

21 August

Pandas

```
In [1]: import pandas as pd
```

```
In [2]: pd.__version__
```

```
Out[2]: '2.2.2'
```

```
In [3]: store=pd.read_csv(r'C:\Users\arati\Downloads\datasheet.csv')
```

```
In [4]: store
```

Out[4]:

| | Category | City | Country/Region | Customer Name | Manufacturer | Order Date | O |
|-------|-----------------|---------------|----------------|-------------------|--------------|------------|------|
| 0 | Office Supplies | Houston | United States | Darren Powers | Message Book | 03-01-2020 | 103 |
| 1 | Office Supplies | Naperville | United States | Phillina Ober | GBC | 04-01-2020 | 112 |
| 2 | Office Supplies | Naperville | United States | Phillina Ober | Avery | 04-01-2020 | 112 |
| 3 | Office Supplies | Naperville | United States | Phillina Ober | SAFCO | 04-01-2020 | 112 |
| 4 | Office Supplies | Philadelphia | United States | Mick Brown | Avery | 05-01-2020 | 141 |
| ... | | | | | | | |
| 10189 | Office Supplies | New York City | United States | Patrick O'Donnell | Wilson Jones | 30-12-2023 | 2143 |
| 10190 | Office Supplies | Fairfield | United States | Erica Bern | GBC | 30-12-2023 | 2115 |
| 10191 | Office Supplies | Loveland | United States | Jill Matthias | Other | 30-12-2023 | 2156 |
| 10192 | Technology | New York City | United States | Patrick O'Donnell | Other | 30-12-2023 | 2143 |
| 10193 | Office Supplies | Charlottetown | Canada | Harry Olson | Wilson Jones | 30-12-2023 | 2143 |

10194 rows × 19 columns



In [5]:

len(store)

```
Out[5]: 10194
```

```
In [6]: store.columns
```

```
Out[6]: 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 [7]: store.shape
```

```
Out[7]: (10194, 19)
```

```
In [8]: store.isnull()
```

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

10194 rows × 19 columns

```
In [9]: store.isnull().sum()
```

```
Out[9]: 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 [34]: store.dtypes
```

```
Out[34]: Category      object  
City          object  
Country/Region object  
Customer Name object  
Manufacturer   object  
Order Date    object  
Order ID      object  
Postal Code   object  
Product Name  object  
Region        object  
Segment       object  
Ship Date    object  
Ship Mode    object  
State/Province object  
Sub-Category  object  
Discount      float64  
Profit        float64  
Quantity      int64  
Sales         float64  
dtype: object
```

```
In [10]: store.isna()
```

Out[10]:

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

10194 rows × 19 columns



In [11]: `store.isna().sum()`

Out[11]:

| | |
|----------------|--------------|
| 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 [12]: `store.head()`

Out[12]:

| | 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 [13]: `store.tail()`

Out[13]:

| | 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 | 20143 |
| 10190 | Office Supplies | Fairfield | United States | Erica Bern | GBC | 30-12-2023 | 20115 |
| 10191 | Office Supplies | Loveland | United States | Jill Matthias | Other | 30-12-2023 | 20156 |
| 10192 | Technology | New York City | United States | Patrick O'Donnell | Other | 30-12-2023 | 20143 |
| 10193 | Office Supplies | Charlottetown | Canada | Harry Olson | Wilson Jones | 30-12-2023 | 20143 |



In [14]: `store.head(2)`

Out[14]:

| | Category | City | Country/Region | Customer Name | Manufacturer | Order Date | Order ID | Post Code |
|---|-----------------|------------|----------------|---------------|--------------|------------|----------------|-----------|
| 0 | Office Supplies | Houston | United States | Darren Powers | Message Book | 03-01-2020 | US-2020-103800 | 7709 |
| 1 | Office Supplies | Naperville | United States | Phillina Ober | GBC | 04-01-2020 | US-2020-112326 | 6054 |



In [15]: `store[:]`

Out[15]:

| | Category | City | Country/Region | Customer Name | Manufacturer | Order Date | Order ID |
|-------|-----------------|---------------|----------------|-------------------|--------------|------------|----------|
| 0 | Office Supplies | Houston | United States | Darren Powers | Message Book | 03-01-2020 | 103 |
| 1 | Office Supplies | Naperville | United States | Phillina Ober | GBC | 04-01-2020 | 112 |
| 2 | Office Supplies | Naperville | United States | Phillina Ober | Avery | 04-01-2020 | 112 |
| 3 | Office Supplies | Naperville | United States | Phillina Ober | SAFCO | 04-01-2020 | 112 |
| 4 | Office Supplies | Philadelphia | United States | Mick Brown | Avery | 05-01-2020 | 141 |
| ... | | | | | | | |
| 10189 | Office Supplies | New York City | United States | Patrick O'Donnell | Wilson Jones | 30-12-2023 | 2143 |
| 10190 | Office Supplies | Fairfield | United States | Erica Bern | GBC | 30-12-2023 | 2115 |
| 10191 | Office Supplies | Loveland | United States | Jill Matthias | Other | 30-12-2023 | 2156 |
| 10192 | Technology | New York City | United States | Patrick O'Donnell | Other | 30-12-2023 | 2143 |
| 10193 | Office Supplies | Charlottetown | Canada | Harry Olson | Wilson Jones | 30-12-2023 | 2143 |

10194 rows × 19 columns

In [16]: `store[:::-1]`

Out[16]:

| | Category | City | Country/Region | Customer Name | Manufacturer | Order Date | O |
|-------|-----------------|---------------|----------------|-------------------|--------------|------------|-------|
| 10193 | Office Supplies | Charlottetown | Canada | Harry Olson | Wilson Jones | 30-12-2023 | 20143 |
| 10192 | Technology | New York City | United States | Patrick O'Donnell | Other | 30-12-2023 | 20143 |
| 10191 | Office Supplies | Loveland | United States | Jill Matthias | Other | 30-12-2023 | 20156 |
| 10190 | Office Supplies | Fairfield | United States | Erica Bern | GBC | 30-12-2023 | 20115 |
| 10189 | Office Supplies | New York City | United States | Patrick O'Donnell | Wilson Jones | 30-12-2023 | 20143 |
| ... | ... | ... | ... | ... | ... | ... | ... |
| 4 | Office Supplies | Philadelphia | United States | Mick Brown | Avery | 05-01-2020 | 20141 |
| 3 | Office Supplies | Naperville | United States | Phillina Ober | SAFCO | 04-01-2020 | 20112 |
| 2 | Office Supplies | Naperville | United States | Phillina Ober | Avery | 04-01-2020 | 20112 |
| 1 | Office Supplies | Naperville | United States | Phillina Ober | GBC | 04-01-2020 | 20112 |
| 0 | Office Supplies | Houston | United States | Darren Powers | Message Book | 03-01-2020 | 20103 |

10194 rows × 19 columns

In [17]: `store[1:10:3]`

Out[17]:

| | Category | City | Country/Region | Customer Name | Manufacturer | Order Date | Order ID | Pa C |
|---|-----------------|--------------|----------------|---------------|--------------|------------|----------------|------|
| 1 | Office Supplies | Naperville | United States | Phillina Ober | GBC | 04-01-2020 | US-2020-112326 | 6C |
| 4 | Office Supplies | Philadelphia | United States | Mick Brown | Avery | 05-01-2020 | US-2020-141817 | 19 |
| 7 | Office Supplies | Athens | United States | Jack O'Briant | Dixon | 06-01-2020 | US-2020-106054 | 3C |

In [18]: `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   object 
 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   object 
 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: float64(3), int64(1), object(15)
memory usage: 1.5+ MB
```

In [37]: `store.columns`

```
Out[37]: 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 [19]: store['Category']
```

```
Out[19]: 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 [36]: store['City']
```

