CSCU9B3 Practical 2: Writing SQL

Computing Science, University of Stirling

In the first practical session, we explored the phpMyAdmin interface to MySQL, created some tables and entered some data. Now we will do exactly the same, but by typing the SQL directly, rather than using the user interface.

The data is again from the simple company database, but with slightly different table names to avoid conflict with the first practical sheet:

Table: Employees2

Name	Employee Number	Date of Birth	Salary	Full Time (%)
John Jones	234621	1972-07-04	45345.95	100
Sam Smith	374837	1970-08-23	44000.50	50

Table: Projects2

Project Name	Manager	Description	Full Days Worked
Thrust	234621	Build a rocket to the moon	100
Gold	374837	Turn lead into gold	200
Win	234621	Win Wimbledon	20

Entering SQL

Go to the SQL tab to access the interface for typing SQL directly. You must carry out the rest of these tasks from that interface alone. **You will find it easier** to edit your SQL in an editor such as **TextPad** or **Notepad** and then **cut-and-paste** it into the SQL box on the web page. That way you will have a record of everything that you have done.

It does not matter which table you currently have selected in phpMyAdmin, you can write SQL to operate on any table on the SQL page. Sometimes it is obvious which table the SQL is using: **SELECT * FROM *table***, for example. When it is not obvious, refer to columns in specific tables using dot notation: **table.field**. For example **Projects2.Manager** identifies the **Manager** field of the **Projects2** table. Remember to use single, backwards `` quotes around table and field names and double “” quotes around string literals (i.e. the contents of fields if they are strings, such as VARCHAR).

Create the Tables

Write the SQL to create the two tables. If you are unsure of the syntax for CREATE TABLE, look in the supplied SQL resources.

Now you need to put some data into your tables using the INSERT INTO command. Insert the data shown above into the tables using SQL.

CHECKPOINT 2: show your new tables in phpMyAdmin and the SQL you used.

Searching the Tables

Write the SQL to perform the following searches:

1. Search for the details of Sam Smith
2. Search for all the full time employees
3. Search for all employees born after 1/1/1967
4. Search for all the employees with a salary over 40000
5. List the projects that employee number 234621 is working on
6. Show just the name of all the projects with more than 150 full days worked
7. List the employee numbers of any employee working on a project with fewer than 400 days worked. Only show each employee number once in the list.
8. List all the projects in order of time taken, with the longest running project first.
9. Search for all the names ending in Smith
10. Search for all the names with 'Jon' somewhere in their name.

CHECKPOINT 3: show your results for searches 1 and 6 and the SQL you used.

Updating Tables

Now use the UPDATE command to make the following changes:

1. Change Sam Smith's salary to 50,000
2. Make all the necessary changes to change John Jones' employee number to 45631. How many updates did you make? If it was only one, look again.
3. Add 5 onto the number of days worked on all projects – do this with a single command and without looking first to see what the values for number of days currently are.

More SQL practice

If you want more practice, then use SQL to create the tables used as an example in the second SQL lecture on Data Manipulation (see PDF of lecture slides). Try out some of the search examples from that lecture, or make up some of your own.