```
import numpy as np
import pandas as pd
labels=['a','b','c']
my_data=[10,20,30]
arr=np.array(my_data)
d={"a":10,"b":20,"c":30}
new=pd.Series(data=my_data)
print(new)
print(d)
print(arr)
```

```
0    10
1    20
2    30
dtype: int64
{'a': 10, 'b': 20, 'c': 30}
[10 20 30]
```

```
import numpy as np
import pandas as pd
labels=['a','b','c']
my_data=[10,20,30]
arr=np.array(my_data)
d={"a":10,"b":20,"c":30}
new=pd.Series(data=my_data,index=labels)
print(new)
```

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

```
import numpy as np
import pandas as pd
labels=['a','b','c']
my_data=[10,20,30]
arr=np.array(my_data)
d={"a":10,"b":20,"c":30}
new=pd.Series(my_data,labels)
print(new)
```

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

```
import numpy as np
import pandas as pd
labels=['a','b','c']
my_data=[10,20,30]
arr=np.array(my_data)
d={"a":10,"b":20,"c":30}
new=pd.Series(arr)
print(new)
```

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

```
import numpy as np
import pandas as pd
labels=['a','b','c']
my_data=[10,20,30]
arr=np.array(my_data)
d={"a":10,"b":20,"c":30}
new=pd.Series(arr,labels)
print(new)
```

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

```
import numpy as np
import pandas as pd
labels=['a','b','c']
my_data=[10,20,30]
arr=np.array(my_data)
d={"a":10,"b":20,"c":30}
new=pd.Series(d,my_data)
print(new)
```

```
10   NaN
20   NaN
30   NaN
dtype: float64
```

```
import numpy as np
import pandas as pd
labels=['a','b','c']
my_data=[10,20,30]
arr=np.array(my_data)
d={"a":10,"b":20,"c":30}
new=pd.Series(data=[max,sum,len,print])
print(new)
```

```
0      <built-in function max>
1      <built-in function sum>
2      <built-in function len>
3    <built-in function print>
dtype: object
```

```
import pandas as pd
import numpy as np
ser1 = pd.Series([1,2,3,4,5],['UK','USA','JAPAN','RUSSIA','ITALY'])
print(ser1)
```

```
UK        1
USA       2
JAPAN     3
RUSSIA    4
ITALY     5
dtype: int64
```

```
import pandas as pd
import numpy as np
ser1 = pd.Series([1,2,3,4,5],['UK','USA','JAPAN','RUSSIA','ITALY'])
ser1
```

```
UK        1
USA       2
JAPAN     3
RUSSIA    4
ITALY     5
dtype: int64
```

```
import pandas as pd
import numpy as np
ser1 = pd.Series([1,2,3,4,5],['UK','USA','JAPAN','RUSSIA','ITALY'])
ser1['USA']
```

```
2
```

```
import pandas as pd
import numpy as np
ser1 = pd.Series(data=labels)
ser1
```

```
0    a
1    b
2    c
dtype: object
```

```
import pandas as pd
import numpy as np
s=pd.Series()
print(s)
```

```
Series([], dtype: float64)
<ipython-input-3-468eaf2ac1eb>:3: FutureWarning: The default dtype for empty Series will be 'object' instead of 'float64' in a future
  s=pd.Series()
```

```
import pandas as pd
import numpy as np
data={'a':0,'b':1,'c':2}
s=pd.Series(data)
s
```

```
a    0
b    1
c    2
dtype: int64
```

```
import pandas as pd
import numpy as np
data={'a':0,'b':1,'c':2}
s=pd.Series(data,index=['b','c','d','a'])
s
```

```
b    1.0
c    2.0
d    NaN
a    0.0
dtype: float64
```

```
import pandas as pd
import numpy as np
s=pd.Series(5,index=[0,1,2,3])
s
```

