# Getting Java, mySQL and Eclipse to work together

*Computer Science 102, U of C, Spring 2006*

The "plumbing" that connects Java code to database systems is collectively known as JDBC.

In order to get a mySQL JDBC program to work, you will need to install the "MySQL JDBC driver"—that is, the software that enables Java programs and your MySQL database to communicate with one another.

Here is the process for installing the driver. You only need to follow these steps once.

1. Make a directory, inside your cs home directory, called `jdbc`.
2. Copy the following file, available from the course website, to the directory you just made: `mysql-connector-java-3.0.6-stable-bin.jar`.
3. Open the file `.bashrc` in your home directory with an editor such as emacs. (Note that files whose names begin with . are ordinarily hidden by default, so you may need to "show hidden files" to get to `.bashrc`.)
4. Add the following two lines the file `.bashrc` (anywhere in the file), changing "username" to your own username:

```
MYSQLDRV="mysql-connector-java-3.0.6-stable-bin.jar"
export CLASSPATH="/home/username/jdbc/$MYSQLDRV:."
```

5. Save `.bashrc`.
6. Log out and log back in again, or, alternatively, type `source .bashrc` at a command prompt.

One other thing. You must inform your mySQL-connecting Eclipse projects that you would like to use this driver. Do so by right-clicking the project in question, choosing "Build Path — Add External Archives," then navigating to the aforementioned driver file. You will need to do this for every such Eclipse project.

Here is a sample JDBC program. The program selects the contents of one of the fields of one of your tables (as in, for example, `SELECT FirstName FROM NBAPlayers;`) and then prints out all of the values of that field.

```
import java.sql.*;

public class JDBCExample {

  public static void main(String[] args) throws ClassNotFoundException,
                                                 SQLException {
    String username = "your username";
    String password = "your MySQL password";

    String tablename = "a table in your database";
    String fieldname = "a field in that table";
    String query = "SELECT " + fieldname + " FROM " + tablename + ";";

    /* this chunk of code can appear more or less verbatim */
    /* in your database apps (including JSPs) */
    String url = "jdbc:mysql://dbserver.cs.uchicago.edu/" + username;
    Class.forName("com.mysql.jdbc.Driver");
    Connection con = DriverManager.getConnection(url, username, password);
    Statement stmt = con.createStatement();

    ResultSet rs = stmt.executeQuery(query);

    System.out.println("The contents of field " + fieldname + ":");
    while (rs.next())
      System.out.print(rs.getString(1) + ", ");
      // note that getString anomalously starts counting at 1, not 0

    System.out.println();

    rs.close();
    stmt.close();
    con.close();
  }
}
```

To check your setup, try running this program in Eclipse.