Homework 1

Due Date: Wednesday, May 31st, 2017 at 11:59 PM.

eLearn

eLearn is an e-learning platform. Learners can explore, enroll, study and get certificates from a variety of courses. Courses are grouped into multiple categories. A course may be presented in different categories. Each course has a unique course id (a number with two prefix letters – for example, CS585) and consists of materials, lectures and assignments.

Materials could be general (for example, syllabus, textbook) or come from a lecture. Each lecture may have videos, notes, and materials (files, links…). Each assignment has a description, attached files and a deadline. Learners must submit their assignments online. Learners can view their grades for each assignment (quite similar to USC blackboard).

With lectures and assignments, learners and teacher may post comments. This is useful for teacher to provide any additional notes about the questions being asked, or for students to ask any questions regarding the lectures or assignments.

A user has to register to enroll a course. Prices may vary from different courses. Different payment methods are available. The system should be flexible enough to easily add new payment method or remove an existing one. After completing the course, a user can see his/her grades in details and gets a certificate (if eligible). He/she can also rate the course (0-5 stars) or provide feedback.

A course is created by its teacher. Multiple teachers are allowed to get involved in a course. There are also other roles (TA, graders) who have different permissions on different course operations.

A course should start and end at certain time. It can be re-opened multiple times, for example, per semester or per year. Each time it is re-opened, there may be multiple adjustments (teachers, TA and graders, students, course content, assignments).

Please create the ER Diagram for eLearn based on the above description.

Feel free to make additional assumptions if they are not stated in the description (for example, attributes of entities). You also should be able to analyze the trade-offs of your design decisions.

*The total points for this homework is 10. The submission **MUST** be a pdf file named **[Student First Name]_[Student Last Name]_HW1.pdf** (wrong file name will not be graded) that includes:*

- *The ER Diagram for eLearn (5 points). This could be a picture of your drawing (in .pdf), or a generated figure from any ER tool (for example, Visio or Enterprise Architect). I prefer if you learn and use an ER tool (+1 bonus point).*

- *A report where you describe and justify your design choices (5 points). Some suggestions are:*
    - *Why the relationships between A and B is 1:1, 1:N or M:N?*
    - *Is there any optional/multi-valued attributes in your design? If yes, why?*
    - *What are the attributes of the defined entities that you may have, and why do/don't you include that in the ERD?*
    - *Could some design choices be different, and what are the trade-offs between your designs with others?*

If you have any general questions about the homework, please post your questions on HW1 discussion on USC DEN course forum. Before asking, you should have a look to see whether similar questions were asked and answered. Thank you!

*Students can submit the assignment to USC DEN. Just go to the course → MY TOOLS → Assignments → Homework 1. The deadline is firm. **You will not be able to submit your homework after the deadline.***