

## **CSIT115/CSIT815 Data Management and Security Laboratory 1**

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### **Scope**

This laboratory includes the tasks related to the simple applications of the software systems that will be used in a subject CSIT115/DPIT115/CSIT815 Data Management and Security in spring session 2018 and to CSIT115/DPIT115/CSIT815 Subject Outline.

### **Important messages**

**Please read the messages listed below before implementation of the tasks included in a specification of Laboratory 1.**

Please bring with you to a laboratory class USB memory stick or USB external drive needed to save an exported appliance (Ubuntu 14.04 operating system together with installation of MySQL 5.7.16 Community edition). Your external persistent memory must have at least 8 GB of free space. In all laboratory and assignment specifications we refer to "USB memory stick or USB external drive" as to "USB drive".

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 1 are due by **Saturday, 4 August, 2018, 11.55 pm (sharp)**.

This laboratory contributes to 3% of the total evaluation in the subject.

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

Only one submission of the outcomes of Laboratory 1 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.

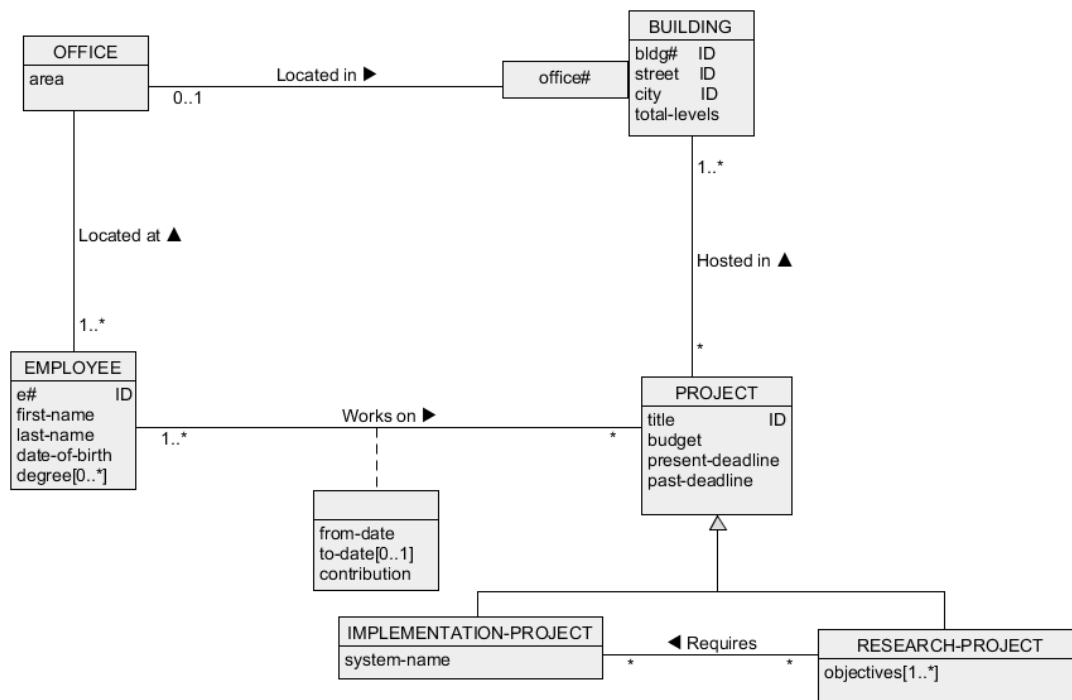
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## Tasks

### Task 1 (1.5 marks)

Perform the following steps.

- (1) Start and connect to your Windows 7 system.
- (2) UMLet is a simplified tool for drawing UML diagrams. To start UMLet use a shortcut UMLet 14.2 available on Desktop. The shortcut has an icon that consists of a red circle crossed with a horizontal dark blue bar.
- (3) When UMLet is started navigate to the right upper corner of UMLet window and pick a palette CSIT115-815Palette. Do not use any other palette!
- (4) Use UMLet application to draw a diagram given below. It is explained in the Cookbook, Recipe 2.1, Steps 1 and 2 "How to create very simple conceptual schemas with UMLet?" how to use UMLet to create class diagrams.



- (5) When ready, add one more attribute to a class **BUILDING**. The new attribute name for the class **BUILDING** is up to you.

- (6) Add a new class DEPARTMENT that associates with OFFICE. At least three attributes must be defined in the class DEPARTMENT. One attribute is an ID (Identifier). The attributes for the new class DEPARTMENT are up to you. The association name between DEPARTMENT and OFFICE should be reasonable. The association between DEPARTMENT and OFFICE is a one-to-many association (one department associates with many offices).
- (7) Use an option File->Save to save your diagram in a file `solution1.uxf`. Do not delete a file `solution1.uxf`.
- (8) Use an option File->Export as... to export your diagram into a file `solution1.bmp` in BMP format. Do not delete an exported file. You will submit it as one of the deliverables from your laboratory work.

**Deliverables**

A file `solution1.bmp` that contains a diagram given above extended with an attribute, a class, and with an association. A submission of a file `solution1.uxf` is not expected and it scores no marks. Submission of a file with a different name and/or different extension and/or different type scores no marks.

