**Data mining**

**Lab 8**

### Density Based Clustering: DENCLUE

Write a script to implement the DENCLUE density-based clustering algorithm Algorithm 15.2 in chapter 15. The script should take as input a dataset D, the minimum density ξ, the tolerance for convergence ϵ, and the width h.

Run your script on the **iris.txt** dataset, with ϵ=0.0001. Your script should output the following:

* The number of clusters, and the size of each cluster
* The density attractor, followed by the set of point in that cluster.

For Iris, you should use a value of ξ that gives you 3 clusters in the end, i.e., try different values and then finally report only the results for the value that gives you 3 clusters, since there are 3 true clusters in the data. Select the value of h empirically.

To speed up the computation for estimating the density at a point, you may want to first identify the K nearest neighbors, and use only those neighbors.