

```
import numpy as np
import pandas as pd
```

```
L1 = [4,6,2,8,1,5]
lables = ['a','b','c','d','e','f']
d1 = {"A":10,"B":20,"C":30,"D":40,"E":50}
```

```
s1 = pd.Series(L1)
s1
```

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

```
Labels = pd.Series(lables)
Labels
```

```
0    a
1    b
2    c
3    d
4    e
5    f
dtype: object
```

```
s1 = pd.Series(d1)
s1
```

```
A    10
B    20
C    30
D    40
E    50
dtype: int64
```

```
s3 = pd.Series(data=lables,index=L1)
s3
```

```
4    a
6    b
2    c
8    d
1    e
5    f
dtype: object
```

```
arr = np.random.randint(low=1,high=100,size=(5,6))
arr
```

```
array([[21, 38, 93,  1, 65, 31],
       [56, 83, 93, 51, 54, 48],
       [67, 48, 56, 81, 79, 72],
       [73, 51, 47, 60, 73, 60],
       [ 8, 13, 23, 40, 81,  2]])
```

```
df = pd.DataFrame(arr,index=["A","B","C","D","E"], columns = ["C1","C2","C3","C4","C5","C6"])
print(df)
print(type(df))
```

```
C1  C2  C3  C4  C5  C6
A   21  38  93   1  65  31
B   56  83  93  51  54  48
C   67  48  56  81  79  72
D   73  51  47  60  73  60
E    8  13  23  40  81   2
<class 'pandas.core.frame.DataFrame'>
```

```
df["C5"]
```

```
↵ A    65
   B    54
   C    79
   D    73
   E    81
   Name: C5, dtype: int64
```

```
df[["C1","C2"]]
```

```
↵
```

	C1	C2
A	21	38
B	56	83
C	67	48
D	73	51
E	8	13

```
df.loc["A"]
```

```
↵ C1    21
   C2    38
   C3    93
   C4     1
   C5    65
   C6    31
   Name: A, dtype: int64
```

```
df.loc[["A","C","B"]]
df
```

```
↵
```

	C1	C2	C3	C4	C5	C6
A	21	38	93	1	65	31
B	56	83	93	51	54	48
C	67	48	56	81	79	72
D	73	51	47	60	73	60
E	8	13	23	40	81	2

```
np.__version__
```

```
↵ '1.25.2'
```

```
pd.__version__
```

```
↵ '2.0.3'
```

```
df.iloc[0]
```

```
↵ C1    21
   C2    38
   C3    93
   C4     1
   C5    65
   C6    31
   Name: A, dtype: int64
```

```
df['New'] = [10,20,30,40,50]
df
```



	C1	C2	C3	C4	C5	C6	New
A	21	38	93	1	65	31	10
B	56	83	93	51	54	48	20
C	67	48	56	81	79	72	30
D	73	51	47	60	73	60	40
E	8	13	23	40	81	2	50

```
df['C5'] = [100,20,52,30,20]
df
```



	C1	C2	C3	C4	C5	C6	New
A	21	38	93	1	100	31	10
B	56	83	93	51	20	48	20
C	67	48	56	81	52	72	30
D	73	51	47	60	30	60	40
E	8	13	23	40	20	2	50

```
df.drop('New',axis=1)
df
```



	C1	C2	C3	C4	C5	C6	New
A	21	38	93	1	100	31	10
B	56	83	93	51	20	48	20
C	67	48	56	81	52	72	30
D	73	51	47	60	30	60	40
E	8	13	23	40	20	2	50

```
df.drop('New',axis=1,inplace=True)
df
```



	C1	C2	C3	C4	C5	C6
A	21	38	93	1	100	31
B	56	83	93	51	20	48
C	67	48	56	81	52	72
D	73	51	47	60	30	60
E	8	13	23	40	20	2

```
df['C1'] % 2 == 0
```




```
A    False
B     True
C    False
D    False
E     True
Name: C1, dtype: bool
```

```
df[df['C1'] % 2 == 0]['C3']
```



```
B    93
E    23
Name: C3, dtype: int64
```

```
(df['C1'] % 2 == 0) & (df['C1'] > 50)
```



```
A    False
B     True
C    False
D    False
E    False
Name: C1, dtype: bool
```