**Competency 1 - Recognize the basic concepts of the use and design of a database**

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**Content**

* Item

**Learning Objectives**

Recognize the basic concepts of the use and design of a database.

* + Recognize the use and application of the Relational Database Model.
  + Explore MySQL as a system for creating database solutions.
* Item

**Learning Procedures / Assignments**

**Step 1: Read it**

SQL for MySQL Developers: Read Chapters 1, 2, 3, and 4.

**Step 2: Do it**

Install MySQL Community Server and MySQL Workbench (done as part of MySQL Tutorial).

Current releases are 5.7.19 for Server and 6.3.9 for Workbench.

Create and load the Tennis Club database (done as part of MySQL Tutorial).

For yourself list the tables and the primary key of each table for the Tennis Club database (described in Chapter 2).

Go to <http://www.r20.nl/SQL_for_MySQL_v1.htm> and download the SQLforMySQL\_V1\_All\_SQL\_Statements.txt file.

When the book has an example for trying out a SQL example, DO IT. I find having the above text file open in an editor helps.

**Step 3: Practice it**

Homework 1 - Tennis Club - Import and explore

Requirements:

1. Create a MySQL database meeting the following requirements:
   1. Import the Tennis database (should be done from MySQL Tutorial)

Execute the following queries and save the results. Also save the SQL statement command you created to answer the query.

* 1. SELECT PLAYERNO FROM PLAYERS WHERE JOINED > 1980 AND TOWN = 'Stratford' ORDER BY PLAYERNO;
  2. SELECT \* FROM PENALTIES;
  3. Modify query 2a to display the player name instead of the player number.
  4. Display the contents of the TEAMS table.
  5. Display what tables are in the database.

1. Submit the saved results file which includes the SQL statements and results using the below name.
2. Each query is worth 20% of the homework grade.

YourLastName\_hw1.txt

|  |  |
| --- | --- |
|  | <http://www.r20.nl/download_sql_MySQL.htm> |
| **Download SQL Statements Belonging to *SQL for MySQL Developers***  The SQL statements from the *SQL for MySQL Developers* book, are all stored in one simple text file:  [SQLforMySQL\_V1\_All\_SQL\_Statements.txt](http://www.r20.nl/SQLforMySQL_V1_All_SQL_Statements.txt). You can use the right mouse click to download the file.  Through cut and paste they can be copied into any product.You can open and process the file with any text editor.  In front of each SQL statement, an identification is included. You can use those identifications to search for the correct SQL  statement. For example, example 7.1 (this is the first example in Chapter 7) has as identification:  Example 7.1:  And answer 12.6 is indicated as:      Answer 12.6:  **Installing the Example Database**    Chapter 4 of *SQL for MYSQL Developers* describes how to install the example database. That description includes explanations  of how certain SQL statements work. This page contains a more concise description of the installation procedure.    We assume that you have successfully installed MySQL and WinSQL. If you have already created a user, such as  BOOKSQL, then start with step 4    Step 1: Start WinSQL and log on using the user name *root* with password *root*.    http://www.r20.nl/SQLV4_Install_1.jpg  Step 2: Create a new user called *BOOKSQL* with password *BOOKSQLPW*. Type in the following SQL statement:  http://www.r20.nl/SQLV4_Install_2.jpg  Execute this statement by pushing the button with the green arrow. If the user is created, the following window appears:  http://www.r20.nl/SQLV4_Install_3.jpg  Step 3: Assign *BOOKSQL* all the required privileges with the following statement, and execute the statement:  http://www.r20.nl/SQLV4_Install_4.jpg    Stop WinSQL now.  Step 4: Start WinSQL and log on with user name *BOOKSQL* and password *BOOKSQLPW*:  http://www.r20.nl/SQLV4_Install_5.jpg  Step 5: Create a new database called TENNIS using the CREATE DATABASE statement.  Don't forget the execute the statement:  http://www.r20.nl/SQLV4_Install_6.jpg  Step 6: Make TENNIS the current database through the USE statement:  http://www.r20.nl/SQLV4_Install_7.jpg  Step 7: Download the file [SQLforMySQL\_V1\_create\_new\_database.txt](http://www.r20.nl/SQLforMySQL_V1_create_new_database.txt). Open the file with, for example, Notepad.  Copy all the statements from the file into WinSQL:  http://www.r20.nl/SQLV4_Install_8.jpg  Execute all the statements by pushing the button with the green arrow.  The example database will be ready after this. |

**Repair the Example Database**

Due to the execution of SQL statements, such as INSERT, UPDATE, and DELETE, it can happen that the contents of the database will deviate from the original situation. These changes will have a direct impact on the results of other statements. Therefore, it is required to restore the database to its original content occasionally.

There are two ways:

1. If only the contents of the example database has changed, download the file called [SQLforMySQL\_V1\_restore\_rows\_example\_database.txt](http://www.r20.nl/SQLforMySQL_V1_restore_rows_example_database.txt). First execute a USE statement to log on to the correct database (this is probably a database called TENNIS). Then, execute the statements in the downloaded file using WinSQL. First, DELETE statements will be used to remove the existing rows,  followed by INSERT statements to restore the original tables.
2. If you have also changed the structure of the tables by, for example, adding a column, then the tables should be dropped and recreated. Download the file [SQLforMySQL\_V1\_restore\_structure\_example\_database.txt](http://www.r20.nl/SQLforMySQL_V1_restore_structure_example_database.txt), and execute the statements using WinSQL.