

pandas loc and iloc

In [1]:

```
import pandas as pd
```

In [2]:

```
df=pd.read_excel("C:\\Users\\acer\\Downloads\\Orders-20210704T092528Z-001\\Orders\\Order Year\\2011.xlsx")
```

In [3]:

```
df
```

Out[3]:

| | Row ID | Order ID | Order Date | Order Priority | Order Quantity | Sales | Discount | Ship Mode | Profit |
|-------------|--------|----------|------------|----------------|----------------|------------|----------|----------------|----------|
| 0 | 80 | 483 | 40734 | High | 30 | 4965.7595 | 0.08 | Regular Air | 1198.971 |
| 1 | 97 | 613 | 40711 | High | 12 | 93.5400 | 0.03 | Regular Air | -54.0385 |
| 2 | 98 | 613 | 40711 | High | 22 | 905.0800 | 0.09 | Regular Air | 127.7000 |
| 3 | 103 | 643 | 40626 | High | 21 | 2781.8200 | 0.07 | Express Air | -695.260 |
| 4 | 160 | 995 | 40693 | Medium | 46 | 1815.4900 | 0.03 | Regular Air | 782.9100 |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 1997 | 2083 | 14883 | 40669 | Low | 47 | 5126.4180 | 0.03 | Regular Air | 1557.639 |
| 1998 | 5577 | 39492 | 40650 | Not Specified | 31 | 5347.9875 | 0.01 | Regular Air | 1332.441 |
| 1999 | 7586 | 54279 | 40754 | High | 41 | 10071.0900 | 0.10 | Delivery Truck | 1977.690 |

| | Row ID | Order ID | Order Date | Order Priority | Order Quantity | Sales | Discount | Ship Mode | Profit |
|------|--------|----------|------------|----------------|----------------|----------|----------|-------------|-----------|
| 2000 | 7906 | 56550 | 40641 | Not Specified | 37 | 823.7800 | 0.03 | Express Air | 343.0500 |
| 2001 | 7907 | 56550 | 40641 | Not Specified | 8 | 469.8375 | 0.00 | Regular Air | -159.2360 |

2002 rows × 21 columns

In [4]:

```
df.loc[0]
```

Out[4]:

```
Row ID      80
Order ID    483
Order Date  40734
Order Priority    High
Order Quantity    30
Sales      4965.7595
Discount      0.08
Ship Mode    Regular Air
Profit      1198.971
Unit Price    195.99
Shipping Cost     3.99
Customer Name    Clay Rozendal
Province      Nunavut
Region      Nunavut
Customer Segment    Corporate
Product Category    Technology
Product Sub-Category    Telephones and Communication
Product Name      R380
Product Container    Small Box
Product Base Margin     0.58
Ship Date      40736
```

Name: 0, dtype: object

In [8]:

```
## list of array of label
```

```
df.loc[[0,1]]
```

Out[8]:

| | Row ID | Order ID | Order Date | Order Priority | Order Quantity | Sales | Discount | Ship Mode | Profit | Un Pric |
|---|--------|----------|------------|----------------|----------------|-----------|----------|-------------|-----------|---------|
| 0 | 80 | 483 | 40734 | High | 30 | 4965.7595 | 0.08 | Regular Air | 1198.9710 | 195. |
| 1 | 97 | 613 | 40711 | High | 12 | 93.5400 | 0.03 | Regular Air | -54.0385 | 7.30 |

| | Row ID | Order ID | Order Date | Order Priority | Order Quantity | Sales | Discount | Ship Mode | Profit | Unit Price |
|--|--------|----------|------------|----------------|----------------|-------|----------|-----------|--------|------------|
| | | | | | | | | | | |

2 rows x 21 columns

In [9]:

```
df.loc[[3,4,8]]
```

Out[9]:

| | Row ID | Order ID | Order Date | Order Priority | Order Quantity | Sales | Discount | Ship Mode | Profit | Unit Price | ... |
|----------|--------|----------|------------|----------------|----------------|---------|----------|-------------|---------|------------|-----|
| 3 | 103 | 643 | 40626 | High | 21 | 2781.82 | 0.07 | Express Air | -695.26 | 138.14 | ... |
| 4 | 160 | 995 | 40693 | Medium | 46 | 1815.49 | 0.03 | Regular Air | 782.91 | 39.89 | ... |
| 8 | 331 | 2277 | 40544 | Not Specified | 10 | 66.54 | 0.01 | Regular Air | -46.03 | 5.98 | ... |

3 rows x 21 columns

In [15]:

```
df.loc[6,"Discount"]
```

Out[15]:

0.05

In [16]:

```
df.loc[7,"Order Priority"]
```

Out[16]:

'High'

In [17]:

```
##a slice object with labels
```

In [20]:

```
df.loc[0:5,"Order Priority"]
```

Out[20]:

0 High

1 High

2 High

3 High

4 Medium

5 Low

Name: Order Priority, dtype: object

In [21]:

```
df.loc[2:7, "Ship Mode"]
```

```
Out[21]:
```

```
2    Regular Air
3    Express Air
4    Regular Air
5    Regular Air
6    Regular Air
7    Regular Air
```

```
Name: Ship Mode, dtype: object
```

```
In [30]:
```

```
## take input in boolean format
```

```
df.loc[[false,false,true]]
```

```
-----
NameError                                Traceback (most recent call last)
```

```
<ipython-input-30-e1974e01f7ee> in <module>
```

```
    1 ## take input in boolean format
```

```
----> 2 df.loc[[false,false,true]]
```

```
NameError: name 'false' is not defined
```

```
In [35]:
```

```
df.loc[df["Order Priority"]=="Medium"]
```

```
Out[35]:
```

| | Row ID | Order ID | Order Date | Order Priority | Order Quantity | Sales | Discount | Ship Mode | Profit |
|-------------|--------|----------|------------|----------------|----------------|-----------|----------|----------------|-----------|
| 4 | 160 | 995 | 40693 | Medium | 46 | 1815.4900 | 0.03 | Regular Air | 782.9100 |
| 35 | 1337 | 9763 | 40768 | Medium | 44 | 176.2600 | 0.07 | Regular Air | 75.1300 |
| 64 | 2782 | 20071 | 40803 | Medium | 31 | 789.9400 | 0.10 | Delivery Truck | -190.4100 |
| 70 | 3493 | 24871 | 40625 | Medium | 6 | 143.7800 | 0.04 | Regular Air | 75.3000 |
| 74 | 3716 | 26531 | 40714 | Medium | 26 | 4688.9485 | 0.00 | Regular Air | 1215.4410 |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 1984 | 5122 | 36482 | 40729 | Medium | 7 | 55.6800 | 0.10 | Express | -7.4000 |


```

Ship Mode                                Regular Air
Profit                                  1198.971
Unit Price                             195.99
Shipping Cost                           3.99
Customer Name                           Clay Rozendal
Province                                Nunavut
Region                                  Nunavut
Customer Segment                         Corporate
Product Category                         Technology
Product Sub-Category                     Telephones and Communication
Product Name                             R380
Product Container                         Small Box
Product Base Margin                       0.58
Ship Date                                40736

```

Name: 0, dtype: object

```

In [42]:
df.iloc[[0,4,5]]

```

Out[42]:

| | Row ID | Order ID | Order Date | Order Priority | Order Quantity | Sales | Discount | Ship Mode | Profit | Unit Price |
|---|--------|----------|------------|----------------|----------------|-----------|----------|-------------|-----------|------------|
| 0 | 80 | 483 | 40734 | High | 30 | 4965.7595 | 0.08 | Regular Air | 1198.9710 | 195.99 |
| 4 | 160 | 995 | 40693 | Medium | 46 | 1815.4900 | 0.03 | Regular Air | 782.9100 | 39.83 |
| 5 | 229 | 1539 | 40611 | Low | 33 | 511.8300 | 0.10 | Regular Air | -172.8795 | 15.90 |

3 rows x 21 columns

```

In [43]:
df.iloc[0:5]

```

Out[43]:

| | Row ID | Order ID | Order Date | Order Priority | Order Quantity | Sales | Discount | Ship Mode | Profit | Unit Price |
|---|--------|----------|------------|----------------|----------------|-----------|----------|-------------|-----------|------------|
| 0 | 80 | 483 | 40734 | High | 30 | 4965.7595 | 0.08 | Regular Air | 1198.9710 | 195.99 |
| 1 | 97 | 613 | 40711 | High | 12 | 93.5400 | 0.03 | Regular Air | -54.0385 | 7.30 |

| | Row ID | Order ID | Order Date | Order Priority | Order Quantity | Sales | Discount | Ship Mode | Profit | Un Pric |
|----------|--------|----------|------------|----------------|----------------|-----------|----------|-------------|-----------|---------|
| | | | | | | | | | | |
| 2 | 98 | 613 | 40711 | High | 22 | 905.0800 | 0.09 | Regular Air | 127.7000 | 42.7 |
| 3 | 103 | 643 | 40626 | High | 21 | 2781.8200 | 0.07 | Express Air | -695.2600 | 138. |
| 4 | 160 | 995 | 40693 | Medium | 46 | 1815.4900 | 0.03 | Regular Air | 782.9100 | 39.8 |

5 rows × 21 columns

In [46]:

df.iloc[0:4,4]

Out[46]:

0 30

1 12

2 22

3 21

Name: Order Quantity, dtype: int64

In [47]:

df.iloc[0:4,3]

Out[47]:

0 High

1 High

2 High

3 High

Name: Order Priority, dtype: object

In [48]:

df.iloc[0:4,0:4]

Out[48]:

| | Row ID | Order ID | Order Date | Order Priority |
|----------|--------|----------|------------|----------------|
| 0 | 80 | 483 | 40734 | High |
| 1 | 97 | 613 | 40711 | High |
| 2 | 98 | 613 | 40711 | High |
| 3 | 103 | 643 | 40626 | High |

In [49]:
df.iloc[:,0:4]

Out[49]:

| | Row ID | Order ID | Order Date | Order Priority |
|-------------|--------|----------|------------|----------------|
| 0 | 80 | 483 | 40734 | High |
| 1 | 97 | 613 | 40711 | High |
| 2 | 98 | 613 | 40711 | High |
| 3 | 103 | 643 | 40626 | High |
| 4 | 160 | 995 | 40693 | Medium |
| ... | ... | ... | ... | ... |
| 1997 | 2083 | 14883 | 40669 | Low |
| 1998 | 5577 | 39492 | 40650 | Not Specified |
| 1999 | 7586 | 54279 | 40754 | High |
| 2000 | 7906 | 56550 | 40641 | Not Specified |
| 2001 | 7907 | 56550 | 40641 | Not Specified |

2002 rows × 4 columns

In [50]:
df.iloc[0:7, :]

Out[50]:

| | Row ID | Order ID | Order Date | Order Priority | Order Quantity | Sales | Discount | Ship Mode | Profit | Un |
|----------|--------|----------|------------|----------------|----------------|-----------|----------|-------------|-----------|------|
| 0 | 80 | 483 | 40734 | High | 30 | 4965.7595 | 0.08 | Regular Air | 1198.9710 | 195. |
| 1 | 97 | 613 | 40711 | High | 12 | 93.5400 | 0.03 | Regular Air | -54.0385 | 7.30 |
| 2 | 98 | 613 | 40711 | High | 22 | 905.0800 | 0.09 | Regular Air | 127.7000 | 42.7 |
| 3 | 103 | 643 | 40626 | High | 21 | 2781.8200 | 0.07 | Express Air | -695.2600 | 138. |

| | Row ID | Order ID | Order Date | Order Priority | Order Quantity | Sales | Discount | Ship Mode | Profit | Un Pric |
|---|--------|----------|------------|----------------|----------------|-----------|----------|-------------|-----------|---------|
| 4 | 160 | 995 | 40693 | Medium | 46 | 1815.4900 | 0.03 | Regular Air | 782.9100 | 39.8 |
| 5 | 229 | 1539 | 40611 | Low | 33 | 511.8300 | 0.10 | Regular Air | -172.8795 | 15.9 |
| 6 | 230 | 1539 | 40611 | Low | 38 | 184.9900 | 0.05 | Regular Air | -144.5500 | 4.89 |

7 rows × 21 columns

In []: