University of Roehampton London

CMP020L012A	Data Analytics	2022/23

Week-11
K-Mode Clustering

Answer the following Multiple-Choice Questions

1. What is K-modes clustering?
   a) A Supervised Learning method
   b) An Unsupervised Learning Method
   c) None of the above
   d) Both of the above

2. Which of the following metric is used for measuring K-Mode Clustering?
   a) Hamming Distance
   b) Euclidean distance
   c) Similarity Cosine
   d) None of the above

3. What initialization method is chosen in K-Mode Clustering?
   a) K-means Initialization
   b) Density based Initialization.
   c) Random Initialization
   d) None of the above

4. K-means clustering is good for continuous data whereas K-mode clustering is good for categorical data
   a) True
   b) False

5. What is the role of parameter K in the K-mode Clustering?
   a) determines the differences to be used
   b) determines the distance to be used
   c) determines the initialization method to be used
   d) determines the number of clusters to be formed

6. What is the advantage of K-Mode clustering over K-Means clustering?
    a) K-Mode Clustering can handle categorical data.
    b) K-Mode is faster than K-Means Clustering
    c) K-Mode Clustering is more accurate than K-Means Clustering
    d) All of the above

7. There can be multiple Centroids in one cluster.
    a) True
    b) False

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Answer the following Question

Assuming you are given with a dataset, contains 16 records in it.

Record	Gender	Age Range	Education Level
1	Female	20-30	Bachelor's Degree
2	Male	30-40	High School Diploma
3	Female	20-30	Master's Degree
4	Female	20-30	Bachelor's Degree
5	Male	30-40	High School Diploma
6	Male	40-50	Master's Degree
7	Female	30-40	High School Diploma
8	Male	20-30	Master's Degree
9	Female	30-40	Bachelor's Degree
10	Male	20-30	High School Diploma
11	Female	40-50	Master's Degree
12	Male	30-40	Bachelor's Degree
13	Female	20-30	High School Diploma
14	Male	40-50	Master's Degree
15	Female	30-40	Bachelor's Degree
16	Female	20-30	Master's Degree

Manually group these data into three clusters using the k-modes clustering algorithm.