MySQL practicals

Exercise ONE

OBJECTIVES: In this exercise you will learn how to create a new MySQL database, a new table and how to populate it. You will also learn about attribute data types and properties; use of primary keys.

Use **MySQL Workbench** (including **MySQL server)** to complete this exercise.
You can download it at:
http://dev.mysql.com/downloads/
(create a local instance).

Check the MySQL Workbench documentation available online. Several tutorials and guides are available online about specific tasks also in the form of videos (for example, you can google "MySQL workbench create table", etc.).

TASKS:

1) Create a new database schema called **mydb** by clicking on the icon in the menu bar (or use the Navigator panel on the left: right-click on one of the existing schemas and select Create Schema). In the new database, create a new table called **studentscourses** by clicking on the icon in the menu bar to create a new table or by right clicking on Tables in the Navigator panel (on the left) and then selecting CreateTable (see Figure 1).
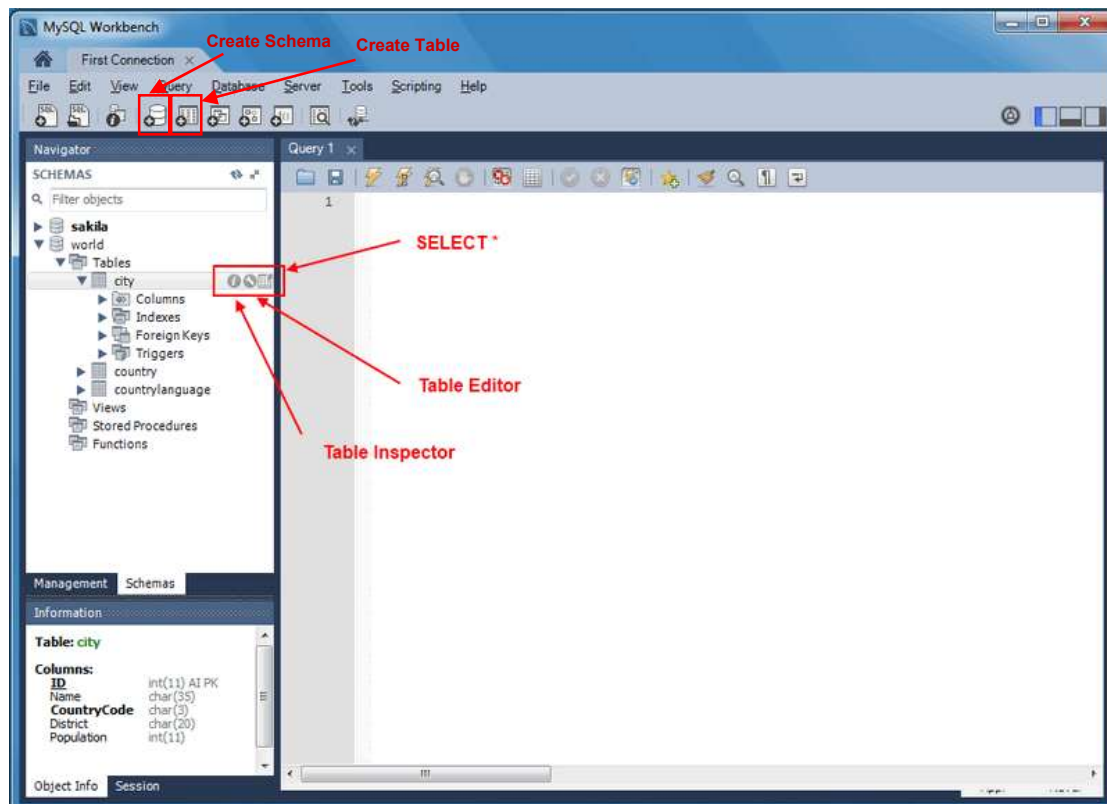

Figure 1: MySQL workbench screenshot

Add the following columns (attributes) to the new table:

Column name	Data type	Comments	Other
studentid	Int	Student number	**Primary key – not null**
firstname	Varchar(30)	First name	**Not null**
lastname	Varchar(30)	Surname	**Not null**
telephone	Varchar(20)	Telephone number	
email	Varchar(20)	Email address	**unique**
coursecode	Varchar(20)	Course code	
coursename	Varchar(30)	Course name	
duration	Int	Number of weeks	*Default value*: **10**
coursecost	Int	Cost in Euro	*Default value*: **300**

Click on **APPLY** (right hand side) to save. You will see that creating a table via the interface translates into an SQL command (we will see this later on).

NOTE: Remember to always **click on APPLY** to save **any operation** you do. Close all windows you do not need.

To modify/edit the schema of a table: click on wrench icon 🔧 (indicated as Table Editor in Figure 1).

Populate the table with the following data:

- 12345, Mary, Murphy, 2888888, MMurphy@ucd.ie, REL20, Relational databases,10, 300

- 23456, Brian, Smith, 6498888, Bsmith@ucd.ie, REL20, Relational databases, 10, 300

- 34567, Cora, Williams, 1234567, Cwilliams@ucd.ie, REL20, Relational databases, 10, 300

- 12222, David, Honan, 2888888, Dhonan@ucd.ie, WEB20, Web design, 10, 200

- 11111, Frank, Murphy, 4568777,   , WEB20, Web design,10, 200

- 23000, Aoife , Byrne, 987789, Abyrne@ucd.ie, EXL20, Excel, 9, 200

You can enter the data by displaying the content of the table (see Result Grid panel): click on table icon to the right of the table name ▦ - indicated as "SELECT *" in Figure and then add rows at the bottom (see also Result Grid menu bar) or use the Form Editor (right hand side, below Result grid tab).

Reminder: Click on **APPLY.**

2) Create another table of your choice with 5 columns (attributes) and populate it with at least 10 rows. Select an appropriate primary key.

Questions

Write concise answers on the side of this sheet.

- Try and enter the following row: 11111, Frank, Murphy, 4568777, Fmurphy@ucd.ie, REL20, Relational databases, 10, 300

   What problem occurs and why?

- Try and enter the following row: 33333, Frank, Murphy, 4568777, Fmurphy@ucd.ie, REL20, Relational databases, 10, 300

   What is the difference with respect to the previous example?

- Is it possible to have two different courses associated with the same student?

- What do you think is the purpose of the default value?

- What information do you consider to be repeated unnecessarily in the **studentscourses** table and why? For example how many times are we given the cost and duration of the "Relational Databases" course?

- How many pieces of information in the **studentscourses** table would you have to change if the "Relational Databases" course changed duration?

- What would happen if you deleted the row for student 23000 (Aoife Byrne) from the database? What information might you want to save which would be deleted?