```
import pandas as pd
```

```
ser=pd.Series([3,4,5,6,7])
```

```
ser
```

```
0    3
1    4
2    5
3    6
4    7
dtype: int64
```

```
ser2=pd.Series(['Apple','Mango','Grapes','Orange'])
ser2
```

```
0     Apple
1     Mango
2    Grapes
3    Orange
dtype: object
```

```
ser2[1:3]
```

```
1     Mango
2    Grapes
dtype: object
```

```
ser3=pd.Series([5,6,7,8,9,1,3,5,18])
ser3
```

```
0     5
1     6
2     7
3     8
4     9
5     1
6     3
7     5
8    18
dtype: int64
```

```
ser3[2:7]
```

```
2    7
3    8
4    9
5    1
6    3
dtype: int64
```

```
ser4=pd.Series([5,6,7,8,9,1,3,5],index=['r1','r2','r3','r4','r5','r6','r7','r8'])
ser4
```

```
r1    5
r2    6
r3    7
r4    8
r5    9
r6    1
r7    3
r8    5
dtype: int64
```

```
ser4['r2':'r7']
```

```
r2    6
r3    7
r4    8
r5    9
r6    1
r7    3
dtype: int64
```

```
df1 = pd.DataFrame([[1,2,3,4,5],[2,3,4,5,6],[4,5,8,9,6],[6,2,3,4,8],[1,2,9,4,3],[1,7,3,4,5],[6,2,7,0,1],[4,2,3,4,5],[1,2,3,4,5],[1,8,3,0,9]])
df1
```

	0	1	2	3	4
0	1	2	3	4	5
1	2	3	4	5	6
2	4	5	8	9	6
3	6	2	3	4	8
4	1	2	9	4	3
5	1	7	3	4	5
6	6	2	7	0	1
7	4	2	3	4	5
8	1	2	3	4	5
9	1	8	3	0	9

```
df1.columns=['c1','c2','c3','c4','c5']
df1.index = ['r1','r2','r3','r4','r5','r6','r7','r8','r9','r10']
df1
```

	c1	c2	c3	c4	c5
r1	1	2	3	4	5
r2	2	3	4	5	6
r3	4	5	8	9	6
r4	6	2	3	4	8
r5	1	2	9	4	3
r6	1	7	3	4	5
r7	6	2	7	0	1
r8	4	2	3	4	5
r9	1	2	3	4	5
r10	1	8	3	0	9

```
import numpy as np
```

```
df1.info()
```

```
<class 'pandas.core.frame.DataFrame'>
Index: 10 entries, r1 to r10
Data columns (total 5 columns):
 #   Column  Non-Null Count  Dtype
---  ------  --------------  -----
 0   c1      10 non-null     int64
 1   c2      10 non-null     int64
 2   c3      10 non-null     int64
 3   c4      10 non-null     int64
 4   c5      10 non-null     int64
dtypes: int64(5)
memory usage: 480.0+ bytes
```

```
df1.describe()
```

	c1	c2	c3	c4	c5
count	10.000000	10.000000	10.000000	10.000000	10.000000
mean	2.700000	3.500000	4.600000	3.800000	5.300000

```
df1.c3.median()
```

```
3.0
```

```
df1.c3.mean()
```

```
4.6
```

```
df1.c3 = df1.c3.fillna(df1.c3.median())
df1
```

	c1	c2	c3	c4	c5
r1	1	2	3	4	5
r2	2	3	4	5	6
r3	4	5	8	9	6
r4	6	2	3	4	8
r5	1	2	9	4	3
r6	1	7	3	4	5
r7	6	2	7	0	1
r8	4	2	3	4	5
r9	1	2	3	4	5
r10	1	8	3	0	9

```
df1.c4.mode()
```

```
0    4
Name: c4, dtype: int64
```

```
df1.c4.mode()
```

```
0    4
Name: c4, dtype: int64
```

```
df1.c4.mode()
```

```
0    4
Name: c4, dtype: int64
```

```
df1.loc['r4','c1':'c5']
```

```
c1    6
c2    2
c3    3
c4    4
c5    8
Name: r4, dtype: int64
```

```
df1.isnull().any()
```

```
c1    False
c2    False
c3    False
c4    False
c5    False
dtype: bool
```

```
df1.isnull().sum()
```

```
c1    0
c2    0
c3    0
c4    0
```

```
c5    0
dtype: int64
```

```
dfd = df1.drop('r3',axis=0)
dfd
```

	c1	c2	c3	c4	c5
r1	1	2	3	4	5
r2	2	3	4	5	6
r4	6	2	3	4	8
r5	1	2	9	4	3
r6	1	7	3	4	5
r7	6	2	7	0	1
r8	4	2	3	4	5
r9	1	2	3	4	5
r10	1	8	3	0	9

```
df1.head()
```

	c1	c2	c3	c4	c5
r1	1	2	3	4	5
r2	2	3	4	5	6
r3	4	5	8	9	6
r4	6	2	3	4	8
r5	1	2	9	4	3