5	145.3	3.3
Casino Royale	1967	David Niven	Ken Hughes	315.0	85.0	NaN
Diamonds Are Forever	1971	Sean Connery	Guy Hamilton	442.5	34.7	5.8
Die Another Day	2002	Pierce Brosnan	Lee Tamahori	465.4	154.2	17.9
Dr. No	1962	Sean Connery	Terence Young	448.8	7.0	0.6
For Your Eyes Only	1981	Roger Moore	John Glen	449.4	60.2	NaN
From Russia with Love	1963	Sean Connery	Terence Young	543.8	12.6	1.6
GoldenEye	1995	Pierce Brosnan	Martin Campbell	518.5	76.9	5.1
Goldfinger	1964	Sean Connery	Guy Hamilton	820.4	18.6	3.2
Licence to Kill	1989	Timothy Dalton	John Glen	250.9	56.7	7.9
Live and Let Die	1973	Roger Moore	Guy Hamilton	460.3	30.8	NaN
Moonraker	1979	Roger Moore	Lewis Gilbert	535.0	91.5	NaN
Never Say Never Again	1983	Sean Connery	Irvin Kershner	380.0	86.0	NaN
Octopussy	1983	Roger Moore	John Glen	373.8	53.9	7.8

Set new value for a cell

In [155]:

```python
bond=pd.read_csv("jamesbond.csv",index_col="Film")
bond.sort_index(inplace=True)
bond.head()
```

Out[155]:

Film	Year	Actor	Director	Box Office	Budget	Bond Actor Salary
A View to a Kill	1985	Roger Moore	John Glen	275.2	54.5	9.1
Casino Royale	2006	Daniel Craig	Martin Campbell	581.5	145.3	3.3
Casino Royale	1967	David Niven	Ken Hughes	315.0	85.0	NaN
Diamonds Are Forever	1971	Sean Connery	Guy Hamilton	442.5	34.7	5.8
Die Another Day	2002	Pierce Brosnan	Lee Tamahori	465.4	154.2	17.9

In [156]:

```python
bond.iloc[0,0]=1541
```

In [157]:

```python
bond.head()
```

Out[157]:

Film	Year	Actor	Director	Box Office	Budget	Bond Actor Salary
A View to a Kill	1541	Roger Moore	John Glen	275.2	54.5	9.1
Casino Royale	2006	Daniel Craig	Martin Campbell	581.5	145.3	3.3
Casino Royale	1967	David Niven	Ken Hughes	315.0	85.0	NaN
Diamonds Are Forever	1971	Sean Connery	Guy Hamilton	442.5	34.7	5.8
Die Another Day	2002	Pierce Brosnan	Lee Tamahori	465.4	154.2	17.9

In [158]:

```python
bond.loc["Casino Royale",["Actor","Director"]]=["hero","director"]
```

In [162]:

```
bond.loc["Casino Royale",["Box Office","Bond Actor Salary","Budget"]]=[1,2,3]
bond.head()
```

Out[162]:

Film	Year	Actor	Director	Box Office	Budget	Bond Actor Salary
A View to a Kill	1541	Roger Moore	John Glen	275.2	54.5	9.1
Casino Royale	2006	hero cum actor	hero cum actor	1.0	3.0	2.0
Casino Royale	1967	hero cum actor	hero cum actor	1.0	3.0	2.0
Diamonds Are Forever	1971	Sean Connery	Guy Hamilton	442.5	34.7	5.8
Die Another Day	2002	Pierce Brosnan	Lee Tamahori	465.4	154.2	17.9

In [164]:

```
bond.loc["Casino Royale",["Box Office","Bond Actor Salary","Budget"]]=1000000
bond.head()
```

Out[164]:

Film	Year	Actor	Director	Box Office	Budget	Bond Actor Salary
A View to a Kill	1541	Roger Moore	John Glen	275.2	54.5	9.1
Casino Royale	2006	hero cum actor	hero cum actor	1000000.0	1000000.0	1000000.0
Casino Royale	1967	hero cum actor	hero cum actor	1000000.0	1000000.0	1000000.0
Diamonds Are Forever	1971	Sean Connery	Guy Hamilton	442.5	34.7	5.8
Die Another Day	2002	Pierce Brosnan	Lee Tamahori	465.4	154.2	17.9

In [169]:

```python
bond.loc["A View to a Kill",["Box Office","Bond Actor Salary","Budget"]]=1000000000
bond.loc["A View to a Kill"]
```

Out[169]:

```
Year                        1541
Actor                Roger Moore
Director               John Glen
Box Office          1000000000.0
Budget              1000000000.0
Bond Actor Salary   1000000000.0
Name: A View to a Kill, dtype: object
```

In [170]:

```python
bond.head()
```

Out[170]:

Film	Year	Actor	Director	Box Office	Budget	Bond Actor Salary
A View to a Kill	1541	Roger Moore	John Glen	1.000000e+09	1.000000e+09	1.000000e+09
Casino Royale	2006	hero cum actor	hero cum actor	1.000000e+06	1.000000e+06	1.000000e+06
Casino Royale	1967	hero cum actor	hero cum actor	1.000000e+06	1.000000e+06	1.000000e+06
Diamonds Are Forever	1971	Sean Connery	Guy Hamilton	4.425000e+02	3.470000e+01	5.800000e+00
Die Another Day	2002	Pierce Brosnan	Lee Tamahori	4.654000e+02	1.542000e+02	1.790000e+01

Set multiple values in a DF

In [171]:

```python
bond=pd.read_csv("jamesbond.csv",index_col="Film")
bond.sort_index(inplace=True)
bond.head()
```

Out[171]:

Film	Year	Actor	Director	Box Office	Budget	Bond Actor Salary
A View to a Kill	1985	Roger Moore	John Glen	275.2	54.5	9.1
Casino Royale	2006	Daniel Craig	Martin Campbell	581.5	145.3	3.3
Casino Royale	1967	David Niven	Ken Hughes	315.0	85.0	NaN
Diamonds Are Forever	1971	Sean Connery	Guy Hamilton	442.5	34.7	5.8
Die Another Day	2002	Pierce Brosnan	Lee Tamahori	465.4	154.2	17.9

In [175]:

```python
bond[bond["Year"]==2002]
```

Out[175]:

Film	Year	Actor	Director	Box Office	Budget	Bond Actor Salary
Die Another Day	2002	Pierce Brosnan	Lee Tamahori	465.4	154.2	17.9

In [176]:

```python
act_is_seancon=bond["Actor"]=="Sean Connery"
```

In [179]:

```python
bond.loc[act_is_seancon,"Actor"]
```

Out[179]:

```
Film
Diamonds Are Forever     Sean Connery
Dr. No                   Sean Connery
From Russia with Love    Sean Connery
Goldfinger               Sean Connery
Never Say Never Again    Sean Connery
Thunderball              Sean Connery
You Only Live Twice      Sean Connery
Name: Actor, dtype: object
```

In [185]:

```python
bond.loc[act_is_seancon,"Actor"]="Sirr Sean Connery"#replacing sean connery in actor to sir
```

In [186]:

```
bond
```

Out[186]:

