

# ASSIGNMENT 3

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DATA:

	sepal.length	sepal.width	petal.length	petal.width	variety
<b>0</b>	5.1	3.5	1.4	0.2	Setosa
<b>1</b>	4.9	3.0	1.4	0.2	Setosa
<b>2</b>	4.7	3.2	1.3	0.2	Setosa
<b>3</b>	4.6	3.1	1.5	0.2	Setosa
<b>4</b>	5.0	3.6	1.4	0.2	Setosa
...	...	...	...	...	...
<b>145</b>	6.7	3.0	5.2	2.3	Virginica
<b>146</b>	6.3	2.5	5.0	1.9	Virginica
<b>147</b>	6.5	3.0	5.2	2.0	Virginica
<b>148</b>	6.2	3.4	5.4	2.3	Virginica
<b>149</b>	5.9	3.0	5.1	1.8	Virginica

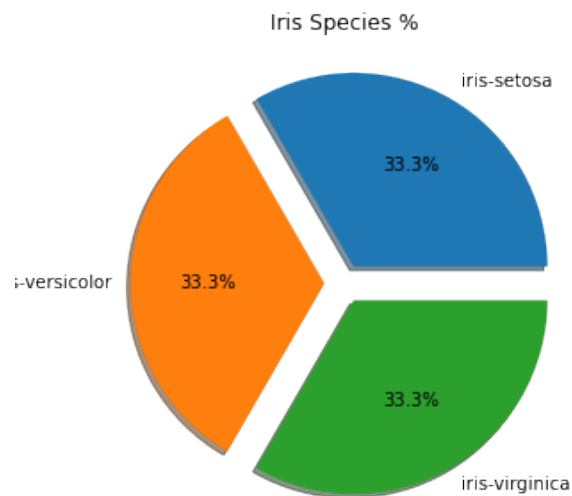
150 rows × 5 columns

# Reading the Data

```
1 #Reading the given data:
2
3 import matplotlib.pyplot as plt
4 import numpy as np
5 import pandas as pd
6
7 df=pd.read_csv("iris.csv")
```

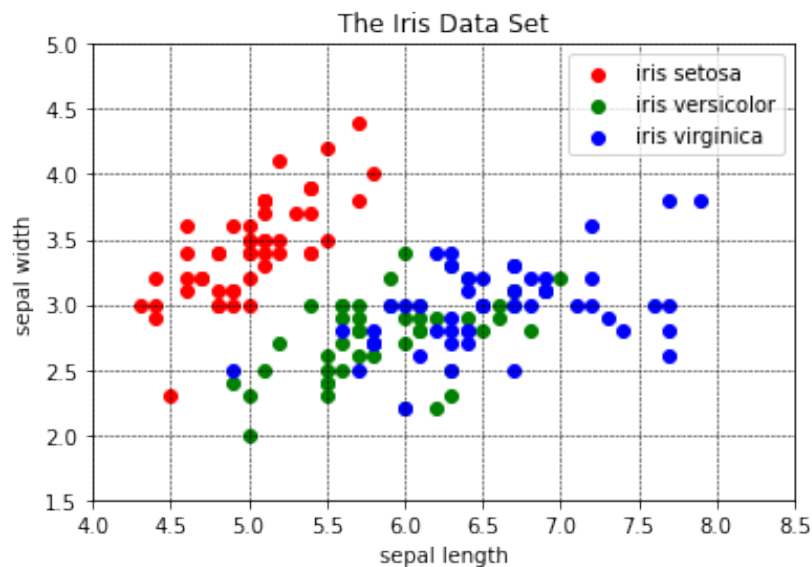
## 1.Pie Chart

```
1 #1.
2 var_count=df["variety"].value_counts()
3 var_count=dict(var_count)
4 A=["iris-setosa","iris-versicolor","iris-virginica"]
5
6
7 fig=plt.figure(figsize=(5,5))
8 explode=(0.1,0.1,0.1)
9 plt.pie(x=var_count.values(),labels=A,explode=explode,autopct='%1.1
    f%%',shadow=True)
10 plt.title("Iris Species %")
11 plt.show()
```



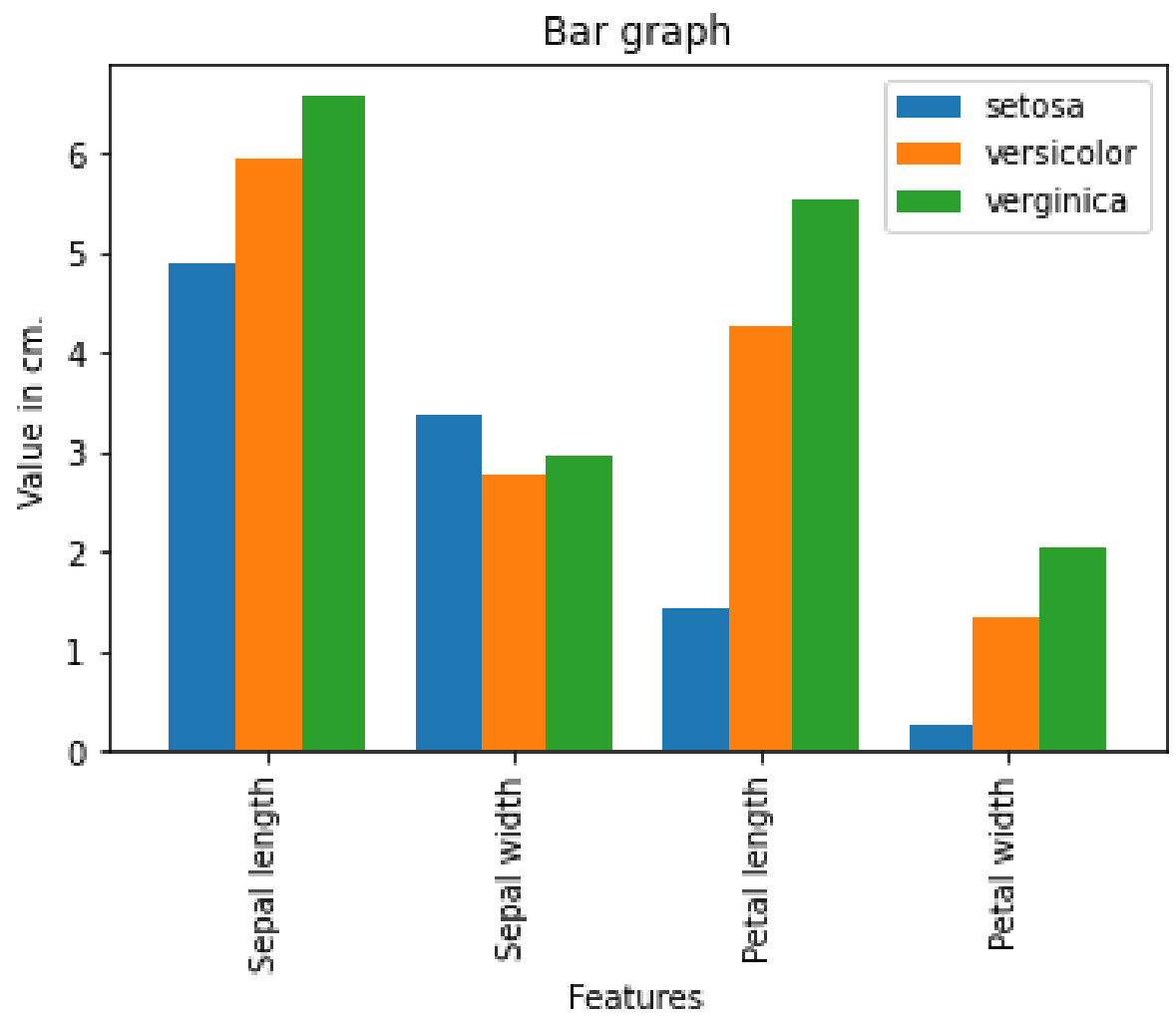
## 2.Scatter Plot

```
1 #2.
2 a=list(df["sepal.length"])
3 b=list(df["sepal.width"])
4 setosa_sep_len=[a[i] for i in range(0,49)]
5 setosa_sep_wid=[b[i] for i in range(0,49)]
6
7 a=list(df["sepal.length"])
8 b=list(df["sepal.width"])
9 versicolor_sep_len=[a[i] for i in range(50,100)]
10 versicolor_sep_wid=[b[i] for i in range(50,100)]
11
12 a=list(df["sepal.length"])
13 b=list(df["sepal.width"])
14 virginica_sep_len=[a[i] for i in range(100,150)]
15 virginica_sep_wid=[b[i] for i in range(100,150)]
16
17 fig=plt.figure()
18 plt.scatter(setosa_sep_len,setosa_sep_wid,color="red")
19 plt.scatter(versicolor_sep_len,versicolor_sep_wid,color="green")
20 plt.scatter(virginica_sep_len,virginica_sep_wid,color="blue")
21 plt.ylabel("sepal width")
22 plt.xlabel("sepal length")
23 plt.xlim(4,8.5)
24 plt.ylim(1.5,5)
25 plt.grid(color = 'black', linestyle = '--', linewidth = 0.5)
26 plt.title("The Iris Data Set")
27 plt.legend(["iris setosa","iris versicolor","iris virginica"])
28 plt.show()
```



### 3.Bar Graph

```
1 #3.
2 a=list(df["petal.length"])
3 b=list(df["petal.width"])
4 setosa_pet_len=[a[i] for i in range(0,49)]
5 setosa_pet_wid=[b[i] for i in range(0,49)]
6
7 a=list(df["petal.length"])
8 b=list(df["petal.width"])
9 versicolor_pet_len=[a[i] for i in range(50,100)]
10 versicolor_pet_wid=[b[i] for i in range(50,100)]
11
12 a=list(df["petal.length"])
13 b=list(df["petal.width"])
14 virginica_pet_len=[a[i] for i in range(100,150)]
15 virginica_pet_wid=[b[i] for i in range(100,150)]
16
17 a1=(sum(setosa_pet_len)/50)#setosa_petlen_avg
18 a2=(sum(setosa_pet_wid)/50)#setosa_petwid_avg
19 a3=(sum(versicolor_pet_len)/50)#versicolor_petlen_avg
20 a4=(sum(versicolor_pet_wid)/50)#versicolor_petwid_avg
21
22 b1=(sum(virginica_pet_len)/50)#virginica_petlen_avg
23 b2=(sum(virginica_pet_wid)/50)#virginica_petwid_avg
24 b3=(sum(setosa_pet_len)/50)#setosa_petlen_avg
25 b4=(sum(setosa_pet_wid)/50)#setosa_petwid_avg
26
27 c1=(sum(versicolor_pet_len)/50)#versicolor_petlen_avg
28 c2=(sum(versicolor_pet_wid)/50)#versicolor_petwid_avg
29 c3=(sum(virginica_pet_len)/50)#virginica_petlen_avg
30 c4=(sum(virginica_pet_wid)/50)#virginica_petwid_avg
31
32
33
34 df = pd.DataFrame({
35     'Features': ['Sepal length', 'Sepal width', 'Petal length', 'Petal width'],
36     'setosa': [a1,a2,a3,a4],
37     'versicolor': [b1,b2,b3,b4],
38     'virginica': [c1,c2,c3,c4]
39 })
40
41 df.plot(x="Features", y=["setosa", "versicolor","virginica"], kind="bar",width=0.8,
42         title="Bar graph",ylabel="Value in cm.")
```



## 4.Iris Histograms

```
1 #4.
2 df=pd.read_csv("iris.csv")
3
4 fig=plt.figure(figsize=(5,3))
5 plt.hist(x=list(df["sepal.length"]))
6 plt.xlabel("sepal length(cm)")
7 plt.ylabel("Frequency")
8 plt.show()
9
10 fig=plt.figure(figsize=(5,3))
11 plt.hist(x=list(df["sepal.width"]),color="orange")
12 plt.xlabel("sepal width(cm)")
13 plt.ylabel("Frequency")
14 plt.show()
15
16 fig=plt.figure(figsize=(5,3))
17 plt.hist(x=list(df["petal.length"]),color="green")
18 plt.xlabel("petal length(cm)")
19 plt.ylabel("Frequency")
20 plt.show()
21
22 fig=plt.figure(figsize=(5,3))
23 plt.hist(x=list(df["petal.width"]),color="red")
24 plt.xlabel("petal width(cm)")
25 plt.ylabel("Frequency")
26 plt.show()
```

