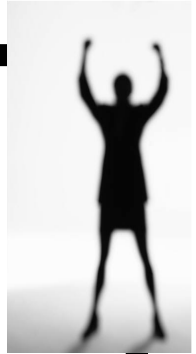


UQC103S1 UFCE47-20-1

Systems Development

Who?



Email:

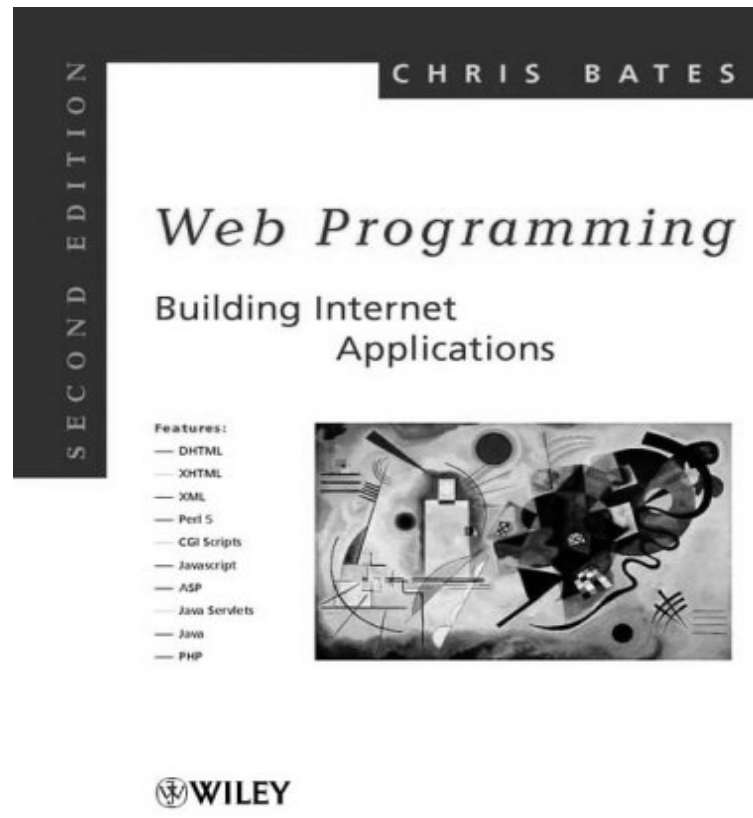
uqc103s1@uwe.ac.uk

Web Site

www.cems.uwe.ac.uk/~jedawson

www.cems.uwe.ac.uk/~jtwebb/uqc103s1/

HELP is at HAND



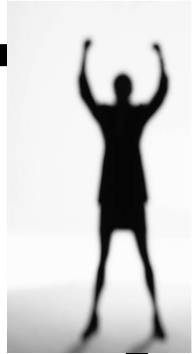
Features:

- DHTML
- XHTML
- XML
- Perl 5
- CGI Scripts
- Javascript
- ASP
- Java Servlets
- Java
- PHP



PHP and MySQL

A crash course



- In this lecture we will consider:
 - What is MySQL?
 - Why PHP and MySQL?
 - How to get and install PHP/MySQL
 - Some SQL
 - Using MySQL (command line)
 - Using PHP and MySQL

What is MySQL?



- The World's Most Popular Open Source Database
 - more than 4 million active installations
- A DBMS - Database Management System
 - Supports a database and allow client/server interactions (storing and retrieving information)
 - On a large system a computer may be solely dedicated to running the DBMS
- A DBA (DataBase Administrator) usually manages the database
- Usually a DBMS is very expensive to buy and/or maintain.

mySQL has ...



