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Practical No:- 10

Download the Iris flower dataset or any other dataset into a DataFrame. (e.g., https://archive.ics.uci.edu/ml/datasets/Iris). Scan the dataset and give the inference as:

1. **List down the features and their types (e.g., numeric, nominal) available in the dataset.**
2. **Create a histogram for each feature in the dataset to illustrate the feature distributions.**
3. **Create a boxplot for each feature in the dataset.**
4. **Compare distributions and identify outliers**

In [10]:
```
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
```

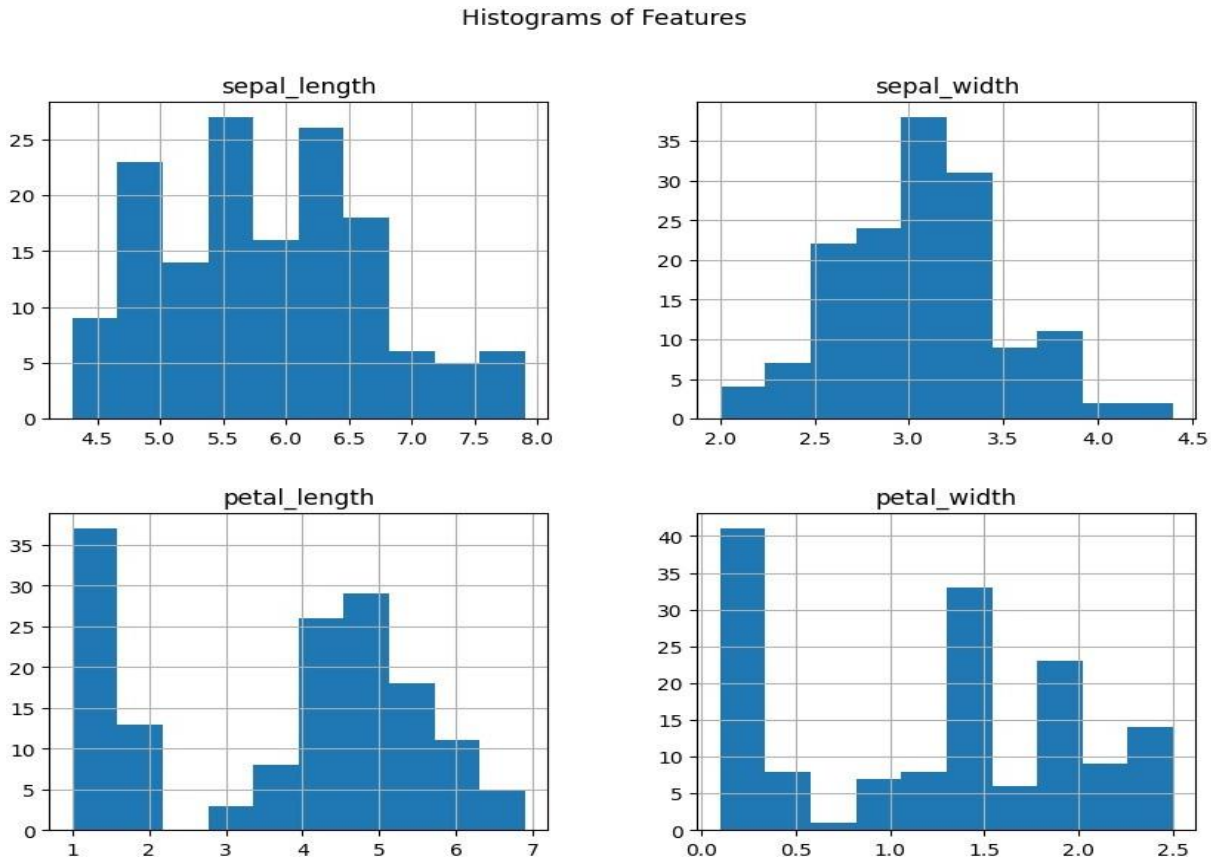
In [11]:
```
df = pd.read_csv("iris dataset.csv")
```

In [12]:
```
df.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 150 entries, 0 to 149 Data
columns (total 5 columns):
 #   Column        Non-Null Count   Dtype
---  ------        --------------   -----
 0   sepal_length  150 non-null     float64
 1   sepal_width   150 non-null     float64
 2   petal_length  150 non-null     float64
 3   petal_width   150 non-null     float64
 4   species       150 non-null     object
dtypes: float64(4), object(1) memory
usage: 6.0+ KB
```

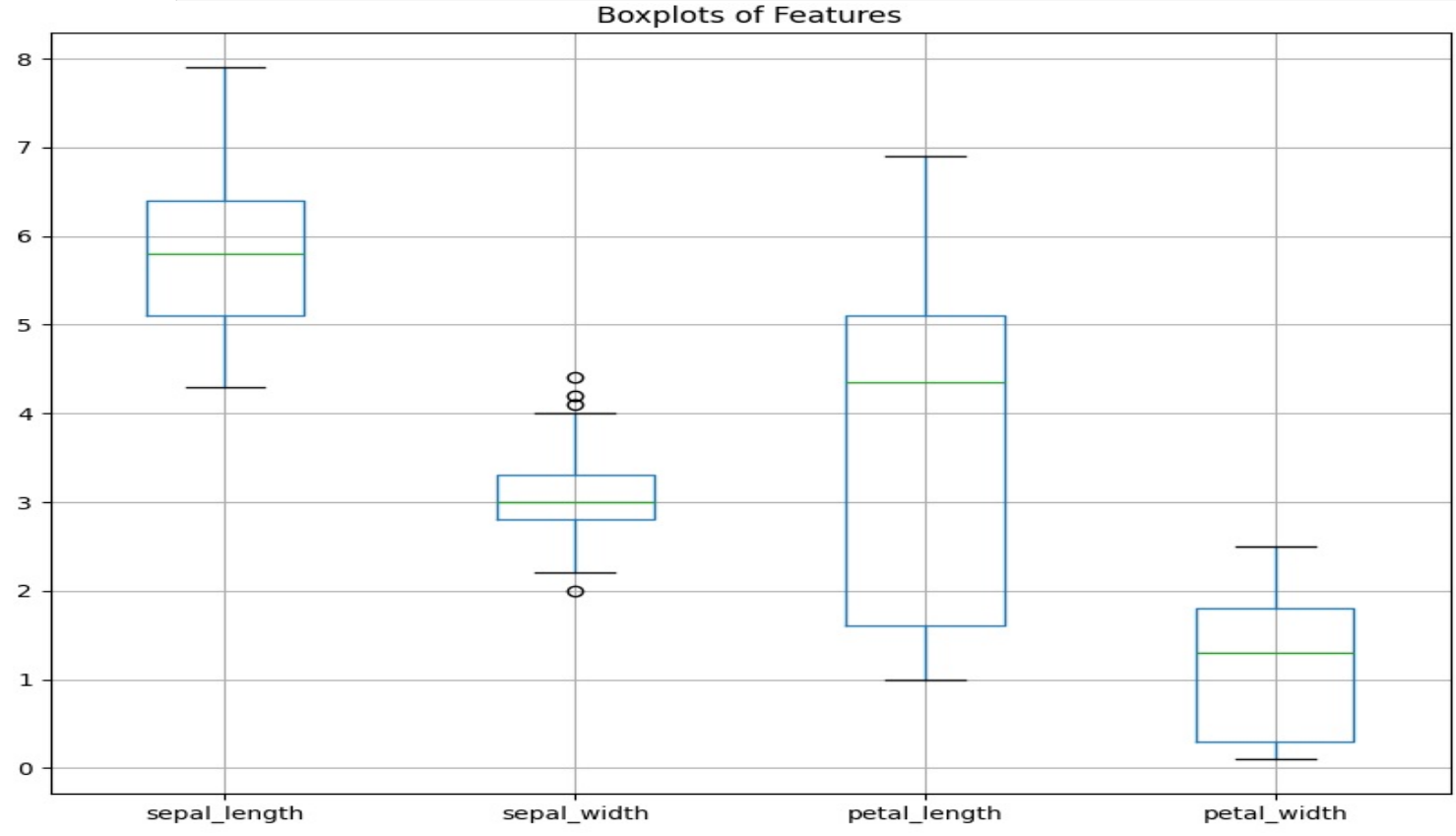
2) Create a histogram for each feature in the dataset to illustrate the feature distributions

In [14]:
```
df.hist(figsize=(10, 8)) plt.suptitle('Histograms of
Features') plt.show()
```



3) Create a boxplot for each feature in the dataset.

```
In [15]: df.boxplot(figsize=(10, 8)) plt.title('Boxplots of
Features') plt.show()
```



If we observe closely for the box 2, interquartile distance is roughly around 0.75 hence the values lying beyond this range of (third quartile

+ interquartile distance) i.e. roughly around 4.05 will be considered as outliers. Similarly outliers with other boxplots can be found.