```
Out[36]: 0          Houston
1          Naperville
2          Naperville
3          Naperville
4          Philadelphia
...
10189    New York City
10190        Fairfield
10191        Loveland
10192    New York City
10193    Charlottetown
Name: City, Length: 10194, dtype: object
```

```
In [20]: store[['Category','City']]
```

Out[20]:

| | Category | City |
|--------------|-----------------|---------------|
| 0 | Office Supplies | Houston |
| 1 | Office Supplies | Naperville |
| 2 | Office Supplies | Naperville |
| 3 | Office Supplies | Naperville |
| 4 | Office Supplies | Philadelphia |
| ... | ... | ... |
| 10189 | Office Supplies | New York City |
| 10190 | Office Supplies | Fairfield |
| 10191 | Office Supplies | Loveland |
| 10192 | Technology | New York City |
| 10193 | Office Supplies | Charlottetown |

10194 rows × 2 columns

In [39]:

```
store[['Category','City','Order ID']]
```

Out[39]:

| | Category | City | Order ID |
|--------------|-----------------|---------------|----------------|
| 0 | Office Supplies | Houston | US-2020-103800 |
| 1 | Office Supplies | Naperville | US-2020-112326 |
| 2 | Office Supplies | Naperville | US-2020-112326 |
| 3 | Office Supplies | Naperville | US-2020-112326 |
| 4 | Office Supplies | Philadelphia | US-2020-141817 |
| ... | ... | ... | ... |
| 10189 | Office Supplies | New York City | US-2023-143259 |
| 10190 | Office Supplies | Fairfield | US-2023-115427 |
| 10191 | Office Supplies | Loveland | US-2023-156720 |
| 10192 | Technology | New York City | US-2023-143259 |
| 10193 | Office Supplies | Charlottetown | CA-2023-143500 |

10194 rows × 3 columns

In [21]:

```
store.dtypes
```

```
Out[21]: Category          object
          City            object
          Country/Region   object
          Customer Name    object
          Manufacturer     object
          Order Date       object
          Order ID         object
          Postal Code      object
          Product Name     object
          Region           object
          Segment          object
          Ship Date        object
          Ship Mode        object
          State/Province   object
          Sub-Category     object
          Discount         float64
          Profit           float64
          Quantity         int64
          Sales            float64
          dtype: object
```

```
In [22]: len(store.dtypes)
```

```
Out[22]: 19
```

```
In [23]: store.columns
```

```
Out[23]: 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 [24]: store_categorical=store[['Category', 'City', 'Country/Region', 'Customer Name',
                               'Order Date', 'Order ID', 'Postal Code', 'Product Name', 'Region',
                               'Segment', 'Ship Date', 'Ship Mode', 'State/Province', 'Sub-Category']]
```

```
In [40]: store_categorical
```

Out[40]:

| | Category | City | Country/Region | Customer Name | Manufacturer | Order Date | O |
|-------|-----------------|---------------|----------------|-------------------|--------------|------------|-------|
| 0 | Office Supplies | Houston | United States | Darren Powers | Message Book | 03-01-2020 | 20103 |
| 1 | Office Supplies | Naperville | United States | Phillina Ober | GBC | 04-01-2020 | 20112 |
| 2 | Office Supplies | Naperville | United States | Phillina Ober | Avery | 04-01-2020 | 20112 |
| 3 | Office Supplies | Naperville | United States | Phillina Ober | SAFCO | 04-01-2020 | 20112 |
| 4 | Office Supplies | Philadelphia | United States | Mick Brown | Avery | 05-01-2020 | 20141 |
| ... | | | | | | | |
| 10189 | Office Supplies | New York City | United States | Patrick O'Donnell | Wilson Jones | 30-12-2023 | 20143 |
| 10190 | Office Supplies | Fairfield | United States | Erica Bern | GBC | 30-12-2023 | 20115 |
| 10191 | Office Supplies | Loveland | United States | Jill Matthias | Other | 30-12-2023 | 20156 |
| 10192 | Technology | New York City | United States | Patrick O'Donnell | Other | 30-12-2023 | 20143 |
| 10193 | Office Supplies | Charlottetown | Canada | Harry Olson | Wilson Jones | 30-12-2023 | 20143 |

10194 rows × 15 columns

In [41]: `store_categorical.info()`

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 10194 entries, 0 to 10193
Data columns (total 15 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   object  
 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   object  
 12  Ship Mode         10194 non-null   object  
 13  State/Province    10194 non-null   object  
 14  Sub-Category      10194 non-null   object  
dtypes: object(15)
memory usage: 1.2+ MB
```

```
In [26]: store_categorical.dtypes #Text data
```

```
Out[26]: Category          object  
City              object  
Country/Region    object  
Customer Name     object  
Manufacturer      object  
Order Date        object  
Order ID          object  
Postal Code       object  
Product Name      object  
Region            object  
Segment           object  
Ship Date         object  
Ship Mode         object  
State/Province    object  
Sub-Category      object  
dtype: object
```

```
In [43]: store_numerical=store[['Discount', 'Profit', 'Quantity', 'Sales']] #Numbers
```

```
In [44]: store_numerical
```

Out[44]:

| | 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 × 4 columns

In [45]: `store_numerical.dtypes`

Out[45]:

| | |
|----------|---------|
| Discount | float64 |
| Profit | float64 |
| Quantity | int64 |
| Sales | float64 |
| dtype: | object |

In [47]: `store.columns`

Out[47]:

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

Out[48]: 19

In [49]: `store_categorical.columns`

Out[49]:

```
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'],
      dtype='object')
```

In [50]: `len(store_categorical.columns)`

Out[50]: 15

In [51]: `store_numerical.columns`

Out[51]:

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

```
In [52]: len(store_numerical.columns)
```

```
Out[52]: 4
```

```
In [53]: print(len(store.columns))
print(len(store_categorical.columns))
print(len(store_numerical.columns))
```

```
19
15
4
```

```
In [54]: store.head()
```

```
Out[54]:
```

| | 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 [56]: store.tail()
```

Out[56]:

| | 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 | 20143 |
| 10190 | Office Supplies | Fairfield | United States | Erica Bern | GBC | 30-12-2023 | 20115 |
| 10191 | Office Supplies | Loveland | United States | Jill Matthias | Other | 30-12-2023 | 20156 |
| 10192 | Technology | New York City | United States | Patrick O'Donnell | Other | 30-12-2023 | 20143 |
| 10193 | Office Supplies | Charlottetown | Canada | Harry Olson | Wilson Jones | 30-12-2023 | 20143 |

In [57]: `store[:]`

Out[57]:

| | Category | City | Country/Region | Customer Name | Manufacturer | Order Date | Order ID |
|-------|-----------------|---------------|----------------|-------------------|--------------|------------|----------|
| 0 | Office Supplies | Houston | United States | Darren Powers | Message Book | 03-01-2020 | 103 |
| 1 | Office Supplies | Naperville | United States | Phillina Ober | GBC | 04-01-2020 | 112 |
| 2 | Office Supplies | Naperville | United States | Phillina Ober | Avery | 04-01-2020 | 112 |
| 3 | Office Supplies | Naperville | United States | Phillina Ober | SAFCO | 04-01-2020 | 112 |
| 4 | Office Supplies | Philadelphia | United States | Mick Brown | Avery | 05-01-2020 | 141 |
| ... | | | | | | | |
| 10189 | Office Supplies | New York City | United States | Patrick O'Donnell | Wilson Jones | 30-12-2023 | 2143 |
| 10190 | Office Supplies | Fairfield | United States | Erica Bern | GBC | 30-12-2023 | 2115 |
| 10191 | Office Supplies | Loveland | United States | Jill Matthias | Other | 30-12-2023 | 2156 |
| 10192 | Technology | New York City | United States | Patrick O'Donnell | Other | 30-12-2023 | 2143 |
| 10193 | Office Supplies | Charlottetown | Canada | Harry Olson | Wilson Jones | 30-12-2023 | 2143 |

10194 rows × 19 columns

In [58]: `store[:::-1]`

Out[58]:

| | Category | City | Country/Region | Customer Name | Manufacturer | Order Date | Order ID |
|-------|-----------------|---------------|----------------|-------------------|--------------|------------|----------|
| 10193 | Office Supplies | Charlottetown | Canada | Harry Olson | Wilson Jones | 30-12-2023 | 20143 |