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**Task 2(1.5 marks)**

Perform the following steps.

- (1) Start and connect to your Windows 7 system.
- (2) Next, start Oracle VirtualBox. A shortcut to VirtualBox is available on Desktop. It is explained in Cookbook, Recipe 1.1, Step 1 "How to start VirtualBox ?" how to start VirtualBox.
- (3) Import an appliance `Ubuntu14.04-32bits-MySQL5.7.16-17-APR-2018` located on a drive `VMs(E:)` in a folder `Virtual Machines\CSIT115`. It is explained in Cookbook, Recipe 1.1 Step 2 "How to import an appliance to VirtualBox ?" how to import an appliance.
- (4) Connect your USB drive to VirtualBox. It is explained in Cookbook, Recipe 1.1 Step 3 "How to connect USB drive to VirtualBox ?" how to connect USB drive to VirtualBox.
- (5) Export a virtual machine to your USB drive. It is explained in Cookbook, Recipe 1.1 Step 5 "How to export an appliance from VirtualBox ?" how to export a virtual machine. Note, that exporting a virtual machine takes some time, usually more than 5 minutes.
- (6) Power on a virtual machine `Ubuntu14.04-32bits-MySQL5.7.16-17-APR-2018`. It is explained Cookbook, Recipe 1.1 Step 4 "How to power on a virtual machine ?" how to power on a virtual machine. Resize the power on virtual machine frame to 2/3 of the screen size.
- (7) When prompted by Ubuntu 14.04 operating system to type in a password to login as `CSIT115` user, enter `csit115` and press Enter key. Then, wait until operating system displays a column of icons on the left hand side of a screen.
- (8) Start Terminal program (a black rectangle icon with white frame in a column of icons). Resize the terminal to about half of the virtual machine frame size.
- (9) Next, in Terminal window type `gedit task2.sql` and press Enter key to open a text editor with a new file `task2.sql`.
- (10) Type into gedit window the following lines.

```
CREATE TABLE MSG( message VARCHAR(30) NOT NULL);  
INSERT INTO MSG VALUES('Hello world, today is ');  
SELECT message, CURDATE()  
FROM MSG;  
DROP TABLE MSG;
```

and save the file `task2.sql`. Note, that there is no blank between "CURDATE" and "()"! Quit gedit editor.

(11) Type at command prompt:

```
mysql -u csit115 -p -v
```

and press Enter key to start a command based interface to MySQL database server. A password is `csit115`.

(12) When a command based interface to MySQL database server is started execute a command:

```
use csit115;
```

at `mysql>` prompt to select `csit115` database.

(13) Next, execute a command:

```
source task2.sql;
```

at `mysql>` prompt to submit a script `task2.sql` for processing by MySQL.

(14) To start MySQL Workbench graphical interface click at a blue icon with a silhouette of a white dolphin. Resize MySQL Workbench to about half of the virtual machine frame size that does not overlap the terminal opened in step (8).

(15) Next, click at a small "+" sign located after "MySQL Connections" string to create a new connection. Type into a field Connection Name your connection name (use a name different from `csit115`), into a field Username `csit115`, and into a field Default Schema `csit115`. Finally, click at OK button.

(16) To open your new connection leftclick at a rectangle that represents a new connection in a front panel of MySQL Workbench. Next, type in a password: `csit115` of `csit115` database user and click at OK button.

(17) Leftclick at the second icon of left with text SQL and a small image of a folder, i.e. Open SQL script file in a new query tab icon. Select a file `task2.sql` and click at Open button.

(18) To submit a script for processing by MySQL database server, left click at the first line of a script and later on left click at "yellow lightning" icon just above a workspace with the script. You should get the results of processing in a workspace below.

- (19) Use `Windows Explorer` navigates to a folder on your USB drive where the exported file has been saved in step (5). Resize the `Windows Explorer` that it does not overlap the virtual machine frame powered on in step (6). Make sure both `Windows Explorer` and virtual machine frame can be viewed on the screen.

To take an image of a screen, simultaneously press "Fn" and "PrintScreen" buttons.

Next, start Paint program to save the image in a file. A path to start Paint program is: "Start button->Accessories->Paint". When started, simultaneously press the keys CTRL V to load the image into Paint. Use "Save" button (small disk icon in the topmost menu) to save the image in a file `solution2.png`.

Make sure that the saved screen image contains the names of a file created by VirtualBox after an appliance has been exported in step (5), virtual machine window that consists of a terminal with processing results in step (13) and MySQL Workbench processing results in step (18).

Do not delete a file `solution2.png`. It will be submitted as one of the deliverables from your laboratory work.

### **Deliverables**

A file `solution2.png` that contains a saved screen image required above. Submission of a file with a different name and/or different extension and/or different type scores no marks.

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## 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 the files **solution1.bmp** and **solution2.png** 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 1**
- (6) Click at a button **Add Submission**
- (7) Move a file **solution1.bmp** 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.png**.
- (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 all tasks included within **Laboratory 1** 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 that assessment task.

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*End of specification*