

Web Design (COMP 20030)

PHP/MySQL

This week, we will take a closer look at how PHP can interact with MySQL. MySQL is a database platform that PHP has been specifically designed to work well with. Using a database system like MySQL, it is possible to both enter and return data that is stored online. This is critical to the way many websites work today. However, in this practical we will only be considering using data that is already stored on a preconfigured database.

In this practical it is mandatory to use your cserver.

Usernames are in the form: first two letters of your first name + your last name (all one word, all lowercase). E.g. Joe Bloggs' username would be jbloggs.

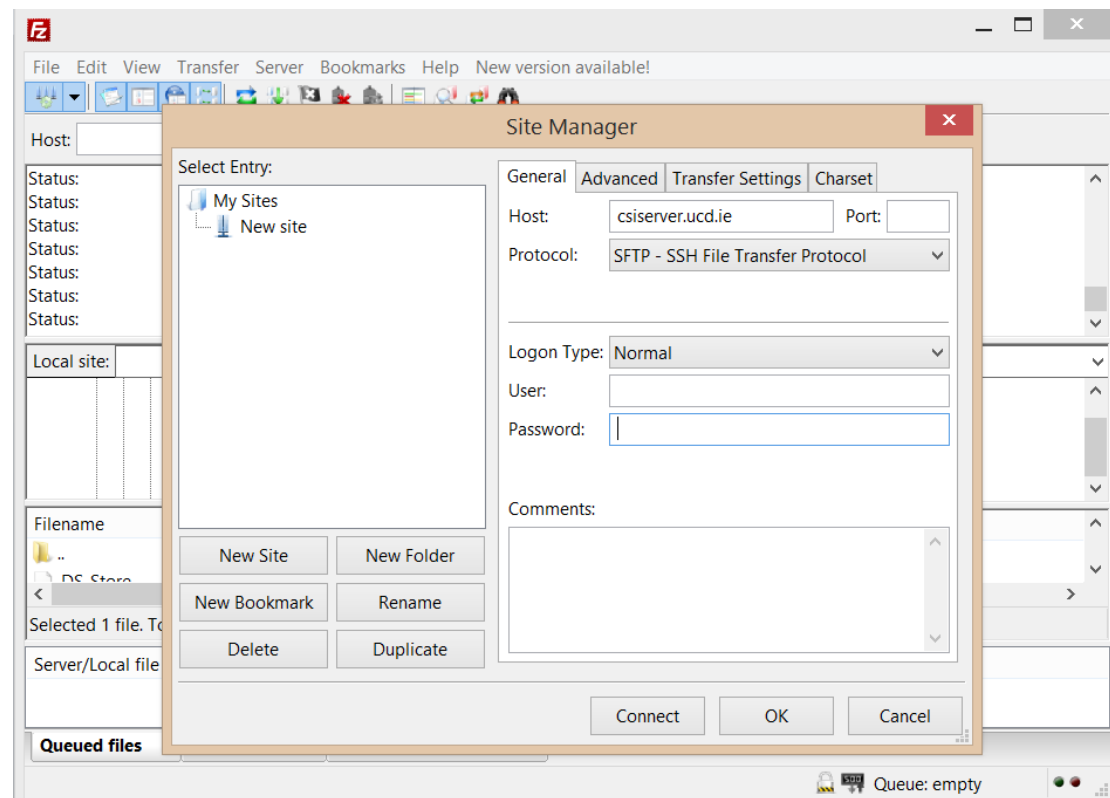
You can log into your server using SFTP/SSH. Note that UCD Wireless is likely to block these protocols (but should work fine on eduroam or Ethernet).

Logging into cserver.ucd.ie via SFTP

You can download an FTP client such as [FileZilla](#).

Once this is installed you can use the Graphical User Interface to connect with the server.

Note that FileZilla will, by default, use ftp. cserver will **not** allow ftp connections and sftp must be specified before the host name or in **SiteManager** instead.



Alternate means of logging into csserver.ucd.ie via SSH

To log into csserver.ucd.ie using SSH, you can use PuTTY installed on your windows machine. You can download PuTTY from <http://www.chiark.greenend.org.uk/~sgtatham/putty/> or by Googling “Putty” great advice there. For Mac OS or Linux machines, you can use your terminal.

Details needed to connect to csserver via SSH:

Windows & PuTTY:

Hostname: csserver.ucd.ie
Port: 22 (default SSH port)
Username: first letter of your
 firstname+lastname
Click Open
You will then be prompted for your
password which is only known to you

Mac OS and Linux:

Open up a new Terminal window.
Type the command:
ssh first letter of your
firstname+lastname @csserver.ucd.ie
You will then be prompted for your
password which is only known to you

Within your server home directory, you will see a directory called public_html. This is your web root for the web server (e.g. Apache) installed on the server.

A list of common command line... commands are listed [on moodle](#)... if command lines are your sort of thing.

Connecting to a MySQL database and submitting queries.

When accessing data contained in a MySQL database through PHP, you must first connect to the MySQL server, then select the database schema you would like to work with, and then start issuing your queries. The standard SELECT, INSERT, UPDATE SQL queries work in a similar manner with MySQL.

Sample connection code:

```
<?php
$con = new mysqli('localhost', 'peter_parker', 'my_password',
    'my_amazing_database');
if (mysqli_connect_errno())
{
    printf("Connect failed: %s\n", mysqli_connect_error());
    exit();
}
mysqli_close($con);
?>
```

You can then send a prepared SQL statement (for instance, to [SELECT](#) data) by using a function like mysqli_query:

```
$result = mysqli_query($connection_variable,"SOME SQL STATEMENT
    HERE");
```

Iterating through a query result

We can use a while loop to iterate through the results from a MySQL query:

```
while($row = mysqli_fetch_array($result))
{
    echo $row['COLUMN1'];
    echo $row['COLUMN2'];
}
```

Notes for this practical:

All of the files you create during this practical should be stored in a folder called php2 on your server. For instance, you can access these files through your browser by navigating to <http://cssserver.ucd.ie/~jbloggs/php2> where jbloggs will be your username.

You will likely need to give any file you upload read permission to be viewed remotely. This can be done through either an FTP or SSH client.

To turn on error reporting use the php function:
`error_reporting(E_ALL);`

Practical Exercises

Exercise 1

You will have to create a directory on your cserver called: **public_html**

You can do this using FileZilla or by using the mkdir command (FileZilla is easier).

Everything that you upload to your cserver that is publically accessible should go in public_html (i.e. everything in this assignment). The directory public_html will not appear in any URL as it is automatically used by the webserver to serve your website.

Create a folder called php2 in public_html.

Upload a php page (q1.php) onto the folder php2 on your cserver which does the following:

Using the superglobal array \$_SERVER and the key 'SERVER_NAME' echo or print the following

“Welcome to my website at \$myserver”

Where \$myserver is a variable representing the server name.

Ensure that the page displays correctly, and include the URL to your page in your submission in a comment on the submission page on moodle.

Exercise 2

For the next three exercises we will be querying a MySQL database using PHP and formatting the results. There is a sample MySQL database set up on the server “csiserver.ucd.ie”. Access to this database is required for the subsequent exercises. To connect to this database the following details are needed:

Hostname:	localhost
Port:	3306 (default MySQL port)
Username:	student
Password:	comp20030
Schema:	php2

Note: the hostname is technically called “csiserver.ucd.ie”, but as you are using a csiserver.ucd.ie server to host the .php file accessing the MySQL database hosted on csiserver.ucd.ie, that the host will be local to that .php file, and as such, the hostname can be specified as “localhost” (without inverted commas) instead.

The sample php2 database consists of the following two tables:

```
mysql> select * from coffees;
```

COF_NAME	SUP_ID	PRICE	SALES	TOTAL
Colombian	101	7.99	3	23.97
French_Roast	49	8.99	2	17.98
Espresso	150	9.99	5	49.95
Colombian_Decaf	101	8.99	0	0
French_Roast_Decaf	49	9.99	1	9.99

```
5 rows in set (0.00 sec)
```

```
mysql>
```

```
mysql> select * from suppliers;
```

SUP_ID	SUP_NAME	STREET	CITY	STATE	ZIP
101	Acme, Inc.	99 Market Street	Groundsville	CA	95199
49	Superior Coffee	1 Party Place	Mendocino	CA	95460
150	The High Ground	100 Coffee Lane	Meadows	CA	93966

```
3 rows in set (0.00 sec)
```

Create a PHP file called q2.php. Connect to the “php2” MySQL database outlined above. **Hint:** try using the PHP `mysqli_connect()` function, i.e.

```
<?php
$connection_var = new mysqli('servername', 'username', 'password',
'databasename');
if (mysqli_connect_errno()) {
    printf("Connect failed: %s\n", mysqli_connect_error());
    exit();
}
mysqli_close($connection_var);
?>
```

Create a variable to store the results from a MySQL SELECT query to retrieve the contents of the ‘COFFEES’ table from the database. Print the required information for each coffee type out to a webpage in the format of:

Coffee Name: Colombian
Price: 7.99
Total Sold: 3
Total earnings: 23.97

Store the file in q2.php in the php2 folder.

Exercise 3

Create a PHP file called q3.php. Connect to the “php2” MySQL database as in the previous question. Create a query and process the results into a HTML table which takes the form of the following:

COF_NAME	SUPPLIER NAME	TOTAL
Colombian	Acme, Inc.	23.97
French_Roast	Superior Coffee	17.98
Espresso	The High Ground	49.95
Colombian_Decaf	Acme, Inc.	0
French_Roast_Decaf	Superior Coffee	9.99

The php page should automatically iterate over the MySQL results so that, if another coffee were added to the MySQL database, the php code would display it in the HTML table without any need to update the php code.

Exercise 4

Create a html page called q4.html. This should have a form which asks users to specify how many Colombian_Decaf supplies they wish to order. The form action should send the form data to “q4.php”. q4.php should, by querying the price of Colombian_Decaf recorded in the php2 database, calculate the total cost for the user, and output the result.

Store the file in q4.php in the php2 folder.

Submission Instructions:

Include a link to your server in the Moodle comment field along with your submission.