

VISUAL QUICKPRO GUIDE



PHP and MySQL for Dynamic Web Sites 4th Edition

Ch5 Introduction to SQL

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LEARN THE QUICK AND EASY WAY!



Learning Outcomes

- Create a database
- Select a database to use
- Create a table
- List the tables in a database or columns in a table
- Insert records into a table
- Properly use quotation marks in queries
- Fetch records from a table
- Use conditionals
- Recognize the MySQL operators



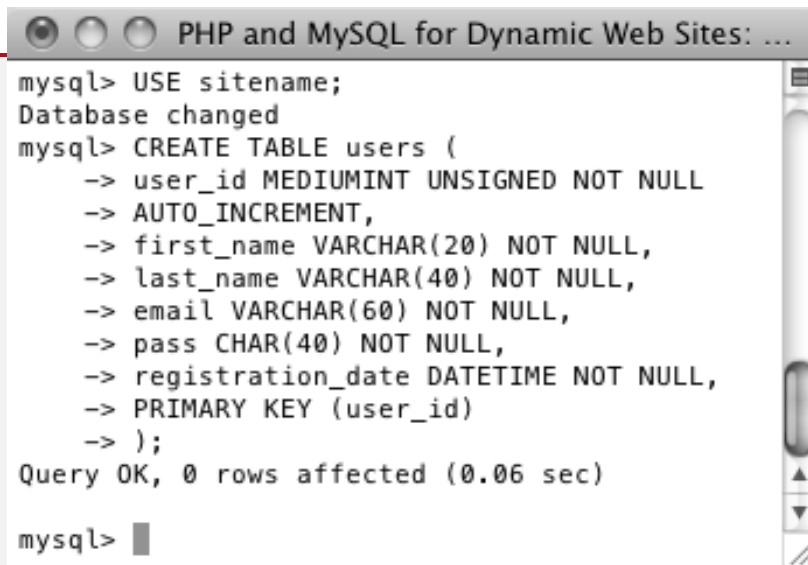
Learning Outcomes

- Perform LIKE and NOT LIKE queries
- Sort query results
- Limit query results
- Update existing data
- Delete existing table rows
- Make and use aliases
- Invoke MySQL functions
- Recognize many commonly used MySQL functions



Creating Tables

```
CREATE TABLE tablename (  
column1name description,  
column2name description  
...)  
  
CREATE TABLE users (  
user_id MEDIUMINT UNSIGNED NOT NULL  
AUTO_INCREMENT,  
first_name VARCHAR(20) NOT NULL,  
last_name VARCHAR(40) NOT NULL,  
email VARCHAR(60) NOT NULL,  
pass CHAR(40) NOT NULL,  
registration_date DATETIME NOT NULL,  
PRIMARY KEY (user_id)  
);
```



```
PHP and MySQL for Dynamic Web Sites: ...  
mysql> USE sitename;  
Database changed  
mysql> CREATE TABLE users (  
-> user_id MEDIUMINT UNSIGNED NOT NULL  
-> AUTO_INCREMENT,  
-> first_name VARCHAR(20) NOT NULL,  
-> last_name VARCHAR(40) NOT NULL,  
-> email VARCHAR(60) NOT NULL,  
-> pass CHAR(40) NOT NULL,  
-> registration_date DATETIME NOT NULL,  
-> PRIMARY KEY (user_id)  
-> );  
Query OK, 0 rows affected (0.06 sec)  
  
mysql> █
```



