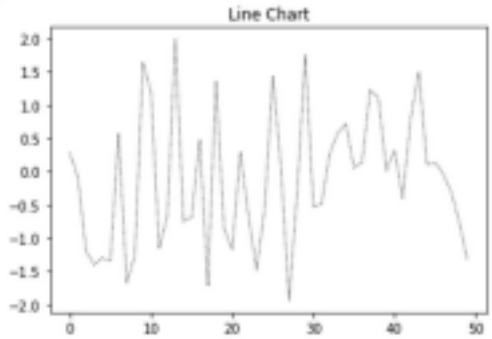
ASSGNMENT 4 : DATA VISUALIZATION

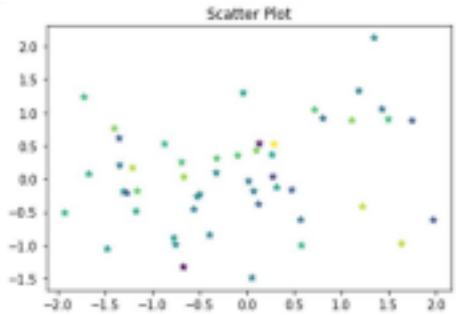
SET A

1.

```
from matplotlib import pyplot as plt
import numpy as np
# generate random array using NumPy
a1 = np.random.randn(50)
a2 = np.random.randn(50)
plt.plot(a1,color="k",linewidth=1,linestyle=':')
plt.title("Line Chart")
plt.show()
```

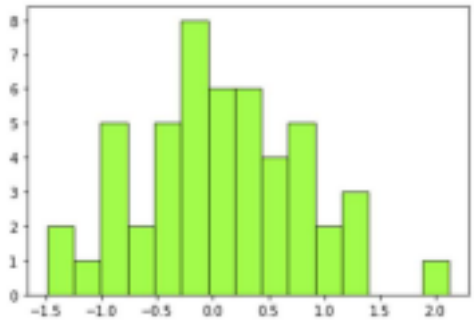



```
plt.scatter(a1,a2,c=np.random.randn(50) ,marker ='*',alpha = 0.9)  plt.title("Scatter Plot")
plt.show()
```

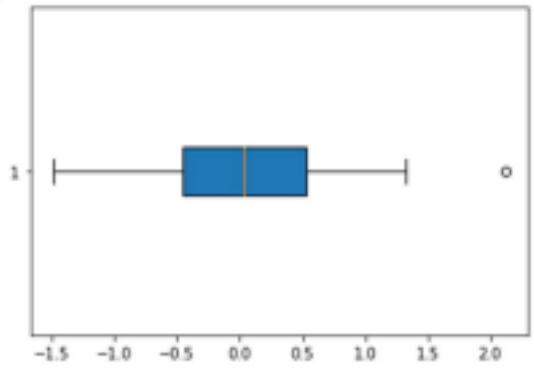



```
plt.hist(a2,bins=15,facecolor ='lawngreen',edgecolor = "k",alpha=0.7)  print("Histogram")
```

Histogram

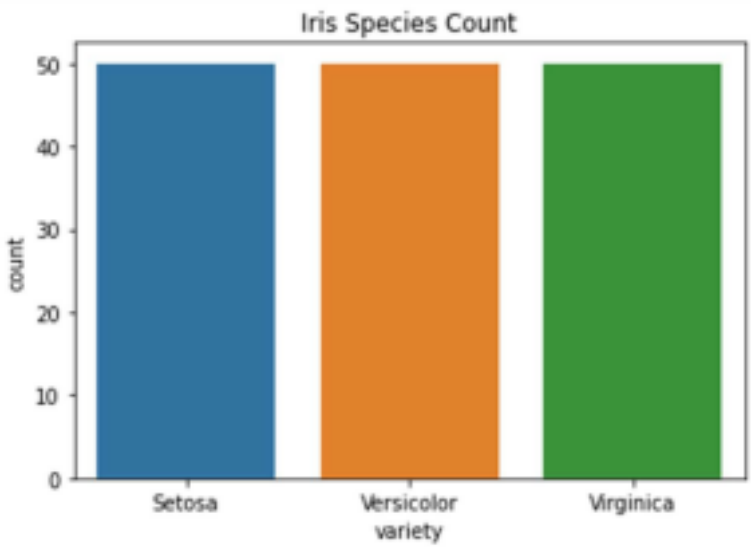


```
box=plt.boxplot(a2,vert=False,patch_artist = True)
print("Boxplot")
```



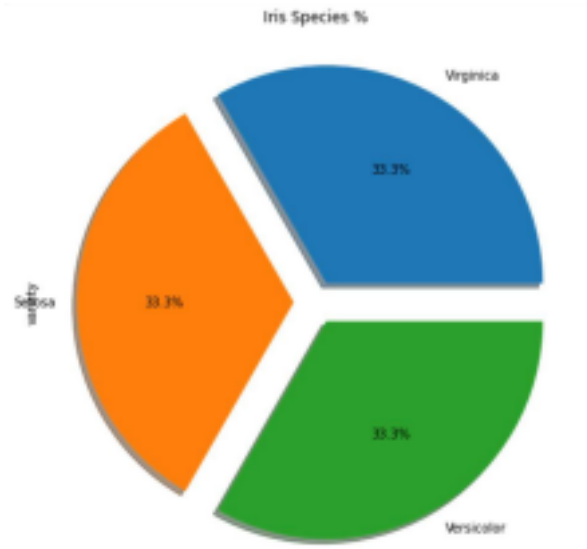
2.

```
import pandas as pd
import seaborn as sns
import matplotlib.pyplot as plt
data= pd.read_csv("iris.csv")
sns.countplot(x='variety',data = data)
plt.title("Iris Species Count")
plt.show()
```



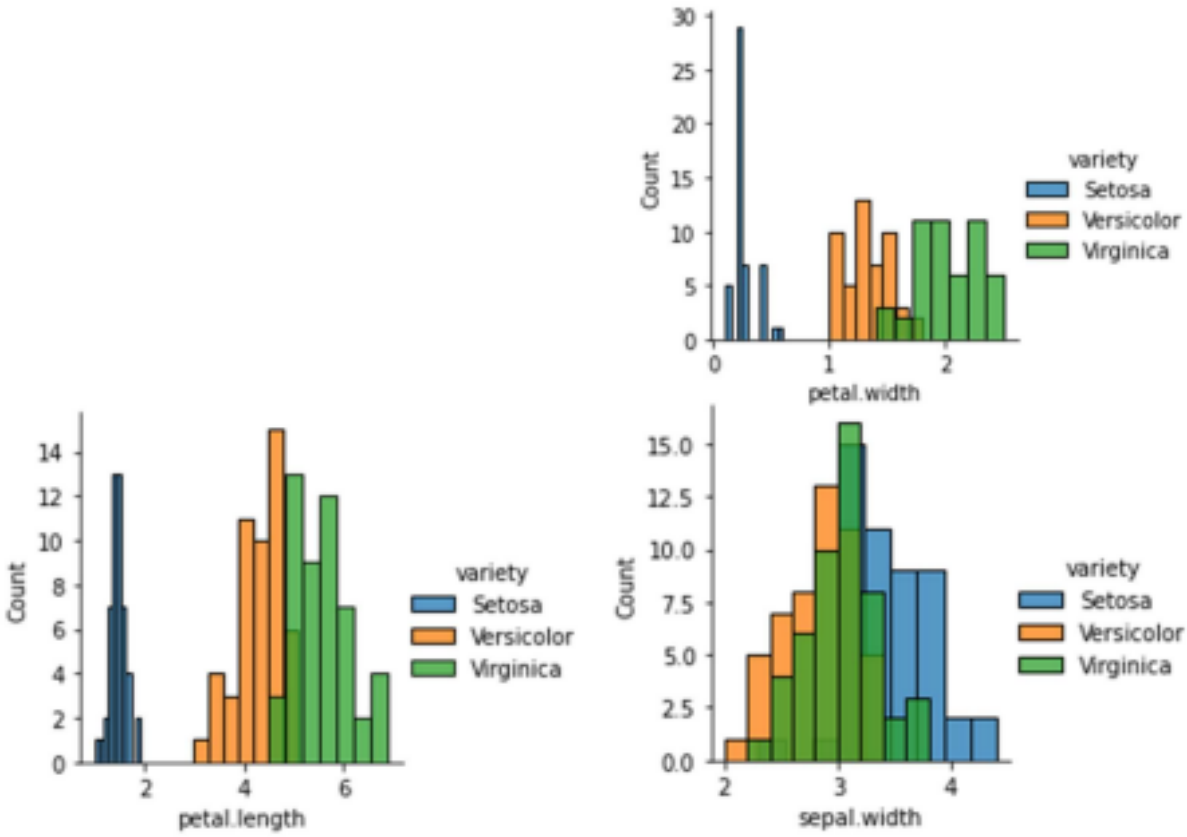
3.

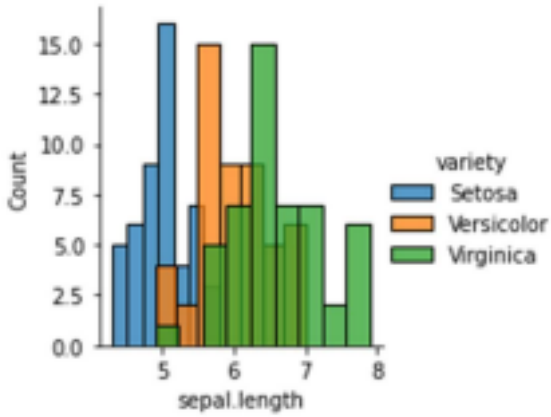
```
import pandas as pd
import seaborn as sns
import matplotlib.pyplot as plt
data= pd.read_csv("iris.csv")
ax=plt.subplots(1,1,figsize=(10,8))
data['variety'].value_counts().plot.pie(explode=[0.1,0.1,0.1],autopct
='%1.1f%%',shadow=True,figsize=(10,8))
plt.title("Iris Species %")
plt.show()
```



4.

```
import seaborn as sns
iris_setosa=data.loc[data["variety"]=="Setosa"]
iris_virginica=data.loc[data["variety"]=="Virginica"]
iris_versicolor=data.loc[data["variety"]=="Versicolor"]

sns.FacetGrid(data,hue="variety").map(sns.histplot,"petal.length").ad d_legend()
sns.FacetGrid(data,hue="variety").map(sns.histplot,"petal.width").add _legend()
sns.FacetGrid(data,hue="variety").map(sns.histplot,"sepal.length").ad d_legend()
sns.FacetGrid(data,hue="variety").map(sns.histplot,"sepal.width").add _legend()
plt.show()
```

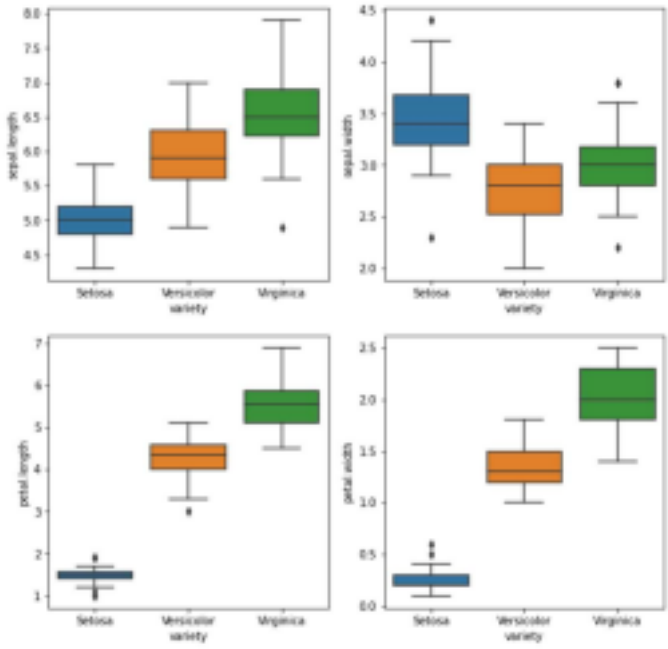




SET B

1.

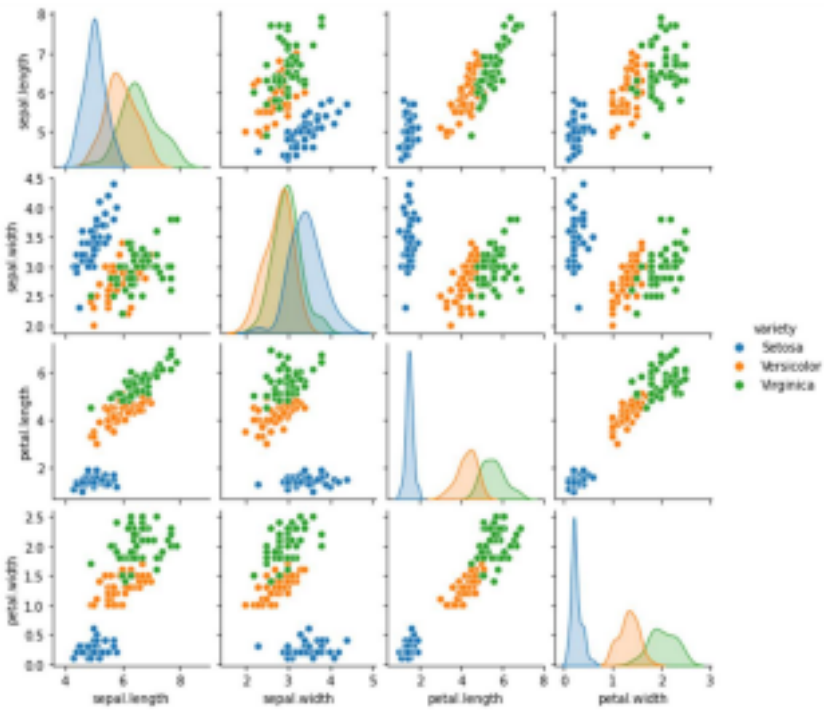
```
import seaborn as sns
import matplotlib.pyplot as plt

def graph(a):
 sns.boxplot(x="variety", y=a, data=data)

plt.figure(figsize=(10,10))

plt.subplot(221)
graph('sepal.length')

plt.subplot(222)
graph('sepal.width')

plt.subplot(223)
graph('petal.length')

plt.subplot(224)
graph('petal.width')

plt.show()
```



SET C

1.

```
#Plot to compare all features of iris dataset
import seaborn as sns
import matplotlib.pyplot as plt
sns.pairplot(data,hue='variety', height=2)
plt.show()
```



s

2.

```
import pandas as pd
import seaborn as sns
import matplotlib.pyplot as plt
data= pd.read_csv("iris.csv")
g = sns.jointplot(x="sepal.length", y="sepal.width",shade=True, data= data, kind="kde",
color="b")
g.plot_joint(plt.scatter, c="gold", s=40, linewidth=1, marker="*")
g.ax_joint.collections[0].set_alpha(0)
g.set_axis_labels("$SepalLength$", "$SepalWidth$")
plt.show()
```