pr10

May 4, 2024

```python
[1]: import pandas as pd
     import numpy as np
     import seaborn as sns
     import matplotlib.pyplot as plt
```

```python
[2]: data=pd.read_csv("C:\\Users\\nayan\\Downloads\\Iris.csv")
```

```python
[3]: data
```

```
[3]:       Id  SepalLengthCm  SepalWidthCm  PetalLengthCm  PetalWidthCm  \
     0      1            5.1           3.5            1.4           0.2
     1      2            4.9           3.0            1.4           0.2
     2      3            4.7           3.2            1.3           0.2
     3      4            4.6           3.1            1.5           0.2
     4      5            5.0           3.6            1.4           0.2
     ..   ...            ...           ...            ...           ...
     145  146            6.7           3.0            5.2           2.3
     146  147            6.3           2.5            5.0           1.9
     147  148            6.5           3.0            5.2           2.0
     148  149            6.2           3.4            5.4           2.3
     149  150            5.9           3.0            5.1           1.8

                 Species
     0       Iris-setosa
     1       Iris-setosa
     2       Iris-setosa
     3       Iris-setosa
     4       Iris-setosa
     ..              ...
     145  Iris-virginica
     146  Iris-virginica
     147  Iris-virginica
     148  Iris-virginica
     149  Iris-virginica

     [150 rows x 6 columns]
```

```
[4]: data.head()
```

```
[4]:    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]: data.shape
```

```
[5]: (150, 6)
```

```
[6]: data.size
```

```
[6]: 900
```

```
[7]: data.dtypes
```

```
[7]: Id                 int64
     SepalLengthCm    float64
     SepalWidthCm     float64
     PetalLengthCm    float64
     PetalWidthCm     float64
     Species           object
     dtype: object
```

```
[8]: data.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
```

```
[10]: np.unique(data['Species'])
```

```
[10]: array(['Iris-setosa', 'Iris-versicolor', 'Iris-virginica'], dtype=object)
```
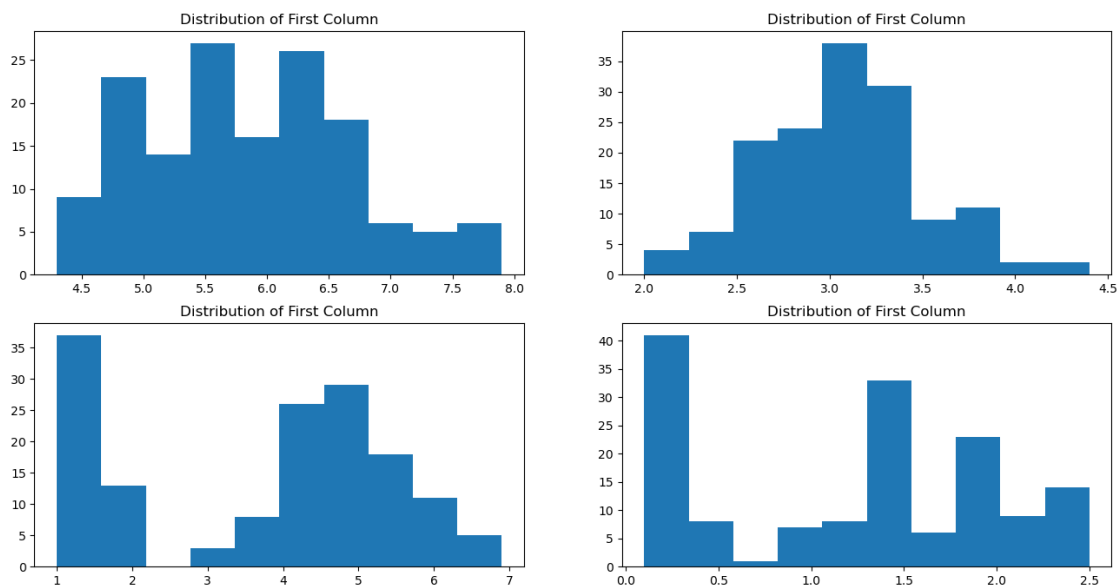
```
[14]: fig,axes=plt.subplots(2,2,figsize=(16,8))

      axes[0,0].set_title("Distribution of First Column")
      axes[0,0].hist(data["SepalLengthCm"]);

      axes[0,1].set_title("Distribution of First Column")
      axes[0,1].hist(data["SepalWidthCm"]);

      axes[1,0].set_title("Distribution of First Column")
      axes[1,0].hist(data["PetalLengthCm"]);

      axes[1,1].set_title("Distribution of First Column")
      axes[1,1].hist(data["PetalWidthCm"]);
```
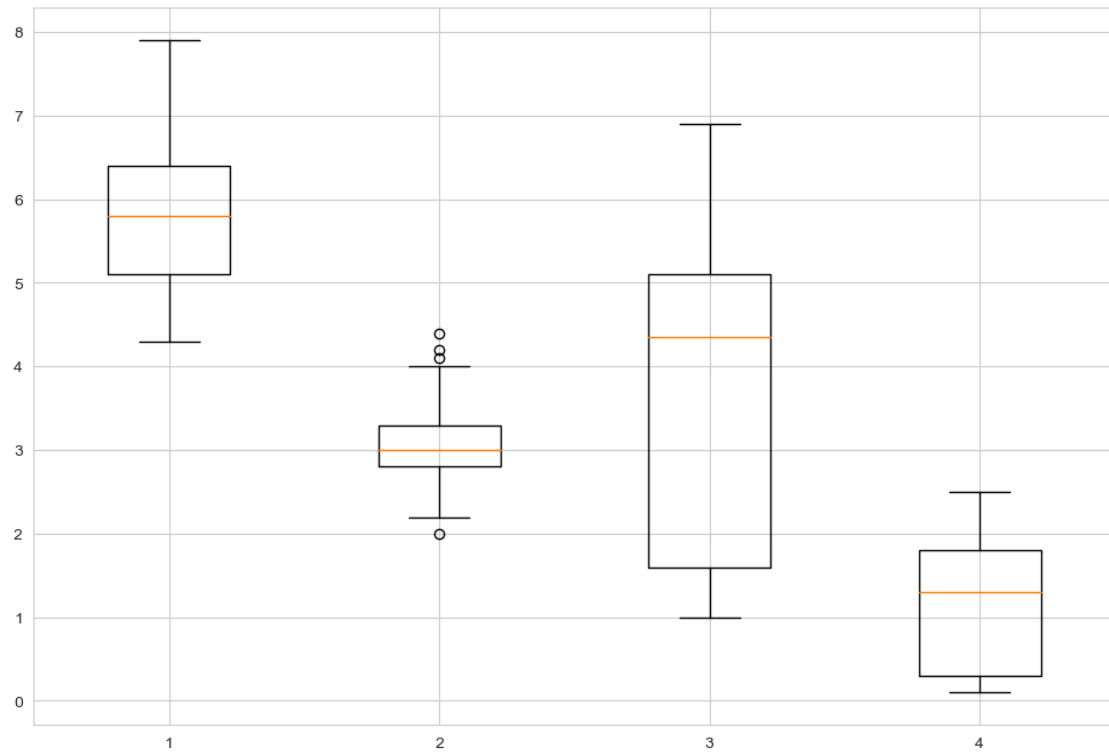


```
[27]: data_to_plot=[data["SepalLengthCm"],data["SepalWidthCm"],data["PetalLengthCm"],data["PetalWidt
      sns.set_style("whitegrid")
      # Creating a figure instance
      fig=plt.figure(1,figsize=(12,8))

      # Creating an axes instance
      ax=fig.add_subplot(111)

      # Creating the boxplot
      bp=ax.boxplot(data_to_plot);
```

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