In [34]:
```
import pandas
```

In [35]:
```
import pandas as pd
```

In [38]:
```
pd.__version__
```

Out[38]:
```
'1.1.3'
```

In [4]:
```
list_s=[1,2,-3,6.2,'data values']
print(list_s)
```

```
[1, 2, -3, 6.2, 'data values']
```

In [5]:
```
series1=pd.Series(list_s)
print(series1)
```

```
0             1
1             2
2            -3
3           6.2
4   data values
dtype: object
```

In [6]:
```
type(series1)
```

Out[6]:
```
pandas.core.series.Series
```

In [7]:
```
series2=pd.Series([1,2,3,4,5,6])
print(series2)
```

```
0    1
1    2
2    3
3    4
4    5
5    6
dtype: int64
```

In [41]:
```
empty_s=pd.Series([])
print(empty_s)
```

```
Series([], dtype: float64)
<ipython-input-41-61bfa6afa16b>:1: DeprecationWarning: The default dtype for empty Series will be 'object' instead of 'float64' in a future version. Specify a dtype explicitly to silence this warning.
  empty_s=pd.Series([])
```

In [43]:
```
series3=pd.Series([1,2,3,4],index=['a','b','c','d'])
print(series3)
```

```
a    1
b    2
c    3
d    4
dtype: int64
```

In [12]:
```
series3=pd.Series([1,2,3,4],index=['a','b','c','d'],dtype=float)
print(series3)
```

```
a    1.0
b    2.0
c    3.0
d    4.0
dtype: float64
```

In [13]:
```
series3=pd.Series([1,2,3,4],index=['a','b','c','d'],dtype=float,name='data values')
print(series3)
```

```
a    1.0
b    2.0
c    3.0
d    4.0
Name: data values, dtype: float64
```

CREATE SERIES WITH SCALAR VALUES

In [15]:
```
scalar_s=pd.Series(0.5)
print(scalar_s)
```

```
0    0.5
dtype: float64
```

In [44]:
```
scalar_s=pd.Series(0.5,index=[1,2,3,4])
print(scalar_s)
```

```
1    0.5
2    0.5
3    0.5
4    0.5
dtype: float64
```

USE DICTONARY TO CREATE SERIES

In [18]:
```
dict_s=pd.Series({'a':1,'b':2,'c':3})
print(dict_s)
```

```
a    1
b    2
c    3
dtype: int64
```

PYTHON PANDAS SUPPORTS NUMPY LIBRARIES TO PERFORM OPERATIONS

In [19]:
```
series4=pd.Series([1,2,3,4,5])
print(series4)
```

```
0    1
1    2
2    3
3    4
4    5
dtype: int64
```

In [20]:
```
#acess 1 value
```

In [21]:
```
series4[0]
```

Out[21]:
```
1
```

In [22]:
```
series4[4]
```

Out[22]:
```
5
```

SLICE OPERATION

In [23]:
```
series4[0:3]
```

Out[23]:
```
0    1
1    2
2    3
dtype: int64
```

In [24]:
```
max(series4)
```

Out[24]:
```
5
```

In [25]:
```
min(series4)
```

Out[25]:
```
1
```

In [27]:
```
series4[series4>3]
```

Out[27]:
```
3    4
4    5
dtype: int64
```

MATHEMATICS OPERATIONS

In [28]:
```
series4
```

Out[28]:
```
0    1
1    2
2    3
3    4
4    5
dtype: int64
```

In [29]:
```
series5=pd.Series([1,2,3,4,5])
print(series5)
```

```
0    1
1    2
2    3
3    4
4    5
dtype: int64
```

In [30]:
```
series4+series5
```

Out[30]:
```
0     2
1     4
2     6
3     8
4    10
dtype: int64
```

In [31]:
```
series6=pd.Series([1,2,3])
print(series6)
```

```
0    1
1    2
2    3
dtype: int64
```

In [32]:
```
series5+series6
```

Out[32]:
```
0    2.0
1    4.0
2    6.0
3    NaN
4    NaN
dtype: float64
```

PANDAS DATAFRAMES

In [45]:
```
import pandas as pd
```

CREATE EMPTY DF

In [47]:
```
empty_df=pd.DataFrame()
print(empty_df)
```

```
Empty DataFrame
Columns: []
Index: []
```

CREATE PANDAS DF FROM LIST

In [48]:
```
list=['a','b','c']
print(list)
```

```
['a', 'b', 'c']
```

In [49]:
```
# create DataFrame
```

In [50]:
```
df1=pd.DataFrame(list)
print(df1)
```

```
   0
0  a
1  b
2  c
```

In [51]:
```
df1
```

Out[51]:

	0
0	a
1	b
2	c

CREATE DATA FRAME FROM LIST OF LIST

In [52]:
```
list_of_list=[[1,2,3,4,5],[11,12,13,14,15],[21,22,23,24,25]]
print(list_of_list)
```

```
[[1, 2, 3, 4, 5], [11, 12, 13, 14, 15], [21, 22, 23, 24, 25]]
```

In [53]:
```
df2=pd.DataFrame(list_of_list)
df2
```

Out[53]:

	0	1	2	3	4
0	1	2	3	4	5
1	11	12	13	14	15
2	21	22	23	24	25

CREATE DATFRAME FROM DICTONARY

In [54]:
```
dict1={'ID':[11,12,13,14,15]}
dict1
```

Out[54]:
```
{'ID': [11, 12, 13, 14, 15]}
```

In [55]:
```
df3=pd.DataFrame(dict1)
df3
```

Out[55]:

	ID
0	11
1	12
2	13
3	14
4	15

In [56]:
```
dict2={'ID':[11,12,13,14,15],'SN':[21,22,23,24,25]}
dict2
```

Out[56]:
```
{'ID': [11, 12, 13, 14, 15], 'SN': [21, 22, 23, 24, 25]}
```

In [57]:
```
df4=pd.DataFrame(dict2)
df4
```

Out[57]:

	ID	SN
0	11	21
1	12	22
2	13	23
3	14	24
4	15	25

CREATE LIST OF DICTONARY

In [58]:
```
ls_dict=[{'a':1,'b':2,'c':3},{'d':1,'e':2,'f':3}]
df5=pd.DataFrame(ls_dict)
df5
```

Out[58]:

	a	b	c	d	e	f
0	1.0	2.0	3.0	NaN	NaN	NaN
1	NaN	NaN	NaN	1.0	2.0	3.0

In [60]:
```
ls_dict=[{'a':1,'b':2,'c':3},{'a':1,'b':2,'c':3}]
df5=pd.DataFrame(ls_dict)
df5
```

Out[60]:

	a	b	c
0	1	2	3
1	1	2	3

CREATING DATAFRAME FROM DICTONARY OF SERIES

In [62]:
```
dict_sr={'ID':pd.Series([41,45,47]),'SN':[66,67,68]}
df6=pd.DataFrame(dict_sr)
df6
```

Out[62]:

	ID	SN
0	41	66
1	45	67
2	47	68

In [ ]:
```

```