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 & Selecting Databases

```
CREATE DATABASE databasename

USE databasename

CREATE DATABASE sitename;
USE sitename;
```
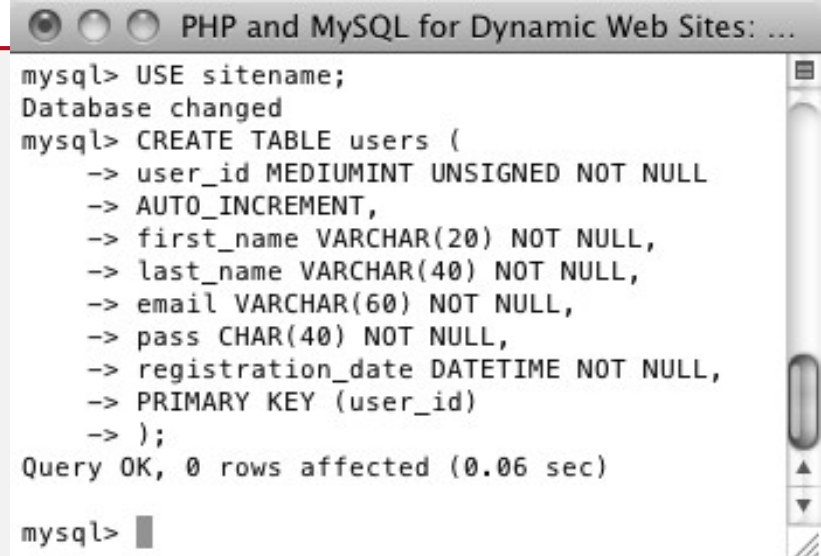
Creating Tables

```
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

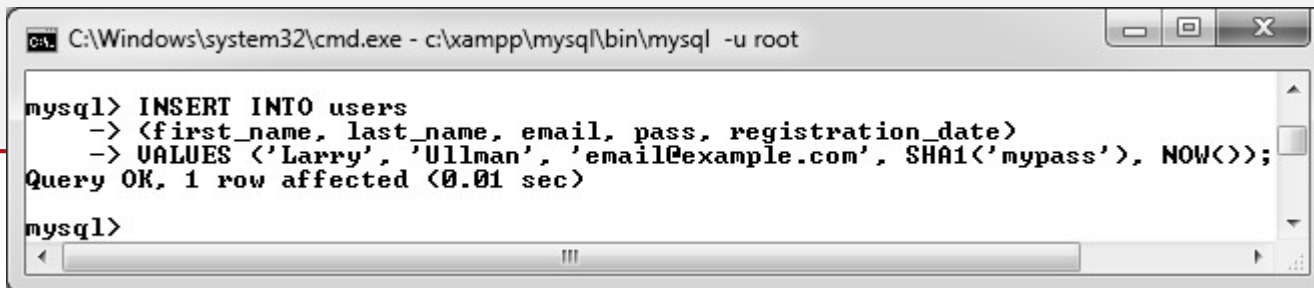```
SHOW TABLES;

SHOW COLUMNS FROM users;
```

# 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());
```



```
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'
```

```
PHP and MySQL for Dynamic Web Sites: Visual QuickPro Guide

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>
```
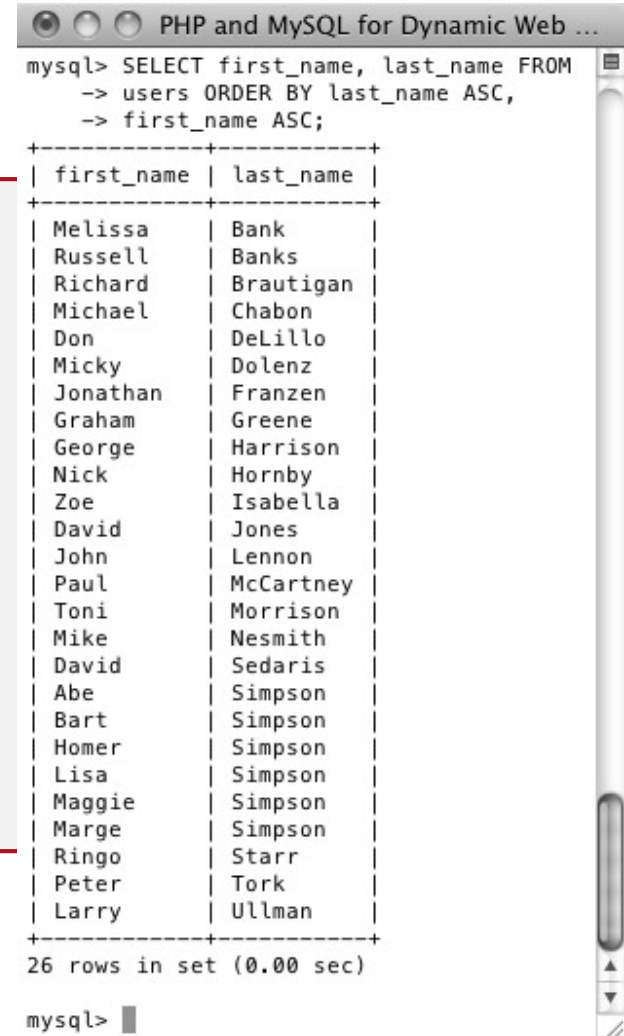
Sorting Query Results

```
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;
```
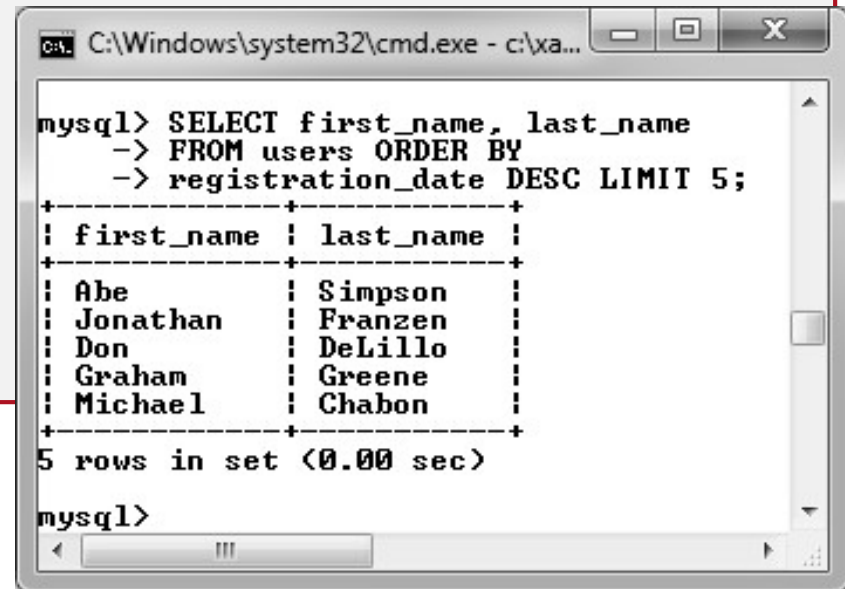
```
    PHP and MySQL for Dynamic Web ...
mysql> SELECT first_name, last_name FROM
    -> users ORDER BY last_name ASC,
    -> first_name ASC;
+------------+-----------+
| first_name | last_name |
+------------+-----------+
| Melissa    | Bank      |
| Russell    | Banks     |
| Richard    | Brautigan |
| 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;
```
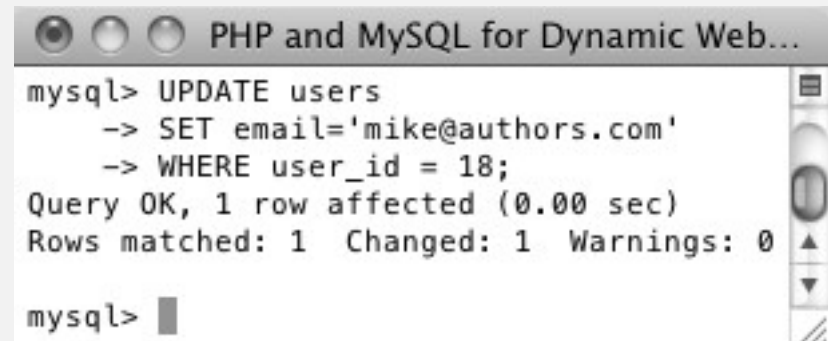
Updating Tables

