Department of Computer Science and Engineering
Lab Problem
Course: Database Mangement System

Date: August 31, 2023

The examination system in a University allows a student to sit in an examination (semester/year Final) for a course for the second and third time when the student wants to improve his/her grades in the course. When a student gets at least 80% marks in a course then s/he cannot sit in the subsequent examinations for the course. The database designer of the system proposed the following table structure to store the examination data for the students.

Table: tbl_ExamMarks

StudentID	Course	ExamDate	IncourseMarks	Final Marks	TotalMarks
A	C1	D1	30	42	72
A	C2	D2	18	40	58
A	C3	D3	22	32	44
B	C1	D1	26	37	63
B	C1	D4	26	41	67
A	C3	D5	22	33	55
A	C1	D4	30	22	52
B	C1	D6	26	33	59

Here, the number in the ExamDate column indicates the sequence of the dates (i. e., D3 is an earlier date than D4).
Note that, the university regulations defines the IncourseMarks as immutable and the highest total marks in a course obtained by a student is considered for the CGPA calculation.

Tasks

1. Define the constraints (using SQL DDL) for the table tbl_ExamMarks. Use numeric type data for the studentID column and date type data for the examDate Column.

2. Write SQL statements to:
   I) find examination data (Student ID, Course, Obtained Marks, Exam Date) for a given student ID to print the GradeSheet/Transcript of the student.

   II) find the maximum and average obtained number in a course on a particular examination date.

   III) find the list of students who did not attempt for more than once in any course.