CS241 - Questions for Lab Assignment 6

1 INSTRUCTIONS

(1) This lab **is graded**.
(2) Use the student database that was created in Lab1.
(3) Get the answers for Lab 5 evaluated before you complete this lab.

2 QUESTION 1

Consider the following relations:

Student(snum: integer, sname: string, major: string, level: string, age: integer)
Class(name: string, meets_at: time, room: string, fid: integer)
Enrolled(snum: integer, cname: string)
Faculty (fid: integer, fname: string, deptid: integer)

The meaning of these relations is straightforward; for example, Enrolled has one record per student-class pair such that the student is enrolled in the class.

(1) Write a trigger to ensure that when a tuple is deleted from Class, it is deleted from Enrolled. Insert the given tuples into Class and Enrolled (class_additional.txt and enrolled_additional.txt) and delete the entries from Class to test the trigger. [5 Marks]
(2) Alter the table Student to create an attribute called *total_credits*. By default, its value must be 0. Alter the table class to create an attribute called credits. The value of credits for each course is given separately to you. Alter the table enrolled to create an attribute called grade, with its default value as null.
Write a trigger that calculates and updates the field total_credits using the following rules: 1) If a student has an F grade or if he has not yet been graded, he gets no credit. 2) If a student gets a grade other than F for a course, he gets the credits for that course. 3) It is possible that a student's grade changes after re-evaluation of his papers, after he writes a supplementary exam, etc. It is also possible that a grade that was entered wrongly is later corrected.
Add the values given for grades to each student in enrolled. Check whether the trigger works as expected.
You can assume that entries in the student, enrolled or class tables will not get deleted. [5 Marks]

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