- Speed - written in C/C++, multithreaded, optimised
- Full data set - supports:
 - float, double, enum, date, char, varchar etc..
- Full Command set (SQL92 compliant)
 - select, insert, delete, show, "aliases" etc
- Functions - e.g. avg(), sum(), max()
- Security - privilege and password system
- Scalable - can take billions of rows of data
- Large character set for internationalisation
- Tools - admin and other access

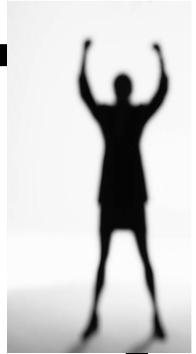
Why PHP and MySQL



- MySQL is a key part of LAMP (Linux, Apache, MySQL, PHP / Perl / Python), a fast growing open source enterprise software stack. More and more companies are using LAMP as an alternative to expensive proprietary software stacks because of its lower cost and freedom from lock-in.

<http://www.mysql.com/company/index.html>

How to get and install PHP/mySQL



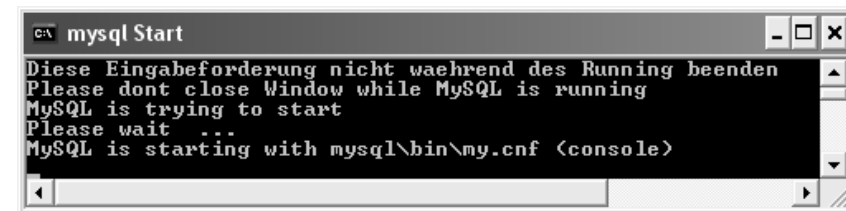
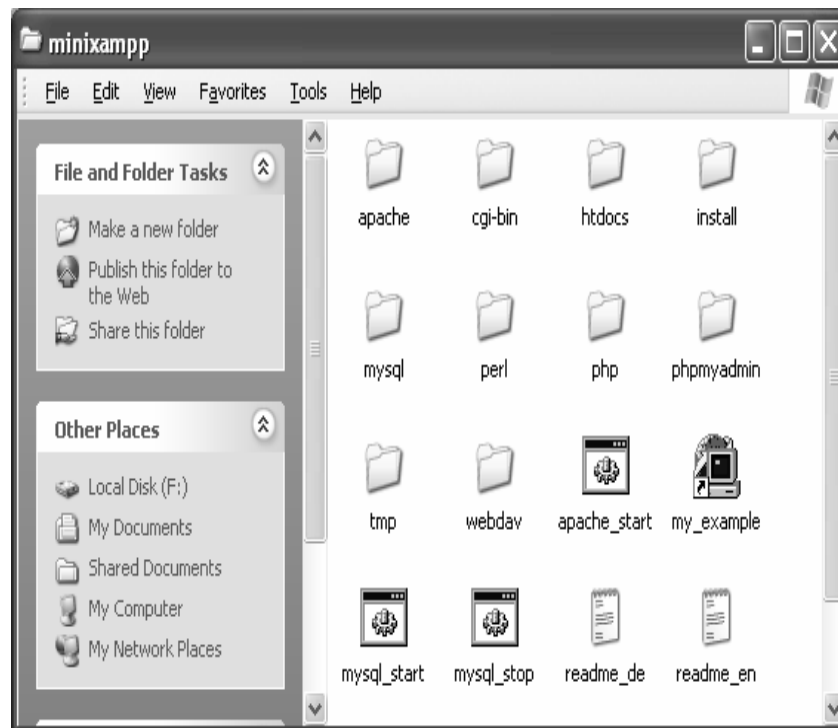
- MySQL NOTE: In Apache users web pages are in
install_dir\htdocs
 - <http://www.mysql.com/downloads/index.html>
- But don't forget (mini -XAMPP) !!
Apache/mySQL/PHP/Perl - download and install instructions (the "old" method should work OK)
 - <http://www.apachefriends.org/xampp-windows-en.html>
 - mini-xampp download is about 13 Mb

Starting Apache and mySQL

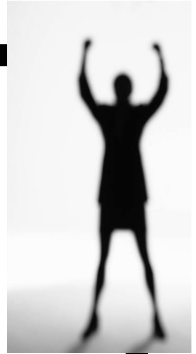


- Scripts to start and stop are in the minixampp install directory
- Starting Apache starts an HTTP service on port 80 (default)
 - <http://localhost/> or <http://127.0.0.1/>
- Starting mySQL starts a service on port 3066 (default)
 - NOTE: XAMPP contains a good admin tool for mySQL
 - <http://localhost/phpmyadmin/>
- Apache (minixampp) users web pages are in:
install_dir\htdocs

Stopping and Starting ...

