|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **National University of Computer and Emerging Sciences, Lahore Campus** | | | | |
| C:\Users\saif\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.Word\final design.jpg | **Course:** | **Information Retrieval** | **Course Code:** | **CS317** |
| **Program:** | **BS(Computer Science)** | **Semester:** | **Fall 2019** |
| **Duration:** | **20 Minutes** | **Total Marks:** | **10** |
| **Paper Date:** | **3-Dec-19** | **Weight** | **4%** |
| **Section:** | **B** | **Page(s):** | **2** |
| **Exam:** | **Quiz 5** | **Roll No:** |  |

**Question 1:**

The table below is a distance matrix for 6 objects.



a) Apply HAC algorithm and show intermediate results. [4]

b) Show the final result of hierarchical clustering with single link by drawing a dendrogram. [2 Marks]

**Solution:**

**First Iteration: Doc A and B have smallest distance so that are closest clusters. Merge A and B.**

**Since it is single link similarity so similarity of doc C with new merged cluster A-B is min of the distance of (0.51 and 0.25).**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | A-B | C | D | E | F |
| **A-B** | **0** |  |  |  |  |
| **C** | **0.25** | **0** |  |  |  |
| **D** | **0.16** | **0.14** | **0** |  |  |
| **E** | **0.28** | **0.7** | **0.45** | **0** |  |
| **F** | **0.34** | **0.93** | **0.2** | **0.67** | **0** |

**Second Iteration**

**C and D have min distance so they will be merged**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | A-B | C-D | E | F |
| **A-B** | **0** |  |  |  |
| **C-D** | **0.16** | **0** |  |  |
| **E** | **0.28** | **0.45** | **0** |  |
| **F** | **0.34** | **0.2** | **0.67** | **0** |

**Third Iteration**

**A-B and C-D have min distance so they will be merged**

|  |  |  |  |
| --- | --- | --- | --- |
|  | A-B-C-D | E | F |
| **A-B-C-D** | **0** |  |  |
| **E** | **0.28** | **0** |  |
| **F** | **0.2** | **0.67** | **0** |

**Fourth Iteration**

**A-B-C-D and F have min distance so they will be merged**

**Question 2:**

1. **What is difference between pseudo relevance feedback and relevance feedback? [2 Marks]**
2. **Why do we need pseudo relevance feedback? [2 Marks]**