ISYS2120 Assignment 2 (sem1, 2022)

Due: Sunday 18 September,, 11:59pm Sydney time
Value: 5%
This assignment is done in **groups of up to 5 students** (aim for exactly 4 members, but it may happen that sometimes a group is smaller or larger, eg if there are not enough students in a lab). We ask that all students in a group be attending the same lab session, so you can work together more easily, and show progress to the lab demonstrator each week.

Procedure: In week 5 lab, you should form a group. It is common for people to stay with the group they had joined in Asst1, but it is not necessary. There will be separate Canvas groups for this assessment; we will initialize them as copies of what were formed for asst1, but membership can change as described below. If any student wishes to not be with their asst1 team, they can simply remove themselves from the initial group; this should also be done if you were in a group from a class that you will not be attending in future. The lab demonstrator will then work with anyone who is unassigned, to form groups properly. If necessary, the demonstrator or coordinator may also rearrange group membership.
If, during the course of the assignment work, there is a dispute among group members that you can't resolve, or that will impact your group's capacity to complete the task well, you need to inform the unit coordinator, alan.fekete@sydney.edu.au. Make sure that your email names the group, and is explicit about the difficulty; also make sure this email is copied to all the members of the group. We need to know about problems in time to help fix them, so set early deadlines for group members, and deal with non-performance promptly (don't wait till a few days before the work is due, to complain that someone is not doing their share). If necessary, the coordinator will split a group, and leave anyone who doesn't participate effectively in a group by themself.
How to submit your work: produce a PDF file called <groupName>_Asst2.pdf, containing the extended ER diagram for your conceptual design (and also any English notes you want to add, such as comments about some ambiguity in description and how you decided to interpret things for this design; or constraints which are beyond what the diagram expresses). We suggest that you have an overview diagram, that shows the entity and relationship information, but not the attributes, and then give separate diagrams for each entity or relationship with its attributes (like the diagram in Asst1 instructions). This file should be submitted by only one member of the group, through the Canvas assignment link.

The task:
Produce an extended ER diagram, that captures a conceptual design for the information that needs to be kept in a system for a high school that manages student work around assessment tasks. If there are important constraints that you could not capture in the notation of the diagram, add notes in English to describe these constraints.

The school has many students, each with a name, date of birth, notes on medical or similar conditions. Each student has a school email address which is different for every student.
For each student there must be one or more parent/guardians recorded (each with name, email, address, up to two phone numbers, relationship, and also a field for notes such as whether this parent has full authority or instead there are limitations (in cases of alternating custody etc). As well as the legal guardians, there may be other people who are allowed to view some students' work, for example, private tutors and counsellors; for each of these the system needs to know name, email, and the source of their authority to access work.
There are of course the school staff (teachers and other employees, such as administrators). Each has staffID, name, school email, private email, contact phone number, home address. For teachers, we need to know which classes each is teaching.
For each class we need a name eg "Yr 8 English – class D", field (eg "English"); number of periods taught per week, who the teachier and which students are in the class. A class will set assessment tasks, with a name such as "Assignment 1", due date, kind of submission (oral talk, upload of video recording, handin on paper, etc), whether resubmission is accepted., value towards the grade in that class. Note that several classes might all use the same assessment name, such as "Quiz 1" or "Video",. Some tasks are done in groups, in which case we need to know about each group, including which students are part of the group (they should all be in the class for which the assessment is done!)
Each piece of work handed in by a student or group, for an assessment, must be recorded in the system(including when it was submitted, and when the system was informed that submission; once the work is graded, the system needs to store the grade and also which teacher did the grading (the grader is not necessarily the teacher of the class the work was done for).
Students also record in the system times they spend working on assessments. Each work-slot has a start and end date/time, as well as a category (such as "reading texts", "searching for information", asking questions of the teacher", "answering questions for my peers", etc) For a work-slot related to group work, each students time is recorded separately, but we also want to know which other students were present during the slot.

Note: you may find this description lacks important details; requests for clarification should be posted on the unit Edstem discussion board, under the posting category of Assignment 2, You should observe closely any answers posted by staff (not only to your own questions, but also to questions from others)

Week 6 progress: by the time of your week 6 lab, the group should have agreed on the entities and the relationships, and produced a high-level diagram of this

(though the constraints may not yet be decided or shown). Please have this design to show the lab demonstrator for feedback. To show individual contribution progress, for week 6 lab, each student should choose one entity set and bring to lab (to show to the lab demonstrator) an individually-created diagram of that entity type, with its attributes, including a decision about what is the primary key for the entity set.

Week 7 progress: it is possible the group will have changed the high-level structure since week 6; so bring along the latest high-level ER diagram. To show individual progress, in week 7 lab, each student should show one relationship diamond from the diagram, with how the edges are marked (for showing cardinality and participation), and also the relationship's attributes if any.

Marking scheme:

Submitted report (all members get the same mark)/4
4: well-designed conceptual model, which captures all the described information [except where the gap is explicitly mentioned as a limitation] expressed with correct notation (including appropriate constraints) and good discussion of the aspects where ambiguity needed to be resolved, and of strengths and limitations of the conceptual model (eg cases where constraints could not be shown directly)
3: reasonable conceptual model, which captures most of the described information, expressed with correct notation (including appropriate constraints)
2: diagram that uses the ER diagram notation from class correctly, and has a number of appropriate entities and relationships, and some constraints
1: diagram that suggests some aspects of the domain

Individual contribution based on the student's progress contributions in week 3 and week4)/1
0.5 for showing progress in week 6
0.5 for showing progress in week 7