

Pandas Library

```
In [18]: import pandas as pd
store = pd.read_excel(r'C:\Users\Lenovo\Desktop\sample data_order for pandas\
store
```

	Category	City	Country/Region	Customer Name	Manufacturer	Order Date	Order ID	Pr C
0	Office Supplies	Houston	United States	Darren Powers	Message Book	2020-01-03	US-2020-103800	77
1	Office Supplies	Naperville	United States	Phillina Ober	GBC	2020-01-04	US-2020-112326	60
2	Office Supplies	Naperville	United States	Phillina Ober	Avery	2020-01-04	US-2020-112326	60
3	Office Supplies	Naperville	United States	Phillina Ober	SAFCO	2020-01-04	US-2020-112326	60
4	Office Supplies	Philadelphia	United States	Mick Brown	Avery	2020-01-05	US-2020-141817	19
...
10189	Office Supplies	New York City	United States	Patrick O'Donnell	Wilson Jones	2023-12-30	US-2023-143259	10
10190	Office Supplies	Fairfield	United States	Erica Bern	GBC	2023-12-30	US-2023-115427	94
10191	Office Supplies	Loveland	United States	Jill Matthias	Other	2023-12-30	US-2023-156720	80
10192	Technology	New York City	United States	Patrick O'Donnell	Other	2023-12-30	US-2023-143259	10
10193	Office Supplies	Charlottetown	Canada	Harry Olson	Wilson Jones	2023-12-30	CA-2023-143500	C

10194 rows x 19 columns

```
In [19]: id(store)
```

```
2831931430800
```

```
In [20]: store.count
```

```

<bound method DataFrame.count of
0      Office Supplies      Houston  United States      Darren Powers
1      Office Supplies      Naperville  United States      Phillina Ober
2      Office Supplies      Naperville  United States      Phillina Ober
3      Office Supplies      Naperville  United States      Phillina Ober
4      Office Supplies      Philadelphia  United States      Mick Brown
...      ...      ...      ...      ...
10189  Office Supplies      New York City  United States      Patrick O'Donnell
10190  Office Supplies      Fairfield  United States      Erica Bern
10191  Office Supplies      Loveland  United States      Jill Matthias
10192      Technology      New York City  United States      Patrick O'Donnell
10193  Office Supplies      Charlottetown      Canada      Harry Olson

```

```

Manufacturer Order Date      Order ID Postal Code \
0      Message Book 2020-01-03  US-2020-103800      77095
1              GBC 2020-01-04  US-2020-112326      60540
2              Avery 2020-01-04  US-2020-112326      60540
3              SAFCO 2020-01-04  US-2020-112326      60540
4              Avery 2020-01-05  US-2020-141817      19143
...      ...      ...      ...      ...
10189  Wilson Jones 2023-12-30  US-2023-143259      10009
10190              GBC 2023-12-30  US-2023-115427      94533
10191              Other 2023-12-30  US-2023-156720      80538
10192              Other 2023-12-30  US-2023-143259      10009
10193  Wilson Jones 2023-12-30  CA-2023-143500      C0A

```

```

Product Name      Region \
0      Message Book, Wirebound, Four 5 1/2" X 4" Form... Central
1              GBC Standard Plastic Binding Systems Combs Central
2              Avery 508 Central
3              SAFCO Boltless Steel Shelving Central
4      Avery Hi-Liter EverBold Pen Style Fluorescent ... East
...      ...      ...
10189              Wilson Jones Legal Size Ring Binders East
10190              GBC Binding covers West
10191              Bagged Rubber Bands West
10192              Gear Head AU3700S Headset East
10193              Wilson Jones Impact Binders East

```

```

Segment Ship Date      Ship Mode      State/Province \
0      Consumer 2020-01-07  Standard Class      Texas
1      Home Office 2020-01-08  Standard Class      Illinois
2      Home Office 2020-01-08  Standard Class      Illinois
3      Home Office 2020-01-08  Standard Class      Illinois
4      Consumer 2020-01-12  Standard Class      Pennsylvania
...      ...      ...      ...
10189  Consumer 2024-01-03  Standard Class      New York
10190  Corporate 2024-01-03  Standard Class      California
10191  Consumer 2024-01-03  Standard Class      Colorado
10192  Consumer 2024-01-03  Standard Class      New York
10193  Consumer 2024-01-03  Standard Class      Prince Edward Island

```

```

Sub-Category Discount Profit Quantity Sales
0      Paper      0.2  5.5512      2  16.448
1      Binders      0.8 -5.4870      2   3.540
2      Labels      0.2  4.2717      3  11.784
3      Storage      0.2 -64.7748      3 272.736
4      Art      0.2  4.8840      3  19.536
...      ...      ...      ...
10189  Binders      0.2 19.7910      3  52.776

```

10190	Binders	0.2	6.4750	2	20.720
10191	Fasteners	0.2	-0.6048	3	3.024
10192	Phones	0.0	2.7279	7	90.930
10193	Binders	0.2	-0.6048	3	3.024

[10194 rows x 19 columns]>

```
In [21]: store.columns
```

```
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 [22]: len(store.columns)
```

19

```
In [23]: store.describe()
```

	Order Date	Ship Date	Discount	Profit	Count
count	10194	10194	10194.000000	10194.000000	1
mean	2022-04-29 16:37:51.453796608	2022-05-03 15:41:38.175397120	0.155385	28.673417	3
min	2020-01-03 00:00:00	2020-01-07 00:00:00	0.000000	-6599.978000	1
25%	2021-05-14 00:00:00	2021-05-19 00:00:00	0.000000	1.760800	2
50%	2022-06-25 00:00:00	2022-06-28 00:00:00	0.200000	8.690000	3
75%	2023-05-14 00:00:00	2023-05-18 00:00:00	0.200000	29.297925	5
max	2023-12-30 00:00:00	2024-01-05 00:00:00	0.800000	8399.976000	1
std	NaN	NaN	0.206249	232.465115	2

In [24]: store.dtypes

```

Category          object
City              object
Country/Region    object
Customer Name     object
Manufacturer       object
Order Date        datetime64[ns]
Order ID          object
Postal Code       object
Product Name      object
Region           object
Segment          object
Ship Date         datetime64[ns]
Ship Mode         object
State/Province    object
Sub-Category      object
Discount          float64
Profit            float64
Quantity          int64
Sales             float64
dtype: object
```

In [25]: store.isnull()

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

10194 rows x 19 columns

```
In [26]: store.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 10194 entries, 0 to 10193
Data columns (total 19 columns):
#   Column                Non-Null Count  Dtype
---  ---
0   Category              10194 non-null  object
1   City                  10194 non-null  object
2   Country/Region        10194 non-null  object
3   Customer Name         10194 non-null  object
4   Manufacturer          10194 non-null  object
5   Order Date            10194 non-null  datetime64[ns]
6   Order ID              10194 non-null  object
7   Postal Code           10194 non-null  object
8   Product Name          10194 non-null  object
9   Region                10194 non-null  object
10  Segment               10194 non-null  object
11  Ship Date              10194 non-null  datetime64[ns]
12  Ship Mode              10194 non-null  object
13  State/Province        10194 non-null  object
14  Sub-Category          10194 non-null  object
15  Discount               10194 non-null  float64
16  Profit                10194 non-null  float64
17  Quantity              10194 non-null  int64
18  Sales                  10194 non-null  float64
dtypes: datetime64[ns](2), float64(3), int64(1), object(13)
memory usage: 1.5+ MB
```


In [27]: store.head()

	Category	City	Country/Region	Customer Name	Manufacturer	Order Date	Order ID	Postal Code
0	Office Supplies	Houston	United States	Darren Powers	Message Book	2020-01-03	US-2020-103800	77095
1	Office Supplies	Naperville	United States	Phillina Ober	GBC	2020-01-04	US-2020-112326	60540
2	Office Supplies	Naperville	United States	Phillina Ober	Avery	2020-01-04	US-2020-112326	60540
3	Office Supplies	Naperville	United States	Phillina Ober	SAFCO	2020-01-04	US-2020-112326	60540
4	Office Supplies	Philadelphia	United States	Mick Brown	Avery	2020-01-05	US-2020-141817	19143

