IS & DB Project Part 2

Project Part 2 – Systems Analysis & Design

Deadline: Friday 02/12/16 @ 23.55hrs
Hand in: via Moodle; No Word Limit (its mostly diagrams)

To complete this part of your project you will need to:

1. Complete a prioritised group use case diagram (UCD) of the new system (that allows for the activities that take place in the current system), using the 'MOSCOW' system of prioritisation
2. Provide a commentary explaining the decisions made when creating the UCD and a summary of what has been learned in the process
3. Complete one use case specification per student (each use case spec should make use of the use case template provided on Moodle and include an entity relationship diagram (ERD)); ensure that you cover the core use cases
4. Complete a top-down ERD of the system
5. Include a completed RDA of each the two documents provided in the case study and a bottom up ERD of the merged RDAs
6. Include a finalised group ERD (including both top down and bottom up perspectives) covering the complete system
7. Provide a commentary explaining the decisions made when creating the finalised ERD and a summary of what has been learned in the process
8. Present your findings in the form of a report that will contain the above elements as well as a brief introduction summarising the contents of the report (ensure that you mark upon the report who has been responsible for which use case specification)
    - Complete a log book entries on Piazza for your group to include:
        - entries for each part documenting the initial work allocation, and progress; that is four 'notes' and associated 'follow ups', one 'note' for each part of the assignment including one for this part (e.g. covering presentation work and final report compilation)
        - all posts should have a date that matches note history on Piazza and include work allocation for each group member
        - **all steps (1-7) should involve all students (some steps might only involve students checking work)**
        - any absences should be noted (were group forewarned? what was done to keep in communication with absent group member, and ensure he/she could continue to contribute?)
        - any work allocated but not completed should have been noted
        - place record of log book in an appendix, with log book entries copied, pasted and appropriately formatted
9. One assignment should be handed in per group in the form of a Word document or rich text format file (all diagrams created in other packages should be screen dumped and embedded into this file)

Note that all students need to participate in some way to steps 1 - 7. Much of your learning (which you'll demonstrate in the tests) will occur when you complete the UCD, ERD, and RDA and evidence of each members involvement in these sections is particularly important.

You will receive formative feedback during lab sessions in week 11 that will focus on your ERD; explaining any changes that you need to make to ensure that it is ready for implementation in

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ORACLE. Your UCD and ERD will be formally marked when you hand in your final complete project. Any changes to your ERD following your formative feedback should be clear from your final report (with the original and altered ERD both being shown). As you would expect, the original ERD (rather than the one altered in response to feedback) will be the one that is marked in your final submission.

Guidance Notes:

You'll not be able to complete all of the above work straight away since you've not yet been taught much of the relevant material (for example, you will not be taught about RDAs until around a week before the deadline). For this reason it's also likely that you'll not understand some of the below at the moment, so be patient. Since you'll only be taught the relevant material as the unit progresses you need to think carefully about how you designate the work, for example, you shouldn't just designate each diagram to a different team member. Instead, you should all be involved inputting to the diagrams and should complete them only after you've been taught the relevant content.

You can start work on the use case diagram straight away, each have a go at drawing it and then bring your diagrams together in a group meeting arguing for your point of view if you think it is the best one. The ERD you can all have a go at during tutor meeting week, completing the top down ERD in week 8. This can then be finalised as the group ERD once you've included information from the bottom up perspective provided by the RDAs and bottom up ERDs you will produce next. You'll be given specific guidance in tutorials in week 10 on the RDAs and so (though you should have a go beforehand) you can wait until then to complete it. If you are going to wait until then you will need to make sure you've got the rest of part 2 completed (including a top down ERD) so that you give yourselves sufficient time.

Written Content:

For the written content there should be around two paragraphs for part 2 (UCD commentary), and the same for part 6 (ERD commentary), as well as an introductory paragraph.

UCD:

- All use cases should be named according to something that can be done e.g. "deal with enquiry" not "enquiry"
- Use cases should only be linked together by either an extend or an include, not lines or arrows (at least this year, you will learn more ways of linking them next year); UCDs are not intended for showing the detailed working of an information system, but rather to help split up the system into smaller, more manageable units

ERD:

- First create the overall top down ERD which includes all of the ERDs included in your use case specs as well as your general idea of the system; this will be useful when creating your final ERD which will include the data from the bottom up ERDs that will in turn be created from your normalisations
- Make sure all your tables (entities) have a primary key
- Follow the "Crow's feet grab" rule in the week 9 lecture slides; this rule can be reversed: if two entities have a relationship then one of them must include an FK or a composite key that is/contains the primary key of the other table that it has the relationship with
- When approaching the top down ERD, i.e. before you look at the normalisation (where you'll look at the data from the bottom up), you should think about the Ray's Rentals case study (and/or your part 1) and decide what entities you have (remember the identify entities exercise from week 6); then start trying to draw out the relationships

- Some students find trying to determine relationships between entities for ERDs confusing (e.g. "what numbers go where?"). To help you with this we've created a guide that can be found in week 5 of the unit in Moodle: http://moodle.mmu.ac.uk/pluginfile.php/1213972/mod_resource/content/1/Determining%20Relationships%20for%20ERDs.pdf
- (Top down means you start with the general picture and work out the detail as you progress, whilst bottom up means you start with the detail and move towards a general picture.)

RDAs

- This is just a matter of following the rules outlined in lectures and tutorials, and practice.

Finally, note that a problem relating to reservations and rentals is included in the scenario, and this problem will not be spelt out to you. The idea is that you think about the scenario thoroughly, identify the problem yourself and devise your own solution. By allowing you to identify and deal with this problem on your own, we are trying to encourage you to be creative, and to think for yourselves.