Showing Tables

```
SHOW TABLES;  
SHOW COLUMNS FROM users;
```

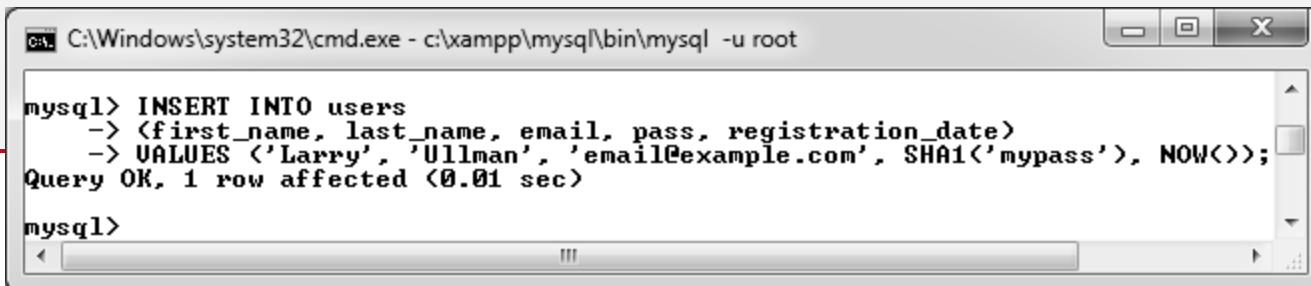
```
C:\Windows\system32\cmd.exe - c:\xampp\mysql\bin\mysql -u root  
  
mysql> SHOW TABLES;  
+-----+  
| Tables_in_sitename |  
+-----+  
| users               |  
+-----+  
1 row in set (0.00 sec)  
  
mysql> SHOW COLUMNS FROM users;  
+-----+-----+-----+-----+-----+-----+  
| Field          | Type                | Null | Key | Default | Extra      |  
+-----+-----+-----+-----+-----+-----+  
| user_id        | mediumint(8) unsigned | NO   | PRI | NULL    | auto_increment |  
| first_name     | varchar(20)         | NO   |     | NULL    |                |  
| last_name      | varchar(40)         | NO   |     | NULL    |                |  
| email          | varchar(60)         | NO   |     | NULL    |                |  
| pass           | char(40)            | NO   |     | NULL    |                |  
| registration_date | datetime            | NO   |     | NULL    |                |  
+-----+-----+-----+-----+-----+-----+  
6 rows in set (0.00 sec)  
  
mysql> _
```



Inserting Records

```
INSERT INTO tablename (column1, column2...) VALUES (value1, value2 ...)  
INSERT INTO tablename (column4, column8) VALUES (valueX, valueY)  
INSERT INTO tablename VALUES (value1, NULL, value2, value3, ...)
```

```
INSERT INTO users  
(first_name, last_name, email, pass, registration_date)  
VALUES ('Larry', 'Ullman', 'email@example.com', SHA1('mypass'), NOW());  
INSERT INTO users VALUES  
(NULL, 'Zoe', 'Isabella', 'email2@example.com', SHA1('mojito'), NOW());
```



```
cmd C:\Windows\system32\cmd.exe - c:\xampp\mysql\bin\mysql -u root  
  
mysql> INSERT INTO users  
-> (first_name, last_name, email, pass, registration_date)  
-> VALUES ('Larry', 'Ullman', 'email@example.com', SHA1('mypass'), NOW());  
Query OK, 1 row affected (0.01 sec)  
  
mysql>
```



Quotes in Queries

- Numeric values should not be quoted
- String values must be quoted
- Date and time values must be quoted
- Functions cannot be quoted
- The word NULL must not be quoted



Selecting Data

```
SELECT which_columns FROM which_table  
SELECT * FROM tablename  
SELECT column1, column3 FROM tablename  
  
SELECT * FROM users;  
SELECT first_name, last_name  
FROM users;
```

```
PHP and MySQL for Dynamic ...  
mysql> SELECT first_name, last_name  
-> FROM users;  
+-----+-----+  
| first_name | last_name |  
+-----+-----+  
| Larry      | Ullman    |  
| Zoe        | Isabella  |  
| John       | Lennon    |  
| Paul       | McCartney |  
| George     | Harrison  |  
| Ringo      | Starr     |  
| David      | Jones     |  
| Peter      | Tork      |  
| Micky      | Dolenz    |  
| Mike       | Nesmith   |  
| David      | Sedaris   |  
| Nick       | Hornby    |  
| Melissa    | Bank      |  
| Toni        | Morrison  |  
| Jonathan   | Franzen   |  
| Don        | DeLillo   |  
| Graham     | Greene    |  
| Michael    | Chabon    |  
| Richard    | Brautigan |  
| Russell    | Banks     |  
| Homer      | Simpson   |  
| Marge      | Simpson   |  
| Bart       | Simpson   |  
| Lisa       | Simpson   |  
| Maggie     | Simpson   |  
| Abe        | Simpson   |  
+-----+-----+  
26 rows in set (0.00 sec)  
  
mysql> █
```




Using Conditionals

```
SELECT which_columns FROM which_table WHERE condition(s)
SELECT name FROM people WHERE birth_date = '2011-01-26';
SELECT * FROM items WHERE (price BETWEEN 10.00 AND 20.00) AND (quantity >
0);
SELECT * FROM cities WHERE (zip_code = 90210) OR (zip_code = 90211);
SELECT first_name FROM users WHERE last_name = 'Simpson';
SELECT * FROM users WHERE email IS NULL;
SELECT user_id, first_name, last_name FROM users WHERE pass =
SHA1('mypass');
```



MySQL Operators

Operator	Meaning
=	Equals
<	Less than
>	Greater than
<=	Less than or equal to
>=	Greater than or equal to
!=	Not equal to
IS NOT NULL	Has a value
IS NULL	Has no known value
IS TRUE	Has a true value
IS FALSE	Has a false value



MySQL Operators

Operator	Meaning
BETWEEN	Within a range
NOT BETWEEN	Outside of a range
IN	Found within a list of values
NOT IN	Not found within a list of values
OR	Where at least one of two conditionals is true
AND	Where both conditionals are true
NOT	Where the condition is not true
XOR	Where only one of two conditionals is true



Using LIKE and NOT LIKE

```
SELECT * FROM users
WHERE last_name LIKE 'Smith%'
SELECT * FROM users
WHERE last_name LIKE 'Bank%'
SELECT first_name, last_name
FROM users WHERE
email NOT LIKE '%@authors.com'
```

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```
mysql> SELECT * FROM users
-> WHERE last_name LIKE 'Bank%';
```

user_id	first_name	last_name	email	pass	registration_date
13	Melissa	Bank	melissa@authors.com	15ac6793642add347cbf24b8884b97947f637091	2011-03-31 21:16:47
20	Russell	Banks	russell@authors.com	6bc4056557e33f1e209870ab578ed362f8b3c1b8	2011-03-31 21:16:47

```
2 rows in set (0.00 sec)

mysql>
```



Sorting Query Results

```
SELECT * FROM tablename ORDER BY column
SELECT * FROM orders ORDER BY total
SELECT * FROM tablename ORDER BY column DESC
SELECT * FROM tablename ORDER BY column1, column2
SELECT * FROM tablename WHERE conditions
ORDER BY column
SELECT first_name, last_name FROM users
ORDER BY last_name;

SELECT first_name, last_name FROM
users ORDER BY last_name ASC,
first_name ASC;
```

```
PHP and MySQL for Dynamic Web ...
mysql> SELECT first_name, last_name FROM
-> users ORDER BY last_name ASC,
-> first_name ASC;
+-----+-----+
| first_name | last_name |
+-----+-----+
| Melissa    | Bank      |
| Russell    | Banks     |
| Richard    | Brautigan |
| Michael    | Chabon    |
| Don        | DeLillo   |
| Micky      | Dolenz    |
| Jonathan   | Franzen   |
| Graham     | Greene    |
| George     | Harrison  |
| Nick       | Hornby    |
| Zoe        | Isabella  |
| David      | Jones     |
| John       | Lennon    |
| Paul       | McCartney |
| Toni       | Morrison  |
| Mike       | Nesmith   |
| David      | Sedaris   |
| Abe        | Simpson   |
| Bart       | Simpson   |
| Homer      | Simpson   |
| Lisa       | Simpson   |
| Maggie     | Simpson   |
| Marge      | Simpson   |
| Ringo      | Starr     |
| Peter      | Tork      |
| Larry      | Ullman    |
+-----+-----+
26 rows in set (0.00 sec)