Film	Year	Actor	Director	Box Office	Budget	Bond Actor Salary
A View to a Kill	1985	Roger Moore	John Glen	275.2	54.5	9.1
Casino Royale	2006	Daniel Craig	Martin Campbell	581.5	145.3	3.3
Casino Royale	1967	David Niven	Ken Hughes	315.0	85.0	NaN
Diamonds Are Forever	1971	Sirr Sean Connery	Guy Hamilton	442.5	34.7	5.8
Die Another Day	2002	Pierce Brosnan	Lee Tamahori	465.4	154.2	17.9
Dr. No	1962	Sirr Sean Connery	Terence Young	448.8	7.0	0.6
For Your Eyes Only	1981	Roger Moore	John Glen	449.4	60.2	NaN
From Russia with Love	1963	Sirr Sean Connery	Terence Young	543.8	12.6	1.6
GoldenEye	1995	Pierce Brosnan	Martin Campbell	518.5	76.9	5.1
Goldfinger	1964	Sirr Sean Connery	Guy Hamilton	820.4	18.6	3.2
Licence to Kill	1989	Timothy Dalton	John Glen	250.9	56.7	7.9
Live and Let Die	1973	Roger Moore	Guy Hamilton	460.3	30.8	NaN
Moonraker	1979	Roger Moore	Lewis Gilbert	535.0	91.5	NaN
Never Say Never Again	1983	Sirr Sean Connery	Irvin Kershner	380.0	86.0	NaN
Octopussy	1983	Roger Moore	John Glen	373.8	53.9	7.8
On Her Majesty's Secret Service	1969	George Lazenby	Peter R. Hunt	291.5	37.3	0.6
Quantum of Solace	2008	Daniel Craig	Marc Forster	514.2	181.4	8.1
Skyfall	2012	Daniel Craig	Sam Mendes	943.5	170.2	14.5
Spectre	2015	Daniel Craig	Sam Mendes	726.7	206.3	NaN
The Living Daylights	1987	Timothy Dalton	John Glen	313.5	68.8	5.2
The Man with the Golden Gun	1974	Roger Moore	Guy Hamilton	334.0	27.7	NaN
The Spy Who Loved Me	1977	Roger Moore	Lewis Gilbert	533.0	45.1	NaN
The World Is Not Enough	1999	Pierce Brosnan	Michael Apted	439.5	158.3	13.5
Thunderball	1965	Sirr Sean Connery	Terence Young	848.1	41.9	4.7
Tomorrow Never Dies	1997	Pierce Brosnan	Roger Spottiswoode	463.2	133.9	10.0

	Year	Actor	Director	Box Office	Budget	Bond Actor Salary
Film						
You Only Live Twice	1967	Sirr Sean Connery	Lewis Gilbert	514.2	59.9	4.4

In [187]:

```
bond.loc[act_is_seancon]#getting rows with actor as sean connery
```

Out[187]:

	Year	Actor	Director	Box Office	Budget	Bond Actor Salary
Film						
Diamonds Are Forever	1971	Sirr Sean Connery	Guy Hamilton	442.5	34.7	5.8
Dr. No	1962	Sirr Sean Connery	Terence Young	448.8	7.0	0.6
From Russia with Love	1963	Sirr Sean Connery	Terence Young	543.8	12.6	1.6
Goldfinger	1964	Sirr Sean Connery	Guy Hamilton	820.4	18.6	3.2
Never Say Never Again	1983	Sirr Sean Connery	Irvin Kershner	380.0	86.0	NaN
Thunderball	1965	Sirr Sean Connery	Terence Young	848.1	41.9	4.7
You Only Live Twice	1967	Sirr Sean Connery	Lewis Gilbert	514.2	59.9	4.4

In [189]:

```
bond.loc[:,"Director"]=="Lewis Gilbert"
```

Out[189]:

```
Film
A View to a Kill                False
Casino Royale                   False
Casino Royale                   False
Diamonds Are Forever            False
Die Another Day                 False
Dr. No                          False
For Your Eyes Only              False
From Russia with Love           False
GoldenEye                       False
Goldfinger                      False
Licence to Kill                 False
Live and Let Die                False
Moonraker                        True
Never Say Never Again           False
Octopussy                       False
On Her Majesty's Secret Service False
Quantum of Solace               False
Skyfall                         False
Spectre                         False
The Living Daylights            False
The Man with the Golden Gun     False
The Spy Who Loved Me             True
The World Is Not Enough         False
Thunderball                     False
Tomorrow Never Dies             False
You Only Live Twice              True
Name: Director, dtype: bool
```

In [201]:

```
gilb=bond["Director"]=="Lewis Gilbert"#condition
```

In [202]:

```
bond.loc[gilb,"Director"]="LW Gilbert"#Replacing
```

In [203]:

```
bond[bond["Director"]=="LW Gilbert"]#Filtering
```

Out[203]:

Film	Year	Actor	Director	Box Office	Budget	Bond Actor Salary
Moonraker	1979	Roger Moore	LW Gilbert	535.0	91.5	NaN
The Spy Who Loved Me	1977	Roger Moore	LW Gilbert	533.0	45.1	NaN
You Only Live Twice	1967	Sirr Sean Connery	LW Gilbert	514.2	59.9	4.4

Rename index names or columns in DF-inplace

In [204]:

```
bond=pd.read_csv("jamesbond.csv",index_col="Film")
bond.sort_index(inplace=True)
bond.head()
```

Out[204]:

Film	Year	Actor	Director	Box Office	Budget	Bond Actor Salary
A View to a Kill	1985	Roger Moore	John Glen	275.2	54.5	9.1
Casino Royale	2006	Daniel Craig	Martin Campbell	581.5	145.3	3.3
Casino Royale	1967	David Niven	Ken Hughes	315.0	85.0	NaN
Diamonds Are Forever	1971	Sean Connery	Guy Hamilton	442.5	34.7	5.8
Die Another Day	2002	Pierce Brosnan	Lee Tamahori	465.4	154.2	17.9

In [230]:

```
bond.rename(mapper={"dead":"Die"},axis=0,inplace=True)#1
bond.head()
```

Out[230]:

Film	Year	Hero	Director Name	Box Office	Budget	Bond Actor Salary
Kill	1985	Roger Moore	John Glen	275.2	54.5	9.1
Casino Royale	2006	Daniel Craig	Martin Campbell	581.5	145.3	3.3
Casino Royale	1967	David Niven	Ken Hughes	315.0	85.0	NaN
Diamonds Are Forever	1971	Sean Connery	Guy Hamilton	442.5	34.7	5.8
Die	2002	Pierce Brosnan	Lee Tamahori	465.4	154.2	17.9

In [237]:

```
bond.rename(mapper={"Killing":"Kill"},axis="index",inplace=True)#2
```

In [235]:

```
bond.head()
```

Out[235]:

Film	Year	Hero	Director Name	Box Office	Budget	Bond Actor Salary
Kill	1985	Roger Moore	John Glen	275.2	54.5	9.1
Casino Royale	2006	Daniel Craig	Martin Campbell	581.5	145.3	3.3
Casino Royale	1967	David Niven	Ken Hughes	315.0	85.0	NaN
Diamonds Are Forever	1971	Sean Connery	Guy Hamilton	442.5	34.7	5.8
Director_Name	2002	Pierce Brosnan	Lee Tamahori	465.4	154.2	17.9

In [234]:

```python
bond.rename({"Die":"Director_Name"},inplace=True)#3
bond.head()
```

Out[234]:

Film	Year	Hero	Director Name	Box Office	Budget	Bond Actor Salary
Kill	1985	Roger Moore	John Glen	275.2	54.5	9.1
Casino Royale	2006	Daniel Craig	Martin Campbell	581.5	145.3	3.3
Casino Royale	1967	David Niven	Ken Hughes	315.0	85.0	NaN
Diamonds Are Forever	1971	Sean Connery	Guy Hamilton	442.5	34.7	5.8
Director_Name	2002	Pierce Brosnan	Lee Tamahori	465.4	154.2	17.9

In [240]:

```python
bond.rename({"Diamonds Are Forever":"Diamond movie"},axis="rows",inplace=True)#4
bond.head()
```

Out[240]:

Film	Year	Hero	Director Name	Box Office	Budget	Bond Actor Salary
Kill	1985	Roger Moore	John Glen	275.2	54.5	9.1
Casino Royale	2006	Daniel Craig	Martin Campbell	581.5	145.3	3.3
Casino Royale	1967	David Niven	Ken Hughes	315.0	85.0	NaN
Diamond movie	1971	Sean Connery	Guy Hamilton	442.5	34.7	5.8
Director_Name	2002	Pierce Brosnan	Lee Tamahori	465.4	154.2	17.9

In [242]:

```
bond.rename(index={"Casino Royale":"King"},inplace=True)#5
bond.head()
```

Out[242]:

Film	Year	Hero	Director Name	Box Office	Budget	Bond Actor Salary
Kill	1985	Roger Moore	John Glen	275.2	54.5	9.1
King	2006	Daniel Craig	Martin Campbell	581.5	145.3	3.3
King	1967	David Niven	Ken Hughes	315.0	85.0	NaN
Diamond movie	1971	Sean Connery	Guy Hamilton	442.5	34.7	5.8
Director_Name	2002	Pierce Brosnan	Lee Tamahori	465.4	154.2	17.9

In [210]:

```
bond.rename({"Actor":"Hero"},axis=1,inplace=True)
```

In [211]:

```
bond.head()
```

Out[211]:

Film	Year	Hero	Director	Box Office	Budget	Bond Actor Salary
Killing	1985	Roger Moore	John Glen	275.2	54.5	9.1
Casino Royale	2006	Daniel Craig	Martin Campbell	581.5	145.3	3.3
Casino Royale	1967	David Niven	Ken Hughes	315.0	85.0	NaN
Diamonds Are Forever	1971	Sean Connery	Guy Hamilton	442.5	34.7	5.8
Die Another Day	2002	Pierce Brosnan	Lee Tamahori	465.4	154.2	17.9

In [224]:

```
bond.rename({"Director":"Director Name"},axis="columns",inplace=True)
```

In [225]:

```
bond.head()
```

Out[225]:

Film	Year	Hero	Director Name	Box Office	Budget	Bond Actor Salary
Kill	1985	Roger Moore	John Glen	275.2	54.5	9.1
Casino Royale	2006	Daniel Craig	Martin Campbell	581.5	145.3	3.3
Casino Royale	1967	David Niven	Ken Hughes	315.0	85.0	NaN
Diamonds Are Forever	1971	Sean Connery	Guy Hamilton	442.5	34.7	5.8
Die	2002	Pierce Brosnan	Lee Tamahori	465.4	154.2	17.9

In [248]:

```
bond.rename(columns={"Year":"Release Date","Box Office":"Revenue"})
bond.rename(mapper={"Year":"Release Date","Box Office":"Revenue"},axis="columns")
bond.rename(mapper={"Year":"Release Date","Box Office":"Revenue"},axis=1,inplace=True)
```

In [249]:

```
bond.head()
```

Out[249]:

Film	Release Date	Hero	Director Name	Revenue	Budget	Bond Actor Salary
Kill	1985	Roger Moore	John Glen	275.2	54.5	9.1
King	2006	Daniel Craig	Martin Campbell	581.5	145.3	3.3
King	1967	David Niven	Ken Hughes	315.0	85.0	NaN
Diamond movie	1971	Sean Connery	Guy Hamilton	442.5	34.7	5.8
Director_Name	2002	Pierce Brosnan	Lee Tamahori	465.4	154.2	17.9

In [251]:

```python
bond.index
```

Out[251]:

```
Index(['Kill', 'King', 'King', 'Diamond movie', 'Director_Name', 'Dr. No',
       'For Your Eyes Only', 'From Russia with Love', 'GoldenEye',
       'Goldfinger', 'Licence to Kill', 'Live and Let Die', 'Moonraker',
       'Never Say Never Again', 'Octopussy', 'On Her Majesty's Secret Servic
e',
       'Quantum of Solace', 'Skyfall', 'Spectre', 'The Living Daylights',
       'The Man with the Golden Gun', 'The Spy Who Loved Me',
       'The World Is Not Enough', 'Thunderball', 'Tomorrow Never Dies',
       'You Only Live Twice'],
      dtype='object', name='Film')
```

In [252]:

```python
bond.columns
```

Out[252]:

```
Index(['Release Date', 'Hero', 'Director Name', 'Revenue', 'Budget',
       'Bond Actor Salary'],
      dtype='object')
```

In [255]:

```python
bond.columns=["Datee","Actors","Director_Name","BoxOffice","Investment","Salary"]
#tochange all column names at atime without inplace param
```

In [256]:

```python
bond.head()
```

Out[256]:

Film	Datee	Actors	Director_Name	BoxOffice	Investment	Salary
Kill	1985	Roger Moore	John Glen	275.2	54.5	9.1
King	2006	Daniel Craig	Martin Campbell	581.5	145.3	3.3
King	1967	David Niven	Ken Hughes	315.0	85.0	NaN
Diamond movie	1971	Sean Connery	Guy Hamilton	442.5	34.7	5.8
Director_Name	2002	Pierce Brosnan	Lee Tamahori	465.4	154.2	17.9

Delete rows or columns in a DF-inplace

In [268]:

```
bond=pd.read_csv("jamesbond.csv",index_col="Film")
bond.sort_index(inplace=True)
bond.head()
```

Out[268]:

Film	Year	Actor	Director	Box Office	Budget	Bond Actor Salary
A View to a Kill	1985	Roger Moore	John Glen	275.2	54.5	9.1
Casino Royale	2006	Daniel Craig	Martin Campbell	581.5	145.3	3.3
Casino Royale	1967	David Niven	Ken Hughes	315.0	85.0	NaN
Diamonds Are Forever	1971	Sean Connery	Guy Hamilton	442.5	34.7	5.8
Die Another Day	2002	Pierce Brosnan	Lee Tamahori	465.4	154.2	17.9

In [267]:

```
bond.drop(["A View to a Kill","Die Another Day"])#remove row
```

Out[267]:

Film	Director	Box Office	Bond Actor Salary
Casino Royale	Martin Campbell	581.5	3.3
Casino Royale	Ken Hughes	315.0	NaN
Diamonds Are Forever	Guy Hamilton	442.5	5.8
Dr. No	Terence Young	448.8	0.6
For Your Eyes Only	John Glen	449.4	NaN
From Russia with Love	Terence Young	543.8	1.6
GoldenEye	Martin Campbell	518.5	5.1
Goldfinger	Guy Hamilton	820.4	3.2
Licence to Kill	John Glen	250.9	7.9
Live and Let Die	Guy Hamilton	460.3	NaN
Moonraker	Lewis Gilbert	535.0	NaN
Never Say Never Again	Irvin Kershner	380.0	NaN
Octopussy	John Glen	373.8	7.8
On Her Majesty's Secret Service	Peter R. Hunt	291.5	0.6
Quantum of Solace	Marc Forster	514.2	8.1
Skyfall	Sam Mendes	943.5	14.5
Spectre	Sam Mendes	726.7	NaN
The Living Daylights	John Glen	313.5	5.2
The Man with the Golden Gun	Guy Hamilton	334.0	NaN
The Spy Who Loved Me	Lewis Gilbert	533.0	NaN
The World Is Not Enough	Michael Apted	439.5	13.5
Thunderball	Terence Young	848.1	4.7
Tomorrow Never Dies	Roger Spottiswoode	463.2	10.0
You Only Live Twice	Lewis Gilbert	514.2	4.4

In [265]:

```
bond.drop(["Actor","Year","Budget"],axis=1,inplace=True)#remove mult columns #1
```

In [269]:

```
bond.head()
```

Out[269]:

Film	Year	Actor	Director	Box Office	Budget	Bond Actor Salary
A View to a Kill	1985	Roger Moore	John Glen	275.2	54.5	9.1
Casino Royale	2006	Daniel Craig	Martin Campbell	581.5	145.3	3.3
Casino Royale	1967	David Niven	Ken Hughes	315.0	85.0	NaN
Diamonds Are Forever	1971	Sean Connery	Guy Hamilton	442.5	34.7	5.8
Die Another Day	2002	Pierce Brosnan	Lee Tamahori	465.4	154.2	17.9

