CSIT115/CSIT815 Data Management and Security
Laboratory 3

Scope

This laboratory includes a task related to logical modelling and relational data model.

Important messages

Please read the messages listed below before implementation of a task included in a specification of Laboratory 3.

More implementation related information can be found in "How to … ?" Cookbook available through Moodle or at:
`http://www.uow.edu.au/~jrg/115/COOKBOOK`.

The outcomes of Laboratory 3 are due by **Saturday, 1 September, 2018, 11.55 pm (sharp).**

Laboratory 3 contributes to 3% of the total evaluation in the subject. 2 tasks are included in this laboratory.

A submission procedure is explained at the end of this document.

Only one submission of Laboratory 3 is allowed and only one submission per student is accepted. Please make sure that you submit the correct files.

A submission that contains an incorrect file attached is treated as a correct submission with all consequences coming from the evaluation of the file attached.

Compressed (zipped, rared, tared, etc) files will not be evaluated.

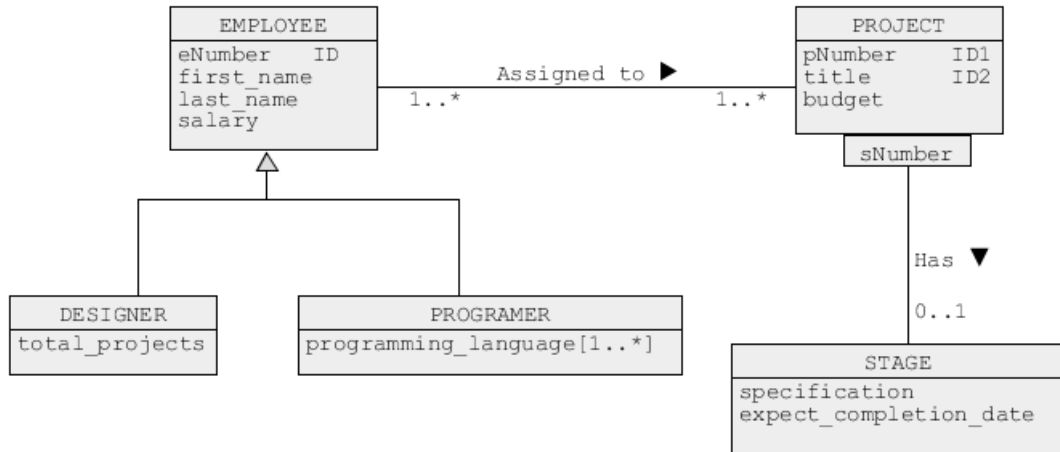All files left on Moodle in a state **"Draft(not submitted)"** will not be evaluated.

A submission marked by Moodle as "late" is treated as a late submission no matter how many seconds it is late.

A policy regarding late submissions is included in CSIT115/815 Subject Outline.

Tasks
Task1 (1.5 marks)
Consider a conceptual schema given below.

Your task is to perform a step of logical database design, i.e. to transform a conceptual schema given above into a collection of relational schemas.

For each relational schema created clearly list the names of attributes, primary key, candidate keys (if any), and foreign keys (if any). Assume that **superset method** must be used to implement a generalization (if any). A way how a conceptual schema can be transformed into a collection of relational schemas is explained in a presentation 06 Logical Design.

The relational schemas <u>must be listed</u> in a format presented in the slides 44-45 in a presentation 06 Logical Design. Listing of the relational schemas in the other format scores no marks.

Deliverables
A file `solution1.pdf` with a list of relational schemas, primary key for each relational schema, candidate keys (if any) for each relational schema, foreign keys (if any) for each relational schema. Submission of a file with a different name and/or different extension and/or different type scores no marks.

Task 2 (1.5 marks)
Consider the following collection of relational schemas.

PRODUCT (p#, price, item, pname, manufacturer)
Primary key = (p#)

CUSTOMER (c#, cname, city, street, building#)
Primary key = (c#)

CORDER (o#, c#, tax)
Primary key = (o#),
Foreign key = (c#) references CUSTOMER (c#)

ORDERPOS (pos#, o#, p#, amount)
Primary key = (o#, pos#),
Foreign key 1 = (o#) references CORDER (o#),
Foreign key 2 = (p#) references PRODUCT (p#)

Your task is to perform *reverse database engineering*, i.e. to find a conceptual schema of a database that has a collection of relational schemas given above. Use UMLet to draw a conceptual schema found. Use an option File->Export as... to export your diagram into a file solution2.bmp in BMP format.

Deliverables
A file solution2.bmp with the *reverse engineered* conceptual schema.

Submission of a file with a different name and/or different extension and/or different type scores no marks.

Submission

Submit a file **solution1.pdf** and **solution2.bmp** to Moodle in the following way:

   (1) Access Moodle at **http://moodle.uowplatform.edu.au/**
   (2) To login use a **Login** link located in the right upper corner the Web page or in the middle of the bottom of the Web page
   (3) When logged select a site **CSIT115/DPIT115/CSIT815 (S218) Data Management & Security**
   (4) Scroll down to a section **Submissions**
   (5) Click at a link **In this place you can submit the outcomes of Laboratory 3**
   (6) Click at a button **Add Submission**
   (7) Move a file **solution1.pdf** into an area **You can drag and drop files here to add them**. You can also use a link **Add…**
   (8) Repeat step (7) for the file **solution2.bmp**.
   (9) Click at a button **Save changes**
   (10) Click at a button **Submit assignment**
   (11) Click at the checkbox with a text attached: **By checking this box, I confirm that this submission is my own work, …** in order to confirm the authorship of your submission
   (12) Click at a button **Continue.**

It is expected that a problem included within **Laboratory 3** will be solved **individually without any cooperation** with the other students. If you have any doubts, questions, etc. please consult your lecturer or tutor during lab classes or office hours. Plagiarism will result in a **<u>FAIL</u>** grade being recorded for that assessment task.

End of specification