In [6]:
```
import pandas as pd
import numpy as np

s = pd.Series(np.random.randn(50))

len(s)
```

Out[6]:
```
50
```

In [9]:
```
df = pd.DataFrame(np.random.randn(50, 4), columns=list('ABCD'))

df.head()
```

Out[9]:

	A	B	C	D
0	0.004808	0.201154	0.097388	0.414939
1	0.582856	-0.442448	-1.220289	0.220618
2	-2.491602	0.388333	2.109029	-1.403069
3	0.503561	-0.233491	0.597784	-0.431508
4	-2.690172	-0.627793	-0.616270	1.233850

In [10]:
```
#3 random elements from the Series:
s.sample(n=3)
```

Out[10]:
```
11   -0.638355
36    1.215022
41   -0.712528
dtype: float64
```

In [12]:
```
#frac=0.1 i.e. 10% of the original data
df.sample(frac=0.1, replace=True)
```

Out[12]:

	A	B	C	D
37	0.865993	1.577826	-0.693913	1.976223
22	-0.610894	1.779696	-0.452651	-1.560573
5	0.474243	2.475570	-0.447798	1.240244

	A	B	C	D
33	-0.598386	-0.711122	0.139984	-2.349773
44	-0.583513	-0.247210	1.057125	0.354486

In [14]:
```
df = pd.DataFrame(np.random.randn(5, 3), index=['a', 'c', 'e', 'f', 'h'],
   ...:                   columns=['one', 'two', 'three'])
```

In [15]:
```
df
```

Out[15]:

	one	two	three
a	-0.863467	2.373341	-1.380276
c	-0.200216	0.205648	-0.725710
e	0.897536	-0.259333	-2.042156
f	-0.432156	2.591913	0.124535
h	-0.337690	0.732995	-0.735014

In [16]:
```
df['four'] = 'bar'
```

In [17]:
```
df['five'] = df['one'] > 0
```

In [18]:
```
df
```

Out[18]:

	one	two	three	four	five
a	-0.863467	2.373341	-1.380276	bar	False
c	-0.200216	0.205648	-0.725710	bar	False
e	0.897536	-0.259333	-2.042156	bar	True
f	-0.432156	2.591913	0.124535	bar	False
h	-0.337690	0.732995	-0.735014	bar	False

In [19]:
```
df2 = df.reindex(['a', 'b', 'c', 'd', 'e', 'f', 'g', 'h'])
```

In [20]:
```
df2
```

Out[20]:

	one	two	three	four	five
a	-0.863467	2.373341	-1.380276	bar	False
b	NaN	NaN	NaN	NaN	NaN
c	-0.200216	0.205648	-0.725710	bar	False
d	NaN	NaN	NaN	NaN	NaN
e	0.897536	-0.259333	-2.042156	bar	True
f	-0.432156	2.591913	0.124535	bar	False
g	NaN	NaN	NaN	NaN	NaN
h	-0.337690	0.732995	-0.735014	bar	False

In [21]:
```
df2['one']
```

Out[21]:
```
a   -0.863467
b         NaN
c   -0.200216
d         NaN
e    0.897536
f   -0.432156
g         NaN
h   -0.337690
Name: one, dtype: float64
```

In [22]:
```
pd.isna(df2['one'])
```

Out[22]:
```
a    False
b     True
c    False
d     True
e    False
f    False
g     True
h    False
Name: one, dtype: bool
```

In [23]:
```
df2['four'].notna()
```

Out[23]:
```
a     True
b    False
c     True
d    False
e     True
f     True
g    False
h     True
Name: four, dtype: bool
```

In [24]:
```
df2.isna()
```

Out[24]:

	one	two	three	four	five
a	False	False	False	False	False
b	True	True	True	True	True
c	False	False	False	False	False
d	True	True	True	True	True
e	False	False	False	False	False
f	False	False	False	False	False
g	True	True	True	True	True
h	False	False	False	False	False

In [ ]: