```
import pandas as pd
```

Making a Series

```
a = pd.Series([1,2,3,4,5,6,7,8,9,10], index=list("ABCDEFGHIJ"))
a
```

```
A     1
B     2
C     3
D     4
E     5
F     6
G     7
H     8
I     9
J    10
dtype: int64
```

Making a DaraFrame

```
b = pd.DataFrame({"Sher Ali": 18, "Hassan": 20,"Zain":19}, index= [1,2,3])
b
```

	Sher Ali	Hassan	Zain
1	18	20	19
2	18	20	19
3	18	20	19

To undo cell deletion use Ctrl+M Z or the Undo option in the Edit menu

...y

```
import seaborn as sns
df = sns.load_dataset("titanic")
df
```

	survived	pclass	sex	age	sibsp	parch	fare	embarked	class	who
0	0	3	male	22.0	1	0	7.2500	S	Third	man
1	1	1	female	38.0	1	0	71.2833	C	First	woman
2	1	3	female	26.0	0	0	7.9250	S	Third	woman
3	1	1	female	35.0	1	0	53.1000	S	First	woman
4	0	3	male	35.0	0	0	8.0500	S	Third	man
...	...	...	...	...	...	...	...	...	...	...
886	0	2	male	27.0	0	0	13.0000	S	Second	man
887	1	1	female	19.0	0	0	30.0000	S	First	woman
888	0	3	female	NaN	1	2	23.4500	S	Third	woman
889	1	1	male	26.0	0	0	30.0000	C	First	man
890	0	3	male	32.0	0	0	7.7500	Q	Third	man

891 rows × 15 columns

Checking information about Data

```
df.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 891 entries, 0 to 890
Data columns (total 15 columns):
 #   Column       Non-Null Count  Dtype   
---  ------       --------------  -----   
 0   survived     891 non-null    int64   
 1   pclass       891 non-null    int64   
 2   sex          891 non-null    object  
 3   age          714 non-null    float64 
 4   sibsp        891 non-null    int64   
 5   parch        891 non-null    int64   
 6   fare         891 non-null    float64 
 7   embarked     889 non-null    object  
 8   class        891 non-null    category
 9   who          891 non-null    object  
 10  adult_male   891 non-null    bool    
 11  deck         203 non-null    category
 12  embark_town  889 non-null    object  
 13  alive        891 non-null    object  
 14  alone        891 non-null    bool    
dtypes: bool(2), category(2), float64(2), int64(4), object(5)
memory usage: 80.7+ KB
```

Check Number of Rows and Columns

```
df.shape
```

```
(891, 15)
```

Checing Columns Name

```
df.columns
```



```
', 'fare',
embark_town',
       'alive', 'alone'],
      dtype='object')
```

Checking row heading

```
df.index
```

```
RangeIndex(start=0, stop=891, step=1)
```

First five entries

```
df.index
```

```
RangeIndex(start=0, stop=891, step=1)
```

Last five entries

```
df.tail()
```

	survived	pclass	sex	age	sibsp	parch	fare	embarked	class	who
886	0	2	male	27.0	0	0	13.00	S	Second	man
887	1	1	female	19.0	0	0	30.00	S	First	woman
888	0	3	female	NaN	1	2	23.45	S	Third	woman
889	1	1	male	26.0	0	0	30.00	C	First	man
890	0	3	male	32.0	0	0	7.75	Q	Third	man

Basic Statistics

```
df.describe()
```

	survived	pclass	age	sibsp	parch	fare
count	891.000000	891.000000	714.000000	891.000000	891.000000	891.000000
mean	0.383838	2.308642	29.699118	0.523008	0.381594	32.204208
std	0.486592	0.836071	14.526497	1.102743	0.806057	49.693429
min	0.000000	1.000000	0.420000	0.000000	0.000000	0.000000
25%	0.000000	2.000000	20.125000	0.000000	0.000000	7.910400
50%	0.000000	3.000000	28.000000	0.000000	0.000000	14.454200
75%	1.000000	3.000000	38.000000	1.000000	0.000000	31.000000
max	1.000000	3.000000	80.000000	8.000000	6.000000	512.329200