In [28]: store.tail()

	Category	City	Country/Region	Customer Name	Manufacturer	Order Date	Order ID	Postal Code
10189	Office Supplies	New York City	United States	Patrick O'Donnell	Wilson Jones	2023-12-30	US-2023-143259	10001
10190	Office Supplies	Fairfield	United States	Erica Bern	GBC	2023-12-30	US-2023-115427	94043
10191	Office Supplies	Loveland	United States	Jill Matthias	Other	2023-12-30	US-2023-156720	80501
10192	Technology	New York City	United States	Patrick O'Donnell	Other	2023-12-30	US-2023-143259	10001
10193	Office Supplies	Charlottetown	Canada	Harry Olson	Wilson Jones	2023-12-30	CA-2023-143500	C1A1A6

```
In [29]: store.head(4)
```

	Category	City	Country/Region	Customer Name	Manufacturer	Order Date	Order ID	Postal Code	P N
0	Office Supplies	Houston	United States	Darren Powers	Message Book	2020-01-03	US-2020-103800	77095	M B V F X F
1	Office Supplies	Naperville	United States	Phillina Ober	GBC	2020-01-04	US-2020-112326	60540	G S P B S C
2	Office Supplies	Naperville	United States	Phillina Ober	Avery	2020-01-04	US-2020-112326	60540	A
3	Office Supplies	Naperville	United States	Phillina Ober	SAFCO	2020-01-04	US-2020-112326	60540	S B S S

```
In [30]: store.head(6)
```

	Category	City	Country/Region	Customer Name	Manufacturer	Order Date	Order ID	Postal Code
0	Office Supplies	Houston	United States	Darren Powers	Message Book	2020-01-03	US-2020-103800	77095
1	Office Supplies	Naperville	United States	Phillina Ober	GBC	2020-01-04	US-2020-112326	60540
2	Office Supplies	Naperville	United States	Phillina Ober	Avery	2020-01-04	US-2020-112326	60540
3	Office Supplies	Naperville	United States	Phillina Ober	SAFCO	2020-01-04	US-2020-112326	60540
4	Office Supplies	Philadelphia	United States	Mick Brown	Avery	2020-01-05	US-2020-141817	19143
5	Furniture	Henderson	United States	Maria Etezadi	Global	2020-01-06	US-2020-167199	42420

```
In [32]: store.tail(-3)
```

	Category	City	Country/Region	Customer Name	Manufacturer	Order Date	Order ID	Product Category
3	Office Supplies	Naperville	United States	Phillina Ober	SAFCO	2020-01-04	US-2020-112326	60
4	Office Supplies	Philadelphia	United States	Mick Brown	Avery	2020-01-05	US-2020-141817	19
5	Furniture	Henderson	United States	Maria Etezadi	Global	2020-01-06	US-2020-167199	42
6	Office Supplies	Henderson	United States	Maria Etezadi	Rogers	2020-01-06	US-2020-167199	42
7	Office Supplies	Athens	United States	Jack O'Briant	Dixon	2020-01-06	US-2020-106054	30
...
10189	Office Supplies	New York City	United States	Patrick O'Donnell	Wilson Jones	2023-12-30	US-2023-143259	10
10190	Office Supplies	Fairfield	United States	Erica Bern	GBC	2023-12-30	US-2023-115427	94
10191	Office Supplies	Loveland	United States	Jill Matthias	Other	2023-12-30	US-2023-156720	80
10192	Technology	New York City	United States	Patrick O'Donnell	Other	2023-12-30	US-2023-143259	10
10193	Office Supplies	Charlottetown	Canada	Harry Olson	Wilson Jones	2023-12-30	CA-2023-143500	C

