Lab 8

MySQL Basics

Installing mysql:

sudo apt-get install mysql-server

Using MySQL

The basic tool for interacting with MySQL is the MySQL client which installs with the server package. The MySQL client is accessed through a terminal.

Root Login

1. To log in to MySQL as the root user:

mysql -u root -p

1. When prompted, enter the root password you assigned when the installation script was run.

You’ll then be presented with the MySQL monitor prompt:

|  |  |
| --- | --- |
| 1  2  3  4  5  6  7 | Welcome to the MySQL monitor. Commands end with ; or \g.  Your MySQL connection id is 1  Server version: 5.0.re45 Source distribution  Type 'help;' or '\h' for help. Type '\c' to clear the buffer.  mysql> |

1. To generate a list of commands for the MySQL prompt, enter \h. You’ll then see:

Create a New MySQL User and Database

1. To create a new database.

Create database addressbook;

1. To create a new user for the database.

Grant all on addressbook.\* to 'testuser' identified by 'password';

1. Exit MySQL.

Exit

Login as the user you just created

mysql -u testuser -p

Open up the database you want to use:

Use addressbook;

View all existing tables in the addressbook database:

SHOW tables;

Create a Table to hold out contacts

Create a sample table called “**contacts**”. This following SQL statement creates a table with a contact ID (CID) field of the type INT for integer (auto-incremented for new records, used as the primary key), as well as two fields for storing the customer’s name, a field for their address, and one for their phone number.

Use addressbook;

Create table contacts (cid INT NOT NULL AUTO\_INCREMENT PRIMARY KEY,

fname VARCHAR(20),

lname VARCHAR(20),

address VARCHAR(60),

phone VARCHAR(10) );

View all existing tables in the addressbook database(we should have 1):

SHOW tables;

To Remind ourselves of how the contacts table is organized:

DESCRIBE contacts;

Basic CRUD (Create, Read, Update and Delete) operations:

INSERT/CREATE:

Let us say we want to insert the following information into the contacts table of the addressbook database:

Name: Kevin Bacon

Address: 45 Hollywood Blvd M4J3D2

Phone: 8703452362

INSERT INTO contacts VALUES (NULL,’Kevin’,’Bacon’,’45 Hollywood Blvd M4J3D2’,’8703452362’);

Or

INSERT INTO contacts (cid,fname,lname,address,phone) VALUES (NULL,’Kevin’,’Bacon’,’45 Hollywood Blvd M4J3D2’,’8703452362’);

Add the following rows of data into the contacts table:

|  |  |  |  |
| --- | --- | --- | --- |
| First name | Surname | Address | Phone |
| Joshua | Micheals | Scarborough | 4663727273 |
| Amy | Crew | North York | 7362345634 |
| Peter | Bikes | Eglington | 1237652435 |
| Cassandra | Oliver | North York | 2635426354 |

READ:

Let us view all the information in the contacts table:

SELECT \* FROM contacts;

To view just the names we will put

SELECT fname,lname from contacts;

UPDATE:

Let us now change the address of everyone whose last name (surname) is Bacon to New York.

UPDATE contacts

SET

address = ’New York’

WHERE contacts.lname=’Bacon’;

Confirm the update(SELECT \* FROM contacts)

DELETE:

Let us now delete the row of everyone lives in New York

DELETE from contacts where address = ‘New York’

Confirm the deletion(SELECT \* FROM contacts)

To alter the structure of a table (add or drop a column)

1)To add a column “email” to our contacts table

ALTER TABLE contacts ADD email VARCHAR(40)

Confirm the email column was added (DESCRIBE contacts)

Now you have a good feel for the basics, complete the following tasks.

Add a column “DOB” for the date of birth of each contact the type is to be DATE.

Update the following rows of data into the contacts table:

|  |  |  |  |
| --- | --- | --- | --- |
| First name | Surname | Email | DOB |
| Joshua | Micheals | jMicheals@abc.ca | 2000-03-21 |
| Amy | Crew | Ames@aol.com | 1982-09-03 |
| Peter | Bikes | pb@tbc.ca | 1997 -10-17 |
| Cassandra | Oliver | cOliver@gb.ca | 2008-06-16 |

Note:

MySQL recognizes [DATE](http://dev.mysql.com/doc/en/datetime.html) values in these formats:

* As a string in either 'YYYY-MM-DD' or 'YY-MM-DD' format. A “relaxed” syntax is permitted: Any punctuation character may be used as the delimiter between date parts. For example, '2012-12-31', '2012/12/31', '2012^12^31', and '2012@12@31' are equivalent.
* As a string with no delimiters in either 'YYYYMMDD' or 'YYMMDD' format, provided that the string makes sense as a date. For example, '20070523' and '070523' are interpreted as '2007-05-23', but '071332' is illegal (it has nonsensical month and day parts) and becomes '0000-00-00'.
* As a number in either YYYYMMDD or YYMMDD format, provided that the number makes sense as a date. For example, 19830905 and 830905 are interpreted as '1983-09-05'.

Connecting through PHP

<?php

$db\_host="localhost";

$db\_username="testUser";

$db\_passwd="n01098567";

$dbc=mysqli\_connect('localhost','testuser','n01098567','addressbook')

or die ("Could not Connect! \n");

echo "Connection established. \n";

mysqli\_close();

?>

Adding through PHP

<html>

<head>

<title>Contacts</title>

</head>

<body>

<h2>Contact</h2>

<?php

$fname = $\_POST['firstname'];

$lname = $\_POST['lastname'];

$address = $\_POST['address'];

$phone = $\_POST['phone'];

$email = $\_POST['email'];

$db\_host="localhost";

$db\_username="testuser";

$db\_passwd="n01098567";

$dbc=mysqli\_connect('localhost','testuser','n01098567','addressbook')

or die ("Could not Connect! \n");

$sql="INSERT INTO contacts VALUES (NULL,'$fname','$lname','$address','$phone','$email',NULL);";

echo "Connection established. \n";

$result=mysqli\_query($dbc,$sql) or die ("Error Querying Database");

mysqli\_close();

?>

</body>

</html>

Viewing through PHP

<html>

<head>

<title>View Contacts</title>

</head>

<body>

<h2>View Contacts</h2>

<?php

$db\_host="localhost";

$db\_username="testuser";

$db\_passwd="n01098567";

$dbc=mysqli\_connect('localhost','testuser','n01098567','addressbook')

or die ("Could not Connect! \n");

$sql="SELECT \* from contacts;";

echo "Connection established. \n";

$result=mysqli\_query($dbc,$sql) or die ("Error Querying Database");

while($row=mysqli\_fetch\_array($result)){

echo $row['fname'].' '.$row['lname'].'<br/>';

}

mysqli\_close();

?>

</body>

</html>

**Useful commands**

**To rename a table:**

RENAME old\_Table\_Name TO new\_Table\_Name;

Or

ALTER TABLE old\_Table\_Name RENAME new\_Table\_Name;

**Triggers:**

CREATE TRIGGER new\_Contact\_Added

AFTER INSWER ON Conctacts

FOR EACH ROW

INSERT INTO AvailableContacts (cid,fname,lname,status)

VALUES (NEW.cid,NEW.fname,New.lname,’Available’);

Note: For multiple statements the “DELIMITER” command must be used. This is so that the semicolon is not misinterpreted by the server when a trigger or procedure is sent to the server.

DELIMITER $$

CREATE TRIGGER new\_Contact\_Added

AFTER INSWER ON Conctacts

FOR EACH ROW

begin

INSERT INTO AvailableContacts (cid,fname,lname,status)

VALUES (NEW.cid,NEW.fname,New.lname,’Available’);

🡨-- other statements go here --🡪

END$$

DELIMITER ;

Troubleshooting notes:

How to Reset the MySQL Root Password.

If you forget your root MySQL password, it can be reset.

1. Stop the current MySQL server instance. Sudo service mysql stop
2. Use dpkg to re-run the configuration process MySQL goes through on first installation. You will again be asked to set a root password.

sudo dpkg-reconfigure mysql-server-5.7

sudo service mysql start

1. Then start MySQL.

You’ll now be able to log in again using mysql –u root –p