**Exp 10**

**import pandas as pd**

**import seaborn as sns**

**data=pd.read\_csv(r"D:\College\TE\SEM-2\Practical\DSBDA\10\Iris.csv")**

**data.head()**

**data.describe()**

**data.info()**

**sns.histplot(data=data, x="SepalLengthCm")**

**sns.histplot(data=data, x="PetalLengthCm")**

**sns.histplot(data=data, x="SepalWidthCm")**

**sns.histplot(data=data, x="PetalWidthCm")**

**sns.boxplot(x="SepalLengthCm", data=data)**

**sns.boxplot(x="PetalLengthCm", data=data)**

**sns.boxplot(x="SepalWidthCm", data=data)**

**sns.boxplot(x="PetalWidthCm", data=data)**

**sns.boxplot(x="PetalWidthCm", y="PetalLengthCm", data=data)**

**sns.boxplot(x="SepalWidthCm", y="SepalLengthCm", data=data)**

Certainly, let's dive deeper into each line:

1. \*\*Importing necessary libraries\*\*: This line imports the required libraries for data manipulation and visualization. `pandas` is imported as `pd` for data handling, and `seaborn` is imported as `sns` for statistical data visualization.

2. \*\*Reading the Iris dataset\*\*: The `pd.read\_csv()` function reads the Iris dataset from the specified file path (`"D:\College\TE\SEM-2\Practical\DSBDA\10\Iris.csv"`) into a Pandas DataFrame named `data`. This dataset typically contains information about the sepal and petal dimensions of different species of Iris flowers.

3. \*\*Displaying the first few rows of the dataset\*\*: The `data.head()` function displays the first few rows (by default, the first five rows) of the DataFrame `data`. This helps in getting a quick overview of the data and its structure.

4. \*\*Summary statistics of the dataset\*\*: The `data.describe()` function generates summary statistics for the numeric columns in the DataFrame, such as count, mean, standard deviation, minimum, and maximum values. This helps in understanding the central tendency, spread, and distribution of the data.

5. \*\*Information about the dataset\*\*: The `data.info()` function provides information about the DataFrame, including the data types of each column and memory usage. This is useful for checking if there are any missing values and understanding the structure of the dataset.

6-9. \*\*Histograms of different features\*\*: These lines create histograms using Seaborn's `histplot()` function for four different features: Sepal Length, Petal Length, Sepal Width, and Petal Width. Histograms visualize the distribution of values for each feature, helping to understand their frequency distribution and range.

10-13. \*\*Box plots of different features\*\*: These lines create box plots using Seaborn's `boxplot()` function for the same four features: Sepal Length, Petal Length, Sepal Width, and Petal Width. Box plots display the distribution of values, including the median, quartiles, and potential outliers, for each feature. They provide a visual summary of the central tendency and spread of the data.

14-15. \*\*Box plots comparing two features\*\*: These lines create box plots comparing two features: Petal Length vs. Petal Width, and Sepal Length vs. Sepal Width. Each box plot provides insights into the relationship between the two features, showing how their values are distributed relative to each other. This helps in understanding any potential correlations or differences between the features.

These visualizations aid in exploring the Iris dataset, gaining insights into the distribution and characteristics of its features, and identifying any patterns or relationships within the data.