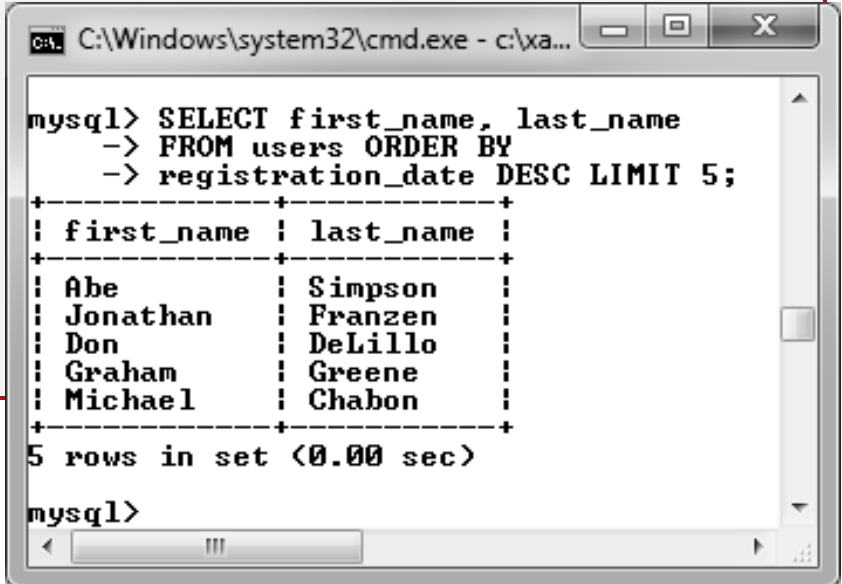
mysql>
```

Limiting Query Results

```

SELECT * FROM tablename LIMIT x
SELECT * FROM tablename LIMIT 3
SELECT * FROM tablename LIMIT x, y
SELECT * FROM tablename LIMIT 10, 10
SELECT which_columns FROM tablename WHERE
conditions ORDER BY column LIMIT x
SELECT first_name, last_name
FROM users ORDER BY
registration_date DESC LIMIT 5;
SELECT first_name, last_name
FROM users ORDER BY
registration_date ASC LIMIT 1, 1;

```



```

C:\Windows\system32\cmd.exe - c:\xa...
mysql> SELECT first_name, last_name
-> FROM users ORDER BY
-> registration_date DESC LIMIT 5;
+-----+-----+
| first_name | last_name |
+-----+-----+
| Abe        | Simpson  |
| Jonathan   | Franzen  |
| Don        | DeLillo  |
| Graham     | Greene   |
| Michael    | Chabon   |
+-----+-----+
5 rows in set (0.00 sec)

mysql>

```



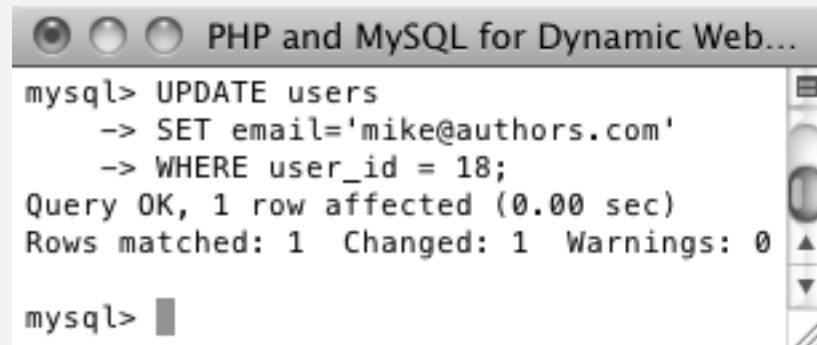
Updating Tables

```
UPDATE tablename SET column=value
```

```
UPDATE tablename SET column1=valueA, column5=valueB
```

```
UPDATE tablename SET column2=value WHERE column5=value
```

```
UPDATE users  
SET email='mike@authors.com'  
WHERE user_id = 18;
```



```
PHP and MySQL for Dynamic Web...  
mysql> UPDATE users  
-> SET email='mike@authors.com'  
-> WHERE user_id = 18;  
Query OK, 1 row affected (0.00 sec)  
Rows matched: 1 Changed: 1 Warnings: 0  
  
mysql> █
```



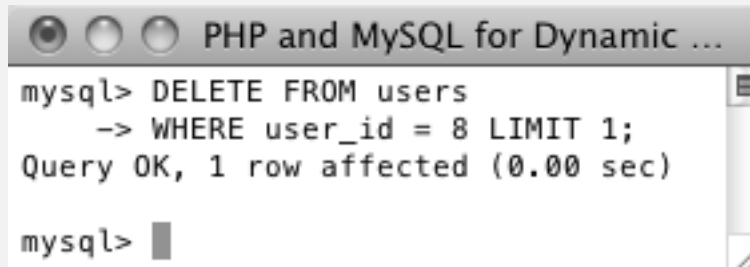
Deleting Rows

```
DELETE FROM tablename
```

```
DELETE FROM tablename WHERE condition
```

```
DELETE FROM users  
WHERE user_id = 8 LIMIT 1;
```

```
TRUNCATE TABLE tablename
```



```
mysql> DELETE FROM users  
-> WHERE user_id = 8 LIMIT 1;  
Query OK, 1 row affected (0.00 sec)  
  
mysql> █
```




Dropping Tables & Databases

```
DROP TABLE tablename
```

```
DROP DATABASE databasename
```



Using Functions

```
SELECT FUNCTION(column) FROM tablename
```

```
SELECT *, FUNCTION(column) FROM tablename
```

```
SELECT column1, FUNCTION(column2), column3 FROM tablename
```

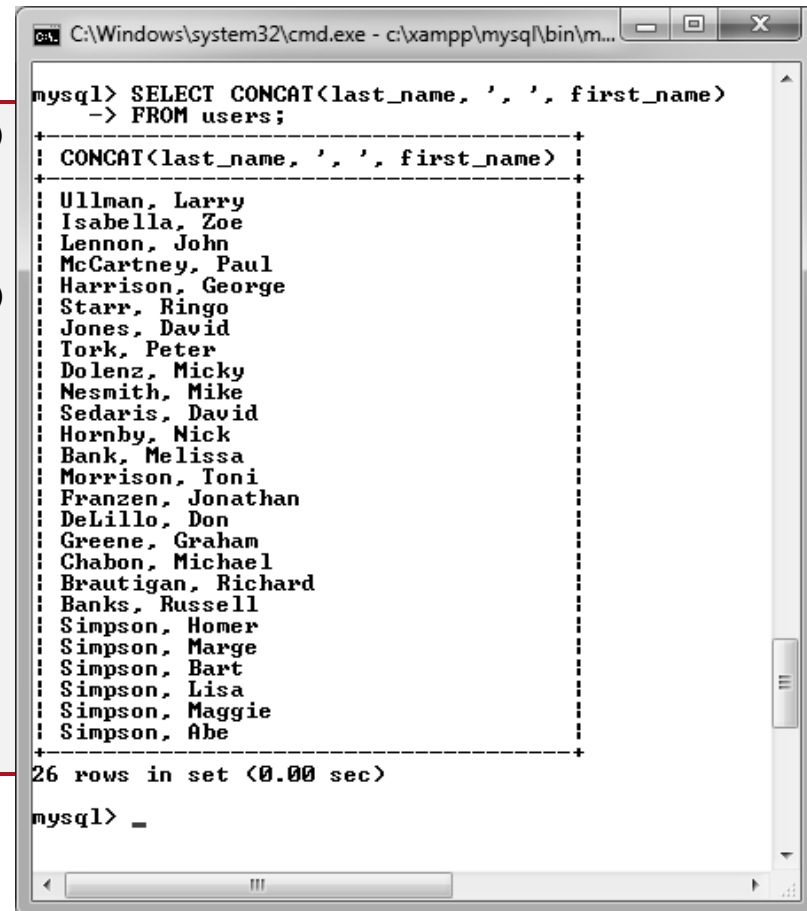


Text Functions

```
SELECT CONCAT(last_name, ', ', first_name)
FROM users;
```

```
SELECT CONCAT(last_name, ', ', first_name)
AS Name FROM users ORDER BY Name;
```

```
SELECT LENGTH(last_name) AS L,
last_name FROM users
ORDER BY L DESC LIMIT 1;
```



```
mysql> SELECT CONCAT(last_name, ', ', first_name)
-> FROM users;
+-----+
| CONCAT(last_name, ', ', first_name) |
+-----+
| Ullman, Larry                       |
| Isabella, Zoe                       |
| Lennon, John                        |
| McCartney, Paul                     |
| Harrison, George                    |
| Starr, Ringo                        |
| Jones, David                         |
| Tork, Peter                          |
| Dolenz, Micky                        |
| Nesmith, Mike                       |
| Sedaris, David                      |
| Hornby, Nick                         |
| Bank, Melissa                       |
| Morrison, Toni                      |
| Franzen, Jonathan                   |
| DeLillo, Don                        |
| Greene, Graham                      |
| Chabon, Michael                     |
| Brautigan, Richard                  |
| Banks, Russell                      |
| Simpson, Homer                      |
| Simpson, Marge                      |
| Simpson, Bart                       |
| Simpson, Lisa                       |
| Simpson, Maggie                     |
| Simpson, Abe                        |
+-----+
26 rows in set (0.00 sec)

mysql> _
```



Numeric Functions

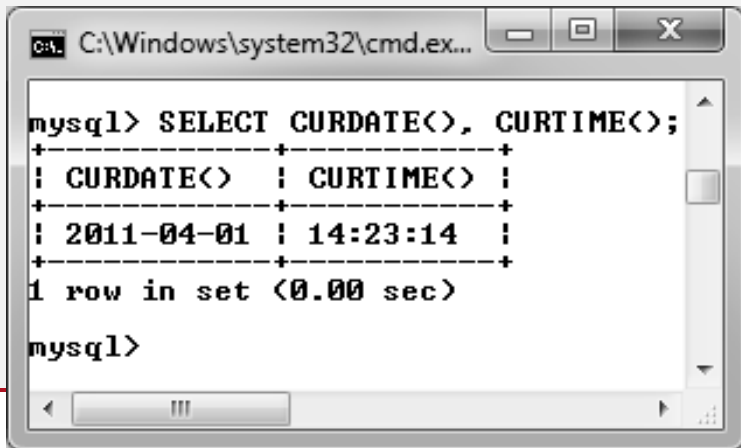
```
SELECT CONCAT('$', FORMAT(5639.6, 2))  
AS cost;  
SELECT email FROM users  
ORDER BY RAND() LIMIT 1;
```

```
mysql> SELECT CONCAT('$', FORMAT(5639.6, 2))  
-> AS cost;  
+-----+  
| cost   |  
+-----+  
| $5,639.60 |  
+-----+  
1 row in set (0.00 sec)  
  
mysql>
```

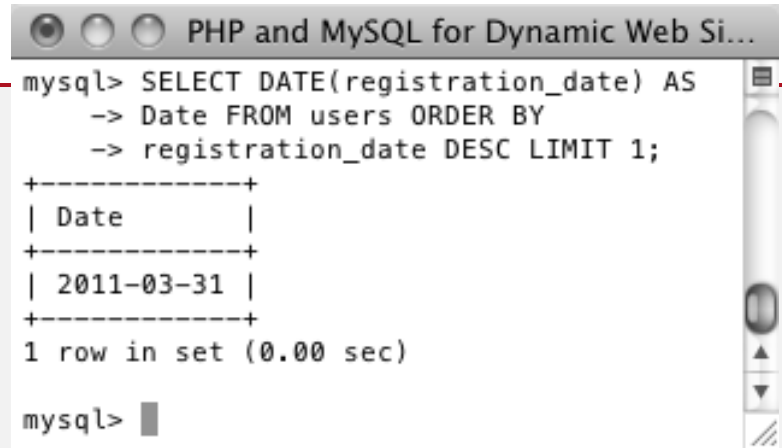
```
mysql> SELECT email FROM users  
-> ORDER BY RAND() LIMIT 1;  
+-----+  
| email   |  
+-----+  
| graham@authors.com |  
+-----+  
1 row in set (0.00 sec)  
  