10191 rows x 9 columns

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

```
Category          10194
City              10194
Country/Region    10194
Customer Name     10194
Manufacturer       10194
Order Date        10194
Order ID          10194
Postal Code       10194
Product Name      10194
Region            10194
Segment           10194
Ship Date         10194
Ship Mode         10194
State/Province    10194
Sub-Category      10194
Discount          10194
Profit            10194
Quantity          10194
Sales             10194
dtype: int64
```

```
In [35]: len(store.columns)
```

```
19
```

```
In [37]: store['Category']
```

```
0      Office Supplies
1      Office Supplies
2      Office Supplies
3      Office Supplies
4      Office Supplies
...
10189   Office Supplies
10190   Office Supplies
10191   Office Supplies
10192      Technology
10193   Office Supplies
Name: Category, Length: 10194, dtype: object
```

```
In [40]: store[['Category','City','Country/Region','Customer Name','Manufacturer']]
```

	Category	City	Country/Region	Customer Name	Manufacturer
0	Office Supplies	Houston	United States	Darren Powers	Message Book
1	Office Supplies	Naperville	United States	Phillina Ober	GBC
2	Office Supplies	Naperville	United States	Phillina Ober	Avery
3	Office Supplies	Naperville	United States	Phillina Ober	SAFCO
4	Office Supplies	Philadelphia	United States	Mick Brown	Avery
...
10189	Office Supplies	New York City	United States	Patrick O'Donnell	Wilson Jones
10190	Office Supplies	Fairfield	United States	Erica Bern	GBC
10191	Office Supplies	Loveland	United States	Jill Matthias	Other
10192	Technology	New York City	United States	Patrick O'Donnell	Other
10193	Office Supplies	Charlottetown	Canada	Harry Olson	Wilson Jones

10194 rows x 5 columns

```
In [41]: store.columns
```

```
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 [42]: store.info()

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 10194 entries, 0 to 10193
Data columns (total 19 columns):
#   Column                Non-Null Count  Dtype
---  ---
0   Category              10194 non-null  object
1   City                  10194 non-null  object
2   Country/Region        10194 non-null  object
3   Customer Name         10194 non-null  object
4   Manufacturer           10194 non-null  object
5   Order Date            10194 non-null  datetime64[ns]
6   Order ID              10194 non-null  object
7   Postal Code           10194 non-null  object
8   Product Name          10194 non-null  object
9   Region                10194 non-null  object
10  Segment               10194 non-null  object
11  Ship Date             10194 non-null  datetime64[ns]
12  Ship Mode              10194 non-null  object
13  State/Province        10194 non-null  object
14  Sub-Category          10194 non-null  object
15  Discount              10194 non-null  float64
16  Profit                10194 non-null  float64
17  Quantity              10194 non-null  int64
18  Sales                 10194 non-null  float64
dtypes: datetime64[ns](2), float64(3), int64(1), object(13)
memory usage: 1.5+ MB
```

In [43]: cat = store[['Category', 'City', 'Country/Region', 'Customer Name', 'Manufacturer']]
cat

	Category	City	Country/Region	Customer Name	Manufacturer
0	Office Supplies	Houston	United States	Darren Powers	Message Book
1	Office Supplies	Naperville	United States	Phillina Ober	GBC
2	Office Supplies	Naperville	United States	Phillina Ober	Avery
3	Office Supplies	Naperville	United States	Phillina Ober	SAFCO
4	Office Supplies	Philadelphia	United States	Mick Brown	Avery
...
10189	Office Supplies	New York City	United States	Patrick O'Donnell	Wilson Jones
10190	Office Supplies	Fairfield	United States	Erica Bern	GBC
10191	Office Supplies	Loveland	United States	Jill Matthias	Other
10192	Technology	New York City	United States	Patrick O'Donnell	Other
10193	Office Supplies	Charlottetown	Canada	Harry Olson	Wilson Jones

10194 rows x 5 columns

```
In [44]: store.columns

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 [45]: cat.columns

Index(['Category', 'City', 'Country/Region', 'Customer Name', 'Manufacturer'], dtype='object')
```

```
In [46]: len(cat.columns)

5
```

```
In [47]: cat.count

<bound method DataFrame.count of
0      Office Supplies      Houston  United States  Darren Powers
1      Office Supplies  Naperville  United States  Phillina Ober
2      Office Supplies  Naperville  United States  Phillina Ober
3      Office Supplies  Naperville  United States  Phillina Ober
4      Office Supplies  Philadelphia  United States  Mick Brown
...      ...      ...      ...      ...
10189  Office Supplies  New York City  United States  Patrick O'Donnell
10190  Office Supplies      Fairfield  United States      Erica Bern
10191  Office Supplies      Loveland  United States  Jill Matthias
10192      Technology  New York City  United States  Patrick O'Donnell
10193  Office Supplies  Charlottetown      Canada  Harry Olson

      Manufacturer
0      Message Book
1              GBC
2              Avery
3             SAFCO
4              Avery
...      ...
10189  Wilson Jones
10190              GBC
10191              Other
10192              Other
10193  Wilson Jones

[10194 rows x 5 columns]>
```



```
In [48]: num = store[['Discount', 'Profit', 'Quantity', 'Sales']]
```

```
num
```

	Discount	Profit	Quantity	Sales
0	0.2	5.5512	2	16.448
1	0.8	-5.4870	2	3.540
2	0.2	4.2717	3	11.784
3	0.2	-64.7748	3	272.736
4	0.2	4.8840	3	19.536
...
10189	0.2	19.7910	3	52.776
10190	0.2	6.4750	2	20.720
10191	0.2	-0.6048	3	3.024
10192	0.0	2.7279	7	90.930
10193	0.2	-0.6048	3	3.024

10194 rows x 4 columns

```
In [49]: num.columns
```

```
Index(['Discount', 'Profit', 'Quantity', 'Sales'], dtype='object')
```

```
In [50]: num.count
```

```
<bound method DataFrame.count of          Discount  Profit  Quantity  Sales
0          0.2    5.5512         2    16.448
1          0.8   -5.4870         2     3.540
2          0.2    4.2717         3    11.784
3          0.2  -64.7748         3   272.736
4          0.2    4.8840         3    19.536
...         ...      ...      ...      ...
10189       0.2   19.7910         3    52.776
10190       0.2    6.4750         2    20.720
10191       0.2   -0.6048         3     3.024
10192       0.0    2.7279         7    90.930
10193       0.2   -0.6048         3     3.024
```

```
[10194 rows x 4 columns]>
```

```
In [51]: len(num.columns)
```

```
4
```

```
In [52]: pd.__version__  
  
'2.0.3'
```

```
In [53]: type(store)  
  
pandas.core.frame.DataFrame
```

```
In [54]: store.info()  
  
<class 'pandas.core.frame.DataFrame'>  
RangeIndex: 10194 entries, 0 to 10193  
Data columns (total 19 columns):  
#   Column                Non-Null Count  Dtype    
---  ---                  
0   Category              10194 non-null object   
1   City                  10194 non-null object   
2   Country/Region        10194 non-null object   
3   Customer Name         10194 non-null object   
4   Manufacturer          10194 non-null object   
5   Order Date            10194 non-null datetime64[ns]   
6   Order ID              10194 non-null object   
7   Postal Code           10194 non-null object   
8   Product Name          10194 non-null object   
9   Region                10194 non-null object   
10  Segment               10194 non-null object   
11  Ship Date              10194 non-null datetime64[ns]   
12  Ship Mode              10194 non-null object   
13  State/Province        10194 non-null object   
14  Sub-Category          10194 non-null object   
15  Discount              10194 non-null float64   
16  Profit                10194 non-null float64   
17  Quantity              10194 non-null int64   
18  Sales                 10194 non-null float64   
dtypes: datetime64[ns](2), float64(3), int64(1), object(13)  
memory usage: 1.5+ MB
```

```
In [55]: store.describe()  
  
              Order Date      Ship Date      Discount      Profit      Count  
count  10194              10194              10194.000000  10194.000000  1  
mean    2022-04-29 16:37:51.453796608  2022-05-03 15:41:38.175397120  0.155385  28.673417  3  
min     2020-01-03 00:00:00              2020-01-07 00:00:00              0.000000  -6599.978000  1  
25%     2021-05-14 00:00:00              2021-05-19 00:00:00              0.000000   1.760800  2  
50%     2022-06-25 00:00:00              2022-06-28 00:00:00              0.200000   8.690000  3  
75%     2023-05-14 00:00:00              2023-05-18 00:00:00              0.200000  29.297925  5  
max     2023-12-30 00:00:00              2024-01-05 00:00:00              0.800000  8399.976000  1  
std     NaN                      NaN                      0.206249  232.465115  2
```

In [56]: store

	Category	City	Country/Region	Customer Name	Manufacturer	Order Date	Order ID	Product Code
0	Office Supplies	Houston	United States	Darren Powers	Message Book	2020-01-03	US-2020-103800	77
1	Office Supplies	Naperville	United States	Phillina Ober	GBC	2020-01-04	US-2020-112326	60
2	Office Supplies	Naperville	United States	Phillina Ober	Avery	2020-01-04	US-2020-112326	60
3	Office Supplies	Naperville	United States	Phillina Ober	SAFCO	2020-01-04	US-2020-112326	60
4	Office Supplies	Philadelphia	United States	Mick Brown	Avery	2020-01-05	US-2020-141817	19
...
10189	Office Supplies	New York City	United States	Patrick O'Donnell	Wilson Jones	2023-12-30	US-2023-143259	10
10190	Office Supplies	Fairfield	United States	Erica Bern	GBC	2023-12-30	US-2023-115427	94
10191	Office Supplies	Loveland	United States	Jill Matthias	Other	2023-12-30	US-2023-156720	80
10192	Technology	New York City	United States	Patrick O'Donnell	Other	2023-12-30	US-2023-143259	10
10193	Office Supplies	Charlottetown	Canada	Harry Olson	Wilson Jones	2023-12-30	CA-2023-143500	C0

10194 rows × 9 columns

In [57]: store[2:5]

	Category	City	Country/Region	Customer Name	Manufacturer	Order Date	Order ID	Postal Code
2	Office Supplies	Naperville	United States	Phillina Ober	Avery	2020-01-04	US-2020-112326	60540
3	Office Supplies	Naperville	United States	Phillina Ober	SAFCO	2020-01-04	US-2020-112326	60540
4	Office Supplies	Philadelphia	United States	Mick Brown	Avery	2020-01-05	US-2020-141817	19143

In [58]: store[:5]

	Category	City	Country/Region	Customer Name	Manufacturer	Order Date	Order ID	Postal Code
0	Office Supplies	Houston	United States	Darren Powers	Message Book	2020-01-03	US-2020-103800	77095
1	Office Supplies	Naperville	United States	Phillina Ober	GBC	2020-01-04	US-2020-112326	60540
2	Office Supplies	Naperville	United States	Phillina Ober	Avery	2020-01-04	US-2020-112326	60540
3	Office Supplies	Naperville	United States	Phillina Ober	SAFCO	2020-01-04	US-2020-112326	60540
4	Office Supplies	Philadelphia	United States	Mick Brown	Avery	2020-01-05	US-2020-141817	19143

In [59]: store[5:]

	Category	City	Country/Region	Customer Name	Manufacturer	Order Date	Order ID	Product Category
5	Furniture	Henderson	United States	Maria Etezadi	Global	2020-01-06	US-2020-167199	42
6	Office Supplies	Henderson	United States	Maria Etezadi	Rogers	2020-01-06	US-2020-167199	42
7	Office Supplies	Athens	United States	Jack O'Briant	Dixon	2020-01-06	US-2020-106054	30
8	Office Supplies	Henderson	United States	Maria Etezadi	Ibico	2020-01-06	US-2020-167199	42
9	Office Supplies	Henderson	United States	Maria Etezadi	Alliance	2020-01-06	US-2020-167199	42
...
10189	Office Supplies	New York City	United States	Patrick O'Donnell	Wilson Jones	2023-12-30	US-2023-143259	10
10190	Office Supplies	Fairfield	United States	Erica Bern	GBC	2023-12-30	US-2023-115427	94
10191	Office Supplies	Loveland	United States	Jill Matthias	Other	2023-12-30	US-2023-156720	80
10192	Technology	New York City	United States	Patrick O'Donnell	Other	2023-12-30	US-2023-143259	10
10193	Office Supplies	Charlottetown	Canada	Harry Olson	Wilson Jones	2023-12-30	CA-2023-143500	C0

10189 rows × 9 columns

Pandas Indexing and slicing

In [60]: store.shape

(10194, 19)

In [63]: store

	Category	City	Country/Region	Customer Name	Manufacturer	Order Date	Order ID	Product Code
0	Office Supplies	Houston	United States	Darren Powers	Message Book	2020-01-03	US-2020-103800	77
1	Office Supplies	Naperville	United States	Phillina Ober	GBC	2020-01-04	US-2020-112326	60
2	Office Supplies	Naperville	United States	Phillina Ober	Avery	2020-01-04	US-2020-112326	60
3	Office Supplies	Naperville	United States	Phillina Ober	SAFCO	2020-01-04	US-2020-112326	60
4	Office Supplies	Philadelphia	United States	Mick Brown	Avery	2020-01-05	US-2020-141817	19
...
10189	Office Supplies	New York City	United States	Patrick O'Donnell	Wilson Jones	2023-12-30	US-2023-143259	10
10190	Office Supplies	Fairfield	United States	Erica Bern	GBC	2023-12-30	US-2023-115427	94
10191	Office Supplies	Loveland	United States	Jill Matthias	Other	2023-12-30	US-2023-156720	80
10192	Technology	New York City	United States	Patrick O'Donnell	Other	2023-12-30	US-2023-143259	10
10193	Office Supplies	Charlottetown	Canada	Harry Olson	Wilson Jones	2023-12-30	CA-2023-143500	C

10194 rows x 19 columns


```
In [65]: store[0:200:10]
```


	Category	City	Country/Region	Customer Name	Manufacturer	Order Date	Order ID	Pos Cod
0	Office Supplies	Houston	United States	Darren Powers	Message Book	2020-01-03	US-2020-103800	7709
10	Office Supplies	Henderson	United States	Maria Etezadi	Southworth	2020-01-06	US-2020-167199	4242
20	Furniture	Dover	United States	Seth Vernon	DAX	2020-01-11	US-2020-130092	1990
30	Office Supplies	San Francisco	United States	Brian Dahlen	Tennsco	2020-01-13	US-2020-157147	9410
40	Office Supplies	Scottsdale	United States	Toby Swindell	GBC	2020-01-19	US-2020-146591	8525
50	Office Supplies	Jonesboro	United States	Hunter Lopez	Newell	2020-01-20	US-2020-147627	7240
60	Furniture	Miami	United States	Tom Boeckenhauer	Ultra	2020-01-21	US-2020-110422	3318
70	Furniture	Alexandria	United States	Shirley Daniels	GE	2020-01-26	US-2020-155502	2230
80	Office Supplies	New York City	United States	Jasper Cacioppo	Pressboard	2020-01-28	US-2020-100328	1002
90	Office Supplies	Escondido	United States	Mark Haberlin	GBC	2020-02-04	US-2020-104808	9202
100	Furniture	Columbia	United States	Guy Armstrong	Global	2020-02-11	US-2020-168368	6520
110	Office Supplies	Seattle	United States	Marina Lichtenstein	Belkin	2020-02-14	US-2020-121762	9810
120	Furniture	Richmond	United States	Linda Cazamias	Master Caster	2020-02-20	US-2020-109491	4737
130	Furniture	Elmhurst	United States	Vicky Freymann	Novimex	2020-03-01	US-2020-113880	6012

	Category	City	Country/Region	Customer Name	Manufacturer	Order Date	Order ID	Pos' Cod
140	Office Supplies	New York City	United States	Kristina Nunn	Staple envelope	2020-03-02	US-2020-107524	1000
150	Office Supplies	Columbus	United States	Jill Stevenson	Avery	2020-03-03	US-2020-127978	4322
160	Furniture	Seattle	United States	Craig Molinari	Office Star	2020-03-07	US-2020-104563	9810
170	Office Supplies	Denver	United States	Kean Thornton	Tennsco	2020-03-10	US-2020-140116	8021
180	Furniture	Calgary	Canada	Nicole Fjeld	Dana	2020-03-13	CA-2020-139675	T2C
190	Technology	Logan	United States	Jason Fortune-	Imation	2020-03-14	US-2020-114510	8432

In [66]: store.describe()

	Order Date	Ship Date	Discount	Profit	Count
count	10194	10194	10194.000000	10194.000000	1
mean	2022-04-29 16:37:51.453796608	2022-05-03 15:41:38.175397120	0.155385	28.673417	3
min	2020-01-03 00:00:00	2020-01-07 00:00:00	0.000000	-6599.978000	1
25%	2021-05-14 00:00:00	2021-05-19 00:00:00	0.000000	1.760800	2
50%	2022-06-25 00:00:00	2022-06-28 00:00:00	0.200000	8.690000	3
75%	2023-05-14 00:00:00	2023-05-18 00:00:00	0.200000	29.297925	5
max	2023-12-30 00:00:00	2024-01-05 00:00:00	0.800000	8399.976000	1
std	NaN	NaN	0.206249	232.465115	2

In [73]: store.describe().transpose()

	count	mean	min	25%	50%	75%
Order Date	10194	2022-04-29 16:37:51.453796608	2020-01-03 00:00:00	2021-05-14 00:00:00	2022-06-25 00:00:00	2023-05-14 00:00:00
Ship Date	10194	2022-05-03 15:41:38.175397120	2020-01-07 00:00:00	2021-05-19 00:00:00	2022-06-28 00:00:00	2023-05-18 00:00:00
Discount	10194.0	0.155385	0.0	0.0	0.2	0.2
Profit	10194.0	28.673417	-6599.978	1.7608	8.69	29.29
Quantity	10194.0	3.791838	1.0	2.0	3.0	5.0
Sales	10194.0	228.225854	0.444	17.22	53.91	209.5

```
In [74]: store.columns

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 [ ]: store.columns[['a','b','c','d','e','f','g','h','i','j','k','l','m','n','o','p']]

store.columns
```

```
In [77]: store.head()
```

	a	b	c	d	e	f	g	h	i	j	k
0	Office Supplies	Houston	United States	Darren Powers	Message Book	2020-01-03	US-2020-103800	77095	Message Book, Wirebound, Four 5 1/2" X 4" Form...	Central	Cons
1	Office Supplies	Naperville	United States	Phillina Ober	GBC	2020-01-04	US-2020-112326	60540	GBC Standard Plastic Binding Systems Combs	Central	Hom Offic
2	Office Supplies	Naperville	United States	Phillina Ober	Avery	2020-01-04	US-2020-112326	60540	Avery 508	Central	Hom Offic
3	Office Supplies	Naperville	United States	Phillina Ober	SAFCO	2020-01-04	US-2020-112326	60540	SAFCO Boltless Steel Shelving	Central	Hom Offic
4	Office Supplies	Philadelphia	United States	Mick Brown	Avery	2020-01-05	US-2020-141817	19143	Avery Hi-Liter EverBold Pen Style Fluorescent ...	East	Cons

```
In [78]: store.columns = [['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']]
```

In [81]: store.head()

	Category	City	Country/Region	Customer Name	Manufacturer	Order Date	Order ID	Postal Code
0	Office Supplies	Houston	United States	Darren Powers	Message Book	2020-01-03	US-2020-103800	77095
1	Office Supplies	Naperville	United States	Phillina Ober	GBC	2020-01-04	US-2020-112326	60540
2	Office Supplies	Naperville	United States	Phillina Ober	Avery	2020-01-04	US-2020-112326	60540
3	Office Supplies	Naperville	United States	Phillina Ober	SAFCO	2020-01-04	US-2020-112326	60540
4	Office Supplies	Philadelphia	United States	Mick Brown	Avery	2020-01-05	US-2020-141817	19143

In []: