

11 — Lab 11 — Databases

11.1 Introduction

Data drives the world; therefore data drives web development and websites. Data is most conveniently stored to and retrieved from databases. In this lab you will explore the Structured Query Language (SQL), which is a commonly used database language. You will also have the opportunity to create a database on a server using phpmyadmin, a commonly used web interface for database maintenance.

11.2 Introduction to SQL

First, get an overview of the SQL language. Follow the SQL Basic thread at <http://www.w3schools.com/sql/>. As usual, a nice feature of the w3schools website is that you can practice a language using their examples. In the case of SQL, they also include a test database for you to use. PHP and SQL.

In order to get data into your web page from a database, you must first connect to the database within your script code. Read the PHP Database thread at http://www.w3schools.com/php/php_mysql_intro.asp. You don't need to do the demos in this section, but you will be connecting to a MySQL database later. You also don't need to install a database server, one will be provided for you.

11.3 Create A Table

In this section you'll create a table in a database, connect to the database from your website, and print the information out from a table. Add a table using phpmyadmin MySQL comes standard with a command-line interface that, for the most experienced user, can be almost useful. There is a commonly used web interface named phpmyadmin that significantly simplifies the most commonly used MySQL.

A practice database has been setup for this class on the setaproject.org site. All students in the 412 classes share this database, which is named csc412. Your task is to create a table and populate it with some sample data; the specifics of the table structure and contents is left to you. To access the database, browse to <http://setaproject.org/phpmyadmin>. The username and password is csc412. Login and browse around. Using phpmyadmin, create a table

and populate it with some data. If you are completely stuck how to do this, you can try the phpmyadmin tutorial at <http://www.siteground.com/tutorials/phpmyadmin/>.

Connect to your database using a PHP script Following the instructions from the tutorial in the PHP and SQL section above, write a PHP script to connect to the csc412 database, select all the records from the table you created, and print the rows of the database to the web page. The location of the database is setaproject.org. The name of the database is csc412. The password for the database is csc412. The table name (used in the SELECT statement) is the table you created. If you get stuck, an example file has been created for you and is available from your thecity shell account at `/home/student/csc412/412/db.php`. You can see how it operates by browsing to <http://thecity.sfsu.edu/~csc412/db.php>.

11.4 Create A Visitor Page

11.4.1 Basic MySQL

Now that you know how to use MySQL and PHP, create a visitor page that asks the visitor to enter a quote and to whom it is attributed. In your PHP processing script, write this information to a table that you create in the database. In your PHP response page, list all of the quotes that have been entered.

11.4.2 Advanced MySQL

In addition to the visitor log from above, in the response page allow the user to search for a string inside the quotations.

First, create an additional response page. Once you've got this working, try seeing if you can use AJAX to update a table on your page without having to go to a new page. jQuery is very helpful with AJAX.

11.5 Show Off

When you've completed your page (either basic or advanced) show the instructor. The instructor will sign off on the worksheet indicating that you completed the assignment.