In [1]:
```
import pandas as pd
```

In [2]:
```
s=pd.Series([10,20,30,40])
print(s)
```

```
0    10
1    20
2    30
3    40
dtype: int64
```

In [3]:
```
s.values
```

Out[3]:
```
array([10, 20, 30, 40], dtype=int64)
```

In [4]:
```
s.index
```

Out[4]:
```
RangeIndex(start=0, stop=4, step=1)
```

In [5]:
```
s[1]
```

Out[5]:
```
20
```

In [6]:
```
s[1:3]
```

Out[6]:
```
1    20
2    30
dtype: int64
```

In [7]:
```
ser=pd.Series([10,20,30,40],index=['a','b','c','d'])
```

In [8]:
```
print(ser)
```

```
a    10
b    20
c    30
d    40
dtype: int64
```

In [9]:
```
ser['d']
```

Out[9]: 40

In [10]:
```
student_dict={'yogita':11,'shraddha':12,'janhavi':13}
student=pd.Series(student_dict)
student
```

Out[10]:
```
yogita      11
shraddha    12
janhavi     13
dtype: int64
```

In [11]:
```
student['shraddha']
```

Out[11]: 12

In [12]:
```
student['yogita':'janhavi']
```

Out[12]:
```
yogita      11
shraddha    12
janhavi     13
dtype: int64
```

In [ ]:
```

```

dataframe

In [13]:
```
marks_dict={'M3':95,'Chem':87,'Phy':90}
marks=pd.Series(student_dict)
marks
```

Out[13]:
```
yogita      11
shraddha    12
janhavi     13
dtype: int64
```

In [17]:
```
marks_dict={'yogita':95,'shraddha':87,'janhavi':90}
marks=pd.Series(marks_dict)
marks
```

Out[17]:
```
yogita      95
shraddha    87
janhavi     90
dtype: int64
```

In [ ]:
```

```

In [15]:
```
states=pd.DataFrame({'student':student,'marks':marks})
```

In [16]:
```
states
```

Out[16]:

	student	marks
Chem	NaN	87.0
M3	NaN	95.0
Phy	NaN	90.0
janhavi	13.0	NaN
shraddha	12.0	NaN
yogita	11.0	NaN

In [18]:
```
states
```

Out[18]:

	student	marks
Chem	NaN	87.0
M3	NaN	95.0
Phy	NaN	90.0
janhavi	13.0	NaN
shraddha	12.0	NaN
yogita	11.0	NaN

In [19]:
```
states=pd.DataFrame({'student':student,'marks':marks})
states
```

Out[19]:

	student	marks
yogita	11	95
shraddha	12	87
janhavi	13	90

In [20]:
```
states.index
```

Out[20]:
```
Index(['yogita', 'shraddha', 'janhavi'], dtype='object')
```

In [21]:
```
states['marks']
```

Out[21]:
```
yogita      95
shraddha    87
janhavi     90
Name: marks, dtype: int64
```

data selection in series

In [22]:
```
data=pd.Series([1,2,3,4],index=['a','b','c','d'])
data
```

Out[22]:
```
a    1
b    2
c    3
d    4
dtype: int64
```

In [23]:
```
data['e']=5
data
```

Out[23]:
```
a    1
b    2
c    3
d    4
e    5
dtype: int64
```

slicing by explicit index

In [24]:
```
data['a':'c']
```

Out[24]:
```
a    1
b    2
c    3
dtype: int64
```

masking

In [28]:
```
data[(data>3)]
```

Out[28]:
```
d    4
e    5
dtype: int64
```

fancy indexing

In [30]:
```
data[['a','c']]
```

Out[30]:
```
a    1
c    3
dtype: int64
```

implicit index

In [32]:
```
data=pd.Series(['a','b','c'],index=[1,2,3])
data
```

Out[32]:
```
1    a
2    b
3    c
dtype: object
```

In [33]:
```
data[1:3]
```

Out[33]:
```
2    b
3    c
dtype: object
```

In [34]:
```
data=pd.Series([1,2,3,4],index=['a','b','c','d'])
data
```

Out[34]:
```
a    1
b    2
c    3
d    4
dtype: int64
```

In [35]:
```
data.iloc[1]
```

Out[35]:
```
2
```

In [36]:
```
data.iloc[1:3]
```

Out[36]:
```
b    2
c    3
dtype: int64
```

In [37]:
```
states=pd.DataFrame({'student':student,'marks':marks})
states
```

Out[37]:

	student	marks
yogita	11	95
shraddha	12	87
janhavi	13	90

In [41]:
```
states.iloc[:2,:2]
```

Out[41]:

	student	marks
yogita	11	95
shraddha	12	87

In [ ]:

In [ ]:

In [ ]: