matplotlibrary

September 11, 2023

[ ]:
```
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
iris=pd.read_csv("C:/Users/91939/Desktop/1st-MCA/python/Iris-Iris.csv")
iris.describe()
```

[ ]:

	Id	SepalLengthCm	SepalWidthCm	PetalLengthCm	PetalWidthCm
count	150.000000	150.000000	150.000000	150.000000	150.000000
mean	75.500000	5.843333	3.054000	3.758667	1.198667
std	43.445368	0.828066	0.433594	1.764420	0.763161
min	1.000000	4.300000	2.000000	1.000000	0.100000
25%	38.250000	5.100000	2.800000	1.600000	0.300000
50%	75.500000	5.800000	3.000000	4.350000	1.300000
75%	112.750000	6.400000	3.300000	5.100000	1.800000
max	150.000000	7.900000	4.400000	6.900000	2.500000

[ ]:
```
iris.shape
```

[ ]:
```
(150, 6)
```

[ ]:
```
iris.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 150 entries, 0 to 149
Data columns (total 6 columns):
 #   Column         Non-Null Count  Dtype  
---  ------         --------------  -----  
 0   Id             150 non-null    int64  
 1   SepalLengthCm  150 non-null    float64
 2   SepalWidthCm   150 non-null    float64
 3   PetalLengthCm  150 non-null    float64
 4   PetalWidthCm   150 non-null    float64
 5   Species        150 non-null    object 
dtypes: float64(4), int64(1), object(1)
memory usage: 7.2+ KB
```

[ ]:
```
iris.head(n=10)
```

[ ]:

	Id	SepalLengthCm	SepalWidthCm	PetalLengthCm	PetalWidthCm	Species
0	1	5.1	3.5	1.4	0.2	Iris-setosa
1	2	4.9	3.0	1.4	0.2	Iris-setosa
2	3	4.7	3.2	1.3	0.2	Iris-setosa
3	4	4.6	3.1	1.5	0.2	Iris-setosa
4	5	5.0	3.6	1.4	0.2	Iris-setosa
5	6	5.4	3.9	1.7	0.4	Iris-setosa
6	7	4.6	3.4	1.4	0.3	Iris-setosa
7	8	5.0	3.4	1.5	0.2	Iris-setosa
8	9	4.4	2.9	1.4	0.2	Iris-setosa
9	10	4.9	3.1	1.5	0.1	Iris-setosa

[ ]:
```
iris['Species'].unique()
```

[ ]:
```
array(['Iris-setosa', 'Iris-versicolor', 'Iris-virginica'], dtype=object)
```

[ ]:
```
print(iris.groupby("Species").size())
print(iris.groupby(['Species']).min())
```

```
Species
Iris-setosa        50
Iris-versicolor    50
Iris-virginica     50
dtype: int64
                 Id  SepalLengthCm  SepalWidthCm  PetalLengthCm  PetalWidthCm
Species
Iris-setosa       1            4.3           2.3            1.0           0.1
Iris-versicolor  51            4.9           2.0            3.0           1.0
Iris-virginica  101            4.9           2.2            4.5           1.4
```

[ ]:
```
# Delete a single column from the dataset
iris=iris.drop(columns="Id")
```

```
                SepalLengthCm  SepalWidthCm  PetalLengthCm  PetalWidthCm
Species
Iris-setosa               4.3           2.3            1.0           0.1
Iris-versicolor           4.9           2.0            3.0           1.0
Iris-virginica            4.9           2.2            4.5           1.4
```

[ ]:
```
print(iris.groupby(['Species']).min())
```

```
                SepalLengthCm  SepalWidthCm  PetalLengthCm  PetalWidthCm
Species
Iris-setosa               4.3           2.3            1.0           0.1
Iris-versicolor           4.9           2.0            3.0           1.0
Iris-virginica            4.9           2.2            4.5           1.4
```

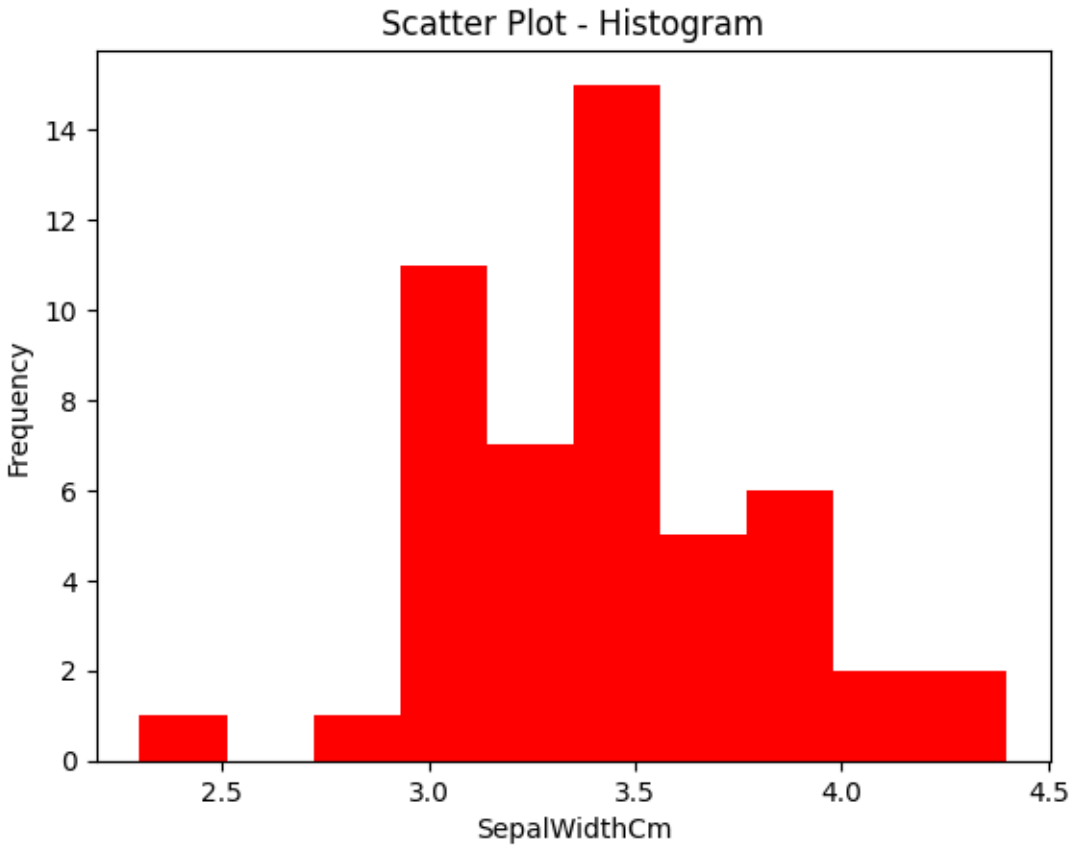
[ ]:
```
setosa=iris[iris['Species']=='Iris-setosa']
versicolor=iris[iris['Species']=='Iris-versicolor']
```

```
virginica=iris[iris['Species']=='Iris-virginica']
print(setosa)
# print(versicolor)
# print(virginica)
```

	SepalLengthCm	SepalWidthCm	PetalLengthCm	PetalWidthCm	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
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

[ ]:
```
setosa["SepalWidthCm"].plot(kind="hist", label="Setosa", color="r",␣
 ↪fontsize="10", density=False)
plt.title("Scatter Plot - Histogram")
plt.xlabel("SepalWidthCm")
plt.show()
```




```
---------------------------------------------------------------------------
AttributeError                            Traceback (most recent call last)
~\AppData\Local\Temp\ipykernel_6684\1921025275.py in ?()
      1 setosa["SepalWidthCm"].plot(kind="hist", label="Setosa", color="r",␣
 ↪fontsize="10", density=False)
```

```
      2 plt.title("Scatter Plot - Histogram")
      3 plt.xlabel("SepalWidthCm")
      4 plt.show()
----> 5 setosa.meann()

~\AppData\Local\Packages\PythonSoftwareFoundation.Python.3.
 ↪10_qbz5n2kfra8p0\LocalCache\local-packages\Python310\site-packages\pandas\cor \generic.
 ↪py in ?(self, name)
   6198             and name not in self._accessors
   6199             and self._info_axis.
 ↪_can_hold_identifiers_and_holds_name(name)
   6200         ):
   6201             return self[name]
-> 6202         return object.__getattribute__(self, name)

AttributeError: 'DataFrame' object has no attribute 'meann'
```

[ ]:
```
setosa.describe()
```

[ ]:

	SepalLengthCm	SepalWidthCm	PetalLengthCm	PetalWidthCm
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