

Database and MySQL

Week 07

Dynamic Web TCNJ

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What is Database?

- A database is a collection of tables (made up of columns and rows) that stores information.



id	idl	name	uname	upic	email	usex	ustatus	uhomeov
1	188525351253408	bjork: biophilia liv	Jean Ho Chu	http://profile.ak.fbcdn.net/hprofile-ak-ae102/1710...	jeanhochu@gmail.com	female	what a nice weather!	Seoul, Korea
2	205725192850787	ê·ê·f·Y i·fi§€i§"	Swapped Jeankb Chu	http://profile.ak.fbcdn.net/hprofile-ak-ae44/41710...	swapidentity@gmail.c	female		
3	111344135614009	Chi2012	David Jimison	http://profile.ak.fbcdn.net/hprofile-ak-ae4/27218...	davidjimison@gmail.c	male	Any recommendations for good Head Mount Display #y...	Washington District of Columbia
4	222141594496005	AIGA NY	Jeffrey Coarse	http://profile.ak.fbcdn.net/hprofile-ak-ae4/41475...	jdf@jefcrouse.info	male		New York, New York
5	246042278796260	AIGA NY	Pete Jimison	http://profile.ak.fbcdn.net/hprofile-ak-ae4/21183...	petejimison@gmail.co	male		McLean, Virginia
6	13259856990	American Museum of N	Grain Made	http://profile.ak.fbcdn.net/hprofile-ak-snc4/7444...	jacob@grainmade.com	male		
7	7224956785	Samsung Mobile USA	Jacob Milam	http://profile.ak.fbcdn.net/hprofile-ak-ae102/27419...	ilurve@yahoo.com	male		
8	164680353586283	Facebook timeline	Jiwon Shin	http://profile.ak.fbcdn.net/hprofile-ak-ae4/57135...	jwoshin@me.com	female	going back to campoo...	Seoul, Korea
9	7040724713	Yahoo!	Heajin Seo	http://profile.ak.fbcdn.net/hprofile-ak-ae4/49548...	sh2853@gmail.com	female	Happy Luna New Year...! §§™_§§™~)	Seoul, Korea
10	174033634611	HUGE	Carlos Sakon Shin	http://profile.ak.fbcdn.net/hprofile-ak-ae4/18053...	sakon@gmail.com	male		
11	278490055523173	An infographic that						
12	199119680134536	The Metropolitan Mus						
13	115384328477363	The Creators Project						
14	67692068407	Social Graph						
15	162029073851756	Social Relay Mail						
16	113700398662301	Demo Application I T						
17	125240220719	CLUB MONACO						

entry_id	title	entry	date_entered
1	updatedtitle	updatedentry	2012-03-01 13:43:26
2	\$title	\$entry	2012-03-01 13:43:26

Database

```
graph TD; Database[Database] --- Table1[Table 1]; Database --- Table2[Table 2]; Database --- Table3[Table 3]; Table1 --- C1[Columns & Rows]; Table2 --- C2[Columns & Rows]; Table3 --- C3[Columns & Rows];
```

Table 1

Table 2

Table 3

Columns & Rows

Columns & Rows

Columns & Rows

What is MySQL?



- The most used relational database management system (RDBMS) that runs as a server providing multi-user access to a number of databases
- Most databases are created, updated, and read using SQL (Structured Query Language)

