ESTIN

Lab: KNN

Exercise1

Given a data table

Feature 1	Feature 2
4	1
1	2
9	14
7	5
10	16
12	18
14	10
8	10

- Visualize the data using scatter plot.

- Compute **the k nearest neighbors** (k=4) of the point (11, 3) using python (**from scratch**).

Steps to learn a knn model:

1- Locate the test point and calculate the distance (example: Euclidian distance) from all train data points.
2- Sort the distance list in ascending order.
3- Choose the first k distances from the sorted list.

- Use the **neighbors module** from **sklearn** to calculate the knns of the previous point (from sklearn.neighbors import NearestNeighbors).

Exercise2

Consider the Iris dataset (from sklearn).

1- Create and train knn model. (Use KNeighborsClassifier from sklearn.neighbors)
2- Given the following observations: **[5.4, 3.3, 5.9, 1.1], [1, 1, 1, 1]**, predict their classes based on the class of their neighbors.