School of Computing and Information Technology
University of Wollongong

Session: **Spring 2019**
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CSIT115/CSIT815 Data Management and Security
Laboratory 2

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Scope

This laboratory is related to conceptual modelling of a sample database domain.

The outcomes of the laboratory work are due by **Saturday 17 August 2019, 7.00 pm (sharp).**

Please read very carefully information listed below.

This laboratory contributes to 3% of the total evaluation in a subject CSIT115 and it contributes to 3% of the total evaluation in a subject CSIT815.

A submission procedure is explained at the end of specification.

This laboratory work consists of 1 task.

It is recommended to solve the problems before attending the laboratory classes in order to efficiently use supervised laboratory time.

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 the subject outline.

A submission of compressed files (zipped, gzipped, rared, tared, 7-zipped, lhzed, … etc) is not allowed. The compressed files will not be evaluated.

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

An implementation that does not compile due to one or more syntactical errors scores no marks.

It is expected that all tasks included within **Laboratory 2** 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 **FAIL** grade being recorded for the assessment task.

Tasks

Task 1 (3 marks)

Read the following specification of a sample database domain.

The following describes a domain of a database for an international chain of hotels.

An international chain of hotels would like to create a simple database to store information about its activities. The chain of hotels owns a number of hotels in the different countries. A hotel is identified by its address that consists of country name, city name, street name and building number. The hotels are also described by a unique phone number, unique email address, and unique link to a web site. All hotels located in the same country and in the same city have the unique local names. It may happen that two hotels located in two different cities have the same names.

A hotel has a number of employees. An employee is described by an employee number which is unique within a hotel, first and last name, date of birth and position occupied at a hotel. Each employee works at only one hotel. It may happen that two or more employees working in the different hotels have the same employee number.

A hotel offers different types of rooms for hotel guests. A room is described by a number unique within a hotel, area, type, and price per night.

The customers book the rooms in the hotels. A booking is described by a room type, a planned arrival date, planned departure date, first and last name of a customer, and credit card type and number. A booking is identified by boking date and time.

When a booking is cancelled, a cancellation date, and cancellation reason are appended to its description and a booking is moved to a class of cancelled bookings.

On arrival day a hotel records information about the hotel guests who checked-in. Such information includes the first and last name of each hotel guest, date of birth, nationality, type and number of identification document and check-in date and time. Then, the hotel guests are assigned to their rooms. Of course, the hotel guests who checked-in a hotel must have a valid booking performed beforehand.

On check-out date a hotel records a bill, i.e. total amount of money charged for a stay and the services used in a hotel.

Your task is to create a conceptual schema of the sample database domain given above and to draw such schema in a notation of UML simplified classes of objects explained to you during the lecture classes in CSIT115. No other notation will be accepted !

To create a conceptual schema, use a methodology explained to you in a presentation 04 Conceptual Modeling. First, read through the specification listed above and find all classes of objects. Next, read through the specification again and find all attributes. Next, read through the specification again and find all associations, link attributes, and association

classes. Next, read through the specification again and find identifiers and qualifications. Finally, read through the specification and find generalizations. Entire process described above must be included in the outcomes from the implementation of this task.

To create the fragments of conceptual schema obtained after each iteration use a diagram drawing tool UMLet.

Remember to use `CSIT115-815Palette` palette !

Technically, to follow a design methodology explained to you in a presentation 04 Conceptual Modeling can include the fragments of database specification listed above into a Word document and then insert into the document the fragments of diagrams and the final diagram as `bmp` file obtained from File->Export as ... option of UMLet. A structure of the file should include the specification of a sample database domain with the fragments of text with the UML simplified class diagrams representing a solution expanded step by step. When ready convert Word document into `pdf` format and save it as a file `solution1.pdf`.

If you still do not understand how the problem should be solved please check the sample solution of similar tasks available on Moodle in a file `sample-solution.pdf`.

You can find more examples in `all-archives.zip` file.

If you still do not understand how the problem should be solved then ask your tutor during a laboratory class and/or your lecture during his office hours.

Deliverables
A file `solution1.pdf` with a description of a process of conceptual modelling together with the final design of a conceptual schema. Submission of a file with a different name and/or different extension and/or different type scores no marks.

Submission

Note, that you have only one submission. So, make it absolutely sure that you submit correct files with the correct contents. No other submission is possible !

Submit a file **`solution1.pdf`** 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/CSIT815 (S219) 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 2`**
(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) Click at a button **`Save changes`**
(9) Click at a button **`Submit assignment`**
(10) 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
(11) Click at a button **`Continue`**

End of specification