Cf)Data Interchange Formats

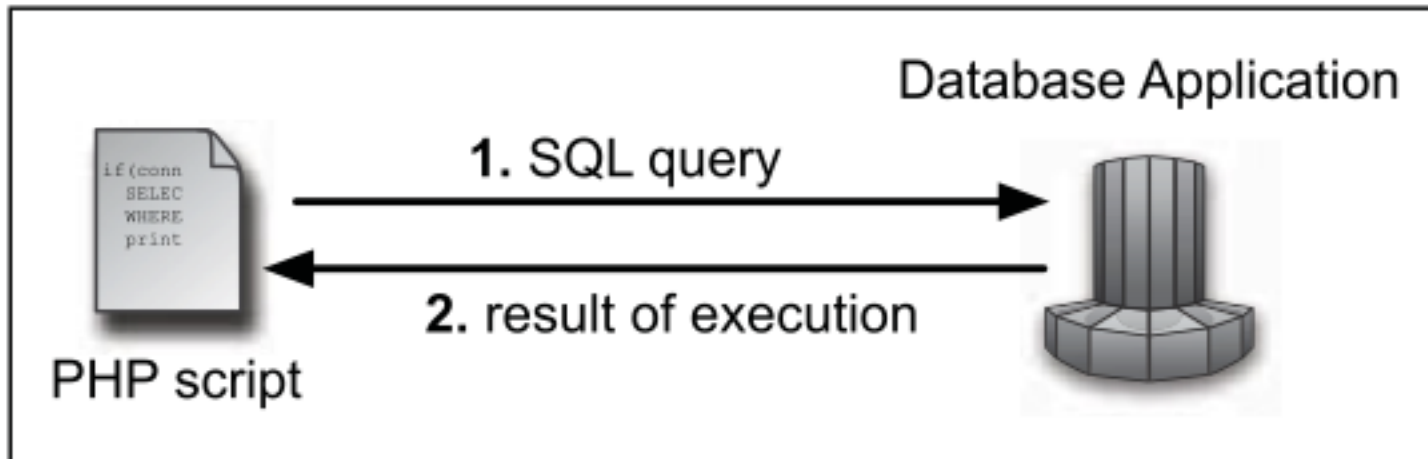
JSON

```
{"menu": {  
  "id": "file",  
  "value": "File",  
  "popup": {  
    "menuitem": [  
      {"value": "New", "onclick":  
        "CreateNewDoc()"},  
      {"value": "Open", "onclick": "OpenDoc  
        ()"},  
      {"value": "Close", "onclick": "CloseDoc  
        ()"}  
    ]  
  }  
}}
```

XML

```
<menu id="file" value="File">  
  <popup>  
    <menuitem value="New"  
      onclick="CreateNewDoc()" />  
    <menuitem value="Open"  
      onclick="OpenDoc()" />  
    <menuitem value="Close"  
      onclick="CloseDoc()" />  
  </popup>  
</menu>
```

PHP & MySQL



A PHP will be used to send an SQL statement to MySQL. MySQL will execute the statement and return the result to the PHP script.

Our Shared DB

Our Shared DB

Host:ipower.com

username: interactive

password:

11bestoftimes_2012

This will only allow you to log in to the control panel but will not give you remote access

Jean's

Host:data.jeanhochu.com

username: tcnj

password: dynamicweb

This will not allow you to the control panel but will give you remote access

Host : ipower.com

The screenshot shows the iPower website homepage. At the top, there is a navigation bar with links for CONTROL PANEL, WEBMAIL, and FILEMANAGER. A login section includes a USERNAME field with 'interactive' and a PASSWORD field with masked characters, followed by a LOG IN button. The main header features the IPOWER logo, a Country dropdown menu set to 'United States', a 'POWERED BY WIND ENERGY' logo, and a 'Supplied by Community Energy' badge. A 24x7 SUPPORT phone number (1.888.511.HOST) and a LIVE CHAT button are also present. A dark blue navigation menu contains links for WEB HOSTING, PRODUCTS, TESTIMONIALS, PARTNERSHIPS, HELP CENTER, and CONTROL PANEL. The main content area is a large banner with a grid background. On the left, a diagonal banner reads 'HOSTING OVER 1,000,000 SITES!'. The main text says 'POWERFUL WEB HOSTING FOR HOME AND BUSINESS'. To the right, there are six feature icons: Unlimited Disk Space and Bandwidth, 24x7 Phone, Chat and Email Support, Free Domain Name, 2,500 Email Accounts, Host Unlimited Sites in One Account, and Free Site-Building Tools & Scripts. A 'VIEW FULL FEATURE LIST' button is located below these features. A large orange banner at the bottom of the main content area displays 'THE PRO PLAN \$5.95/mo*' and a 'SIGN UP NOW' button. Below this, a smaller banner indicates 'REGULARLY \$8.95/MO.'. At the very bottom, there are three sections: 'Get Started With' (partially visible), 'FOLLOW US' with social media icons for Twitter and Facebook, and 'IPOWER Goes Green'.

Code

General

```
$dbc = @mysql_connect  
      ('localhost', 'username',  
      'password')
```

Remote Connect

```
$dbc = @mysql_connect  
      ('data.jeanhochu.com',  
      'tcnj', 'dynamicweb')
```

* note: Tcnjart.com ipower account setting do not support remote access to the database. You could only use the control panel or use Jean's personal database connection.

Common SQL Commands

SELECT (Retrieves records from a table)

INSERT (Adds records to a table)

UPDATE (Updates records in a table)

DELETE (Deletes records from a table)

MySQL Database

The screenshot shows the iPower Control Panel interface. At the top, the browser address bar displays `www.ipower.com/controlpanel/beta/`. The page header includes the iPOWER logo and navigation links for Website, Email, Domain, and Marketing Services. The main content area is titled "Control Panel" and features a "SHOWCASE" section with promotional banners for Nextiva, iPayment, Google AdWords, and SEO. Below this is a "WEBSITE" section containing a grid of service icons, including .htaccess Editor, Archive Gateway, CGI and Scripted Language Support, Disk Usage, FTP, FileManager, Form Builder, FrontPage Extensions, Google Services for Websites, **MySQL Database**, Secure Server, Server Information, ShopSite Starter, SimpleScripts, Visitor Statistics, WebSite Creator by CM4all, Weebly Drag and Drop Builder, and WordPress. On the right side, there are "Shortcuts" (Edit Website, View My Site, Check Email, Edit Domains, Check Stats, Edit Password), a "Marketplace" section with a search bar, a "Twitter" follow prompt, and "System Settings" which lists the Website IP as 66.96.130.15 and Nameservers as ns1.ipower.com.

Add Database

The screenshot displays the IPOWER MySQL Beta control panel. The browser address bar shows the URL `www.ipower.com/controlpanel/MySQL/index.bml`. The user is logged in as `interactive`. The main content area is titled "MySQL Beta" and features two tabs: "Manage Databases" (selected) and "Manage Backups".

Under the "Manage Databases" tab, there is an "Add Database" button and a list of existing databases:

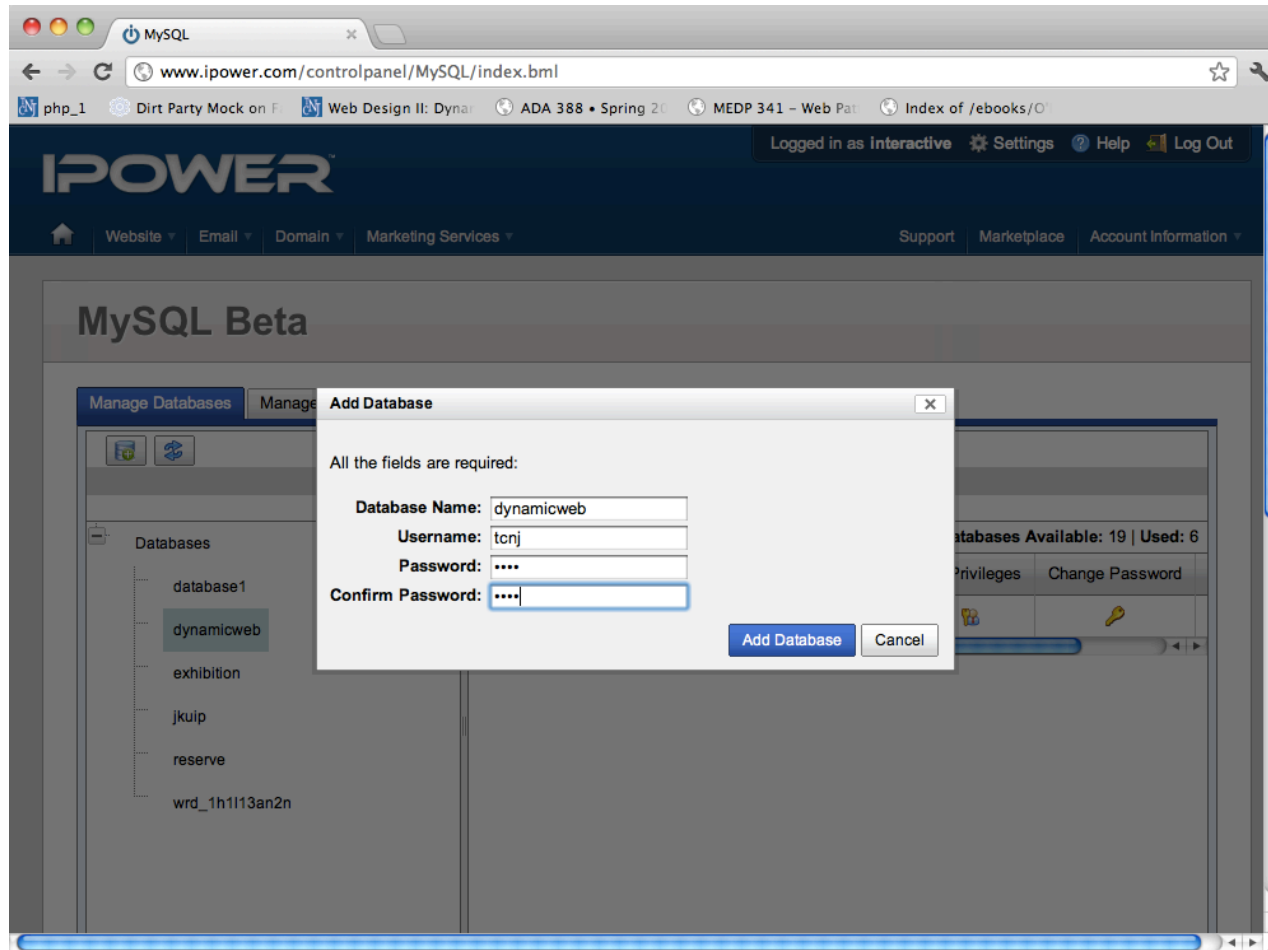
- database1
- exhibition
- jkuip
- reserve
- wrd_1h1113an2n

The right-hand pane shows the configuration for the selected database, `database1`. It displays the following information:

- Version: 5.0.45 | Server Name: interactive.ipowermysql.com | Databases Available: 20 | Used: 5
- Username: `bubser3`
- Actions: Access phpMyAdmin, Generate Code, Set Privileges, Change Password

The browser's address bar at the bottom shows `www.ipower.com/controlpanel/MySQL/index.bml#`.

Add Database



Create Database

```
mysql_query('CREATE  
    DATABASE somedb',  
    $dbc);
```

Theoretically, it should work, but it won't work in Jean's server for permissions and security reasons.

Manage Database

The screenshot displays the phpMyAdmin interface. At the top, there are two tabs: "Manage Databases" (active) and "Manage Backups". Below the tabs, there are two icons: a server with a plus sign and a server with a minus sign. The main content area is divided into two panes. The left pane, titled "Databases", shows a tree view of databases: "database1", "dynamicweb" (highlighted), "exhibition", "jkuip", "reserve", and "wrд_1h1113an2n". The right pane, titled "Managing Database: dynamicweb", shows server information: "Version: 5.0.45 | Server Name: interactive.ipowernmysql.com | Databases Available: 19 | Used: 6". Below this, there is a table with columns: "Username", "Access phpMyAdmin", "Generate Code", "Set Privileges", and "Change Password". The "Username" column contains "tcnj". Each cell in the table has a corresponding icon: a document for "Access phpMyAdmin", a terminal for "Generate Code", a group of people for "Set Privileges", and a key for "Change Password".

Username	Access phpMyAdmin	Generate Code	Set Privileges	Change Password
tcnj				

php MyAdmin

The screenshot displays the phpMyAdmin web interface in a browser window. The address bar shows the URL `https://mysqladmin.ipower.com/mysqladmin/index.php`. The page is titled "MySQL - 5.0.91-log" and "phpMyAdmin - 2.8.0.1".

MySQL - 5.0.91-log

- MySQL charset: **UTF-8 Unicode (utf8)**
- MySQL connection collation: `utf8_unicode_ci`
- [Show MySQL runtime information](#)
- [Show MySQL system variables](#)
- [Show processes](#)
- [Character Sets](#) (Dirt Party Mock on Facebook <http://apps.facebook.com/dirtpartymock/>)
- [Storage Engines](#)
- [Databases](#)
- [Export](#)
- [Import](#)

phpMyAdmin - 2.8.0.1

- Used PHP extensions: mysql
- Language: `English`
- Theme / Style: `Original`
- [phpMyAdmin documentation](#)
- [Official phpMyAdmin Homepage](#)
- [\[ChangeLog\]](#) [\[CVS\]](#) [\[Lists\]](#)

phpMyAdmin

[Open new phpMyAdmin window](#)

php MyAdmin

The screenshot shows the phpMyAdmin web interface in a browser window. The address bar displays `https://mysqladmin.ipower.com/mysqladmin/index.php`. The server name is `custsql-ipw26.eigbox.net`. The interface includes navigation tabs for `Databases`, `SQL`, `Status`, `Variables`, `Charsets`, `Engines`, and `Processes`, along with `Export` and `Import` options. A message states: "Your SQL query has been executed successfully (Query took 0.0057 sec)". The executed SQL query is displayed in a code block:

```
CREATE TABLE entries (
  entry_id INT UNSIGNED NOT NULL AUTO_INCREMENT PRIMARY KEY ,
  title VARCHAR( 100 ) NOT NULL ,
  entry TEXT NOT NULL ,
  date_entered DATETIME NOT NULL
)
```

Below the query, there are links for `[Edit]` and `[Create PHP Code]`. A section titled "Run SQL query/queries on server custsql-ipw26.eigbox.net:" contains a text area with the same SQL query and a `Go` button. A checkbox labeled "Show this query here again" is checked.

Create Table

```
CREATE TABLE tablename (column1 definition,  
column2 definition)
```

Create Table

Table name

```
CREATE TABLE entries (  
  entry_id INT UNSIGNED NOT NULL  
    AUTO_INCREMENT PRIMARY KEY,  
  title VARCHAR(100) NOT NULL,  
  entry TEXT NOT NULL,  
  date_entered DATETIME NOT NULL);
```

Column

Datatype

Definition

Common Datatypes

INT	used for IDs
VARCHAR	used for varying lengths (255 or less)
CHAR	used for fixed lengths
TEXT	used to store lots of text like blog entries
DATETIME	used for storing dates

Primary Key

Every table should have one.

It should contain a value.

That value must never change.

It must be unique for each record in the table.

auto_increment

If you add 'AUTO_INCREMENT' into the column description, it will assign the next-highest number available for the columns value.

Table Created!

dynamicweb (1)
entries

Server: custsql-ipw26.eigbox.net Database: dynamicweb

Structure SQL Search Query Export Import Operations

Table	Action	Records	Type	Collation	Size	Overhead
<input type="checkbox"/> entries	Browse Structure Search Insert Empty Drop	0	MyISAM	latin1_swedish_ci	1.0 KB	-
1 table(s) Sum		0	MyISAM	latin1_swedish_ci	1.0 KB	0 Bytes

Check All / Uncheck All With selected: [v]

Print view Data Dictionary

Create new table on database dynamicweb

Name: Number of fields:

Go

[Open new phpMyAdmin window](#)

Table Created!

	Field	Type	Collation	Attributes	Null
<input type="checkbox"/>	<u>entry_id</u>	int(10)		UNSIGNED	No
<input type="checkbox"/>	title	varchar(100)	latin1_swedish_ci		No
<input type="checkbox"/>	entry	text	latin1_swedish_ci		No
<input type="checkbox"/>	date_entered	datetime			No

```
SELECT *  
  FROM `entries`
```

```
SELECT *  
  FROM `entries`  
 WHERE `entry_id` = '2'  
 LIMIT 0 , 30
```

```
SELECT *  
  FROM 'entries'  
 ORDER BY 'entry_id'
```

* asterisk is the equivalent of saying every column

<http://www.tizag.com/mysqlTutorial/mysqlselect.php>

Inserting Rows

```
INSERT INTO tablename VALUES (value1, value2,  
value3)
```

```
INSERT INTO tablename (column1_name,  
column2_name) VALUES (value1, value2)
```

Inserting Rows

```
INSERT INTO entries (entry_id, title, entry,  
    date_entered) VALUES (0, '$title', '$entry',  
    NOW())
```

SQL query:

```
INSERT INTO entries( entry_id, title, entry, date_entered )  
VALUES ( 0, '$title', '$entry', NOW() )
```

Row Inserted!

SQL query:

```
SELECT *  
FROM `entries`  
LIMIT 0, 30
```

[\[Edit \]](#) [\[Explain SQL \]](#) [\[Create PHP Code \]](#) [\[Refresh \]](#)

Show: row(s) starting from record #

in mode and repeat headers after cells

Sort by key:

			entry_id	title	entry	date_entered
<input type="checkbox"/>	Edit	Delete	1	\$title	\$entry	2012-03-01 13:43:26
<input type="checkbox"/>	Edit	Delete	2	\$title	\$entry	2012-03-01 13:43:46

[Check All / Uncheck All](#) With selected:

Updating Rows

UPDATE tablename SET column1_name= value,
column2_name=value2 WHERE
some_column=value

SQL query:

```
UPDATE entries SET title = 'updatedtitle',  
entry = 'updatedentry' WHERE entry_id = 1
```

Row Updated!

←T→			entry_id	title	entry	date_entered
<input type="checkbox"/>	Edit	Delete	1	\$title	\$entry	2012-03-01 13:43:26
<input type="checkbox"/>	Edit	Delete	2	\$title	\$entry	2012-03-01 13:43:46



←T→			entry_id	title	entry	date_entered
<input type="checkbox"/>	Edit	Delete	1	updatedtitle	updatedentry	2012-03-01 13:43:26
<input type="checkbox"/>	Edit	Delete	2	\$title	\$entry	2012-03-01 13:43:46





Deleting Rows

DELETE FROM tablename WHERE column=value


SQL query:

```
DELETE FROM entries WHERE entry_id =1
```

Deleting Rows

←T→			entry_id	title	entry	date_entered
<input type="checkbox"/>	 Edit	 Delete	1	updatedtitle	updatedentry	2012-03-01 13:43:26
<input type="checkbox"/>	 Edit	 Delete	2	\$title	\$entry	2012-03-01 13:43:46



←T→			entry_id	title	entry	date_entered
<input type="checkbox"/>	 Edit	 Delete	2	\$title	\$entry	2012-03-01 13:43:46

References

- PHP for the Web (Larry Ullman) : Chapter 12
- <http://www.tizag.com/mysqlTutorial/>