4DV510 / Linnaeus University / 2023

Weekly Exercise 4:

Implement the original Local Outlier Detection (LOF) method.

Input:

- Any dataset with arbitrary number of points (*N*) and dimensionality.

Parameters:

- The number of ***k*** neighbors to be considered in the function.

Output:

- A 1-D array with the LOF scores of each data point.

By default, write the LOF score of each element as follows in the console.

```
LOF[0] = 2.3111659487059772
LOF[1] = 2.901337923383965
LOF[2] = 2.7192136676924727
LOF[3] = 1.0
LOF[4] = 1.0
LOF[5] = 1.0
LOF[6] = 1.0
```

Notes:

I expect a self-contained, ready-to-run, OS-independent software package, with clear instructions on how to run it, preferably via console. The input file and the parameters should be provided, by default, as command-line parameters. If you need to do it in some other way, such as by using an input file for configuration, or by writing the parameters directly into the source code, please send explicit and clear instructions on how to do everything. Assume that the person running your program is totally unfamiliar with your project and must be directed step by step.