In [272]:

```
Year=bond.pop("Year")#2
```

In [273]:

```
Year
```

Out[273]:

```
Film
A View to a Kill                  1985
Casino Royale                     2006
Casino Royale                     1967
Diamonds Are Forever              1971
Die Another Day                   2002
Dr. No                            1962
For Your Eyes Only                1981
From Russia with Love             1963
GoldenEye                         1995
Goldfinger                        1964
Licence to Kill                   1989
Live and Let Die                  1973
Moonraker                         1979
Never Say Never Again             1983
Octopussy                         1983
On Her Majesty's Secret Service   1969
Quantum of Solace                 2008
Skyfall                           2012
Spectre                           2015
The Living Daylights              1987
The Man with the Golden Gun       1974
The Spy Who Loved Me              1977
The World Is Not Enough           1999
Thunderball                       1965
Tomorrow Never Dies               1997
You Only Live Twice               1967
Name: Year, dtype: int64
```

In [274]:

```
bond.head()
```

Out[274]:

Film	Director	Box Office	Budget	Bond Actor Salary
A View to a Kill	John Glen	275.2	54.5	9.1
Casino Royale	Martin Campbell	581.5	145.3	3.3
Casino Royale	Ken Hughes	315.0	85.0	NaN
Diamonds Are Forever	Guy Hamilton	442.5	34.7	5.8
Die Another Day	Lee Tamahori	465.4	154.2	17.9

In [275]:

```
bond["Budget"]
```

Out[275]:

```
Film
A View to a Kill                54.5
Casino Royale                  145.3
Casino Royale                   85.0
Diamonds Are Forever            34.7
Die Another Day                154.2
Dr. No                           7.0
For Your Eyes Only              60.2
From Russia with Love           12.6
GoldenEye                       76.9
Goldfinger                      18.6
Licence to Kill                 56.7
Live and Let Die                30.8
Moonraker                       91.5
Never Say Never Again           86.0
Octopussy                       53.9
On Her Majesty's Secret Service 37.3
Quantum of Solace              181.4
Skyfall                        170.2
Spectre                        206.3
The Living Daylights            68.8
The Man with the Golden Gun     27.7
The Spy Who Loved Me            45.1
The World Is Not Enough        158.3
Thunderball                     41.9
Tomorrow Never Dies            133.9
You Only Live Twice             59.9
Name: Budget, dtype: float64
```

In [276]:

```
del bond["Budget"]#rem colms #3
```

In [277]:

```
bond.head()
```

Out[277]:

Film	Director	Box Office	Bond Actor Salary
A View to a Kill	John Glen	275.2	9.1
Casino Royale	Martin Campbell	581.5	3.3
Casino Royale	Ken Hughes	315.0	NaN
Diamonds Are Forever	Guy Hamilton	442.5	5.8
Die Another Day	Lee Tamahori	465.4	17.9

In [280]:

```python
bond.loc["Casino Royale"]
```

Out[280]:

	Director	Box Office	Bond Actor Salary
Film			
Casino Royale	Martin Campbell	581.5	3.3
Casino Royale	Ken Hughes	315.0	NaN

In [284]:

```python
bond.head()
```

Out[284]:

	Director	Box Office	Bond Actor Salary
Film			
Casino Royale	Martin Campbell	581.5	3.3
Casino Royale	Ken Hughes	315.0	NaN
Diamonds Are Forever	Guy Hamilton	442.5	5.8
Die Another Day	Lee Tamahori	465.4	17.9
Dr. No	Terence Young	448.8	0.6

In [283]:

```python
bond.drop("A View to a Kill",inplace=True)#rows
```

create a random sample with .sample()

In [285]:

```
bond=pd.read_csv("jamesbond.csv",index_col="Film")
bond.sort_index(inplace=True)
bond.head()
```

Out[285]:

Film	Year	Actor	Director	Box Office	Budget	Bond Actor Salary
A View to a Kill	1985	Roger Moore	John Glen	275.2	54.5	9.1
Casino Royale	2006	Daniel Craig	Martin Campbell	581.5	145.3	3.3
Casino Royale	1967	David Niven	Ken Hughes	315.0	85.0	NaN
Diamonds Are Forever	1971	Sean Connery	Guy Hamilton	442.5	34.7	5.8
Die Another Day	2002	Pierce Brosnan	Lee Tamahori	465.4	154.2	17.9

In [297]:

```
bond.sample()
```

Out[297]:

Film	Year	Actor	Director	Box Office	Budget	Bond Actor Salary
Diamonds Are Forever	1971	Sean Connery	Guy Hamilton	442.5	34.7	5.8

In [299]:

```
bond.sample(n=2)#no of rows
```

Out[299]:

Film	Year	Actor	Director	Box Office	Budget	Bond Actor Salary
Moonraker	1979	Roger Moore	Lewis Gilbert	535.0	91.5	NaN
Die Another Day	2002	Pierce Brosnan	Lee Tamahori	465.4	154.2	17.9

In [300]:

```
len(bond)
```

Out[300]:

26

In [303]:

```
bond.head(10).sample(frac=.25)
```

Out[303]:

Film	Year	Actor	Director	Box Office	Budget	Bond Actor Salary
A View to a Kill	1985	Roger Moore	John Glen	275.2	54.5	9.1
Casino Royale	2006	Daniel Craig	Martin Campbell	581.5	145.3	3.3

In [305]:

```
bond.sample(frac=.25)#percentage of rows
```

Out[305]:

Film	Year	Actor	Director	Box Office	Budget	Bond Actor Salary
On Her Majesty's Secret Service	1969	George Lazenby	Peter R. Hunt	291.5	37.3	0.6
Octopussy	1983	Roger Moore	John Glen	373.8	53.9	7.8
Never Say Never Again	1983	Sean Connery	Irvin Kershner	380.0	86.0	NaN
Casino Royale	1967	David Niven	Ken Hughes	315.0	85.0	NaN
Tomorrow Never Dies	1997	Pierce Brosnan	Roger Spottiswoode	463.2	133.9	10.0
Dr. No	1962	Sean Connery	Terence Young	448.8	7.0	0.6

In [307]:

```
bond.sample(n=2,axis=1)
```

Out[307]:

	Year	Director
Film		
A View to a Kill	1985	John Glen
Casino Royale	2006	Martin Campbell
Casino Royale	1967	Ken Hughes
Diamonds Are Forever	1971	Guy Hamilton
Die Another Day	2002	Lee Tamahori
Dr. No	1962	Terence Young
For Your Eyes Only	1981	John Glen
From Russia with Love	1963	Terence Young
GoldenEye	1995	Martin Campbell
Goldfinger	1964	Guy Hamilton
Licence to Kill	1989	John Glen
Live and Let Die	1973	Guy Hamilton
Moonraker	1979	Lewis Gilbert
Never Say Never Again	1983	Irvin Kershner
Octopussy	1983	John Glen
On Her Majesty's Secret Service	1969	Peter R. Hunt
Quantum of Solace	2008	Marc Forster
Skyfall	2012	Sam Mendes
Spectre	2015	Sam Mendes
The Living Daylights	1987	John Glen
The Man with the Golden Gun	1974	Guy Hamilton
The Spy Who Loved Me	1977	Lewis Gilbert
The World Is Not Enough	1999	Michael Apted
Thunderball	1965	Terence Young
Tomorrow Never Dies	1997	Roger Spottiswoode
You Only Live Twice	1967	Lewis Gilbert

.nsmallest() .nlargest()

In [308]:

```
bond=pd.read_csv("jamesbond.csv",index_col="Film")
bond.sort_index(inplace=True)
bond.head()
```

Out[308]:

Film	Year	Actor	Director	Box Office	Budget	Bond Actor Salary
A View to a Kill	1985	Roger Moore	John Glen	275.2	54.5	9.1
Casino Royale	2006	Daniel Craig	Martin Campbell	581.5	145.3	3.3
Casino Royale	1967	David Niven	Ken Hughes	315.0	85.0	NaN
Diamonds Are Forever	1971	Sean Connery	Guy Hamilton	442.5	34.7	5.8
Die Another Day	2002	Pierce Brosnan	Lee Tamahori	465.4	154.2	17.9

In [310]:

```
bond.sort_values("Box Office",ascending=False).head()
```

Out[310]:

Film	Year	Actor	Director	Box Office	Budget	Bond Actor Salary
Skyfall	2012	Daniel Craig	Sam Mendes	943.5	170.2	14.5
Thunderball	1965	Sean Connery	Terence Young	848.1	41.9	4.7
Goldfinger	1964	Sean Connery	Guy Hamilton	820.4	18.6	3.2
Spectre	2015	Daniel Craig	Sam Mendes	726.7	206.3	NaN
Casino Royale	2006	Daniel Craig	Martin Campbell	581.5	145.3	3.3

In [339]:

```
bond.nlargest(3,columns="Box Office")        #1
```

Out[339]:

Film	Year	Actor	Director	Box Office	Budget	Bond Actor Salary
Skyfall	2012	Daniel Craig	Sam Mendes	943.5	170.2	14.5
Thunderball	1965	Sean Connery	Terence Young	848.1	41.9	4.7
Goldfinger	1964	Sean Connery	Guy Hamilton	820.4	18.6	3.2

In [340]:

```
bond.sort_values("Box Office",ascending=False).tail()
```

Out[340]:

Film	Year	Actor	Director	Box Office	Budget	Bond Actor Salary
Casino Royale	1967	David Niven	Ken Hughes	315.0	85.0	NaN
The Living Daylights	1987	Timothy Dalton	John Glen	313.5	68.8	5.2
On Her Majesty's Secret Service	1969	George Lazenby	Peter R. Hunt	291.5	37.3	0.6
Licence to Kill	1989	Timothy Dalton	John Glen	275.2	56.7	7.9
A View to a Kill	1985	Roger Moore	John Glen	275.2	54.5	9.1

In [325]:

```
bond.nsmallest(3,columns="Box Office",keep="first")
```

Out[325]:

Film	Year	Actor	Director	Box Office	Budget	Bond Actor Salary
A View to a Kill	1985	Roger Moore	John Glen	275.2	54.5	9.1
Licence to Kill	1989	Timothy Dalton	John Glen	275.2	56.7	7.9
On Her Majesty's Secret Service	1969	George Lazenby	Peter R. Hunt	291.5	37.3	0.6

In [315]:

```
bond["Box Office"].nsmallest(3)    #2
```

Out[315]:

```
Film
Licence to Kill               250.9
A View to a Kill              275.2
On Her Majesty's Secret Service    291.5
Name: Box Office, dtype: float64
```

In [318]:

```
bond.loc["Licence to Kill","Box Office"]=275.2
```

In [337]:

```
bond["Box Office"].nsmallest(3,keep="last")#2 #last reps smallest value last occured comes
```

Out[337]:

```
Film
Licence to Kill                 275.2
A View to a Kill                275.2
On Her Majesty's Secret Service    291.5
Name: Box Office, dtype: float64
```

In [338]:

```
bond["Box Office"].nsmallest(3,keep="first")#2#last reps smallest value last occured comes
```

Out[338]:

```
Film
A View to a Kill                275.2
Licence to Kill                 275.2
On Her Majesty's Secret Service    291.5
Name: Box Office, dtype: float64
```

In [342]:

```
bond["Box Office"].nsmallest(1,keep="all")#2#all reps all smallest values of equal level
```

Out[342]:

```
Film
A View to a Kill    275.2
Licence to Kill     275.2
Name: Box Office, dtype: float64
```

In [320]:

```
bond.sort_values("Box Office",ascending=False).tail()
```

Out[320]:

Film	Year	Actor	Director	Box Office	Budget	Bond Actor Salary
Casino Royale	1967	David Niven	Ken Hughes	315.0	85.0	NaN
The Living Daylights	1987	Timothy Dalton	John Glen	313.5	68.8	5.2
On Her Majesty's Secret Service	1969	George Lazenby	Peter R. Hunt	291.5	37.3	0.6
Licence to Kill	1989	Timothy Dalton	John Glen	275.2	56.7	7.9
A View to a Kill	1985	Roger Moore	John Glen	275.2	54.5	9.1

DF with Where()

In [343]:

```
bond=pd.read_csv("jamesbond.csv",index_col="Film")
bond.sort_index(inplace=True)
bond.head()
```

Out[343]:

Film	Year	Actor	Director	Box Office	Budget	Bond Actor Salary
A View to a Kill	1985	Roger Moore	John Glen	275.2	54.5	9.1
Casino Royale	2006	Daniel Craig	Martin Campbell	581.5	145.3	3.3
Casino Royale	1967	David Niven	Ken Hughes	315.0	85.0	NaN
Diamonds Are Forever	1971	Sean Connery	Guy Hamilton	442.5	34.7	5.8
Die Another Day	2002	Pierce Brosnan	Lee Tamahori	465.4	154.2	17.9

In [354]:

```
mask=bond["Actor"]=="Sean Connery"
bond[mask]
```

Out[354]:

Film	Year	Actor	Director	Box Office	Budget	Bond Actor Salary
Diamonds Are Forever	1971	Sean Connery	Guy Hamilton	442.5	34.7	5.8
Dr. No	1962	Sean Connery	Terence Young	448.8	7.0	0.6
From Russia with Love	1963	Sean Connery	Terence Young	543.8	12.6	1.6
Goldfinger	1964	Sean Connery	Guy Hamilton	820.4	18.6	3.2
Never Say Never Again	1983	Sean Connery	Irvin Kershner	380.0	86.0	NaN
Thunderball	1965	Sean Connery	Terence Young	848.1	41.9	4.7
You Only Live Twice	1967	Sean Connery	Lewis Gilbert	514.2	59.9	4.4

In [355]:

```
bond.where(mask)#Unmatching rows are null
```

Out[355]:

Film	Year	Actor	Director	Box Office	Budget	Bond Actor Salary
A View to a Kill	NaN	NaN	NaN	NaN	NaN	NaN
Casino Royale	NaN	NaN	NaN	NaN	NaN	NaN
Casino Royale	NaN	NaN	NaN	NaN	NaN	NaN
Diamonds Are Forever	1971.0	Sean Connery	Guy Hamilton	442.5	34.7	5.8
Die Another Day	NaN	NaN	NaN	NaN	NaN	NaN
Dr. No	1962.0	Sean Connery	Terence Young	448.8	7.0	0.6
For Your Eyes Only	NaN	NaN	NaN	NaN	NaN	NaN
From Russia with Love	1963.0	Sean Connery	Terence Young	543.8	12.6	1.6
GoldenEye	NaN	NaN	NaN	NaN	NaN	NaN
Goldfinger	1964.0	Sean Connery	Guy Hamilton	820.4	18.6	3.2
Licence to Kill	NaN	NaN	NaN	NaN	NaN	NaN
Live and Let Die	NaN	NaN	NaN	NaN	NaN	NaN
Moonraker	NaN	NaN	NaN	NaN	NaN	NaN
Never Say Never Again	1983.0	Sean Connery	Irvin Kershner	380.0	86.0	NaN
Octopussy	NaN	NaN	NaN	NaN	NaN	NaN
On Her Majesty's Secret Service	NaN	NaN	NaN	NaN	NaN	NaN
Quantum of Solace	NaN	NaN	NaN	NaN	NaN	NaN
Skyfall	NaN	NaN	NaN	NaN	NaN	NaN
Spectre	NaN	NaN	NaN	NaN	NaN	NaN
The Living Daylights	NaN	NaN	NaN	NaN	NaN	NaN
The Man with the Golden Gun	NaN	NaN	NaN	NaN	NaN	NaN
The Spy Who Loved Me	NaN	NaN	NaN	NaN	NaN	NaN
The World Is Not Enough	NaN	NaN	NaN	NaN	NaN	NaN
Thunderball	1965.0	Sean Connery	Terence Young	848.1	41.9	4.7
Tomorrow Never Dies	NaN	NaN	NaN	NaN	NaN	NaN
You Only Live Twice	1967.0	Sean Connery	Lewis Gilbert	514.2	59.9	4.4