Removing Specific Columns

```
df1 = df.drop(["fare", "alone"], axis=1)
df1
```

	survived	pclass	sex	age	sibsp	parch	embarked	class	who	adult_m
0	0	3	male	22.0	1	0	S	Third	man	
1	1	1	female	38.0	1	0	C	First	woman	F
2	1	3	female	26.0	0	0	S	Third	woman	F
3	1	1	female	35.0	1	0	S	First	woman	F
4	0	3	male	35.0	0	0	S	Third	man	
...	...	...	...	...	...	...	...	...	...	
886	0	2	male	27.0	0	0	S	Second	man	
887	1	1	female	19.0	0	0	S	First	woman	F
888	0	3	female	NaN	1	2	S	Third	woman	F
889	1	1	male	26.0	0	0	C	First	man	
890	0	3	male	32.0	0	0	Q	Third	man	

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891 rows × 13 columns

Grouping

```
df1.groupby(["sex"]).mean()
```

```
<ipython-input-32-753766b12dbc>:1: FutureWarning: The default value of numeric_onl
  df1.groupby(["sex"]).mean()
```

sex	survived	pclass	age	sibsp	parch	adult_male
female	0.742038	2.159236	27.915709	0.694268	0.649682	0.000000
male	0.188908	2.389948	30.726645	0.429809	0.235702	0.930676

```
df1.groupby(["sex", "class"]).mean()
```

```
<ipython-input-33-a46285371ee2>:1: FutureWarning: The default value of numeric_onl
  df1.groupby(["sex", "class"]).mean()
```

sex	class	survived	pclass	age	sibsp	parch	adult_male
female	First	0.968085	1.0	34.611765	0.553191	0.457447	0.000000
	Second	0.921053	2.0	28.722973	0.486842	0.605263	0.000000
	Third	0.500000	3.0	21.750000	0.895833	0.798611	0.000000
male	First	0.368852	1.0	41.281386	0.311475	0.278689	0.975410

```
df1[df1["age"]<18].groupby(["sex", "class"]).mean()
```

```
<ipython-input-34-3c49e529d8df>:1: FutureWarning: The default value of numeric_onl
  df1[df1["age"]<18].groupby(["sex", "class"]).mean()
```

sex	class	survived	pclass	age	sibsp	parch	adult_male
female	First	0.875000	1.0	14.125000	0.500000	0.875000	0.000000
	Second	1.000000	2.0	8.333333	0.583333	1.083333	0.000000
	Third	0.542857	3.0	8.428571	1.571429	1.057143	0.000000
male	First	1.000000	1.0	8.230000	0.500000	2.000000	0.250000
	Second	0.818182	2.0	4.757273	0.727273	1.000000	0.181818
	Third	0.232558	3.0	9.963256	2.069767	1.000000	0.348837

Checking Missing Values

```
df.isnull().sum()
```

To undo cell deletion use Ctrl+M Z or the Undo option in the Edit menu

```
pclass          0
sex             0
age           177
sibsp           0
parch           0
fare            0
embarked        2
class           0
who             0
adult_male      0
deck          688
embark_town     2
alive           0
alone           0
dtype: int64
```

Checking Unique Values

```
df1.who.unique()
```

```
array(['man', 'woman', 'child'], dtype=object)
```

```
df1.age.unique()
```

```
array([22.  , 38.  , 26.  , 35.  ,   nan, 54.  ,  2.  , 27.  , 14.  ,
        4.  , 58.  , 20.  , 39.  , 55.  , 31.  , 34.  , 15.  , 28.  ,
        8.  , 19.  , 40.  , 66.  , 42.  , 21.  , 18.  ,  3.  ,  7.  ,
       49.  , 29.  , 65.  , 28.5 ,  5.  , 11.  , 45.  , 17.  , 32.  ,
       16.  , 25.  ,  0.83, 30.  , 33.  , 23.  , 24.  , 46.  , 59.  ,
       71.  , 37.  , 47.  , 14.5 , 70.5 , 32.5 , 12.  ,  9.  , 36.5 ,
       51.  , 55.5 , 40.5 , 44.  ,  1.  , 61.  , 56.  , 50.  , 36.  ,
       45.5 , 20.5 , 62.  , 41.  , 52.  , 63.  , 23.5 ,  0.92, 43.  ,
       60.  , 10.  , 64.  , 13.  , 48.  ,  0.75, 53.  , 57.  , 80.  ,
       70.  , 24.5 ,  6.  ,  0.67, 30.5 ,  0.42, 34.5 , 74.  ])
```

+ Code + Text

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