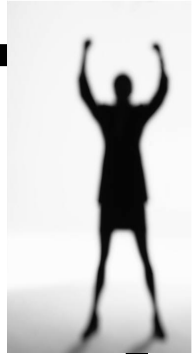


Basic SQL



- SQL - Structured Query Language
 - "sequel" or "ess-cue-el"
- We will consider:
 - creating a database
 - creating a table
 - populating a table (inserting data)
 - viewing a table (selecting data and ordering it)
 - changing data (updating data)
 - deleting data

Using SQL with MySQL



- In the simplest case can use MySQL "on the command line" (DOS prompt)
- the command to use mysql :
 - *install_dir*\mysql\bin\mysql
 - get a command prompt and change to the bin folder (or add `mysql` to your path)
 - make sure mysql service has been started
 - type "`mysql`" on the command line

Connecting to mySQL creating a database and a table



```
C:\ Command Prompt
F:\>mysql
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 10 to server version: 4.0.17-max-debug
Type 'help;' or '\h' for help. Type '\c' to clear the buffer.

mysql> create database sales;
Query OK, 1 row affected (0.00 sec)

mysql> use sales;
Database changed
mysql> create table products (
  -> id int primary key,
  -> description varchar(100),
  -> cost int);
Query OK, 0 rows affected (0.05 sec)

mysql> quit
Bye
F:\>
```

Populating a table

Viewing contents



```
Command Prompt - mysql
F:\>mysql
Welcome to the MySQL monitor.  Commands en
Your MySQL connection id is 12 to server v

Type 'help;' or '\h' for help. Type '\c' t

mysql> use sales;
Database changed
mysql> insert into products values(
-> 1,"Red Iron",12);
Query OK, 1 row affected (0.01 sec)

mysql> insert into products values(
-> 2,"Blue Pan",9);
Query OK, 1 row affected (0.00 sec)

mysql> insert into products values(
-> 3,"Green Door",43);
Query OK, 1 row affected (0.00 sec)

mysql>
```

```
Command Prompt - mysql
mysql> describe products;
+-----+-----+-----+-----+-----+
| Field      | Type          | Null | Key | Default |
+-----+-----+-----+-----+-----+
| id         | int(11)       |      | PRI | 0        |
| description| varchar(100)  | YES  |     | NULL     |
| cost      | int(11)       | YES  |     | NULL     |
+-----+-----+-----+-----+-----+
3 rows in set (0.01 sec)

mysql> select * from products;
+----+-----+-----+
| id | description | cost |
+----+-----+-----+
| 1  | Red Iron    | 12   |
| 2  | Blue Pan    | 9    |
| 3  | Green Door  | 43   |
+----+-----+-----+
3 rows in set (0.02 sec)

mysql> _
```

More about select ...



```
CA Command Prompt - mysql
mysql> select * from products order by cost;
+-----+-----+-----+
| id | description | cost |
+-----+-----+-----+
| 2 | Blue Pan   | 9    |
| 1 | Red Iron   | 12   |
| 3 | Green Door | 43   |
+-----+-----+-----+
3 rows in set (0.02 sec)

mysql> select * from products where
-> description like '%d%';
+-----+-----+-----+
| id | description | cost |
+-----+-----+-----+
| 1 | Red Iron   | 12   |
| 3 | Green Door | 43   |
+-----+-----+-----+
2 rows in set (0.03 sec)
```

```
CA Command Prompt - mysql
mysql> select * from products where
-> cost < 20;
+-----+-----+-----+
| id | description | cost |
+-----+-----+-----+
| 1 | Red Iron   | 12   |
| 2 | Blue Pan   | 9    |
+-----+-----+-----+
2 rows in set (0.00 sec)

mysql> select description, cost
-> from products;
+-----+-----+
| description | cost |
+-----+-----+
| Red Iron    | 12   |
| Blue Pan    | 9    |
| Green Door  | 43   |
+-----+-----+
3 rows in set (0.00 sec)
```

Changing and Deleting Data



```
Command Prompt - mysql
mysql> select * from products where
-> id = 2;
+----+-----+-----+
| id | description | cost |
+----+-----+-----+
| 2  | Blue Pan   | 9    |
+----+-----+-----+
1 row in set (0.00 sec)

mysql> update products set cost=11
-> where id = 2;
Query OK, 1 row affected (0.02 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> select * from products where
-> id = 2;
+----+-----+-----+
| id | description | cost |
+----+-----+-----+
| 2  | Blue Pan   | 11   |
+----+-----+-----+
```

```
Command Prompt - mysql
mysql> select * from products;
+----+-----+-----+
| id | description | cost |
+----+-----+-----+
| 1  | Red Iron   | 12   |
| 2  | Blue Pan   | 11   |
| 3  | Green Door | 43   |
| 4  | Pink Shoes | 22   |
+----+-----+-----+
4 rows in set (0.00 sec)

mysql> delete from products where
-> id = 2;
Query OK, 1 row affected (0.00 sec)

mysql> select * from products;
+----+-----+-----+
| id | description | cost |
+----+-----+-----+
| 1  | Red Iron   | 12   |
| 3  | Green Door | 43   |
| 4  | Pink Shoes | 22   |
+----+-----+-----+
```

Using MySQL with PHP



- Example One:
 - connect to MySQL
 - select a database
 - define a query
 - execute query
 - present results
 - free resources
- Program - [mysql1.php](#)



PHP/mySQL - column headings



- We can add a bit more detail:
 - improved formatting
 - **order by** in select
 - **insert** new data
 - adding column names
 - LINK: [mysql2.php](#)

The screenshot shows a web browser window titled "mysql - Two - Microsoft Int...". The page content includes the heading "MySQL Two" and the text "showing table headings" and "Connected successfully". Below this is a table with three columns: "id", "description", and "cost". The table contains five rows of data. At the bottom of the browser window, the text "Bve..." is visible.

id	description	cost
5	Purple Rug	8
2	Blue Pan	9
1	Red Iron	12
4	Pink Shoes	22
3	Green Door	43

Using PHP with HTML forms

The form ...



- PHP is commonly used to process HTML forms
 - cf. CGI programs
- See [search1.html](#)

A screenshot of a Microsoft Internet Explorer browser window. The title bar reads 'Form One - Microsoft Internet Explorer'. The menu bar includes 'File', 'Edit', 'View', 'Favorites', 'Tools', and 'Help'. The main content area displays a form titled 'Test Form' in a large, bold font. Below the title, the text reads 'Find what presents you want to buy'. A question follows: 'What is the most you wish to spend?'. Below this question is a text input field containing the number '20'. At the bottom of the form are two buttons: 'Search for presents' and 'Clear'. The browser's status bar is visible at the bottom right.

The PHP ...



- Check input is OK
- connect to database
- run query
- check output
- process as before
- See: [form1.php](#)

The screenshot shows a web browser window with the title 'PHP Search Form - Microsoft Inte...'. The browser's menu bar includes 'File', 'Edit', 'View', 'Favorites', 'Tools', and 'Help'. The main content of the page is titled 'Present Finder' in a large, bold font. Below the title, the text reads 'You can afford these presents'. At the bottom of the page, there is a table with two columns: 'description' and 'cost'. The table contains three rows of data:

description	cost
Purple Rug	8
Blue Pan	9
Red Iron	12

Some Helpful URLs



- **mySQL - reference and tutorial**
 - <http://www.mysql.com/doc/en/Introduction.html>PHP/mySQL tutorial
 - <http://www.mysql.com/doc/en/Tutorial.html>
- **PHP/mySQL tutorial**
 - http://hotwired.lycos.com/webmonkey/99/21/index2a.html?t_w=programming
- **Learn SQL**
 - <http://www.w3schools.com/sql/default.asp>
- **PHP to MS Access (ODBC) example**
 - http://www.w3schools.com/php/php_db_odbc.asp