| 10192 | Technology | New York City | United States | Patrick O'Donnell | Other | 30-12-2023 | 20143 |
| 10191 | Office Supplies | Loveland | United States | Jill Matthias | Other | 30-12-2023 | 20156 |
| 10190 | Office Supplies | Fairfield | United States | Erica Bern | GBC | 30-12-2023 | 20115 |
| 10189 | Office Supplies | New York City | United States | Patrick O'Donnell | Wilson Jones | 30-12-2023 | 20143 |
| ... | ... | ... | ... | ... | ... | ... | ... |
| 4 | Office Supplies | Philadelphia | United States | Mick Brown | Avery | 05-01-2020 | 20141 |
| 3 | Office Supplies | Naperville | United States | Phillina Ober | SAFCO | 04-01-2020 | 20112 |
| 2 | Office Supplies | Naperville | United States | Phillina Ober | Avery | 04-01-2020 | 20112 |
| 1 | Office Supplies | Naperville | United States | Phillina Ober | GBC | 04-01-2020 | 20112 |
| 0 | Office Supplies | Houston | United States | Darren Powers | Message Book | 03-01-2020 | 20103 |

10194 rows × 19 columns

In [59]:

store[0:100:10]

Out[59]:

| | 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 |
| 10 | Office Supplies | Henderson | United States | Maria Etezadi | Southworth | 06-01-2020 | US-2020-167199 |
| 20 | Furniture | Dover | United States | Seth Vernon | DAX | 11-01-2020 | US-2020-130092 |
| 30 | Office Supplies | San Francisco | United States | Brian Dahlen | Tennsco | 13-01-2020 | US-2020-157147 |
| 40 | Office Supplies | Scottsdale | United States | Toby Swindell | GBC | 19-01-2020 | US-2020-146591 |
| 50 | Office Supplies | Jonesboro | United States | Hunter Lopez | Newell | 20-01-2020 | US-2020-147627 |
| 60 | Furniture | Miami | United States | Tom Boeckenhauer | Ultra | 21-01-2020 | US-2020-110422 |
| 70 | Furniture | Alexandria | United States | Shirley Daniels | GE | 26-01-2020 | US-2020-155502 |
| 80 | Office Supplies | New York City | United States | Jasper Cacioppo | Pressboard | 28-01-2020 | US-2020-100328 |
| 90 | Office Supplies | Escondido | United States | Mark Haberlin | GBC | 04-02-2020 | US-2020-104808 |

In [60]: `store[10:11]`

```
Out[60]:
```

| | Category | City | Country/Region | Customer Name | Manufacturer | Order Date | Order ID | Post C |
|----|-----------------|-----------|----------------|---------------|--------------|------------|----------------|--------|
| 10 | Office Supplies | Henderson | United States | Maria Etezadi | Southworth | 06-01-2020 | US-2020-167199 | 42 |



```
In [61]:
```

```
store_categorical[:4]
```

```
Out[61]:
```

| | Category | City | Country/Region | Customer Name | Manufacturer | Order Date | Order ID | Post C |
|---|-----------------|------------|----------------|---------------|--------------|------------|----------------|--------|
| 0 | Office Supplies | Houston | United States | Darren Powers | Message Book | 03-01-2020 | US-2020-103800 | 7709 |
| 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 |
| 3 | Office Supplies | Naperville | United States | Phillina Ober | SAFCO | 04-01-2020 | US-2020-112326 | 6054 |



```
In [62]:
```

```
store_numerical[::-1]
```

Out[62]:

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

10194 rows × 4 columns

In []:

In []: