Databases - Session 1: DBMS installation

Q0. Write the name of your partner for these sessions or "nobody" if you will do them individually.

Each student must submit a text with the answers of questions Q0 to Q7 through the corresponding quiz in Aula Virtual by the end of the lab session.

If the students work on their own laptop, the Windows' versions of "MySQL Server" and "MySQL Workbench" must have been previously installed. (download the "Community" version for Windows)

1.1 Basic concepts

What is data?

What is information?

What is a database?

How many times have you previously used a database?

How can you use a database?

What is a database management system?

1.2 Server installation

A database server is a program that manages the database and handles user connections (usually on a computer different from the user's).

Access a console/command prompt and execute some queries and instructions:

Make sure you have the operating system updated. To do this:

>cd C:\Program Files\MySQL\MySQL Server 8.0\bin

>mysql -u root -p (will prompt for the root password of the database server)

>select sysdate();

>select distinct table_schema from information_schema.tables;

Q1. What is the content of the last row returned?

>exit

1.3 Client installation

A database client is a program installed on the user's computer that allows connecting to the database server, interacting with it, and also enables certain tasks to be performed offline.

Use or add a new connection for the local host (localhost) and connect to it.

Identify the various sections displayed in a connection:

Upper menu (*)

Left: Management / Instance / Schemas (object browser)

Central: SQL editor (and output)

Right: additional services

Bottom: Action output / Text output / History

Check the Server status.

Execute the following SQL query, look at its effects and save the query in a file.

select table_name from information_schema.tables where table_schema='mysql';

Q2. How many rows are returned?

1.4 Generate a database from a script

Download the file ***bd_personal.sql*** from Aula Virtual.

Connect to the database server and open the SQL script file you just downloaded in a new query tab and execute it. If necessary, refresh the schema browser.

Navigate to the new personal schema.

Q3. What tables have been created?

Q4. What are the columns of the "empleado" table, and how many records does it have?

Using the object explorer (and right-clicking), display (select) some rows from the "empleado" table.

1.5 Reverse engineer: generate a model from a database

At the Workbench upper menu, select in *Database* the *Reverse Engineer* option to generate a new model from the schema of the '***personal'*** database.

Explore the generated model and its EER Diagram.

*Q5. What are the indexes of the "**empleado**" table?*

Save the generated model in a file.

1.6 Forward engineer: create a database from a model

Download the file ***modelo_biblio.mwb*** from Aula Virtual.

In *MySQL Workbench*, open the "*modelo_biblio*" model and explore it.

In the top menu of *Workbench*, select *Database* and choose the *Forward Engineer* option to connect to our DBMS and create a new database (a schema and a set of tables).

Q6. What are the lines of the SQL script that need to be executed to create the "biblio" database schema and be able to use it? What is the content of the first line CREATE TABLE?

Connect to the DBMS and navigate through the new schema named 'biblio'.

Q7. How many tables are there in the 'biblio' schema?

Annex with brief definitions of the terms used in the database

The terms of the database used are not in English. For clarity, the translation of the terms present in this document is provided here:

"biblio" - Library: Pertaining to a collection of books or publications.

"personal" - Personnel: Relating to individuals or employees within an organization.

"empleado" - Employee: Denoting an individual working within a specific context.