**Data Visualization - III**

In []:

**import numpy as np**

**import pandas as pd**

**import seaborn as sns**

**import matplotlib.pyplot as plt**

**df1=pd.read\_csv**('**/content/iris.csv'**)

In [ ]:

**df1**

Out[ ]:

**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

In []:

...

...

...

**145** 146

6.7

3.0

5.2

2.3 Iris-virginica

**146** 147

6.3

2.5

5.0

1.9 Iris-virginica

**147** 148

6.5

3.0

5.2

2.0 Iris-virginica

**148** 149

6.2

3.4

5.4

2.3 Iris-virginica

**149** 150

5.9

3.0

5.1

1.8 Iris-virginica

150 rows x 6 columns

**df=pd.DataFrame(df1)**

**df.head()**

Out[ ]:

**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

In []:

**df.describe()**

Out[ ]:

**count** 150.000000

**Id SepalLengthCm SepalWidth Cm PetalLengthCm PetalWidthCm**

150.000000

150.000000

150.000000

150.000000

**Id SepalLengthCm SepalWidthCm PetalLengthCm PetalWidthCm**

**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

In []:

**df.info(**)

<class 'pandas.core.frame.DataFrame'> RangeIndex: 150 entries, 0 to 149

Data columns (total 6 columns):

# Column

Non-Null Count Dtype

Ө

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

In []:

**df.columns**

Out[ ]: Index(['Id', 'Sepal LengthCm', 'SepalWidthCm', 'PetalLengthCm'**,** 'PetalWidthCm',

In []:

'Species'],

dtype='object')

**df[** '**SepalLengthCm'].max()**

Out 1: 7.9

In []:

**df[** '**SepalLengthCm**'**]**.**min()**

Out[ ]: 4.3

In []:

**df[ 'SepalLengthCm'].hist**(**bins=30)**

Out[ ]: <matplotlib.axes.\_subplots. Axes Subplot at 0x7fdb58296150>

16

14

12

10

8

**6**

4

N

**0**

4.5

5.0

**5.5**

6.0

**6.5**

7.0

7.5

**8.0**

In []:

df['**PetalLengthCm'].max()**

Out[ ]: 6.9

In []:

**df['PetalLengthCm'].min**()

Out[ ]: 1.0

In []**:**

**df[**'**PetalLengthCm**'**].hist (bins=30**)

Out[ ]: <matplotlib.axes.\_subplots. AxesSubplot at 0x7fdb581536d0>

25

20

20

15

10

5

**0**

2

3

In []:

**df['PetalWidthCm'].max()**

Out[ ]: 2.5

In []:

**df[**'**PetalWidthCm**'**].min(**)

Out[]: 0.1

**5-**

6

*7*

In []:

**df['PetalwidthCm']**.**hist(bins=30**)

Out[]: <matplotlib.axes.\_subplots. Axes Subplot at 0x7fdb57beff50>

25

20

15

10

5

I

**0**

0.0

**0.5**

10

15

2.0

2.5

In []: **df**[ 'SepalWidthCm'].**max**()

Out[]: 4.4

In []:

**df[** '**SepalWidthCm**'**]**.**min()**

Out[ ]: 2.0

In []:

**df[** '**SepalWidthCm'].hist(bins=30)**

Out[]: **<**matplotlib.axes.\_subplots. Axes Subplot at 0x7fdb57b6da50>

25

20

15

10

5

**0**

20

2.5

3.0

3.5

4.0

4.5

In []:

**df[ 'Species'].value\_counts()**

Out[]: Iris-setosa

Iris-versicolor

Iris-virginica

50

50

50

In [ ]:

Name: Species, dtype: int64

df['**Species'].hist (bins=20**)

Out[ ]: <matplotlib.axes.\_subplots. AxesSubplot at 0x7fdb57a7e250>

50

40

30

20

10

**0**

Iris-setosa

Iris-versicolor

Iris-virginica

In []: **sns.boxplot(x=** 'SepalLengthCm'**,** data**=df**)

Out[ ]: <matplotlib.axes.\_subplots. AxesSubplot at 0x7fdb57a50bd0>

4.5

5.0

5.5

6.0 SepalLengthCm

**6.5**

7.0

7.5

8.0

In []: **sns.boxplot**(**x=** 'SepalWidthCm', data=df**)**

Out[ ]: **<**matplotlib.axes.\_subplots. AxesSubplot at 0x7fdb57976390>

20

2.5

3.0

SepalWidthCm

3.5

4.0

4.5

In []**:**

**sns.boxplot**(**x='PetalLengthCm', data=df)**

Out[]: <matplotlib.axes.\_subplots. Axes Subplot at 0x7fdb578f5d50>

In [ ]:

1

2

3

4

5

**6**

7

PetalLengthCm

**sns.boxplot(x='PetalWidthCm**'**, data=df)**

Out[ ]: <matplotlib.axes.\_subplots. Axes Subplot at 0x7fdb57868e50>

0.0

0.5

10

15

20

2.5

PetalWidthCm