

## MYSQL BASICS

THIS WEEK our goal is to do the following:

- Connect to the MySQL Client
- Create a DATABASE
- Create tables inside the database.
- Input information into different tables within the Database
- Retrieve and Manipulate this information
- FINISH ANY OVERDUE ASSIGNMENTS

### WHAT IS A MySQL DATABASE ?

A MySQL database is just a useful way to store and order a lot of information.

“Databases are most useful when it comes to storing information that fits into logical categories. For example, say that you wanted to store information of all the employees in a company. With a database you can group different parts of your business into separate tables to help store your information logically. Example tables might be: Employees, Supervisors, and Customers. Each table would then contain columns specific to these three areas.”

TIZAG.COM

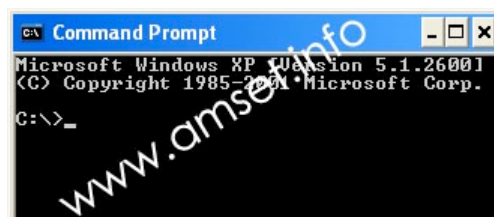
Utilizing a MySQL Database with PHP adds functionality that will let us create Web Applications, such as BLOGS and Social Networking Sites ( re: Facebook, Myspace etc) . Think of a site with a lot of searchable information such as CNN, The NYTIMES or PITCH-FORKMEDIA. Guaranteed they all use some form of Database structure.

### FIRST STEP - CREATING DATABASE & TABLES

Go to your start Menu and look for ALL PROGRAMS > ACCESSORIES > COMMAND PROMPT.

You will get a little black window like this:

Here is where we will type our commands to create the database etc.



Directly after the `c:\>` or `u:\>` type

`mysql -h localhost -u root -p`

You will be prompted for a password, type:

*phsclass*

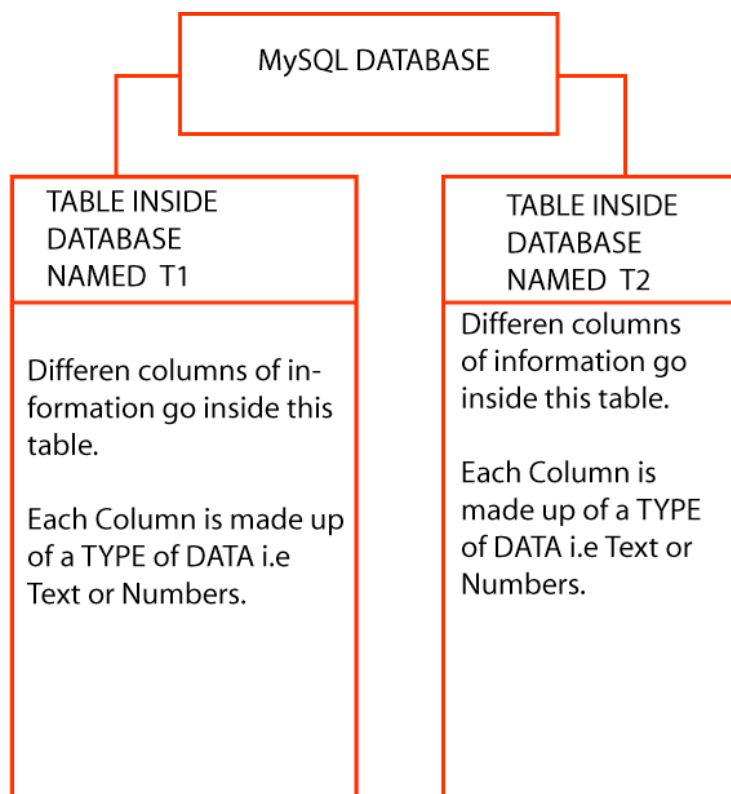
You should receive a message stating you have connected to the MySQL Monitor. Congrats.

You are going to name our Database something simple that you will remember, such as your last name.

The Command to create the database is a very simple one.

Type : *create database smith;* Where smith is the name of the database. Don't forget the semicolon.

We now have an empty database that we need to fill with information. Information in a MySQL database is stored in tables.



Each table has COLUMNS which represent a category of information and ROWS which hold the information for the columns. For example we could have a table called "People" .

id	NAME	AGE
1	John	25
2	Sally	22

id	NAME	AGE
3	Michael	65

This example shows a table with 3 columns representing the ID of the entry, the NAME and the AGE.

When we create our table we need to specify the names of the columns (categories) AND the TYPE of information to be stored in each column, BEFORE we put any information into it. Notice in the above example some information is TEXT and some is NUMERIC. Here is a chart showing the different types of data we can use. For the moment we are going to stick to VARCHAR (various characters) and INT(integer), these are marked in RED.

DATA TYPES	
CHAR	String, length 0 - 255
● VARCHAR	String, length 0 - 255
TINYTEXT	String, length 0 - 255
TEXT	String, length 0 - 65535
BLOB	String, length 0 - 65535
MEDIUMTEXT	String, length 0 - 16777215
MEDIUMBLOB	String, length 0 - 16777215
LONGTEXT	String, length 0 - 4294967295
LOBLOB	String, length 0 - 4294967295
* TINYINT	Integer, -128 to 127
* SMALLINT	Integer, -32768 to 32767
* MEDIUMINT	Integer, -8388608 to 8388607
● * INT	Integer, -2147483648 to 2147483647
* BIGINT	Int, -9223372036854775808 to 9223372036854775807
FLOAT	Decimal (precise to 23 digits)
DOUBLE	Decimal (24 to 53 digits)
DECIMAL	"DOUBLE" stored as string
DATE	YYYY-MM-DD
DATETIME	YYYY-MM-DD HH:MM:SS
TIMESTAMP	YYYYMMDDHHMMSS
TIME	HH:MM:SS
ENUM	One of preset options
SET	Selection of preset options
<p>* Note: "UNSIGNED" TINYINT, SMALLINT, MEDIUMINT, INT, BIGINT have the same range of values but start at 0, e.g. TINYINT UNSIGNED is between 0 and 255.</p>	

LET'S START by creating a table just like the above example. Just to make sure you are still in the correct database type the following:

`use smith;` Where smith is the name of the database you created earlier. You should get a message saying "database changed" or similar.

Now to create the table, type:

```
CREATE TABLE people (id INT NOT NULL AUTO_INCREMENT PRIMARY KEY, name VARCHAR(100), age INT(11));
```

If you get error messages try it again making sure you type everything correctly.

Let's break it down -

Basically we created a table called people.

We have 3 columns named id, name & age

id is a number , name is text and age is a number up to 11 spaces long.

The only strange code is for the id column.

NOT NULL is saying this value cannot be empty,

AUTO\_INCREMENT is saying We want the id of the row to go sequentially,

PRIMARY KEY is saying that this value cannot be repeated, for example you could have 20 people named "John" in the table with different age values but the id for each entry has to be unique.

To test if your table is now in the database , type:

```
show tables;
```

You should see your table listed.

LET'S insert some information to our table:

```
INSERT INTO people(name,age) VALUES ('john','25');
```

If you get an error message, try it again. Be careful to follow the above syntax exactly.

NOTICE how we didn't put in a number for ID? Go back to where we created the table, the AUTO\_INCREMENT part puts the next number in the sequence automatically.

Try another one

```
INSERT INTO people(name,age) VALUES('sally','22');
```

To view your results type:

```
SELECT * FROM people;
```

You should get a read-out of all your table information.

For easy/further reference here is a link to a MySQL tutorial concerning table creation.

<http://sql-info.de/mysql/examples/CREATE-TABLE-examples.html>

## TASK:

Using the windows command prompt , create 3 ADDITIONAL tables in the database you created earlier. The tables should contain the following information.

### Table 1: Named - Population

- Contains auto incremented id column
- A column for the name of the country
- A column for the population as a number

Once the table has been created , Insert 6 rows of correct information (research), choose any countries you like.

### Table 2: Named - NYC

- Contains auto incremented id column
- A column for the name of each borough
- A column for the name of the Borough President.

Once created , insert the appropriate information. Obviously there will be only 5 rows of information.

### Table 3: You Choose

Criteria - Must contain an AUTO\_INCREMENTED id column and @ least 3 other columns either TEXT or NUMBERS.

## LOOKING AHEAD

- Integration of PHP with the DATABASE we have created.
- Our first Web Application using the database.