Pandas Pivot Table

1. Write a Python script to sort (ascending and descending) a dictionary by value..

In [9]:
```
d={'a':10,'b':20,'c':30,'d':4,'e':5,'f':6}


d_asc=dict(sorted(d.items(), key=lambda x: x[1], reverse=False))
print('Asecding order dictionary:', d_asc)

d_desc=dict(sorted(d.items(), key=lambda x: x[1], reverse=True))
print('Descending order dictionary:', d_desc)
```

```
Asecding order dictionary: {'d': 4, 'e': 5, 'f': 6, 'a': 10, 'b': 20, 'c': 30}
Descending order dictionary: {'c': 30, 'b': 20, 'a': 10, 'f': 6, 'e': 5, 'd': 4}
```

2. Write a Pandas program to create a Pivot table and find the total sale amount region wise, manager wise

In [10]:
```
import numpy as np
import pandas as pd
```

In [11]:
```
df=pd.read_excel("Sales_data_Panda_numpy.xlsx")
df.head()
```

Out[11]:

	OrderDate	Region	Manager	SalesMan	Item	Units	Unit_price	Sale_amt
0	2018-01-06	East	Martha	Alexander	Television	95	1198.0	1,13,810.00
1	2018-01-23	Central	Hermann	Shelli	Home Theater	50	500.0	25000
2	2018-02-09	Central	Hermann	Luis	Television	36	1198.0	43128
3	2018-02-26	Central	Timothy	David	Cell Phone	27	225.0	6075
4	2018-03-15	West	Timothy	Stephen	Television	56	1198.0	67088

In [12]:
```
df=pd.read_excel("Sales_data_Panda_numpy.xlsx",thousands=',')
df.head()
```

Out[12]:

	OrderDate	Region	Manager	SalesMan	Item	Units	Unit_price	Sale_amt
0	2018-01-06	East	Martha	Alexander	Television	95	1198.0	113810.0
1	2018-01-23	Central	Hermann	Shelli	Home Theater	50	500.0	25000.0
2	2018-02-09	Central	Hermann	Luis	Television	36	1198.0	43128.0
3	2018-02-26	Central	Timothy	David	Cell Phone	27	225.0	6075.0
4	2018-03-15	West	Timothy	Stephen	Television	56	1198.0	67088.0

In [ ]:
```

```

In [13]:
```
df.pivot_table(values='Sale_amt',index='Region',columns='Manager',margins=True,aggfunc
```

Out[13]:

Manager	Douglas	Hermann	Marth	Martha	Timothy	All
Region						
Central	124016.0	365108.5	14000.0	185690.0	140955.0	829769.5
East	48204.0	NaN	NaN	272803.0	NaN	321007.0
West	66836.0	NaN	NaN	NaN	88063.0	154899.0
All	239056.0	365108.5	14000.0	458493.0	229018.0	1305675.5

3. Write a Pandas program to create a Pivot table and find the total sale amount region wise, manager wise, sales man wise.

In [14]:
```
df.pivot_table(values='Sale_amt',index='Region',columns=['Manager','SalesMan'],margins
```

Out[14]:

Manager	Douglas		Hermann			Marth	Martha			
SalesMan	John	Karen	Michael	Luis	Shelli	Sigal	Steven	Alexander	Diana	Steven	D
Region											
Central	124016.0	NaN	NaN	206373.0	33698.0	125037.5	14000.0	NaN	NaN	185690.0	1405
East	NaN	48204.0	NaN	NaN	NaN	NaN	NaN	236703.0	36100.0	NaN	
West	NaN	NaN	66836.0	NaN	NaN	NaN	NaN	NaN	NaN	NaN	
All	124016.0	48204.0	66836.0	206373.0	33698.0	125037.5	14000.0	236703.0	36100.0	185690.0	1405

In [15]:
```
df.pivot_table(values='Sale_amt',index=['Region','Manager','SalesMan'],margins=True,a
```

Out[15]:

			Sale_amt
Region	Manager	SalesMan	
Central	Douglas	John	124016.0
	Hermann	Luis	206373.0
		Shelli	33698.0
		Sigal	125037.5
	Marth	Steven	14000.0
	Martha	Steven	185690.0
	Timothy	David	140955.0
East	Douglas	Karen	48204.0
	Martha	Alexander	236703.0
		Diana	36100.0
West	Douglas	Michael	66836.0
	Timothy	Stephen	88063.0
All			1305675.5

4. Write a Pandas program to create a Pivot table and find the item wise unit sold.

In [16]:
```
df.pivot_table(values='Units',index='Item',margins=True,aggfunc='sum')
```

Out[16]:

	Units
Item	
Cell Phone	278
Desk	10
Home Theater	722
Television	716
Video Games	395
All	2121

5. Write a Pandas program to create a Pivot table and find the region wise total sale.

In [17]:
```
df.pivot_table(values='Sale_amt',index='Region',margins=True,aggfunc='sum')
```

Out[17]:

	Sale_amt
Region	
Central	829769.5
East	321007.0
West	154899.0
All	1305675.5

6. Write a Pandas program to create a Pivot table and find the region wise, item wise unit sold.

In [18]:
```
df.pivot_table(values='Units',index='Region',columns='Item',margins=True,aggfunc='sum
```

Out[18]:

Item	Cell Phone	Desk	Home Theater	Television	Video Games	All
Region						
Central	27.0	7.0	424.0	498.0	243.0	1199
East	175.0	NaN	234.0	130.0	152.0	691
West	76.0	3.0	64.0	88.0	NaN	231
All	278.0	10.0	722.0	716.0	395.0	2121

7. Write a Pandas program to create a Pivot table and count the manager wise sale and mean value of sale amount.

In [19]:
```
df.pivot_table(values='Sale_amt',index='Manager',margins=True,aggfunc=['count','mean'
```

Out[19]:

	count	mean
	Sale_amt	Sale_amt
Manager		
Douglas	8	29882.000000
Hermann	12	30425.708333
Marth	1	14000.000000
Martha	13	35268.692308
Timothy	9	25446.444444
All	43	30364.546512

8. Write a Pandas program to create a Pivot table and find manager wise, salesman wise total sale and also display the sum of all sale amount at the bottom.

In [20]:
```
df.pivot_table(values=['Sale_amt','Units'],index=['Manager','SalesMan'],margins=True,
```

Out[20]:

		Sale_amt	Units
Manager	SalesMan		
Douglas	John	124016.0	156
	Karen	48204.0	170
	Michael	66836.0	89
Hermann	Luis	206373.0	281
	Shelli	33698.0	193
	Sigal	125037.5	173
Marth	Steven	14000.0	28
Martha	Alexander	236703.0	396
	Diana	36100.0	125
	Steven	185690.0	155
Timothy	David	140955.0	213
	Stephen	88063.0	142
All		1305675.5	2121

9. Write a Pandas program to create a Pivot table and find the total sale amount region wise, manager wise, sales man wise where Manager = "Douglas".

In [21]:
```
table=df.pivot_table(values='Sale_amt',index=['Region','Manager','SalesMan'],margins=
table.query('Manager == "Douglas"')
```

Out[21]:

			Sale_amt
Region	Manager	SalesMan	
Central	Douglas	John	124016.0
East	Douglas	Karen	48204.0
West	Douglas	Michael	66836.0

10. Write a Pandas program to create a Pivot table and find the region wise Television and Home Theater sold.

In [22]:
```
table=df.pivot_table(values='Units',index=['Region','Item'],margins=True,aggfunc='sum
table.query('Item==["Television","Home Theater"]')
```

Out[22]:

		Units
Region	Item	
Central	Home Theater	424
	Television	498
East	Home Theater	234
	Television	130
West	Home Theater	64
	Television	88

In [ ]:
```

```

In [ ]:
```

```