In [357]:

```python
mask2=bond["Box Office"]>900
bond.where(mask2)
```

Out[357]:

Film	Year	Actor	Director	Box Office	Budget	Bond Actor Salary
A View to a Kill	NaN	NaN	NaN	NaN	NaN	NaN
Casino Royale	NaN	NaN	NaN	NaN	NaN	NaN
Casino Royale	NaN	NaN	NaN	NaN	NaN	NaN
Diamonds Are Forever	NaN	NaN	NaN	NaN	NaN	NaN
Die Another Day	NaN	NaN	NaN	NaN	NaN	NaN
Dr. No	NaN	NaN	NaN	NaN	NaN	NaN
For Your Eyes Only	NaN	NaN	NaN	NaN	NaN	NaN
From Russia with Love	NaN	NaN	NaN	NaN	NaN	NaN
GoldenEye	NaN	NaN	NaN	NaN	NaN	NaN
Goldfinger	NaN	NaN	NaN	NaN	NaN	NaN
Licence to Kill	NaN	NaN	NaN	NaN	NaN	NaN
Live and Let Die	NaN	NaN	NaN	NaN	NaN	NaN
Moonraker	NaN	NaN	NaN	NaN	NaN	NaN
Never Say Never Again	NaN	NaN	NaN	NaN	NaN	NaN
Octopussy	NaN	NaN	NaN	NaN	NaN	NaN
On Her Majesty's Secret Service	NaN	NaN	NaN	NaN	NaN	NaN
Quantum of Solace	NaN	NaN	NaN	NaN	NaN	NaN
Skyfall	2012.0	Daniel Craig	Sam Mendes	943.5	170.2	14.5
Spectre	NaN	NaN	NaN	NaN	NaN	NaN
The Living Daylights	NaN	NaN	NaN	NaN	NaN	NaN
The Man with the Golden Gun	NaN	NaN	NaN	NaN	NaN	NaN
The Spy Who Loved Me	NaN	NaN	NaN	NaN	NaN	NaN
The World Is Not Enough	NaN	NaN	NaN	NaN	NaN	NaN
Thunderball	NaN	NaN	NaN	NaN	NaN	NaN
Tomorrow Never Dies	NaN	NaN	NaN	NaN	NaN	NaN
You Only Live Twice	NaN	NaN	NaN	NaN	NaN	NaN

In [359]:

```
bond.where(mask & mask2)#both condns are not satisfied
```

Out[359]:

Film	Year	Actor	Director	Box Office	Budget	Bond Actor Salary
A View to a Kill	NaN	NaN	NaN	NaN	NaN	NaN
Casino Royale	NaN	NaN	NaN	NaN	NaN	NaN
Casino Royale	NaN	NaN	NaN	NaN	NaN	NaN
Diamonds Are Forever	NaN	NaN	NaN	NaN	NaN	NaN
Die Another Day	NaN	NaN	NaN	NaN	NaN	NaN
Dr. No	NaN	NaN	NaN	NaN	NaN	NaN
For Your Eyes Only	NaN	NaN	NaN	NaN	NaN	NaN
From Russia with Love	NaN	NaN	NaN	NaN	NaN	NaN
GoldenEye	NaN	NaN	NaN	NaN	NaN	NaN
Goldfinger	NaN	NaN	NaN	NaN	NaN	NaN
Licence to Kill	NaN	NaN	NaN	NaN	NaN	NaN
Live and Let Die	NaN	NaN	NaN	NaN	NaN	NaN
Moonraker	NaN	NaN	NaN	NaN	NaN	NaN
Never Say Never Again	NaN	NaN	NaN	NaN	NaN	NaN
Octopussy	NaN	NaN	NaN	NaN	NaN	NaN
On Her Majesty's Secret Service	NaN	NaN	NaN	NaN	NaN	NaN
Quantum of Solace	NaN	NaN	NaN	NaN	NaN	NaN
Skyfall	NaN	NaN	NaN	NaN	NaN	NaN
Spectre	NaN	NaN	NaN	NaN	NaN	NaN
The Living Daylights	NaN	NaN	NaN	NaN	NaN	NaN
The Man with the Golden Gun	NaN	NaN	NaN	NaN	NaN	NaN
The Spy Who Loved Me	NaN	NaN	NaN	NaN	NaN	NaN
The World Is Not Enough	NaN	NaN	NaN	NaN	NaN	NaN
Thunderball	NaN	NaN	NaN	NaN	NaN	NaN
Tomorrow Never Dies	NaN	NaN	NaN	NaN	NaN	NaN
You Only Live Twice	NaN	NaN	NaN	NaN	NaN	NaN

DF with query method- no spaces in column names

In [360]:

```
bond=pd.read_csv("jamesbond.csv",index_col="Film")
bond.sort_index(inplace=True)
bond.head()
```

Out[360]:

Film	Year	Actor	Director	Box Office	Budget	Bond Actor Salary
A View to a Kill	1985	Roger Moore	John Glen	275.2	54.5	9.1
Casino Royale	2006	Daniel Craig	Martin Campbell	581.5	145.3	3.3
Casino Royale	1967	David Niven	Ken Hughes	315.0	85.0	NaN
Diamonds Are Forever	1971	Sean Connery	Guy Hamilton	442.5	34.7	5.8
Die Another Day	2002	Pierce Brosnan	Lee Tamahori	465.4	154.2	17.9

In [365]:

```
bond.columns=[column_name.replace(" ","_") for column_name in bond.columns]#replacing all s
```

In [367]:

```
bond.head()
```

Out[367]:

Film	Year	Actor	Director	Box_Office	Budget	Bond_Actor_Salary
A View to a Kill	1985	Roger Moore	John Glen	275.2	54.5	9.1
Casino Royale	2006	Daniel Craig	Martin Campbell	581.5	145.3	3.3
Casino Royale	1967	David Niven	Ken Hughes	315.0	85.0	NaN
Diamonds Are Forever	1971	Sean Connery	Guy Hamilton	442.5	34.7	5.8
Die Another Day	2002	Pierce Brosnan	Lee Tamahori	465.4	154.2	17.9

In [368]:

```
bond.query('Actor=="Sean Connery"')
```

Out[368]:

Film	Year	Actor	Director	Box_Office	Budget	Bond_Actor_Salary
Diamonds Are Forever	1971	Sean Connery	Guy Hamilton	442.5	34.7	5.8
Dr. No	1962	Sean Connery	Terence Young	448.8	7.0	0.6
From Russia with Love	1963	Sean Connery	Terence Young	543.8	12.6	1.6
Goldfinger	1964	Sean Connery	Guy Hamilton	820.4	18.6	3.2
Never Say Never Again	1983	Sean Connery	Irvin Kershner	380.0	86.0	NaN
Thunderball	1965	Sean Connery	Terence Young	848.1	41.9	4.7
You Only Live Twice	1967	Sean Connery	Lewis Gilbert	514.2	59.9	4.4

In [371]:

```
bond.query(" Actor =='Daniel Craig'")
```

Out[371]:

Film	Year	Actor	Director	Box_Office	Budget	Bond_Actor_Salary
Casino Royale	2006	Daniel Craig	Martin Campbell	581.5	145.3	3.3
Quantum of Solace	2008	Daniel Craig	Marc Forster	514.2	181.4	8.1
Skyfall	2012	Daniel Craig	Sam Mendes	943.5	170.2	14.5
Spectre	2015	Daniel Craig	Sam Mendes	726.7	206.3	NaN

In [375]:

```
bond.query("Budget == 145.3")#equal==
```

Out[375]:

	Year	Actor	Director	Box_Office	Budget	Bond_Actor_Salary
Film						
Casino Royale	2006	Daniel Craig	Martin Campbell	581.5	145.3	3.3

In [378]:

```
bond.query("Budget > 145.3")#gt>
```

Out[378]:

	Year	Actor	Director	Box_Office	Budget	Bond_Actor_Salary
Film						
Die Another Day	2002	Pierce Brosnan	Lee Tamahori	465.4	154.2	17.9
Quantum of Solace	2008	Daniel Craig	Marc Forster	514.2	181.4	8.1
Skyfall	2012	Daniel Craig	Sam Mendes	943.5	170.2	14.5
Spectre	2015	Daniel Craig	Sam Mendes	726.7	206.3	NaN
The World Is Not Enough	1999	Pierce Brosnan	Michael Apted	439.5	158.3	13.5

In [379]:

```
bond.query("Actor == 'Daniel Craig' and Director=='Sam Mendes'")#and
```

Out[379]:

	Year	Actor	Director	Box_Office	Budget	Bond_Actor_Salary
Film						
Skyfall	2012	Daniel Craig	Sam Mendes	943.5	170.2	14.5
Spectre	2015	Daniel Craig	Sam Mendes	726.7	206.3	NaN

In [380]:

```
bond.query("Actor in ['Daniel Craig','Pierce Brosnan']")#in
```

Out[380]:

Film	Year	Actor	Director	Box_Office	Budget	Bond_Actor_Salary
Casino Royale	2006	Daniel Craig	Martin Campbell	581.5	145.3	3.3
Die Another Day	2002	Pierce Brosnan	Lee Tamahori	465.4	154.2	17.9
GoldenEye	1995	Pierce Brosnan	Martin Campbell	518.5	76.9	5.1
Quantum of Solace	2008	Daniel Craig	Marc Forster	514.2	181.4	8.1
Skyfall	2012	Daniel Craig	Sam Mendes	943.5	170.2	14.5
Spectre	2015	Daniel Craig	Sam Mendes	726.7	206.3	NaN
The World Is Not Enough	1999	Pierce Brosnan	Michael Apted	439.5	158.3	13.5
Tomorrow Never Dies	1997	Pierce Brosnan	Roger Spottiswoode	463.2	133.9	10.0

In [382]:

```
bond.query("Actor not in ['Daniel Craig','Sean Connery','Pierce Brosnan']")# not in
```

Out[382]:

Film	Year	Actor	Director	Box_Office	Budget	Bond_Actor_Salary
A View to a Kill	1985	Roger Moore	John Glen	275.2	54.5	9.1
Casino Royale	1967	David Niven	Ken Hughes	315.0	85.0	NaN
For Your Eyes Only	1981	Roger Moore	John Glen	449.4	60.2	NaN
Licence to Kill	1989	Timothy Dalton	John Glen	250.9	56.7	7.9
Live and Let Die	1973	Roger Moore	Guy Hamilton	460.3	30.8	NaN
Moonraker	1979	Roger Moore	Lewis Gilbert	535.0	91.5	NaN
Octopussy	1983	Roger Moore	John Glen	373.8	53.9	7.8
On Her Majesty's Secret Service	1969	George Lazenby	Peter R. Hunt	291.5	37.3	0.6
The Living Daylights	1987	Timothy Dalton	John Glen	313.5	68.8	5.2
The Man with the Golden Gun	1974	Roger Moore	Guy Hamilton	334.0	27.7	NaN
The Spy Who Loved Me	1977	Roger Moore	Lewis Gilbert	533.0	45.1	NaN

In [4]:

```
sqldb=pd.read_sql_table("tbl_sample","mysql,"django")
```

. . .

In [5]:

```
from sqlalchemy import create_engine

engine=create_engine('mysql://root:tiger@localhost/django')
df=pandas.read_sql_table("tbl_sample",engine)
```

. . .

A review of .apply() mtd on single colms

In [6]:

```
bond=pd.read_csv("jamesbond.csv",index_col="Film")
bond.sort_index(inplace=True)
bond.head()
```

Out[6]:

Film	Year	Actor	Director	Box Office	Budget	Bond Actor Salary
A View to a Kill	1985	Roger Moore	John Glen	275.2	54.5	9.1
Casino Royale	2006	Daniel Craig	Martin Campbell	581.5	145.3	3.3
Casino Royale	1967	David Niven	Ken Hughes	315.0	85.0	NaN
Diamonds Are Forever	1971	Sean Connery	Guy Hamilton	442.5	34.7	5.8
Die Another Day	2002	Pierce Brosnan	Lee Tamahori	465.4	154.2	17.9

In [11]:

```python
def conv_tostr_add_milins(num):
    return str(num)+" Millions"
bond["Box Office"]
```

Out[11]:

```
Film
A View to a Kill                 275.2
Casino Royale                    581.5
Casino Royale                    315.0
Diamonds Are Forever             442.5
Die Another Day                  465.4
Dr. No                           448.8
For Your Eyes Only               449.4
From Russia with Love            543.8
GoldenEye                        518.5
Goldfinger                       820.4
Licence to Kill                  250.9
Live and Let Die                 460.3
Moonraker                        535.0
Never Say Never Again            380.0
Octopussy                        373.8
On Her Majesty's Secret Service  291.5
Quantum of Solace                514.2
Skyfall                          943.5
Spectre                          726.7
The Living Daylights             313.5
The Man with the Golden Gun      334.0
The Spy Who Loved Me             533.0
The World Is Not Enough          439.5
Thunderball                      848.1
Tomorrow Never Dies              463.2
You Only Live Twice              514.2
Name: Box Office, dtype: float64
```

In [12]:

```python
bond["Box Office"].apply(conv_tostr_add_milins)
```

Out[12]:

```
Film
A View to a Kill              275.2 Millions
Casino Royale                581.5 Millions
Casino Royale                315.0 Millions
Diamonds Are Forever         442.5 Millions
Die Another Day              465.4 Millions
Dr. No                       448.8 Millions
For Your Eyes Only           449.4 Millions
From Russia with Love        543.8 Millions
GoldenEye                    518.5 Millions
Goldfinger                   820.4 Millions
Licence to Kill              250.9 Millions
Live and Let Die             460.3 Millions
Moonraker                    535.0 Millions
Never Say Never Again        380.0 Millions
Octopussy                    373.8 Millions
On Her Majesty's Secret Service   291.5 Millions
Quantum of Solace            514.2 Millions
Skyfall                      943.5 Millions
Spectre                      726.7 Millions
The Living Daylights         313.5 Millions
The Man with the Golden Gun  334.0 Millions
The Spy Who Loved Me         533.0 Millions
The World Is Not Enough      439.5 Millions
Thunderball                  848.1 Millions
Tomorrow Never Dies          463.2 Millions
You Only Live Twice          514.2 Millions
Name: Box Office, dtype: object
```