mysql>
```

Date & Time Functions

```
SELECT DATE(registration_date) AS  
Date FROM users ORDER BY  
registration_date DESC LIMIT 1;  
SELECT CURDATE(), CURTIME();
```



```
C:\Windows\system32\cmd.ex...  
mysql> SELECT CURDATE(), CURTIME();  
+-----+-----+  
| CURDATE() | CURTIME() |  
+-----+-----+  
| 2011-04-01 | 14:23:14 |  
+-----+-----+  
1 row in set (0.00 sec)  
mysql>
```

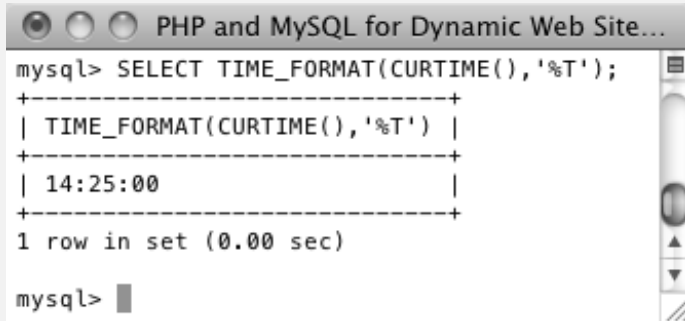


```
PHP and MySQL for Dynamic Web Si...  
mysql> SELECT DATE(registration_date) AS  
-> Date FROM users ORDER BY  
-> registration_date DESC LIMIT 1;  
+-----+  
| Date |  
+-----+  
| 2011-03-31 |  
+-----+  
1 row in set (0.00 sec)  
mysql>
```

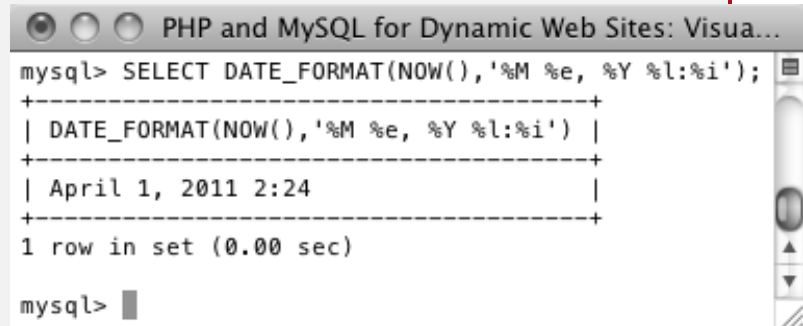
Formatting Dates & Times

```
SELECT DATE_FORMAT(NOW(), '%M %e, %Y %l:%i');
```

```
SELECT TIME_FORMAT(CURTIME(), '%T');
```



```
PHP and MySQL for Dynamic Web Site...  
mysql> SELECT TIME_FORMAT(CURTIME(), '%T');  
+-----+  
| TIME_FORMAT(CURTIME(), '%T') |  
+-----+  
| 14:25:00                       |  
+-----+  
1 row in set (0.00 sec)  
  
mysql>
```



```
PHP and MySQL for Dynamic Web Sites: Visua...  
mysql> SELECT DATE_FORMAT(NOW(), '%M %e, %Y %l:%i');  
+-----+  
| DATE_FORMAT(NOW(), '%M %e, %Y %l:%i') |  
+-----+  
| April 1, 2011 2:24                       |  
+-----+  
1 row in set (0.00 sec)  
  
mysql>
```

Other MySQL Functions

- SHA1()
- MD5()
- NOW()



Questions???