**Experiment 6**

**k-nearest neighbors algorithm**

K-Nearest Neighbour is one of the simplest Machine Learning algorithms

based on Supervised Learning technique. K-NN algorithm assumes the

similarity between the new case/data and available cases and put the new

case into the category that is most similar to the available categories.K-NN

algorithm stores all the available data and classifies a new data point based

on the similarity. This means when new data appears then it can be easily

classified into a well suite category by using K- NN algorithm.K-NN

algorithm can be used for Regression as well as for Classification but mostly

it is used for the Classification problems.

Exercise:-

1. Study Nearest Neighbors Classification in Scikit-learn
2. Build a classifier using k-Nearest Neighbors Classifier with in-built Iris dataset and plot the decision boundaries of each class
3. Change features from sepal length and width to petal length and width. Build the classifier again and discuss the output.
4. Consider all the features and build the classifier again and discuss the output.
5. Demonstrate the resolution of a regression problem using a k-Nearest Neighbor and the interpolation of the target.