In [13]:

```python
bond["Budget"].apply(conv_tostr_add_milins)
```

Out[13]:

```
Film
A View to a Kill                54.5 Millions
Casino Royale                  145.3 Millions
Casino Royale                   85.0 Millions
Diamonds Are Forever            34.7 Millions
Die Another Day                154.2 Millions
Dr. No                           7.0 Millions
For Your Eyes Only              60.2 Millions
From Russia with Love           12.6 Millions
GoldenEye                       76.9 Millions
Goldfinger                      18.6 Millions
Licence to Kill                 56.7 Millions
Live and Let Die                30.8 Millions
Moonraker                       91.5 Millions
Never Say Never Again           86.0 Millions
Octopussy                       53.9 Millions
On Her Majesty's Secret Service 37.3 Millions
Quantum of Solace              181.4 Millions
Skyfall                        170.2 Millions
Spectre                        206.3 Millions
The Living Daylights            68.8 Millions
The Man with the Golden Gun     27.7 Millions
The Spy Who Loved Me            45.1 Millions
The World Is Not Enough        158.3 Millions
Thunderball                     41.9 Millions
Tomorrow Never Dies            133.9 Millions
You Only Live Twice             59.9 Millions
Name: Budget, dtype: object
```

In [15]:

```python
colms=["Box Office","Budget","Bond Actor Salary"]
for col in colms:
    bond[col]=bond[col].apply(conv_tostr_add_milins)
```

In [16]:

```
bond.head()
```

Out[16]:

Film	Year	Actor	Director	Box Office	Budget	Bond Actor Salary
A View to a Kill	1985	Roger Moore	John Glen	275.2 Millions	54.5 Millions	9.1 Millions
Casino Royale	2006	Daniel Craig	Martin Campbell	581.5 Millions	145.3 Millions	3.3 Millions
Casino Royale	1967	David Niven	Ken Hughes	315.0 Millions	85.0 Millions	nan Millions
Diamonds Are Forever	1971	Sean Connery	Guy Hamilton	442.5 Millions	34.7 Millions	5.8 Millions
Die Another Day	2002	Pierce Brosnan	Lee Tamahori	465.4 Millions	154.2 Millions	17.9 Millions

The .apply() method with single row values

In [17]:

```
 bond=pd.read_csv("jamesbond.csv",index_col="Film")
bond.sort_index(inplace=True)
bond.head()
```

Out[17]:

Film	Year	Actor	Director	Box Office	Budget	Bond Actor Salary
A View to a Kill	1985	Roger Moore	John Glen	275.2	54.5	9.1
Casino Royale	2006	Daniel Craig	Martin Campbell	581.5	145.3	3.3
Casino Royale	1967	David Niven	Ken Hughes	315.0	85.0	NaN
Diamonds Are Forever	1971	Sean Connery	Guy Hamilton	442.5	34.7	5.8
Die Another Day	2002	Pierce Brosnan	Lee Tamahori	465.4	154.2	17.9

In [18]:

```python
def good_movie(row):
    actor=row[1]
    budget=row[4]
    if actor=="Pierce Brosnan":
        return "The Best"
    elif actor=="Roger Moore" and budget>40:
        return "Enjoyable"
    else:
        return "I have no clue"
```

In [19]:

```python
bond.apply(good_movie,axis="columns")
```

Out[19]:

```
Film
A View to a Kill                     Enjoyable
Casino Royale                   I have no clue
Casino Royale                   I have no clue
Diamonds Are Forever            I have no clue
Die Another Day                       The Best
Dr. No                          I have no clue
For Your Eyes Only                   Enjoyable
From Russia with Love           I have no clue
GoldenEye                             The Best
Goldfinger                      I have no clue
Licence to Kill                 I have no clue
Live and Let Die                     Enjoyable
Moonraker                            Enjoyable
Never Say Never Again           I have no clue
Octopussy                            Enjoyable
On Her Majesty's Secret Service I have no clue
Quantum of Solace               I have no clue
Skyfall                         I have no clue
Spectre                         I have no clue
The Living Daylights            I have no clue
The Man with the Golden Gun          Enjoyable
The Spy Who Loved Me                 Enjoyable
The World Is Not Enough               The Best
Thunderball                     I have no clue
Tomorrow Never Dies                   The Best
You Only Live Twice             I have no clue
dtype: object
```

The .copy() method

In [20]:

```python
 bond=pd.read_csv("jamesbond.csv",index_col="Film")
bond.sort_index(inplace=True)
bond.head()
```

Out[20]:

Film	Year	Actor	Director	Box Office	Budget	Bond Actor Salary
A View to a Kill	1985	Roger Moore	John Glen	275.2	54.5	9.1
Casino Royale	2006	Daniel Craig	Martin Campbell	581.5	145.3	3.3
Casino Royale	1967	David Niven	Ken Hughes	315.0	85.0	NaN
Diamonds Are Forever	1971	Sean Connery	Guy Hamilton	442.5	34.7	5.8
Die Another Day	2002	Pierce Brosnan	Lee Tamahori	465.4	154.2	17.9

In [22]:

```python
directors=bond["Director"]
directors.head()
```

Out[22]:

```
Film
A View to a Kill             John Glen
Casino Royale         Martin Campbell
Casino Royale             Ken Hughes
Diamonds Are Forever      Guy Hamilton
Die Another Day           Lee Tamahori
Name: Director, dtype: object
```

In [23]:

```python
directors["A View to a Kill"]="Mr A View to a Kill"
```

```
<ipython-input-23-e70a4720da26>:1: SettingWithCopyWarning:
A value is trying to be set on a copy of a slice from a DataFrame

See the caveats in the documentation: https://pandas.pydata.org/pandas-docs/
stable/user_guide/indexing.html#returning-a-view-versus-a-copy (https://pand
as.pydata.org/pandas-docs/stable/user_guide/indexing.html#returning-a-view-v
ersus-a-copy)
  directors["A View to a Kill"]="Mr A View to a Kill"
```

In [29]:

```python
bond.head()
```

Out[29]:

Film	Year	Actor	Director	Box Office	Budget	Bond Actor Salary
A View to a Kill	1985	Roger Moore	Mr A View to a Kill	275.2	54.5	9.1
Casino Royale	2006	Daniel Craig	Martin Campbell	581.5	145.3	3.3
Casino Royale	1967	David Niven	Ken Hughes	315.0	85.0	NaN
Diamonds Are Forever	1971	Sean Connery	Guy Hamilton	442.5	34.7	5.8
Die Another Day	2002	Pierce Brosnan	Lee Tamahori	465.4	154.2	17.9

In [25]:

```python
directors=bond["Director"].copy()#indirect copy
```

In [30]:

```python
directors["A View to a Kill"]="Mr John Glenn" #indirect copy
```

In [28]:

```
directors
```

Out[28]:

```
Film
A View to a Kill                        Mr John Glenn
Casino Royale                          Martin Campbell
Casino Royale                             Ken Hughes
Diamonds Are Forever                     Guy Hamilton
Die Another Day                          Lee Tamahori
Dr. No                                  Terence Young
For Your Eyes Only                         John Glen
From Russia with Love                   Terence Young
GoldenEye                              Martin Campbell
Goldfinger                               Guy Hamilton
Licence to Kill                            John Glen
Live and Let Die                         Guy Hamilton
Moonraker                              Lewis Gilbert
Never Say Never Again                  Irvin Kershner
Octopussy                                  John Glen
On Her Majesty's Secret Service         Peter R. Hunt
Quantum of Solace                        Marc Forster
Skyfall                                   Sam Mendes
Spectre                                   Sam Mendes
The Living Daylights                       John Glen
The Man with the Golden Gun              Guy Hamilton
The Spy Who Loved Me                    Lewis Gilbert
The World Is Not Enough                 Michael Apted
Thunderball                             Terence Young
Tomorrow Never Dies                 Roger Spottiswoode
You Only Live Twice                    Lewis Gilbert
Name: Director, dtype: object
```