```
import pandas as pd
import numpy as np
import statistics as st

df = pd.read_csv("https://raw.githubusercontent.com/YBI-Foundation/Dataset/main/Customer%20Spending%20Score.csv")
df
```

1 to 25 of 200 entries Filter

index	Gender	Age	Annual Income (k$)	Spending Score (1-100)
0	Male	19	15000	39
1	Male	21	15000	81
2	Female	20	16000	6
3	Female	23	16000	77
4	Female	31	17000	40
5	Female	22	17000	76
6	Female	35	18000	6
7	Female	23	18000	94
8	Male	64	19000	3
9	Female	30	19000	72
10	Male	67	19000	14
11	Female	35	19000	99
12	Female	58	20000	15
13	Female	24	20000	77
14	Male	37	20000	13
15	Male	22	20000	79
16	Female	35	21000	35
17	Male	20	21000	66
18	Male	52	23000	29
19	Female	35	23000	98
20	Male	35	24000	35
21	Male	25	24000	73
22	Female	46	25000	5
23	Male	31	25000	73
24	Female	54	28000	14

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```
df.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 200 entries, 0 to 199
Data columns (total 4 columns):
 #   Column                  Non-Null Count  Dtype
---  ------                  --------------  -----
 0   Gender                  200 non-null    object
 1   Age                     200 non-null    int64
 2   Annual Income (k$)      200 non-null    int64
 3   Spending Score (1-100)  200 non-null    int64
dtypes: int64(3), object(1)
memory usage: 6.4+ KB
```

```
df.dtypes
```

```
Gender                    object
Age                        int64
Annual Income (k$)         int64
Spending Score (1-100)     int64
dtype: object
```

```
df.mean()
```

```
<ipython-input-10-c61f0c8f89b5>:1: FutureWarning: Dropping of nuisance columns in DataFrame reductions (with 'numeric_only=None') :
  df.mean()
Age                        38.85
Annual Income (k$)       60560.00
Spending Score (1-100)      50.20
dtype: float64
```

```
print('Mean of Age : ',df.loc[:,"Age"].mean())
print('Mean of Income : ',df.loc[:,"Annual Income (k$)"].mean())
```

```
Mean of Age :  38.85
Mean of Income :  60560.0
```

```
df.median()
```

```
<ipython-input-19-6d467abf240d>:1: FutureWarning: Dropping of nuisance columns in DataFrame reductions (with 'numeric_only=None') :
  df.median()
Age                        36.0
Annual Income (k$)        61500.0
Spending Score (1-100)       50.0
dtype: float64
```

```
print('Median of Age : ',df.loc[:,"Age"].median())
print('Median of Income : ',df.loc[:,"Annual Income (k$)"].median())
```

```
Median of Age :  36.0
Median of Income :  61500.0
<ipython-input-18-ae6a13c2f192>:1: FutureWarning: Dropping of nuisance columns in DataFrame reductions (with 'numeric_only=None') :
  df.median()
```

```
df.mode()
```

1 to 2 of 2 entries Filter

index	Gender	Age	Annual Income (k$)	Spending Score (1-100)
0	Female	32.0	54000	42.0
1	NaN	NaN	78000	NaN

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```
df.std()
```

```
<ipython-input-21-ce97bb7eaef8>:1: FutureWarning: Dropping of nuisance columns in DataFrame reductions (with 'numeric_only=None') :
  df.std()
Age                        13.969007
Annual Income (k$)        26264.721165
Spending Score (1-100)       25.823522
dtype: float64
```

```
print('Standard deviation of Age : ',df.loc[:,"Age"].std())
print('Standard deviation of Income : ',df.loc[:,"Annual Income (k$)"].std())
```

```
Standard deviation of Age :  13.96900733155888
Standard deviation of Income :  26264.721165271243
```

```
df.max()
```

```
Gender                      Male
Age                           70
Annual Income (k$)        137000
Spending Score (1-100)        99
dtype: object
```

```
df.min()
```

```
Gender                    Female
Age                           18
Annual Income (k$)         15000
Spending Score (1-100)         1
dtype: object
```

```
df.groupby(["Gender"]).mean()
```

Gender	Age	Annual Income (k$)	Spending Score (1-100)
Female	38.098214	59250.000000	51.526786
Male	39.806818	62227.272727	48.511364

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```
import pandas as pd
import numpy as numpy

iris = pd.read_csv("https://raw.githubusercontent.com/YBI-Foundation/Dataset/main/IRIS.csv")
iris
```

1 to 25 of 150 entries Filter

index	sepal_length	sepal_width	petal_length	petal_width	species
0	5.1	3.5	1.4	0.2	Iris-setosa
1	4.9	3.0	1.4	0.2	Iris-setosa
2	4.7	3.2	1.3	0.2	Iris-setosa
3	4.6	3.1	1.5	0.2	Iris-setosa
4	5.0	3.6	1.4	0.2	Iris-setosa
5	5.4	3.9	1.7	0.4	Iris-setosa
6	4.6	3.4	1.4	0.3	Iris-setosa
7	5.0	3.4	1.5	0.2	Iris-setosa
8	4.4	2.9	1.4	0.2	Iris-setosa
9	4.9	3.1	1.5	0.1	Iris-setosa
10	5.4	3.7	1.5	0.2	Iris-setosa
11	4.8	3.4	1.6	0.2	Iris-setosa
12	4.8	3.0	1.4	0.1	Iris-setosa
13	4.3	3.0	1.1	0.1	Iris-setosa
14	5.8	4.0	1.2	0.2	Iris-setosa
15	5.7	4.4	1.5	0.4	Iris-setosa
16	5.4	3.9	1.3	0.4	Iris-setosa
17	5.1	3.5	1.4	0.3	Iris-setosa
18	5.7	3.8	1.7	0.3	Iris-setosa
19	5.1	3.8	1.5	0.3	Iris-setosa
20	5.4	3.4	1.7	0.2	Iris-setosa
21	5.1	3.7	1.5	0.4	Iris-setosa
22	4.6	3.6	1.0	0.2	Iris-setosa
23	5.1	3.3	1.7	0.5	Iris-setosa
24	4.8	3.4	1.9	0.2	Iris-setosa

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Like what you see? Visit the data table notebook to learn more about interactive tables.

```
iris.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 150 entries, 0 to 149
Data columns (total 5 columns):
 #   Column        Non-Null Count  Dtype
---  ------        --------------  -----
 0   sepal_length  150 non-null    float64
 1   sepal_width   150 non-null    float64
 2   petal_length  150 non-null    float64
 3   petal_width   150 non-null    float64
 4   species       150 non-null    object
dtypes: float64(4), object(1)
memory usage: 6.0+ KB
```

```
iris.describe()
```

1 to 8 of 8 entries Filter

index	sepal_length	sepal_width	petal_length	petal_width
count	150.0	150.0	150.0	150.0
mean	5.843333333333334	3.0540000000000003	3.758666666666666	1.1986666666666668
std	0.828066127977863	0.4335943113621737	1.7644204199522626	0.7631607417008411
min	4.3	2.0	1.0	0.1
25%	5.1	2.8	1.6	0.3
50%	5.8	3.0	4.35	1.3
75%	6.4	3.3	5.1	1.8
max	7.9	4.4	6.9	2.5

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Like what you see? Visit the data table notebook to learn more about interactive tables.

```
print('Iris-setosa')
setosa = iris['species'] == 'Iris-setosa'
```

```
print(iris[setosa])
print(iris[setosa].describe())
```

```
     1           4.9          3.0           1.4          0.2  Iris-setosa
     2           4.7          3.2           1.3          0.2  Iris-setosa
     3           4.6          3.1           1.5          0.2  Iris-setosa
     4           5.0          3.6           1.4          0.2  Iris-setosa
     5           5.4          3.9           1.7          0.4  Iris-setosa
     6           4.6          3.4           1.4          0.3  Iris-setosa
     7           5.0          3.4           1.5          0.2  Iris-setosa
     8           4.4          2.9           1.4          0.2  Iris-setosa
     9           4.9          3.1           1.5          0.1  Iris-setosa
     10          5.4          3.7           1.5          0.2  Iris-setosa
     11          4.8          3.4           1.6          0.2  Iris-setosa
     12          4.8          3.0           1.4          0.1  Iris-setosa
     13          4.3          3.0           1.1          0.1  Iris-setosa
     14          5.8          4.0           1.2          0.2  Iris-setosa
     15          5.7          4.4           1.5          0.4  Iris-setosa
     16          5.4          3.9           1.3          0.4  Iris-setosa
     17          5.1          3.5           1.4          0.3  Iris-setosa
     18          5.7          3.8           1.7          0.3  Iris-setosa
     19          5.1          3.8           1.5          0.3  Iris-setosa
     20          5.4          3.4           1.7          0.2  Iris-setosa
     21          5.1          3.7           1.5          0.4  Iris-setosa
     22          4.6          3.6           1.0          0.2  Iris-setosa
     23          5.1          3.3           1.7          0.5  Iris-setosa
     24          4.8          3.4           1.9          0.2  Iris-setosa
     25          5.0          3.0           1.6          0.2  Iris-setosa
     26          5.0          3.4           1.6          0.4  Iris-setosa
     27          5.2          3.5           1.5          0.2  Iris-setosa
     28          5.2          3.4           1.4          0.2  Iris-setosa
     29          4.7          3.2           1.6          0.2  Iris-setosa
     30          4.8          3.1           1.6          0.2  Iris-setosa
     31          5.4          3.4           1.5          0.4  Iris-setosa
     32          5.2          4.1           1.5          0.1  Iris-setosa
     33          5.5          4.2           1.4          0.2  Iris-setosa
     34          4.9          3.1           1.5          0.1  Iris-setosa
     35          5.0          3.2           1.2          0.2  Iris-setosa
     36          5.5          3.5           1.3          0.2  Iris-setosa
     37          4.9          3.1           1.5          0.1  Iris-setosa
     38          4.4          3.0           1.3          0.2  Iris-setosa
     39          5.1          3.4           1.5          0.2  Iris-setosa
     40          5.0          3.5           1.3          0.3  Iris-setosa
     41          4.5          2.3           1.3          0.3  Iris-setosa
     42          4.4          3.2           1.3          0.2  Iris-setosa
     43          5.0          3.5           1.6          0.6  Iris-setosa
     44          5.1          3.8           1.9          0.4  Iris-setosa
     45          4.8          3.0           1.4          0.3  Iris-setosa
     46          5.1          3.8           1.6          0.2  Iris-setosa
     47          4.6          3.2           1.4          0.2  Iris-setosa
     48          5.3          3.7           1.5          0.2  Iris-setosa
     49          5.0          3.3           1.4          0.2  Iris-setosa
            sepal_length  sepal_width  petal_length  petal_width
     count      50.00000    50.000000     50.000000     50.00000
     mean        5.00600     3.418000      1.464000      0.24400
     std         0.35249     0.381024      0.173511      0.10721
     min         4.30000     2.300000      1.000000      0.10000
     25%         4.80000     3.125000      1.400000      0.20000
     50%         5.00000     3.400000      1.500000      0.20000
     75%         5.20000     3.675000      1.575000      0.30000
     max         5.80000     4.400000      1.900000      0.60000
```

```
print('\nIris-versicolor')
setosa = iris['species'] == 'Iris-versicolor'
print(iris[setosa])
print(iris[setosa].describe())
```

```
     51          6.4          3.2           4.5          1.5  Iris-versicolor
     52          6.9          3.1           4.9          1.5  Iris-versicolor
     53          5.5          2.3           4.0          1.3  Iris-versicolor
     54          6.5          2.8           4.6          1.5  Iris-versicolor
     55          5.7          2.8           4.5          1.3  Iris-versicolor
     56          6.3          3.3           4.7          1.6  Iris-versicolor
     57          4.9          2.4           3.3          1.0  Iris-versicolor
     58          6.6          2.9           4.6          1.3  Iris-versicolor
     59          5.2          2.7           3.9          1.4  Iris-versicolor
     60          5.0          2.0           3.5          1.0  Iris-versicolor
     61          5.9          3.0           4.2          1.5  Iris-versicolor
     62          6.0          2.2           4.0          1.0  Iris-versicolor
```

```
67           5.8          2.7           4.1          1.0  Iris-versicolor
68           6.2          2.2           4.5          1.5  Iris-versicolor
69           5.6          2.5           3.9          1.1  Iris-versicolor
70           5.9          3.2           4.8          1.8  Iris-versicolor
71           6.1          2.8           4.0          1.3  Iris-versicolor
72           6.3          2.5           4.9          1.5  Iris-versicolor
73           6.1          2.8           4.7          1.2  Iris-versicolor
74           6.4          2.9           4.3          1.3  Iris-versicolor
75           6.6          3.0           4.4          1.4  Iris-versicolor
76           6.8          2.8           4.8          1.4  Iris-versicolor
77           6.7          3.0           5.0          1.7  Iris-versicolor
78           6.0          2.9           4.5          1.5  Iris-versicolor
79           5.7          2.6           3.5          1.0  Iris-versicolor
80           5.5          2.4           3.8          1.1  Iris-versicolor
81           5.5          2.4           3.7          1.0  Iris-versicolor
82           5.8          2.7           3.9          1.2  Iris-versicolor
83           6.0          2.7           5.1          1.6  Iris-versicolor
84           5.4          3.0           4.5          1.5  Iris-versicolor
85           6.0          3.4           4.5          1.6  Iris-versicolor
86           6.7          3.1           4.7          1.5  Iris-versicolor
87           6.3          2.3           4.4          1.3  Iris-versicolor
88           5.6          3.0           4.1          1.3  Iris-versicolor
89           5.5          2.5           4.0          1.3  Iris-versicolor
90           5.5          2.6           4.4          1.2  Iris-versicolor
91           6.1          3.0           4.6          1.4  Iris-versicolor
92           5.8          2.6           4.0          1.2  Iris-versicolor
93           5.0          2.3           3.3          1.0  Iris-versicolor
94           5.6          2.7           4.2          1.3  Iris-versicolor
95           5.7          3.0           4.2          1.2  Iris-versicolor
96           5.7          2.9           4.2          1.3  Iris-versicolor
97           6.2          2.9           4.3          1.3  Iris-versicolor
98           5.1          2.5           3.0          1.1  Iris-versicolor
99           5.7          2.8           4.1          1.3  Iris-versicolor
       sepal_length  sepal_width  petal_length  petal_width
count     50.000000    50.000000     50.000000    50.000000
mean       5.936000     2.770000      4.260000     1.326000
std        0.516171     0.313798      0.469911     0.197753
min        4.900000     2.000000      3.000000     1.000000
25%        5.600000     2.525000      4.000000     1.200000
50%        5.900000     2.800000      4.350000     1.300000
75%        6.300000     3.000000      4.600000     1.500000
max        7.000000     3.400000      5.100000     1.800000
```

```
print('\nIris-virginica')
setosa = iris['species'] == 'Iris-virginica'
print(iris[setosa])
print(iris[setosa].describe())
```

```
Iris-virginica
     sepal_length  sepal_width  petal_length  petal_width         species
100           6.3          3.3           6.0          2.5  Iris-virginica
101           5.8          2.7           5.1          1.9  Iris-virginica
102           7.1          3.0           5.9          2.1  Iris-virginica
103           6.3          2.9           5.6          1.8  Iris-virginica
104           6.5          3.0           5.8          2.2  Iris-virginica
105           7.6          3.0           6.6          2.1  Iris-virginica
106           4.9          2.5           4.5          1.7  Iris-virginica
107           7.3          2.9           6.3          1.8  Iris-virginica
108           6.7          2.5           5.8          1.8  Iris-virginica
109           7.2          3.6           6.1          2.5  Iris-virginica
110           6.5          3.2           5.1          2.0  Iris-virginica
111           6.4          2.7           5.3          1.9  Iris-virginica
112           6.8          3.0           5.5          2.1  Iris-virginica
113           5.7          2.5           5.0          2.0  Iris-virginica
114           5.8          2.8           5.1          2.4  Iris-virginica
115           6.4          3.2           5.3          2.3  Iris-virginica
116           6.5          3.0           5.5          1.8  Iris-virginica
117           7.7          3.8           6.7          2.2  Iris-virginica
118           7.7          2.6           6.9          2.3  Iris-virginica
119           6.0          2.2           5.0          1.5  Iris-virginica
120           6.9          3.2           5.7          2.3  Iris-virginica
121           5.6          2.8           4.9          2.0  Iris-virginica
122           7.7          2.8           6.7          2.0  Iris-virginica
123           6.3          2.7           4.9          1.8  Iris-virginica
124           6.7          3.3           5.7          2.1  Iris-virginica
125           7.2          3.2           6.0          1.8  Iris-virginica
126           6.2          2.8           4.8          1.8  Iris-virginica
127           6.1          3.0           4.9          1.8  Iris-virginica
128           6.4          2.8           5.6          2.1  Iris-virginica
129           7.2          3.0           5.8          1.6  Iris-virginica
130           7.4          2.8           6.1          1.9  Iris-virginica
131           7.9          3.8           6.4          2.0  Iris-virginica
132           6.4          2.8           5.6          2.2  Iris-virginica
```

```
133           6.3          2.8           5.1          1.5  Iris-virginica
134           6.1          2.6           5.6          1.4  Iris-virginica
135           7.7          3.0           6.1          2.3  Iris-virginica
136           6.3          3.4           5.6          2.4  Iris-virginica
137           6.4          3.1           5.5          1.8  Iris-virginica
138           6.0          3.0           4.8          1.8  Iris-virginica
139           6.9          3.1           5.4          2.1  Iris-virginica
140           6.7          3.1           5.6          2.4  Iris-virginica
141           6.9          3.1           5.1          2.3  Iris-virginica
142           5.8          2.7           5.1          1.9  Iris-virginica
143           6.8          3.2           5.9          2.3  Iris-virginica
144           6.7          3.3           5.7          2.5  Iris-virginica
145           6.7          3.0           5.2          2.3  Iris-virginica
146           6.3          2.5           5.0          1.9  Iris-virginica
147           6.5          3.0           5.2          2.0  Iris-virginica
148           6.2          3.4           5.4          2.3  Iris-virginica
149           5.9          3.0           5.1          1.8  Iris-virginica
       sepal_length  sepal_width  petal_length  petal_width
count      50.00000    50.000000     50.000000     50.00000
mean        6.58800     2.974000      5.552000      2.02600
std         0.63588     0.322497      0.551895      0.27465
min         4.90000     2.200000      4.500000      1.40000
```

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