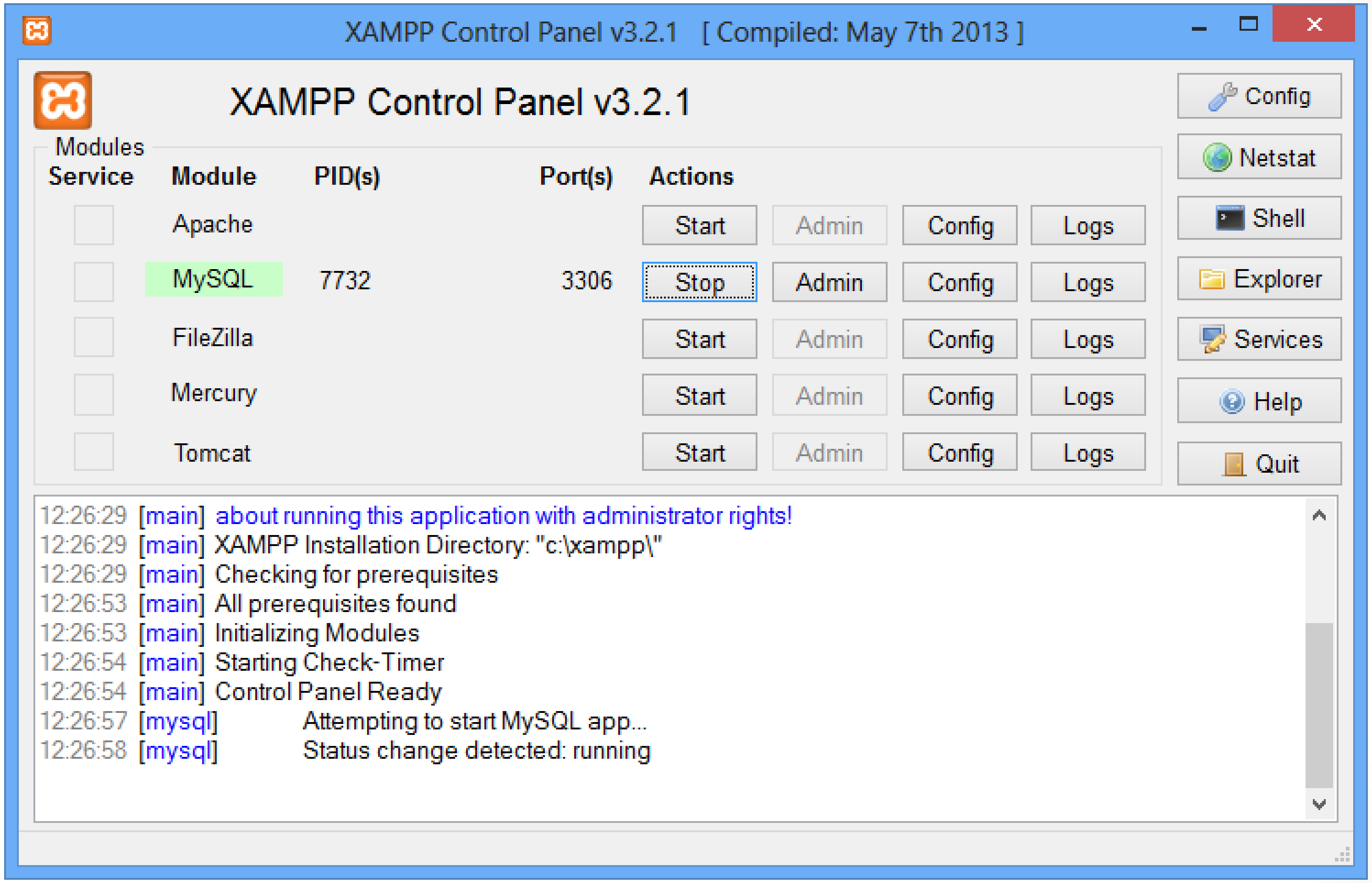
C# MySQL

http://www.codeproject.com/Articles/43438/Connect-C-to-MySQL

MySQL

XAMPP


XAMPP Control Panel v3.2.1 [Compiled: May 7th 2013]
XAMPP Control Panel v3.2.1
Config
Netstat
Shell
Explorer
Services
Help
Quit

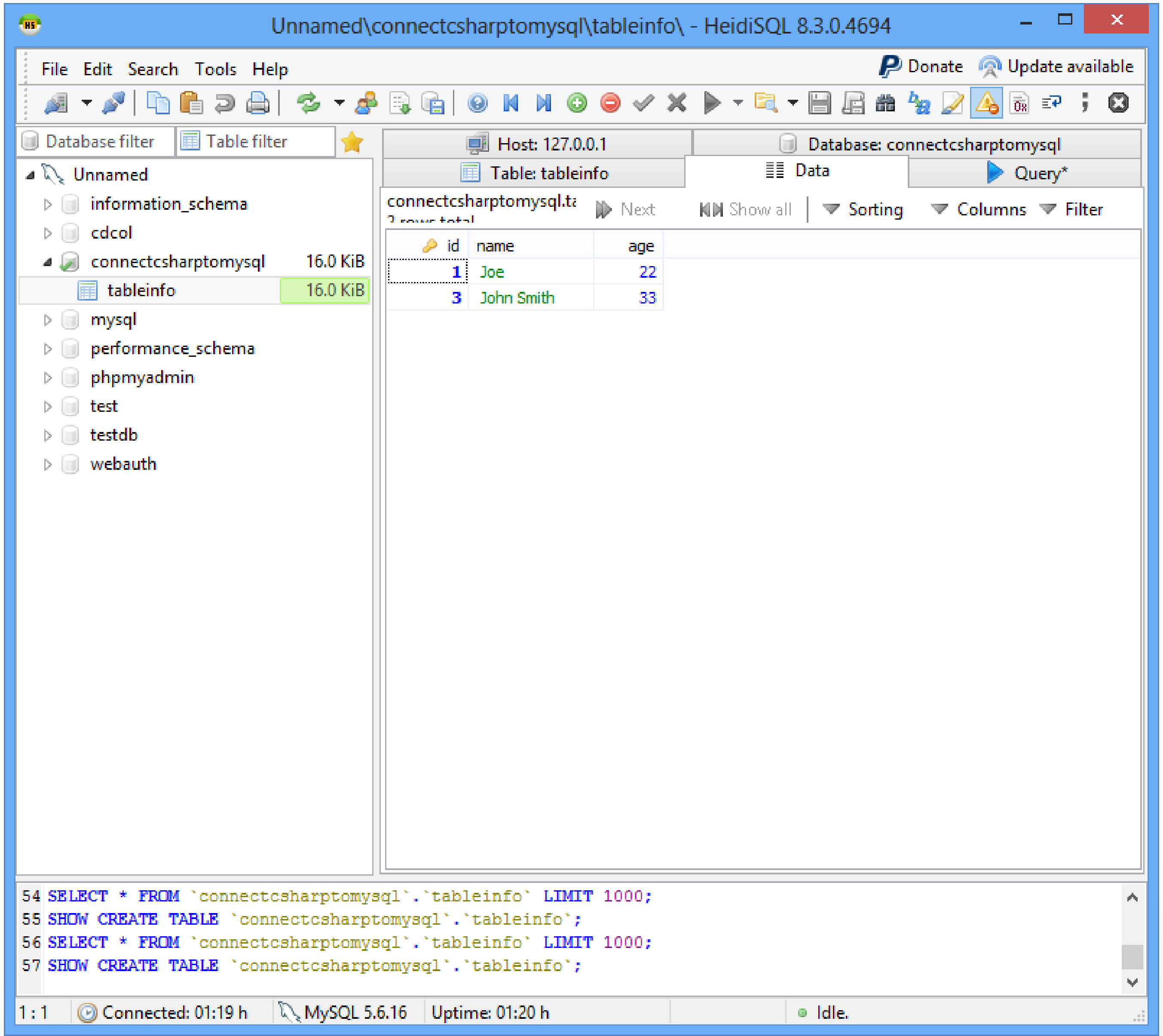
Modules

Service	Module	PID(s)	Port(s)	Actions			
	Apache			Start	Admin	Config	Logs
	MySQL	7732	3306	Stop	Admin	Config	Logs
	FileZilla			Start	Admin	Config	Logs
	Mercury			Start	Admin	Config	Logs
	Tomcat			Start	Admin	Config	Logs

```
12:26:29  [main]   about running this application with administrator rights!
12:26:29  [main]   XAMPP Installation Directory: "c:\xampp\"
12:26:29  [main]   Checking for prerequisites
12:26:53  [main]   All prerequisites found
12:26:53  [main]   Initializing Modules
12:26:54  [main]   Starting Check-Timer
12:26:54  [main]   Control Panel Ready
12:26:57  [mysql]          Attempting to start MySQL app...
12:26:58  [mysql]          Status change detected: running
```

เลิกใช้ Appserv ได้แล้ว

HeidiSQL



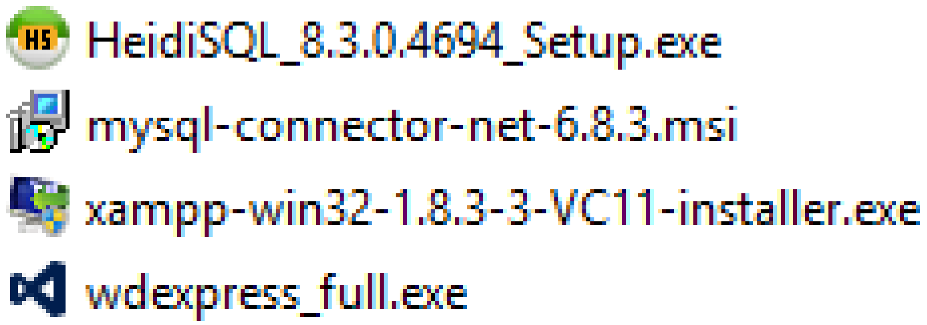
id	name	age
1	Joe	22
3	John Smith	33

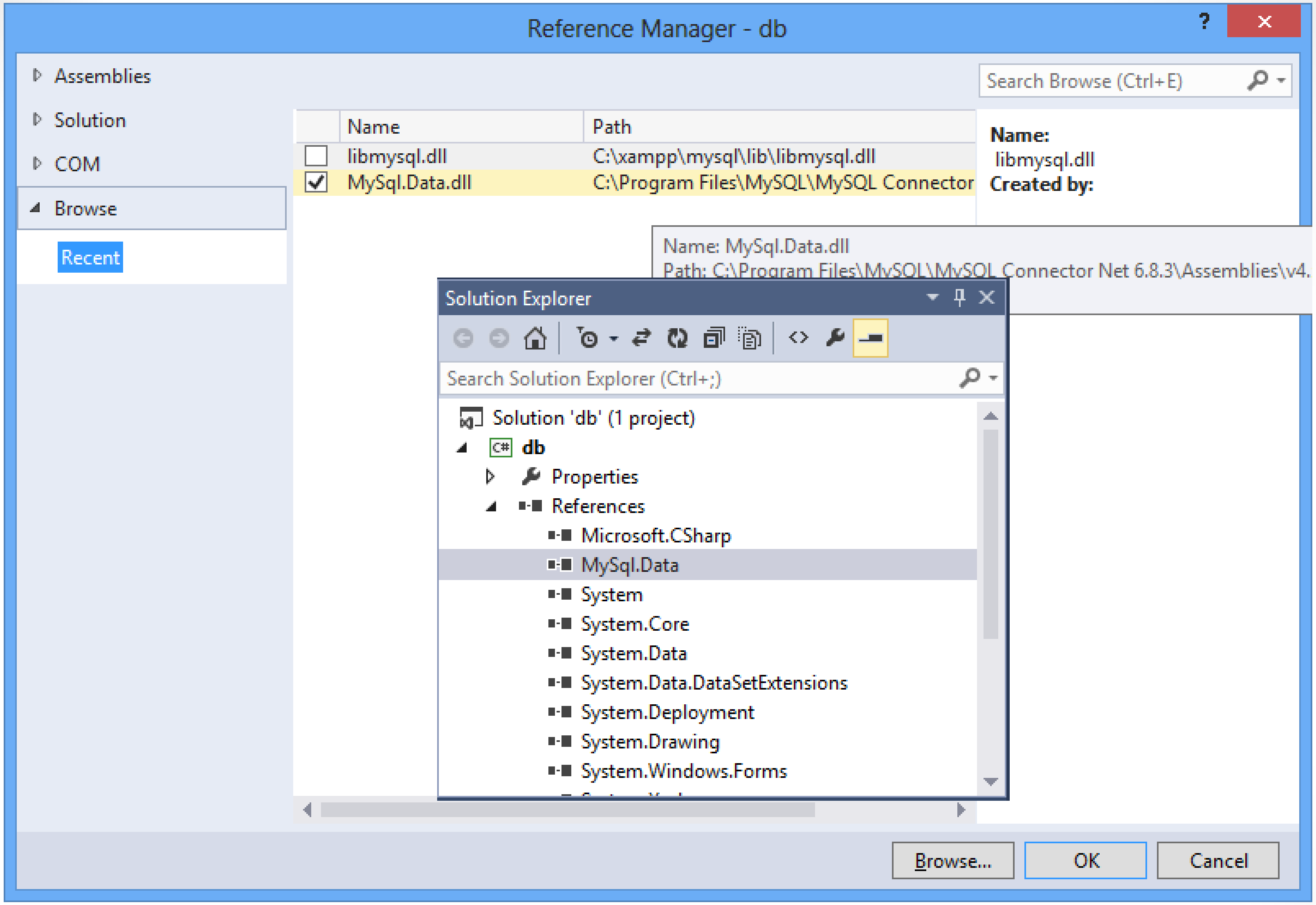
```
SELECT * FROM `connectcsharptomysql`.`tableinfo` LIMIT 1000;
SHOW CREATE TABLE `connectcsharptomysql`.`tableinfo`;
SELECT * FROM `connectcsharptomysql`.`tableinfo` LIMIT 1000;
SHOW CREATE TABLE `connectcsharptomysql`.`tableinfo`;
```

1 : 1 | Connected: 01:19 h | MySQL 5.6.16 | Uptime: 01:20 h | Idle.

Downloading Connector/Net

- First make sure you have downloaded and installed the MySQL Connector/NET from the MySQL
- http://dev.mysql.com/downloads/connector/net/6.1.html
- ตอนนี้มีตัว update กว่านี้แล้ว


HeidiSQL_8.3.0.4694_Setup.exe
mysql-connector-net-6.8.3.msi
xampp-win32-1.8.3-3-VC11-installer.exe
wdexpress_full.exe



	Name	Path
☐	libmysql.dll	C:\xampp\mysql\lib\libmysql.dll
✓	MySql.Data.dll	C:\Program Files\MySQL\MySQL Connector

Name:
libmysql.dll
Created by:

Name: MySql.Data.dll
Path: C:\Program Files\MySQL\MySQL Connector Net 6.8.3\Assemblies\v4.

```
Solution 'db' (1 project)
  db
    Properties
    References
      Microsoft.CSharp
      MySql.Data
      System
      System.Core
      System.Data
      System.Data.DataSetExtensions
      System.Deployment
      System.Drawing
      System.Windows.Forms
```

- ตัวอย่าง Browse ไปที่ C:\Program Files\MySQL\MySQL Connector Net 6.8.3\Assemblies\v4.5

Creating Database

- create database ConnectCsharpToMysql;

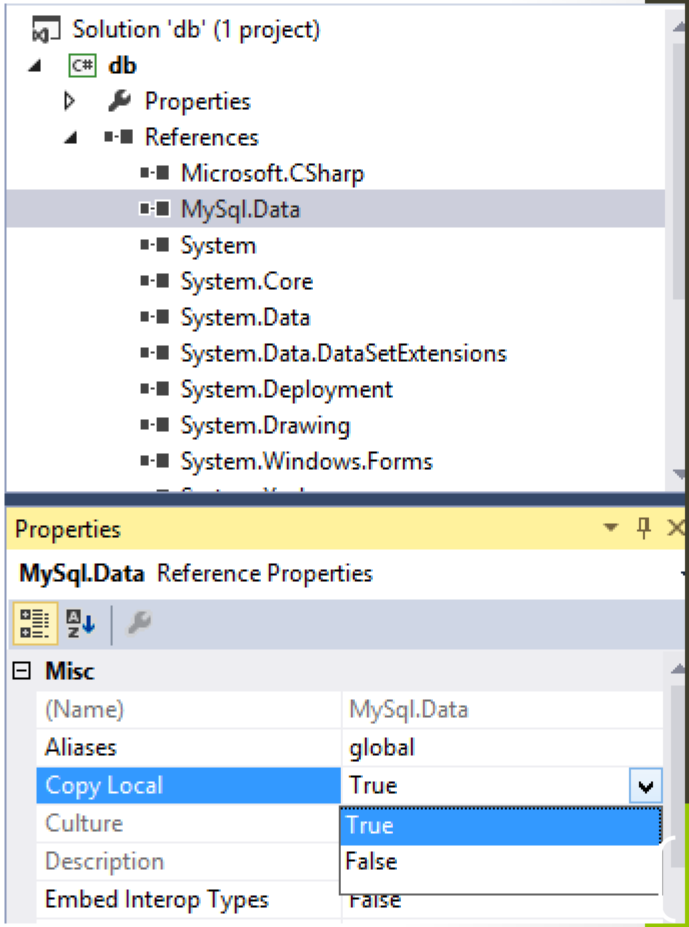
- use ConnectCsharpToMysql;

Creating Table

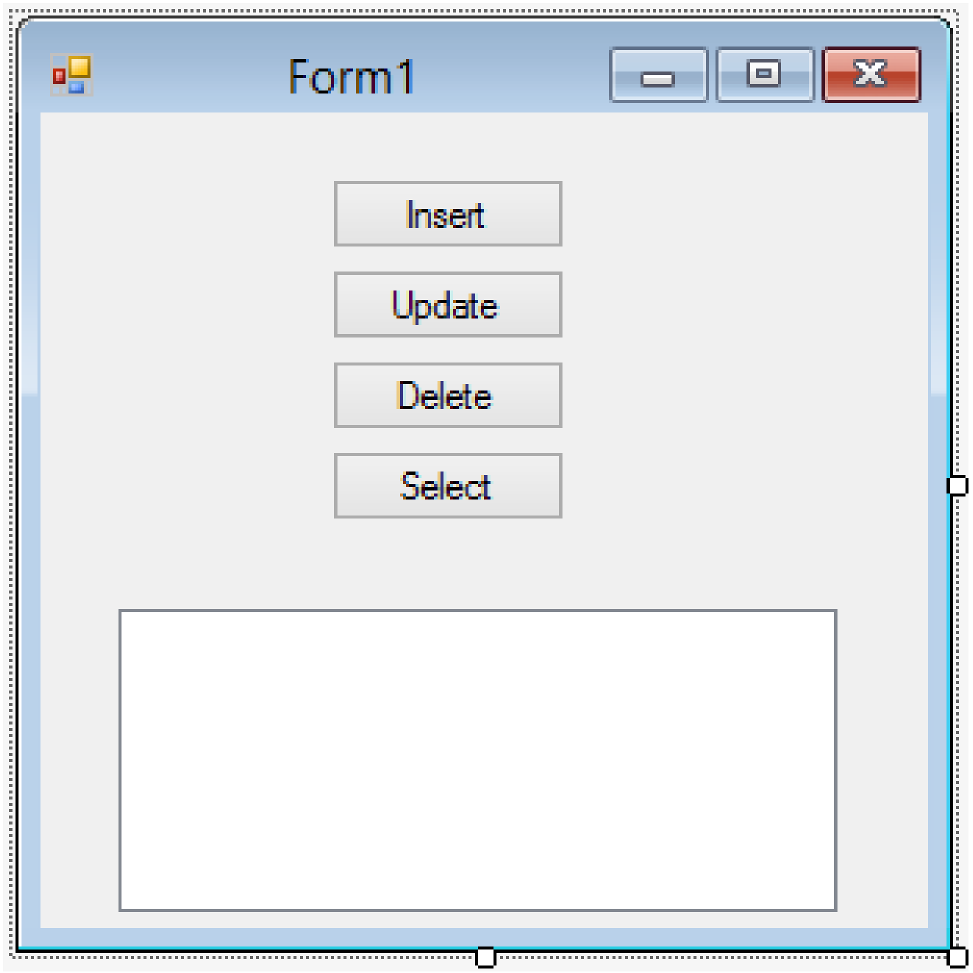
- Create table: tableinfo

```
create table tableInfo (
        id INT NOT NULL AUTO_INCREMENT,
        name VARCHAR(30),
        age INT, PRIMARY KEY(id) );
```

- In order to use the application on other computers that don't have the connector installed, we will have to create a DLL from the reference.



(Name)	MySql.Data
Aliases	global
Copy Local	True
Culture	
Description	
Embed Interop Types	False


Form1
Insert
Update
Delete
Select

```
//Add MySql Library
using MySql.Data.MySqlClient;
```

Then declaring and initializing the variables that we will use:

- connection: will be used to open a connection to the database.
- server: indicates where our server is hosted, in our case, it's localhost.
- database: is the name of the database we will use, in our case it's the database we already created earlier which is connectcsharptomysql.
- uid: is our MySQL username.
- password: is our MySQL password.
- connectionString: contains the connection string to connect to the database, and will be assigned to the connection variable.

```
private MySqlConnection connection;

private string server;

private string database;

private string uid;

private string password;

public Form1()

{   InitializeComponent();

    server = "localhost";

    database = "connectcsharptomysql";

    uid = "root";

    password = “root";

    string connectionString;

    connectionString = "SERVER=" + server + ";" + "DATABASE=" +

    database + ";" + "UID=" + uid + ";" + "PASSWORD=" + password + ";";

    connection = new MySqlConnection(connectionString);

}
```

```
private bool OpenConnection()
        {
            try
            {
                connection.Open();
                return true;
            }
            catch (MySqlException ex)
            {
              //When handling errors, you can your application's response based on the
//error number.
              //The two most common error numbers when connecting are as follows:
              //0: Cannot connect to server.
              //1045: Invalid user name and/or password.
                switch (ex.Number)
                {
                    case 0:
                        MessageBox.Show("Cannot connect to server.  Contact
administrator");
                        break;
                    case 1045:
                        MessageBox.Show("Invalid username/password, please try again");
                        break;
                }
                return false;
            }
        }
```

```
private bool CloseConnection()
        {
            try
            {
                connection.Close();
                return true;
            }
            catch (MySqlException ex)
            {
                MessageBox.Show(ex.Message);
                return false;
            }
        }
```

Working with Insert, Update, Select, Delete

Usually, Insert, update and delete are used to write or change data in the database, while Select is used to read data.
For this reason, we have different types of methods to execute those queries.

The methods are the following:

- ExecuteNonQuery: Used to execute a command that will <u>not</u> return any data, for example Insert, update or delete.
- ExecuteReader: Used to execute a command that will return 0 or more records, for example Select.
- ExecuteScalar: Used to execute a command that will return only 1 value, for example Select Count(*).

Steps

Start with Insert, update and delete, which are the easiest. The process to successfully execute a command is as follows:

1. Open connection to the database.
2. Create a MySQL command.
3. Assign a connection and a query to the command. This can be done using the constructor, or using theConnection and the CommandText methods in the MySqlCommand class.
4. Execute the command.
5. Close the connection.

```
private void button1_Click(object sender, EventArgs e)
        {
            string query = "INSERT INTO tableinfo (name, age) VALUES('John Smith', '33')";
            //open connection
            if (this.OpenConnection() == true)
            {
                //create command and assign the query and connection from the constructor
                MySqlCommand cmd = new MySqlCommand(query, connection);
                //Execute command
                cmd.ExecuteNonQuery();
                //close connection
                this.CloseConnection();
            }
        }
```

```
private void button2_Click(object sender, EventArgs e)
        {
            string query = "UPDATE tableinfo SET name='Joe', age='22' WHERE name='John Smith'";
            //Open connection
            if (this.OpenConnection() == true)
            {
                //create mysql command
                MySqlCommand cmd = new MySqlCommand();
                //Assign the query using CommandText
                cmd.CommandText = query;
                //Assign the connection using Connection
                cmd.Connection = connection;
                //Execute query
                cmd.ExecuteNonQuery();
                //close connection
                this.CloseConnection();
            }
        }
```

```
private void button3_Click(object sender, EventArgs e)
        {
            string query = "DELETE FROM tableinfo WHERE name='John Smith'";


            if (this.OpenConnection() == true)
            {
                MySqlCommand cmd = new MySqlCommand(query, connection);
                cmd.ExecuteNonQuery();
                this.CloseConnection();
            }
        }
```

Steps for select

To execute a Select statement, we add a few more steps, and we use the ExecuteReader method that will return a dataReader object to read and store the data or records.

1. Open connection to the database.
2. Create a MySQL command.
3. Assign a connection and a query to the command. This can be done using the constructor, or using theConnection and the CommandText methods in the MySqlCommand class.
4. Create a MySqlDataReader object to read the selected records/data.
5. Execute the command.
6. Read the records and display them or store them in a list.
7. Close the data reader.
8. Close the connection.

```
private void button4_Click(object sender, EventArgs e)
        {
            string query = "SELECT * FROM tableinfo";
            //Open connection
            if (this.OpenConnection() == true)
            {
                //Create Command
                MySqlCommand cmd = new MySqlCommand(query, connection);
                //Create a data reader and Execute the command
                MySqlDataReader dataReader = cmd.ExecuteReader();
                //Read the data and store them in the list
                while (dataReader.Read())
                {
                    textbox1.text += dataReader["id"] +"" +dataReader["name"] +
                              ""+dataReader["age"] + "\r\n";
                }
                //close Data Reader
                dataReader.Close();
                //close Connection
                this.CloseConnection();
              }
        }
```

Extra

Sometimes, a command will always return only one value, like for example if we want to count the number of records, we have been using Select Count(*) from tableinfo;, in this case, we will have to use the methodExecuteScalar that will return one value.

- The process to successfully run and ExecuteScalar is as follows:

1. Open connection to the database.
2. Create a MySQL command.
3. Assign a connection and a query to the command. This can be done using the constructor, or using theConnection and the CommandText methods in the MySqlCommand class.
4. Execute the command.
5. Parse the result if necessary.
6. Close the connection.

```
private void button5_Click(object sender, EventArgs e)
        {
            string query = "SELECT Count(*) FROM tableinfo";
            int Count = -1;
            //Open Connection
            if (this.OpenConnection() == true)
            {                   //Create Mysql Command
                MySqlCommand cmd = new MySqlCommand(query, connection);
                //ExecuteScalar will return one value
                Count = int.Parse(cmd.ExecuteScalar() + "");
                //close Connection
                this.CloseConnection();
                MessageBox.Show(Count.ToString()); // ต้องเพิ่ม using System.Windows;
            }
        }
```

Workshop

- ให้จำลองร้านค้าเล็ก ๆ ที่มีของขาย อย่างน้อย 3 อย่างโดยที่ของแต่ละอย่าง เก็บจำนวนและ ราคาต่อหน่วย ที่สามารถเพิ่ม ลบ แก้ไขได้