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

```
import pandas as pd
import numpy as np
s=pd.Series([1,2,3,4,5],index=['a','b','c','d','e'])
print(s)
print(s[0])
print(s[:3])
print(s[-3:])
```

```
a    1
b    2
c    3
d    4
e    5
dtype: int64
1
a    1
b    2
c    3
dtype: int64
c    3
d    4
e    5
dtype: int64
```

```
import pandas as pd
import numpy as np
s=pd.Series([1,2,3,4,5],index=['a','b','c','d','e'])
print(s[['a','c','e']])
print(s['f'])
```

```
a    1
c    3
e    5
dtype: int64
---------------------------------------------------------------------------
KeyError                                  Traceback (most recent call last)
/usr/local/lib/python3.9/dist-packages/pandas/core/indexes/base.py in get_loc(self, key,
method, tolerance)
   3801             try:
-> 3802                 return self._engine.get_loc(casted_key)
   3803             except KeyError as err:

                                 5 frames
pandas/_libs/hashtable_class_helper.pxi in
pandas._libs.hashtable.PyObjectHashTable.get_item()

pandas/_libs/hashtable_class_helper.pxi in
pandas._libs.hashtable.PyObjectHashTable.get_item()

KeyError: 'f'

The above exception was the direct cause of the following exception:

KeyError                                  Traceback (most recent call last)
/usr/local/lib/python3.9/dist-packages/pandas/core/indexes/base.py in get_loc(self, key,
method, tolerance)
   3802                 return self._engine.get_loc(casted_key)
   3803             except KeyError as err:
-> 3804                 raise KeyError(key) from err
   3805             except TypeError:
   3806                 # If we have a listlike key, _check_indexing_error will raise
```

```
import pandas as pd
data=[['Alex',10],['Bob',12],['Clarke',13]]
df=pd.DataFrame(data,columns=['Name','Age'])
print(df)
```

```
     Name  Age
0    Alex   10
1     Bob   12
2  Clarke   13
```

```
import pandas as pd
data=[1,2,3,4,5]
df=pd.DataFrame(data)
print(df)
```

```
   0
0  1
1  2
2  3
3  4
4  5
```

```
import pandas as pd
data=[1,2,3,4,5]
df=pd.DataFrame(data)
print(df)
```

```
   0
0  1
1  2
2  3
3  4
4  5
```

```
import pandas as pd
data=[{'a':1,'b':2},{'a':5,'b':10,'c':20}]
df=pd.DataFrame(data)
print(df)
```

```
   a   b     c
0  1   2   NaN
1  5  10  20.0
```

```
import pandas as pd
data=[{'a':1,'b':2},{'a':5,'b':10,'c':20}]
df=pd.DataFrame(data,index=['first','second'])
print(df)
```

```
            a   b     c
     first   1   2   NaN
     second  5  10  20.0
```

```
import pandas as pd
d={'one':pd.Series([1,2,3],index=['a','b','c']),'two':pd.Series([1,2,3,4],index=['a','b','c','d'])}
df=pd.DataFrame(d)
print(df)
```

```
        one  two
     a  1.0    1
     b  2.0    2
     c  3.0    3
     d  NaN    4
```

```
import pandas as pd
d={'one':pd.Series([1,2,3],index=['a','b','c']),'two':pd.Series([1,2,3,4],index=['a','b','c','d'])}
print(pd.DataFrame(d))
```

```
        one  two
     a  1.0    1
     b  2.0    2
     c  3.0    3
     d  NaN    4
```

```
import pandas as pd
d={'one':pd.Series([1,2,3],index=['a','b','c']),'two':pd.Series([1,2,3,4],index=['a','b','c','d'])}
print("Adding a new columnby passng as series")
df['three']=pd.Series([10,20,30],index=['a','b','c'])
print(df)
print("Adding a new column using the existing columns in DataFrame")
df['four']=df['one']+df['three']
print(df)
```

```
     Adding a new columnby passng as series
        one  two  three
     a  1.0    1   10.0
     b  2.0    2   20.0
     c  3.0    3   30.0
     d  NaN    4    NaN
     Adding a new column using the existing columns in DataFrame
        one  two  three  four
     a  1.0    1   10.0  11.0
     b  2.0    2   20.0  22.0
     c  3.0    3   30.0  33.0
     d  NaN    4    NaN   NaN
```

```
import pandas as pd
d={'one':pd.Series([1,2,3],index=['a','b','c']),'two':pd.Series([1,2,3,4],index=['a','b','c','d']),'three':pd.Series([10,20,30],index=['a'
df=pd.DataFrame(d)
print("Our DataFrame is:")
print(df)
```

```
     Our DataFrame is:
        one  two  three
     a  1.0    1   10.0
     b  2.0    2   20.0
     c  3.0    3   30.0
     d  NaN    4    NaN
```

```
import pandas as pd
d={'one':pd.Series([1,2,3],index=['a','b','c']),'two':pd.Series([1,2,3,4],index=['a','b','c','d']),'three':pd.Series([10,20,30],index=['a'
df=pd.DataFrame(d)
print("Our dataframe is:")
print(df)
print("Deleting the first column using DEL function:")
del df['one']
print(df)
print("Deleting the first column using POP function:")
```

```
df.pop('two')
print(df)
```

```
Our dataframe is:
   one  two  three
a  1.0    1   10.0
b  2.0    2   20.0
c  3.0    3   30.0
d  NaN    4    NaN
Deleting the first column using DEL function:
   two  three
a    1   10.0
b    2   20.0
c    3   30.0
d    4    NaN
Deleting the first column using POP function:
   three
a   10.0
b   20.0
c   30.0
d    NaN
```

```
import pandas as pd
import numpy as np
s=pd.Series(np.random.randn(4))
print("The axes are:")
print(s.axes)
```

```
The axes are:
[RangeIndex(start=0, stop=4, step=1)]
```

```
import pandas as pd
import numpy as np
s=pd.Series(np.random.randn(4))
print(s.empty)
```

```
False
```

```
import pandas as pd
import numpy as np
s=pd.Series(np.random.randn(4))
print(s.ndim)
```

```
1
```

```
import pandas as pd
import numpy as np
s=pd.Series(np.random.randn(2))
print(s.size)
```

```
2
```

```
import pandas as pd
import numpy as np
s=pd.Series(np.random.randn(4))
print(s.values)
```

```
[-0.40040036  1.46471237  0.67120151  0.24671572]
```

```
import pandas as pd
import numpy as np
s=pd.Series(np.random.randn(4))
print("The original series is:")
print(s)
print("The first two rows of the data series:")
print(s.head(2))
print(s.tail(2))
```

```
The original series is:
0   -0.099290
1    0.800397
2    1.478899
3    1.461333
dtype: float64
```

```
The first two rows of the data series:
0   -0.099290
1    0.800397
dtype: float64
2    1.478899
3    1.461333
dtype: float64
```

```
import pandas as pd
import numpy as np
d={'Name':pd.Series(['Tom','James','Ricky','Vin','Steve','Smith','Jack']),'Age':pd.Series([25,26,25,23,30,29,23]),'Rating':pd.Series([4.23
df=pd.DataFrame(d)
print(df)
print("The transpose of the data series is:")
print(df.T)
```

```
    Name  Age  Rating
0    Tom   25    4.23
1  James   26    3.24
2  Ricky   25    3.98
3    Vin   23    2.56
4  Steve   30    3.20
5  Smith   29    4.60
6   Jack   23    3.80
The transpose of the data series is:
           0      1      2     3      4      5     6
Name     Tom  James  Ricky   Vin  Steve  Smith  Jack
Age       25     26     25    23     30     29    23
Rating  4.23   3.24   3.98  2.56    3.2    4.6   3.8
```

```
import pandas as pd
import numpy as np
d={'Name':pd.Series(['Tom','James','Ricky','Vin','Steve','Smith','Jack']),'Age':pd.Series([25,26,25,23,30,29,23]),'Rating':pd.Series([4.23
df=pd.DataFrame(d)
print(df)
print("The transpose of the data series is:")
print(df.T)

print(df.dtypes)

print(df.shape)
```

```
    Name  Age  Rating
0    Tom   25    4.23
1  James   26    3.24
2  Ricky   25    3.98
3    Vin   23    2.56
4  Steve   30    3.20
5  Smith   29    4.60
6   Jack   23    3.80
The transpose of the data series is:
           0      1      2     3      4      5     6
Name     Tom  James  Ricky   Vin  Steve  Smith  Jack
Age       25     26     25    23     30     29    23
Rating  4.23   3.24   3.98  2.56    3.2    4.6   3.8
Name       object
Age         int64
Rating    float64
dtype: object
(7, 3)
```