

Accessing a MySQL DB from a VS C# Program

You'll need:

- Visual Studio 2008 (get it from room C208, if needed), not just Visual C# Express Edition (the free download from Microsoft)
- MySQL Connector for .NET from www.mysql.com/downloads
 - Find Connector/Net and click download
 - Select platform & zip file (2nd one, not the src version)
 - Download & install it
 - NOTE: You now have local documentation about it at:
start>All Programs>MySQL>MySQL Connector Net...>Documentation
- World DB already set up in MySQL to run the C# program, UseMySQLDB

See internal Program comments (see below) & code in UseMySQLDB for instructions on how to proceed including examples of Query/Insert/Delete/Update.

PROGRAM: UseMySQLDB

DESCRIPTION: This program USES the World DB. It assumes the DB's already set up.

This set up was done directly in mysql by using script files to CREATE the database, CREATE its tables (with column descriptions), and populate the tables with actual data using INSERTs.

Such operations as CREATE, DROP, ALTER (i.e., DDL, Data Definition Language, SQL commands which affect the DB Schema) COULD have been done by a C# program instead. That's something you can explore later in a DBS course.

This program only queries & manipulates the DATA itself using DML (Data Manipulation Language) SQL commands: SELECT, INSERT, DELETE, UPDATE.

NOTE: Much of this code was adapted from the tutorial in the MySQL Connection documentation - see:
start / All Programs / MySQL / MySQL Server 5.1
/ MySQL Connector Net 6.2.2 / Documentation

WHAT'S NEEDED TO CONNECT TO A MYSQL DB:

1. ADD A CONNECTION to the MySQL DB server and the particular user & DB by doing:
 - open Server Explorer window (View / Server Explorer)

- right-click Data Connections & select Add Connection
- select MySQL Database & click continue
- enter the following info:
 - Server name: localhost
 - User name: root
 - Password: <whatever yours is - mine's MySQL3310>
 - check the box: Save my password
 - Database name: world <or whatever one you need>
- click Test Connection & click OK

The connection IS SAVED for when you next open this project. To establish the connection again, open Server Explorer and click on localhost(world) if it's flagged in red.

Note that you can see the list of tables in the DB as well as the columns in each table by expanding the + signs in the Server Explorer.

2. ADD A REFERENCE to MySQL.Data library by doing:
 - in Solution Explorer window (do View / Solution Explorer to open it)
 - right-click on this project's References & select Add Reference
 - in Add Reference window (under .NET tab) select MySql.Data & click OK

Note: This is SAVED & only needs to be done when first setting up the project.
3. INCLUDE the 3 LIBRARIES with using directives (see below):
System.Data, MySql.Data, MySql.Data.MySqlClient
4. OPEN the connection by declaring a MySqlConnection object, providing the constructor with the connection string with the relevant data (see below).
Note that a program could ask an interactive user for data like userName & password to use in building a connection string.
IF THE CONNECTION FAILS TO OPEN, start the DB SERVER itself by starting up mysql by opening the Command Prompt client, starting mysql and logging in.
5. Use 1 of MySqlCommand's 3 methods (see below) to RETRIEVE/CHANGE the DB's data:
 - ExecuteReader - used to query the DB - results returned in a MySqlDataReader object, created by ExecuteReader
 - ExecuteScalar - used to RETURN a single value
 - ExecuteNonQuery - used to INSERT, DELETE, UPDATE data
6. CLOSE the connection to release resources