```python
In [2]: import pandas as pd
```

```python
In [4]: pd.__version__
```

```
Out[4]: '2.2.2'
```

```python
In [16]: pd.read_csv(r'Sample - Superstore_Orders.csv')
```

Out[16]:

	Category	City	Country/Region	Customer Name	Manufacturer	Order Date	O
0	Office Supplies	Houston	United States	Darren Powers	Message Book	03-01-2020	2(103
1	Office Supplies	Naperville	United States	Phillina Ober	GBC	04-01-2020	2(112
2	Office Supplies	Naperville	United States	Phillina Ober	Avery	04-01-2020	2(112
3	Office Supplies	Naperville	United States	Phillina Ober	SAFCO	04-01-2020	2(112
4	Office Supplies	Philadelphia	United States	Mick Brown	Avery	05-01-2020	2(141
...	...	...	...	...	...	...	...
10189	Office Supplies	New York City	United States	Patrick O'Donnell	Wilson Jones	30-12-2023	2(143
10190	Office Supplies	Fairfield	United States	Erica Bern	GBC	30-12-2023	2(115
10191	Office Supplies	Loveland	United States	Jill Matthias	Other	30-12-2023	2(156
10192	Technology	New York City	United States	Patrick O'Donnell	Other	30-12-2023	2(143
10193	Office Supplies	Charlottetown	Canada	Harry Olson	Wilson Jones	30-12-2023	2(143

10194 rows × 19 columns

In [18]:
```python
store=pd.read_csv(r'Sample - Superstore_Orders.csv')
```

```
In [20]:  len(store)
```

Out[20]: 10194

```
In [22]:  id(store)
```

Out[22]: 1634265547168

```
In [24]:  store.shape
```

Out[24]: (10194, 19)

```
In [26]:  store.columns
```

Out[26]: Index(['Category', 'City', 'Country/Region', 'Customer Name', 'Manufacturer',
           'Order Date', 'Order ID', 'Postal Code', 'Product Name', 'Region',
           'Segment', 'Ship Date', 'Ship Mode', 'State/Province', 'Sub-Category',
           'Discount', 'Profit', 'Quantity', 'Sales'],
          dtype='object')

```
In [28]:  len(store.columns)
```

Out[28]: 19

```
In [34]:  store.isnull()
```

Out[34]:

	Category	City	Country/Region	Customer Name	Manufacturer	Order Date	Order ID	Posta Code
0	False	False	False	False	False	False	False	False
1	False	False	False	False	False	False	False	False
2	False	False	False	False	False	False	False	False
3	False	False	False	False	False	False	False	False
4	False	False	False	False	False	False	False	False
...	...	...	...	...	...	...	...	...
10189	False	False	False	False	False	False	False	False
10190	False	False	False	False	False	False	False	False
10191	False	False	False	False	False	False	False	False
10192	False	False	False	False	False	False	False	False
10193	False	False	False	False	False	False	False	False

10194 rows × 19 columns

◀ ▬▬▬▬▬▬▬▬▬▬▬▬▬ ▶

```
In [36]:  store.isnull().sum()
```

```
Out[36]:  Category           0
          City               0
          Country/Region     0
          Customer Name      0
          Manufacturer       0
          Order Date         0
          Order ID           0
          Postal Code        0
          Product Name       0
          Region             0
          Segment            0
          Ship Date          0
          Ship Mode          0
          State/Province     0
          Sub-Category       0
          Discount           0
          Profit             0
          Quantity           0
          Sales              0
          dtype: int64
```

In [40]: `store[0:10]`

	Category	City	Country/Region	Customer Name	Manufacturer	Order Date	Order ID	Po C
0	Office Supplies	Houston	United States	Darren Powers	Message Book	03-01-2020	US-2020-103800	77
1	Office Supplies	Naperville	United States	Phillina Ober	GBC	04-01-2020	US-2020-112326	60
2	Office Supplies	Naperville	United States	Phillina Ober	Avery	04-01-2020	US-2020-112326	60
3	Office Supplies	Naperville	United States	Phillina Ober	SAFCO	04-01-2020	US-2020-112326	60
4	Office Supplies	Philadelphia	United States	Mick Brown	Avery	05-01-2020	US-2020-141817	19
5	Furniture	Henderson	United States	Maria Etezadi	Global	06-01-2020	US-2020-167199	42
6	Office Supplies	Henderson	United States	Maria Etezadi	Rogers	06-01-2020	US-2020-167199	42
7	Office Supplies	Athens	United States	Jack O'Briant	Dixon	06-01-2020	US-2020-106054	30
8	Office Supplies	Henderson	United States	Maria Etezadi	Ibico	06-01-2020	US-2020-167199	42

	Category	City	Country/Region	Customer Name	Manufacturer	Order Date	Order ID	Po C
9	Office Supplies	Henderson	United States	Maria Etezadi	Alliance	06-01-2020	US-2020-167199	42

In [32]: `store[0:20:5]`

Out[32]:

	Category	City	Country/Region	Customer Name	Manufacturer	Order Date	Order ID	
0	Office Supplies	Houston	United States	Darren Powers	Message Book	03-01-2020	US-2020-103800	
5	Furniture	Henderson	United States	Maria Etezadi	Global	06-01-2020	US-2020-167199	
10	Office Supplies	Henderson	United States	Maria Etezadi	Southworth	06-01-2020	US-2020-167199	
15	Office Supplies	Huntsville	United States	Vivek Sundaresam	Acco	07-01-2020	US-2020-105417	

In [38]: `store.head()`

Out[38]:

	Category	City	Country/Region	Customer Name	Manufacturer	Order Date	Order ID	Po C
0	Office Supplies	Houston	United States	Darren Powers	Message Book	03-01-2020	US-2020-103800	77
1	Office Supplies	Naperville	United States	Phillina Ober	GBC	04-01-2020	US-2020-112326	60
2	Office Supplies	Naperville	United States	Phillina Ober	Avery	04-01-2020	US-2020-112326	60
3	Office Supplies	Naperville	United States	Phillina Ober	SAFCO	04-01-2020	US-2020-112326	60
4	Office Supplies	Philadelphia	United States	Mick Brown	Avery	05-01-2020	US-2020-141817	19

In [42]: `store.head(3)`

Out[42]:

	Category	City	Country/Region	Customer Name	Manufacturer	Order Date	Order ID	Post Cod
0	Office Supplies	Houston	United States	Darren Powers	Message Book	03-01-2020	US-2020-103800	7701
1	Office Supplies	Naperville	United States	Phillina Ober	GBC	04-01-2020	US-2020-112326	6054
2	Office Supplies	Naperville	United States	Phillina Ober	Avery	04-01-2020	US-2020-112326	6054

In [44]: `store.tail()`

	Category	City	Country/Region	Customer Name	Manufacturer	Order Date	O
10189	Office Supplies	New York City	United States	Patrick O'Donnell	Wilson Jones	30-12-2023	20 143
10190	Office Supplies	Fairfield	United States	Erica Bern	GBC	30-12-2023	20 115
10191	Office Supplies	Loveland	United States	Jill Matthias	Other	30-12-2023	20 156
10192	Technology	New York City	United States	Patrick O'Donnell	Other	30-12-2023	20 143
10193	Office Supplies	Charlottetown	Canada	Harry Olson	Wilson Jones	30-12-2023	20 143

```
In [46]: store.isnull()
```

	Category	City	Country/Region	Customer Name	Manufacturer	Order Date	Order ID	Posta Code
0	False	False	False	False	False	False	False	False
1	False	False	False	False	False	False	False	False
2	False	False	False	False	False	False	False	False
3	False	False	False	False	False	False	False	False
4	False	False	False	False	False	False	False	False
...	...	...	...	...	...	...	...	..
10189	False	False	False	False	False	False	False	False
10190	False	False	False	False	False	False	False	False
10191	False	False	False	False	False	False	False	False
10192	False	False	False	False	False	False	False	False
10193	False	False	False	False	False	False	False	False

10194 rows × 19 columns

```
In [48]: store.isnull().sum()
```

```
Out[48]:   Category          0
           City              0
           Country/Region    0
           Customer Name     0
           Manufacturer      0
           Order Date        0
           Order ID          0
           Postal Code       0
           Product Name      0
           Region            0
           Segment           0
           Ship Date         0
           Ship Mode         0
           State/Province    0
           Sub-Category      0
           Discount          0
           Profit            0
           Quantity          0
           Sales             0
           dtype: int64
```

In [50]: `store.isna()`

Out[50]:

	Category	City	Country/Region	Customer Name	Manufacturer	Order Date	Order ID	Postal Code
0	False	False	False	False	False	False	False	False
1	False	False	False	False	False	False	False	False
2	False	False	False	False	False	False	False	False
3	False	False	False	False	False	False	False	False
4	False	False	False	False	False	False	False	False
...	...	...	...	...	...	...	...	..
10189	False	False	False	False	False	False	False	False
10190	False	False	False	False	False	False	False	False
10191	False	False	False	False	False	False	False	False
10192	False	False	False	False	False	False	False	False
10193	False	False	False	False	False	False	False	False

10194 rows × 19 columns

introduction to statistical concepts in pandas

In [52]: `store.describe()`

Out[52]:

	Discount	Profit	Quantity	Sales
count	10194.000000	10194.000000	10194.000000	10194.000000
mean	0.155385	28.673417	3.791838	228.225854
std	0.206249	232.465115	2.228317	619.906839
min	0.000000	-6599.978000	1.000000	0.444000
25%	0.000000	1.760800	2.000000	17.220000
50%	0.200000	8.690000	3.000000	53.910000
75%	0.200000	29.297925	5.000000	209.500000
max	0.800000	8399.976000	14.000000	22638.480000

In [ ]:

In [ ]:

In [ ]:

In [ ]:

In [ ]:

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In [ ]:

In [ ]: