**Assignment No. 2**

**Problem Statement:** DESCRIPTIVE STATISTICS: Write a python script to find basic descriptive statistics using summary, quartile function, etc on iris datasets.

**Objective:**

The objective of this task is to calculate basic descriptive statistics such as mean, median, mode, quartiles, variance, and standard deviation using Python. These statistics will provide insights into the distribution and central tendency of the data.

**Prerequisite :**

 **Python**: Basic understanding of Python syntax.

 **Pandas & NumPy**: Familiarity with Python libraries like pandas (for data manipulation) and numpy (for numerical computations).

 **Matplotlib/Seaborn**: Optional for visualizing statistics (histograms, boxplots).

**Theory :**

 **Descriptive Statistics**: These statistics describe the central tendency and variability of a dataset. The key metrics include:

* **Mean**: The average of the dataset.
* **Median**: The middle value in the dataset.
* **Mode**: The most frequent value.
* **Standard Deviation**: A measure of the amount of variation or dispersion in a dataset.
* **Variance**: The square of the standard deviation.
* **Quartiles**: Divides the dataset into four equal parts.
* **Min/Max**: The smallest and largest values in the dataset.

 **Iris Dataset**: The Iris dataset is a famous dataset in machine learning, containing 150 samples of iris flowers with 4 features: sepal length, sepal width, petal length, and petal width. It is widely used for classification and clustering tasks.

**Algorithm (if any to achieve the objective ):**

 **Load the Iris dataset**.

 **Display summary statistics** using functions like describe(), mean(), median(), mode().

 **Calculate quartiles**, variance, and standard deviation.

 **Optionally, visualize** the data using histograms or boxplots.

**Conclusion** :

This script provides a comprehensive approach to analyzing the Iris dataset by calculating basic descriptive statistics. It uses key libraries (pandas, numpy, and matplotlib) to load, process, and visualize the data.