Assignment 3

Indexing Techniques

Submission Date: Tuesday 01-Nov-2016 (Start of Class)

Note: Read the assignment carefully and thoroughly. If you have any confusion in understanding the statements then take suitable assumption and mention it before solving the question.

Consider the following table and statistics which are part of a student system:

Student (RollNo, Name, DegreeID, BatchID, DeptID, GPA .....);

Block Size= 32 KB; Available Memory= 100 Blocks; Rows= 100,000; Row Width= 256 bytes; Index Row Width= 16 bytes. Assume batch 2013 students are 10%, CS department students are 50%, students having GPA>2.5 are 40% and students having GPA>3.8 are 2%.

Question:
Find the I/O cost for the two given queries for all the indexes specified:

Query 1: Students of the batch 2013 who are from CS dept. and have GPA > 2.5
Query 2: Students of the batch 2013 who are from CS dept. and have GPA > 3.8

1) FULL TABLE SCAN
2) SINGLE INDEXING
3) COMBINING MULTIPLE INDEXES
4) DYNAMIC BITMAP INDEX
5) STATIC BITMAP INDEX
6) COMPOSITE INDEX
7) CLUSTERED INDEX