```
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>
```
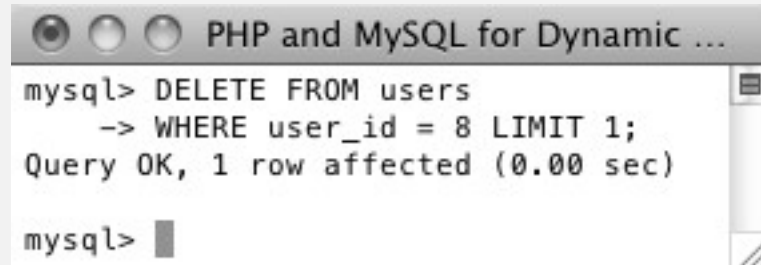
Deleting Rows

```
DELETE FROM tablename


DELETE FROM tablename WHERE condition


DELETE FROM users
WHERE user_id = 8 LIMIT 1;


TRUNCATE TABLE tablename
```

PHP and MySQL for Dynamic ...

```
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
```

Aliases

```
SELECT registration_date AS reg
FROM users

SELECT first_name AS name
FROM users WHERE name='Sam'
```

```
C:\Windows\system32\cmd.exe - c:\xampp\mysql\bin\m...

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

mysql> _
```
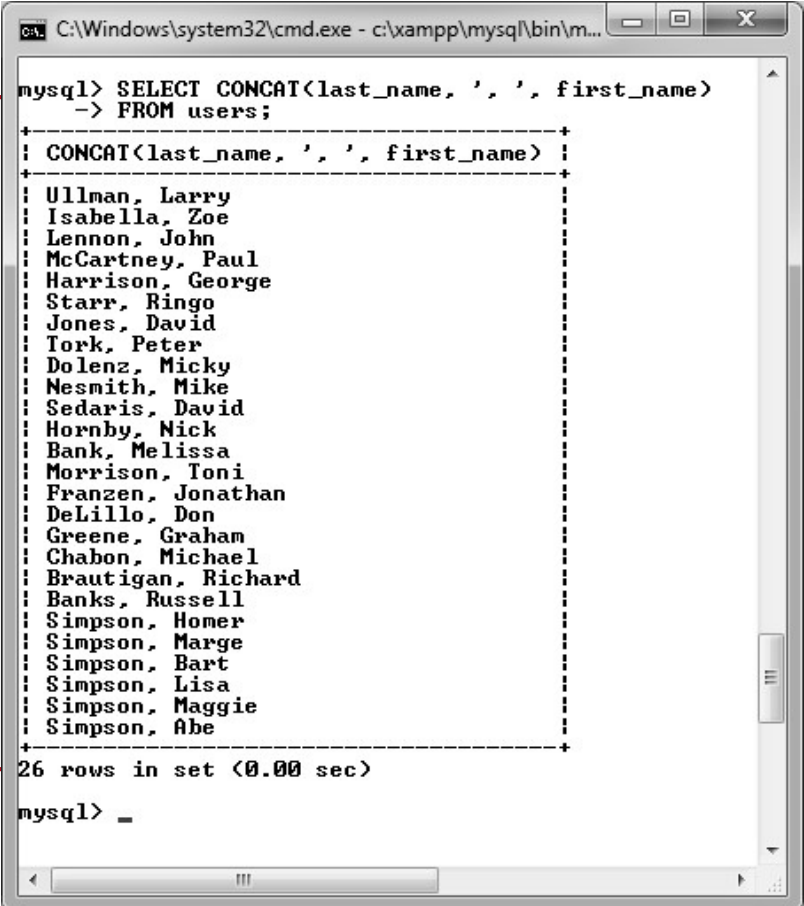
Text Functions

```
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;
```

```
C:\Windows\system32\cmd.exe - c:\xampp\mysql\bin\m...

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> _
```
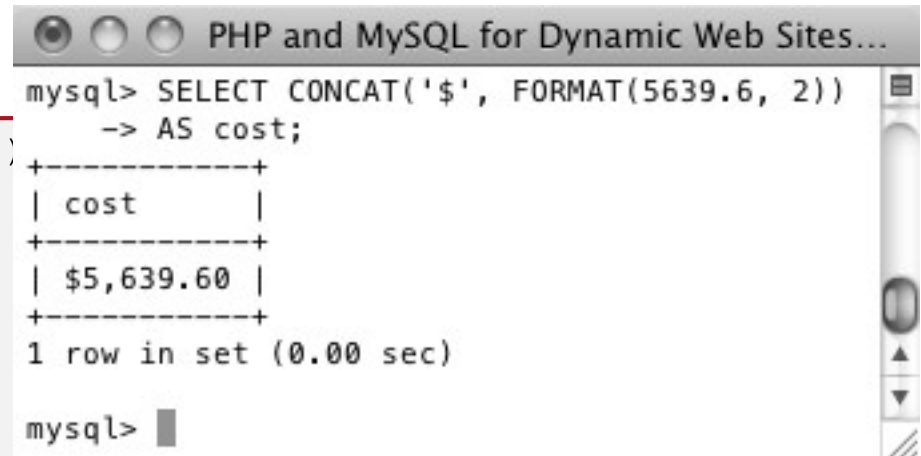
Numeric Functions

```
SELECT CONCAT('$', FORMAT(5639.6, 2))
AS cost;

SELECT email FROM users
ORDER BY RAND() LIMIT 1;
```
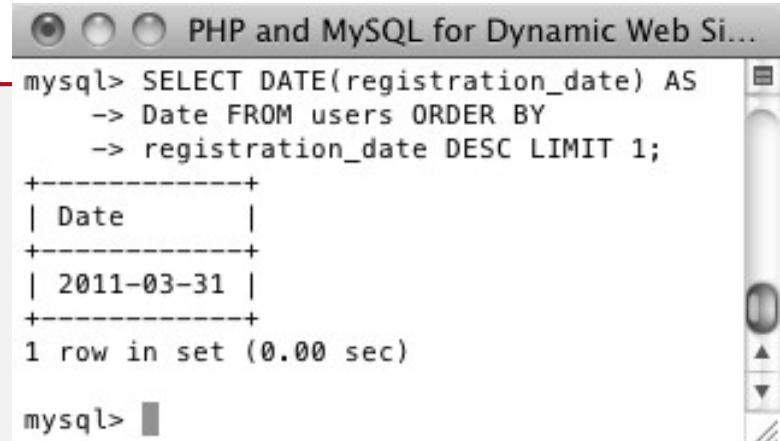
Date & Time Functions

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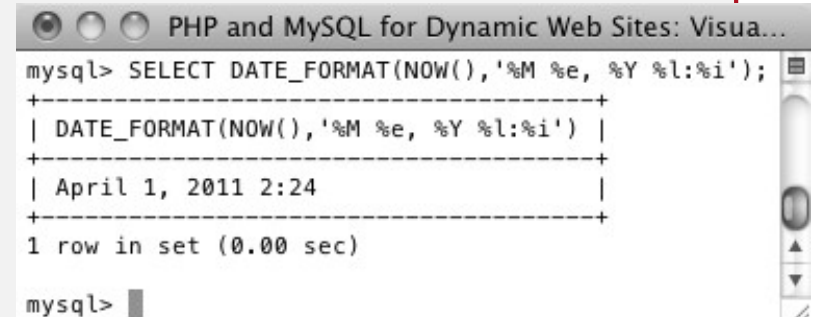
Formatting Dates & Times

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


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

```
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>
```

```
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>
```

Other MySQL Functions

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