In [3]:
```
from pydataset import data
import pandas as pd
```

In [4]:
```
iris=data("iris")
```

In [5]:
```
iris
```

Out[5]:

	Sepal.Length	Sepal.Width	Petal.Length	Petal.Width	Species
1	5.1	3.5	1.4	0.2	setosa
2	4.9	3.0	1.4	0.2	setosa
3	4.7	3.2	1.3	0.2	setosa
4	4.6	3.1	1.5	0.2	setosa
5	5.0	3.6	1.4	0.2	setosa
6	5.4	3.9	1.7	0.4	setosa
7	4.6	3.4	1.4	0.3	setosa
8	5.0	3.4	1.5	0.2	setosa
9	4.4	2.9	1.4	0.2	setosa
10	4.9	3.1	1.5	0.1	setosa
11	5.4	3.7	1.5	0.2	setosa
12	4.8	3.4	1.6	0.2	setosa
13	4.8	3.0	1.4	0.1	setosa
14	4.3	3.0	1.1	0.1	setosa
15	5.8	4.0	1.2	0.2	setosa
16	5.7	4.4	1.5	0.4	setosa
17	5.4	3.9	1.3	0.4	setosa
18	5.1	3.5	1.4	0.3	setosa
19	5.7	3.8	1.7	0.3	setosa
20	5.1	3.8	1.5	0.3	setosa
21	5.4	3.4	1.7	0.2	setosa
22	5.1	3.7	1.5	0.4	setosa
23	4.6	3.6	1.0	0.2	setosa
24	5.1	3.3	1.7	0.5	setosa
25	4.8	3.4	1.9	0.2	setosa
26	5.0	3.0	1.6	0.2	setosa
27	5.0	3.4	1.6	0.4	setosa
28	5.2	3.5	1.5	0.2	setosa
29	5.2	3.4	1.4	0.2	setosa
30	4.7	3.2	1.6	0.2	setosa
31	4.8	3.1	1.6	0.2	setosa
32	5.4	3.4	1.5	0.4	setosa
33	5.2	4.1	1.5	0.1	setosa
34	5.5	4.2	1.4	0.2	setosa
35	4.9	3.1	1.5	0.2	setosa
36	5.0	3.2	1.2	0.2	setosa
37	5.5	3.5	1.3	0.2	setosa
38	4.9	3.6	1.4	0.1	setosa
39	4.4	3.0	1.3	0.2	setosa
40	5.1	3.4	1.5	0.2	setosa
41	5.0	3.5	1.3	0.3	setosa
42	4.5	2.3	1.3	0.3	setosa
43	4.4	3.2	1.3	0.2	setosa
44	5.0	3.5	1.6	0.6	setosa
45	5.1	3.8	1.9	0.4	setosa
46	4.8	3.0	1.4	0.3	setosa
47	5.1	3.8	1.6	0.2	setosa
48	4.6	3.2	1.4	0.2	setosa
49	5.3	3.7	1.5	0.2	setosa
50	5.0	3.3	1.4	0.2	setosa
51	7.0	3.2	4.7	1.4	versicolor
52	6.4	3.2	4.5	1.5	versicolor
53	6.9	3.1	4.9	1.5	versicolor
54	5.5	2.3	4.0	1.3	versicolor
55	6.5	2.8	4.6	1.5	versicolor
56	5.7	2.8	4.5	1.3	versicolor
57	6.3	3.3	4.7	1.6	versicolor
58	4.9	2.4	3.3	1.0	versicolor
59	6.6	2.9	4.6	1.3	versicolor

	Sepal.Length	Sepal.Width	Petal.Length	Petal.Width	Species
60	5.2	2.7	3.9	1.4	versicolor
61	5.0	2.0	3.5	1.0	versicolor
62	5.9	3.0	4.2	1.5	versicolor
63	6.0	2.2	4.0	1.0	versicolor
64	6.1	2.9	4.7	1.4	versicolor
65	5.6	2.9	3.6	1.3	versicolor
66	6.7	3.1	4.4	1.4	versicolor
67	5.6	3.0	4.5	1.5	versicolor
68	5.8	2.7	4.1	1.0	versicolor
69	6.2	2.2	4.5	1.5	versicolor
70	5.6	2.5	3.9	1.1	versicolor
71	5.9	3.2	4.8	1.8	versicolor
72	6.1	2.8	4.0	1.3	versicolor
73	6.3	2.5	4.9	1.5	versicolor
74	6.1	2.8	4.7	1.2	versicolor
75	6.4	2.9	4.3	1.3	versicolor
76	6.6	3.0	4.4	1.4	versicolor
77	6.8	2.8	4.8	1.4	versicolor
78	6.7	3.0	5.0	1.7	versicolor
79	6.0	2.9	4.5	1.5	versicolor
80	5.7	2.6	3.5	1.0	versicolor
81	5.5	2.4	3.8	1.1	versicolor
82	5.5	2.4	3.7	1.0	versicolor
83	5.8	2.7	3.9	1.2	versicolor
84	6.0	2.7	5.1	1.6	versicolor
85	5.4	3.0	4.5	1.5	versicolor
86	6.0	3.4	4.5	1.6	versicolor
87	6.7	3.1	4.7	1.5	versicolor
88	6.3	2.3	4.4	1.3	versicolor
89	5.6	3.0	4.1	1.3	versicolor
90	5.5	2.5	4.0	1.3	versicolor
91	5.5	2.6	4.4	1.2	versicolor
92	6.1	3.0	4.6	1.4	versicolor
93	5.8	2.6	4.0	1.2	versicolor
94	5.0	2.3	3.3	1.0	versicolor
95	5.6	2.7	4.2	1.3	versicolor
96	5.7	3.0	4.2	1.2	versicolor
97	5.7	2.9	4.2	1.3	versicolor
98	6.2	2.9	4.3	1.3	versicolor
99	5.1	2.5	3.0	1.1	versicolor
100	5.7	2.8	4.1	1.3	versicolor
101	6.3	3.3	6.0	2.5	virginica
102	5.8	2.7	5.1	1.9	virginica
103	7.1	3.0	5.9	2.1	virginica
104	6.3	2.9	5.6	1.8	virginica
105	6.5	3.0	5.8	2.2	virginica
106	7.6	3.0	6.6	2.1	virginica
107	4.9	2.5	4.5	1.7	virginica
108	7.3	2.9	6.3	1.8	virginica
109	6.7	2.5	5.8	1.8	virginica
110	7.2	3.6	6.1	2.5	virginica
111	6.5	3.2	5.1	2.0	virginica
112	6.4	2.7	5.3	1.9	virginica
113	6.8	3.0	5.5	2.1	virginica
114	5.7	2.5	5.0	2.0	virginica
115	5.8	2.8	5.1	2.4	virginica
116	6.4	3.2	5.3	2.3	virginica
117	6.5	3.0	5.5	1.8	virginica
118	7.7	3.8	6.7	2.2	virginica

	Sepal.Length	Sepal.Width	Petal.Length	Petal.Width	Species
119	7.7	2.6	6.9	2.3	virginica
120	6.0	2.2	5.0	1.5	virginica
121	6.9	3.2	5.7	2.3	virginica
122	5.6	2.8	4.9	2.0	virginica
123	7.7	2.8	6.7	2.0	virginica
124	6.3	2.7	4.9	1.8	virginica
125	6.7	3.3	5.7	2.1	virginica
126	7.2	3.2	6.0	1.8	virginica
127	6.2	2.8	4.8	1.8	virginica
128	6.1	3.0	4.9	1.8	virginica
129	6.4	2.8	5.6	2.1	virginica
130	7.2	3.0	5.8	1.6	virginica
131	7.4	2.8	6.1	1.9	virginica
132	7.9	3.8	6.4	2.0	virginica
133	6.4	2.8	5.6	2.2	virginica
134	6.3	2.8	5.1	1.5	virginica
135	6.1	2.6	5.6	1.4	virginica
136	7.7	3.0	6.1	2.3	virginica
137	6.3	3.4	5.6	2.4	virginica
138	6.4	3.1	5.5	1.8	virginica
139	6.0	3.0	4.8	1.8	virginica
140	6.9	3.1	5.4	2.1	virginica
141	6.7	3.1	5.6	2.4	virginica
142	6.9	3.1	5.1	2.3	virginica
143	5.8	2.7	5.1	1.9	virginica
144	6.8	3.2	5.9	2.3	virginica
145	6.7	3.3	5.7	2.5	virginica
146	6.7	3.0	5.2	2.3	virginica
147	6.3	2.5	5.0	1.9	virginica
148	6.5	3.0	5.2	2.0	virginica
149	6.2	3.4	5.4	2.3	virginica
150	5.9	3.0	5.1	1.8	virginica

In [6]:
```
iris.head()
```

Out[6]:

	Sepal.Length	Sepal.Width	Petal.Length	Petal.Width	Species
1	5.1	3.5	1.4	0.2	setosa
2	4.9	3.0	1.4	0.2	setosa
3	4.7	3.2	1.3	0.2	setosa
4	4.6	3.1	1.5	0.2	setosa
5	5.0	3.6	1.4	0.2	setosa

In [8]:
```
iris.sample(10)
```

Out[8]:

	Sepal.Length	Sepal.Width	Petal.Length	Petal.Width	Species
36	5.0	3.2	1.2	0.2	setosa
112	6.4	2.7	5.3	1.9	virginica
65	5.6	2.9	3.6	1.3	versicolor
51	7.0	3.2	4.7	1.4	versicolor
100	5.7	2.8	4.1	1.3	versicolor
71	5.9	3.2	4.8	1.8	versicolor
4	4.6	3.1	1.5	0.2	setosa
69	6.2	2.2	4.5	1.5	versicolor
3	4.7	3.2	1.3	0.2	setosa
46	4.8	3.0	1.4	0.3	setosa

In [10]:
```
iris.columns
```

Out[10]:
```
Index(['Sepal.Length', 'Sepal.Width', 'Petal.Length', 'Petal.Width',
       'Species'],
      dtype='object')
```

In [11]:
```
iris.shape
```

Out[11]:
```
(150, 5)
```

In [12]:
```
iris[0:10]
```

Out[12]:

	Sepal.Length	Sepal.Width	Petal.Length	Petal.Width	Species
1	5.1	3.5	1.4	0.2	setosa
2	4.9	3.0	1.4	0.2	setosa
3	4.7	3.2	1.3	0.2	setosa
4	4.6	3.1	1.5	0.2	setosa
5	5.0	3.6	1.4	0.2	setosa
6	5.4	3.9	1.7	0.4	setosa
7	4.6	3.4	1.4	0.3	setosa
8	5.0	3.4	1.5	0.2	setosa
9	4.4	2.9	1.4	0.2	setosa
10	4.9	3.1	1.5	0.1	setosa

In [ ]:
```

```

In [13]:
```
#### displaying specific rows
```

In [14]:
```
iris.iloc[5]
```

Out[14]:
```
Sepal.Length       5.4
Sepal.Width        3.9
Petal.Length       1.7
Petal.Width        0.4
Species         setosa
Name: 6, dtype: object
```

In [17]:
```
iris.loc[iris["Species"]=="setosa"]
```

Out[17]:

	Sepal.Length	Sepal.Width	Petal.Length	Petal.Width	Species
1	5.1	3.5	1.4	0.2	setosa
2	4.9	3.0	1.4	0.2	setosa
3	4.7	3.2	1.3	0.2	setosa
4	4.6	3.1	1.5	0.2	setosa
5	5.0	3.6	1.4	0.2	setosa
6	5.4	3.9	1.7	0.4	setosa
7	4.6	3.4	1.4	0.3	setosa
8	5.0	3.4	1.5	0.2	setosa
9	4.4	2.9	1.4	0.2	setosa
10	4.9	3.1	1.5	0.1	setosa
11	5.4	3.7	1.5	0.2	setosa
12	4.8	3.4	1.6	0.2	setosa
13	4.8	3.0	1.4	0.1	setosa
14	4.3	3.0	1.1	0.1	setosa
15	5.8	4.0	1.2	0.2	setosa
16	5.7	4.4	1.5	0.4	setosa
17	5.4	3.9	1.3	0.4	setosa
18	5.1	3.5	1.4	0.3	setosa
19	5.7	3.8	1.7	0.3	setosa
20	5.1	3.8	1.5	0.3	setosa
21	5.4	3.4	1.7	0.2	setosa
22	5.1	3.7	1.5	0.4	setosa
23	4.6	3.6	1.0	0.2	setosa
24	5.1	3.3	1.7	0.5	setosa
25	4.8	3.4	1.9	0.2	setosa
26	5.0	3.0	1.6	0.2	setosa
27	5.0	3.4	1.6	0.4	setosa
28	5.2	3.5	1.5	0.2	setosa
29	5.2	3.4	1.4	0.2	setosa
30	4.7	3.2	1.6	0.2	setosa
31	4.8	3.1	1.6	0.2	setosa
32	5.4	3.4	1.5	0.4	setosa
33	5.2	4.1	1.5	0.1	setosa
34	5.5	4.2	1.4	0.2	setosa
35	4.9	3.1	1.5	0.2	setosa
36	5.0	3.2	1.2	0.2	setosa
37	5.5	3.5	1.3	0.2	setosa
38	4.9	3.6	1.4	0.1	setosa
39	4.4	3.0	1.3	0.2	setosa
40	5.1	3.4	1.5	0.2	setosa
41	5.0	3.5	1.3	0.3	setosa
42	4.5	2.3	1.3	0.3	setosa
43	4.4	3.2	1.3	0.2	setosa
44	5.0	3.5	1.6	0.6	setosa
45	5.1	3.8	1.9	0.4	setosa
46	4.8	3.0	1.4	0.3	setosa
47	5.1	3.8	1.6	0.2	setosa
48	4.6	3.2	1.4	0.2	setosa
49	5.3	3.7	1.5	0.2	setosa
50	5.0	3.3	1.4	0.2	setosa

In [ ]:
```

```

In [18]:
```
#Count  unique values frequeny
```

In [19]:
```
iris["Species"].value_counts()
```

Out[19]:
```
setosa        50
virginica     50
versicolor    50
Name: Species, dtype: int64
```

In [20]:
```
## calculate mean of a column
```

In [23]:
```
mean_Sepal = iris["Sepal.Length"].mean()
mean_Sepal
```

Out[23]:
```
5.843333333333334
```

In [24]:
```
# add a new column
#data["total_values"]=data1[cols].sum(axis=1)
```

In [25]:
```
iris.describe() # show quick summary
```

Out[25]:

	Sepal.Length	Sepal.Width	Petal.Length	Petal.Width
count	150.000000	150.000000	150.000000	150.000000
mean	5.843333	3.057333	3.758000	1.199333
std	0.828066	0.435866	1.765298	0.762238
min	4.300000	2.000000	1.000000	0.100000
25%	5.100000	2.800000	1.600000	0.300000
50%	5.800000	3.000000	4.350000	1.300000
75%	6.400000	3.300000	5.100000	1.800000
max	7.900000	4.400000	6.900000	2.500000

In [26]:
```
#missing values
iris.isnull()
```

Out[26]:

	Sepal.Length	Sepal.Width	Petal.Length	Petal.Width	Species
1	False	False	False	False	False
2	False	False	False	False	False
3	False	False	False	False	False
4	False	False	False	False	False
5	False	False	False	False	False
6	False	False	False	False	False
7	False	False	False	False	False
8	False	False	False	False	False
9	False	False	False	False	False
10	False	False	False	False	False
11	False	False	False	False	False
12	False	False	False	False	False
13	False	False	False	False	False
14	False	False	False	False	False
15	False	False	False	False	False
16	False	False	False	False	False
17	False	False	False	False	False
18	False	False	False	False	False
19	False	False	False	False	False
20	False	False	False	False	False
21	False	False	False	False	False
22	False	False	False	False	False
23	False	False	False	False	False
24	False	False	False	False	False
25	False	False	False	False	False
26	False	False	False	False	False
27	False	False	False	False	False
28	False	False	False	False	False
29	False	False	False	False	False
30	False	False	False	False	False
31	False	False	False	False	False
32	False	False	False	False	False
33	False	False	False	False	False
34	False	False	False	False	False
35	False	False	False	False	False
36	False	False	False	False	False
37	False	False	False	False	False
38	False	False	False	False	False
39	False	False	False	False	False
40	False	False	False	False	False
41	False	False	False	False	False
42	False	False	False	False	False
43	False	False	False	False	False
44	False	False	False	False	False
45	False	False	False	False	False
46	False	False	False	False	False
47	False	False	False	False	False
48	False	False	False	False	False
49	False	False	False	False	False
50	False	False	False	False	False
51	False	False	False	False	False
52	False	False	False	False	False
53	False	False	False	False	False
54	False	False	False	False	False
55	False	False	False	False	False
56	False	False	False	False	False
57	False	False	False	False	False
58	False	False	False	False	False
59	False	False	False	False	False

	Sepal.Length	Sepal.Width	Petal.Length	Petal.Width	Species
60	False	False	False	False	False
61	False	False	False	False	False
62	False	False	False	False	False
63	False	False	False	False	False
64	False	False	False	False	False
65	False	False	False	False	False
66	False	False	False	False	False
67	False	False	False	False	False
68	False	False	False	False	False
69	False	False	False	False	False
70	False	False	False	False	False
71	False	False	False	False	False
72	False	False	False	False	False
73	False	False	False	False	False
74	False	False	False	False	False
75	False	False	False	False	False
76	False	False	False	False	False
77	False	False	False	False	False
78	False	False	False	False	False
79	False	False	False	False	False
80	False	False	False	False	False
81	False	False	False	False	False
82	False	False	False	False	False
83	False	False	False	False	False
84	False	False	False	False	False
85	False	False	False	False	False
86	False	False	False	False	False
87	False	False	False	False	False
88	False	False	False	False	False
89	False	False	False	False	False
90	False	False	False	False	False
91	False	False	False	False	False
92	False	False	False	False	False
93	False	False	False	False	False
94	False	False	False	False	False
95	False	False	False	False	False
96	False	False	False	False	False
97	False	False	False	False	False
98	False	False	False	False	False
99	False	False	False	False	False
100	False	False	False	False	False
101	False	False	False	False	False
102	False	False	False	False	False
103	False	False	False	False	False
104	False	False	False	False	False
105	False	False	False	False	False
106	False	False	False	False	False
107	False	False	False	False	False
108	False	False	False	False	False
109	False	False	False	False	False
110	False	False	False	False	False
111	False	False	False	False	False
112	False	False	False	False	False
113	False	False	False	False	False
114	False	False	False	False	False
115	False	False	False	False	False
116	False	False	False	False	False
117	False	False	False	False	False
118	False	False	False	False	False

	Sepal.Length	Sepal.Width	Petal.Length	Petal.Width	Species
119	False	False	False	False	False
120	False	False	False	False	False
121	False	False	False	False	False
122	False	False	False	False	False
123	False	False	False	False	False
124	False	False	False	False	False
125	False	False	False	False	False
126	False	False	False	False	False
127	False	False	False	False	False
128	False	False	False	False	False
129	False	False	False	False	False
130	False	False	False	False	False
131	False	False	False	False	False
132	False	False	False	False	False
133	False	False	False	False	False
134	False	False	False	False	False
135	False	False	False	False	False
136	False	False	False	False	False
137	False	False	False	False	False
138	False	False	False	False	False
139	False	False	False	False	False
140	False	False	False	False	False
141	False	False	False	False	False
142	False	False	False	False	False
143	False	False	False	False	False
144	False	False	False	False	False
145	False	False	False	False	False
146	False	False	False	False	False
147	False	False	False	False	False
148	False	False	False	False	False
149	False	False	False	False	False
150	False	False	False	False	False

In [28]:
```
## count null values

iris.isnull().sum()
```

Out[28]:
```
Sepal.Length    0
Sepal.Width     0
Petal.Length    0
Petal.Width     0
Species         0
dtype: int64
```

In [31]:
```
#### groupby and show mean
```

In [32]:
```
iris.groupby("Species").agg({"Sepal.Length":"mean"})
```

Out[32]:

	Sepal.Length
Species	
setosa	5.006
versicolor	5.936
virginica	6.588

In [33]:
```

```

```
  File "<ipython-input-33-d4e9341b0197>", line 1
    iris.groupby("Species").agg({"Sepal.Length":lambda(x) mean(x)})
                                                       ^
SyntaxError: invalid syntax
```

In [ ]:
```

```

In [ ]:
```

```

In [ ]:
```

```

In [ ]:

In [ ]:

In [ ]:

In [ ]:

In [ ]:

In [ ]: