

About

This assignment is a part of screening process for candidates who applied for a role at our organization.

Data

You are being provided with the required information in dataset 'Dataset.csv'.

Background

The assignment focuses on solving the problem of computing the Davies Bouldin Index, a similarity measure which indicates the quality of clustering that has been performed. You are being provided with required concept below. You can use the dataset 'Dataset.csv' to exploit your solution.

The davies bouldin index has to be calculated for any value of n as follows:

$$DB = \frac{1}{n_c} \sum_{i=1}^{n_c} R_i, \text{ where}$$
$$R_i = \max_{j=1 \dots n_c, i \neq j} (R_{ij}), \quad i = 1 \dots n_c$$
$$R_{ij} = \frac{s_i + s_j}{d_{ij}}$$
$$d_{ij} = d(v_i, v_j), \quad s_i = \frac{1}{\|c_i\|} \sum_{x \in c_i} d(x, v_i)$$

Where:

- $d(x,y)$ is the Euclidean distance between x and y .
- c_i is the cluster i .
- v_i is the centroid of cluster c_i
- $\|c_i\|$ refers to the norm of