CSC 134-02 Database Management Systems (Spring 2022)

In-class Worksheet 5 (100 points)

ER-to-Schema Mapping

Due at 11:59 pm, Friday April 8, 2022

1) Consider the following set of requirements for a UNIVERSITY database that is used to keep track of students' transcripts. **Draw an ER diagram**.

- The university keeps track of each student's name, student number, social security number, address and phone, birthdate, sex, class (freshman, sophomore, ..., graduate), major department, minor department (if any), and degree program (B.A., B.S., ..., Ph.D.).

- Both social security number and student number have unique values for each student.

- One student may have more than one minors but only one major with her major department.

- Each department is described by a name, department code, office number, office phone, and college. Both name and code have unique values for each department.

- Each course has a course name, description, course number, number of hours, level, and one offering department. The value of the course number is unique for each course among the whole university (e.g., CSC134).

- Each section has an instructor, semester, year, course number, and section number. The section number distinguishes different sections of the same course that are taught during the same semester; its values are 1, 2, 3, ..., up to the number of sections taught during that semester. One course (e.g., CSC134) can be offered multiple semesters. Possible semester values are spring, summer, fall.

- If we remove a course, all of its sections should be removed as well.

- A student receives a grade from each section she takes, which can be either a letter grade or a numeric score.

2) Please convert the ER diagram you achieved for the UNIVERSITY database to corresponding **relational database schema**. **Follow the 7-step algorithm we learned in class.**

Deliverables

1. Two PDFs or images containing your answers for both questions.   The instructor will share the Jamboard link with you in class.

    - Claim two Jamboard frames, one for ER diagram and the other for relation DB schema.
    - Put a sticky note with your name on both of your frames.
    - Save **your OWN frame** as image.   Make sure the sticky note with your name is there.
    - Submit both of your frames to Canvas

How to use Google Jamboard: https://www.youtube.com/watch?v=IJc55XOJhJI

Requirements on deliverables

1. Your deliverable should be named as *FLastname_W5-1* and *FLastname_W5-2* where *F* indicates first letter, in uppercase, of your firstname and *Lastname* indicates your last name where first letter is in uppercase. Please exactly follow the naming rule described above. You will be deducted 5 points for incorrect naming.

2. Clearly state your name, ID, course title, worksheet number, and due date.

3. Submit your pdf/image files via Canvas.

4. No late submission will be accepted.

5. When grades are returned to you on Canvas, you have 7 days to meet with the instructor for grade changes. Issues and/or disagreements concerning your

grade must be resolved in such 7 days window. After 7 days, the grades are written in stone and can't be changed after that point, for whatever reason.