**Experiment 10**

**Title : Machine Learning using Python**

**Download Iris Flower Dataset from link given below :**

[**https://archive.ics.uci.edu/ml/datasets/iris**](https://archive.ics.uci.edu/ml/datasets/iris)

[**https://www.w3resource.com/machine-learning/scikit-learn/iris/index.php**](https://www.w3resource.com/machine-learning/scikit-learn/iris/index.php)

**Implement following Problem Statement using ScikitLearn Python Library :**

1. Write a Python program to view basic statistical details like percentile, mean, std etc. of iris data.
2. Write a Python program to get the number of observations, missing values and nan values
3. Write a Python program to access first four cells from a given Dataframe using the index and column labels. Call iris.csv to create the Dataframe
4. Write a Python program to create a plot to get a general Statistics of Iris data.
5. Write a Python program to create a Pie plot to get the frequency of the three species of the Iris data.
6. Write a Python program using Scikit-learn to split the iris dataset into 70% train data and 30% test data. Out of total 150 records, the training set will contain 120 records and the test set contains 30 of those records. Print both datasets.
7. Write a Python program using Scikit-learn to split the iris dataset into 70% train data and 30% test data. Out of total 150 records, the training set will contain 105 records and the test set contains 45 of those records. Predict the response for test dataset (SepalLengthCm, SepalWidthCm, PetalLengthCm, PetalWidthCm) using the K Nearest Neighbor Algorithm. Use 5 as number of neighbors
8. Write a Python program using Scikit-learn to split the iris dataset into 80% train data and 20% test data. Out of total 150 records, the training set will contain 120 records and the test set contains 30 of those records. Train or fit the data into the model and using the K Nearest Neighbor Algorithm and create a plot of k values vs accuracy.
9. In statistical modeling, regression analysis is a set of statistical processes for estimating the relationships among variables. It includes many techniques for modeling and analyzing several variables, when the focus is on the relationship between a dependent variable and one or more independent variables (or 'predictors').
10. Write a Python program to get the accuracy of the Logistic Regression.