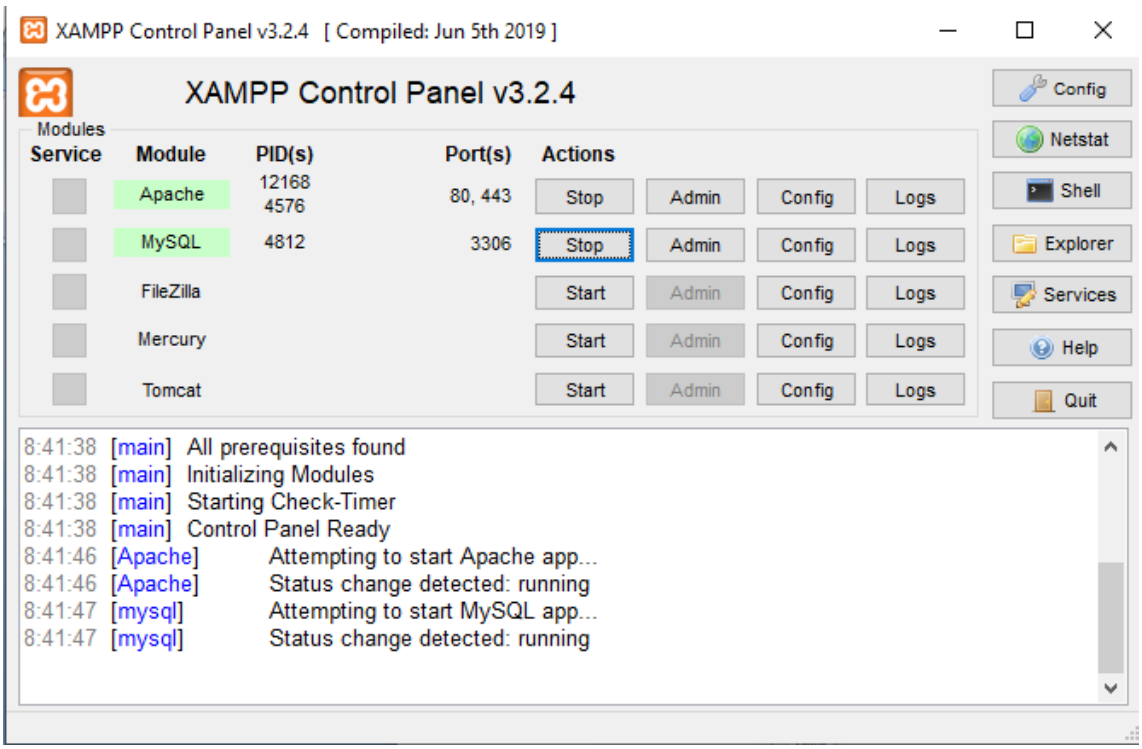
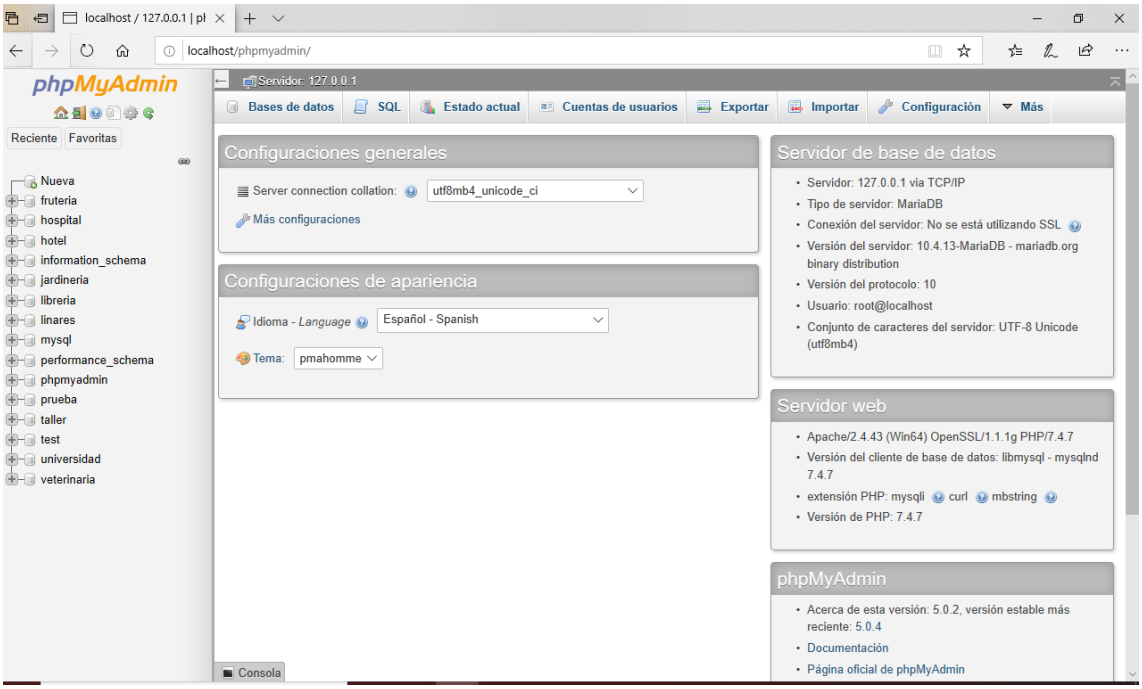
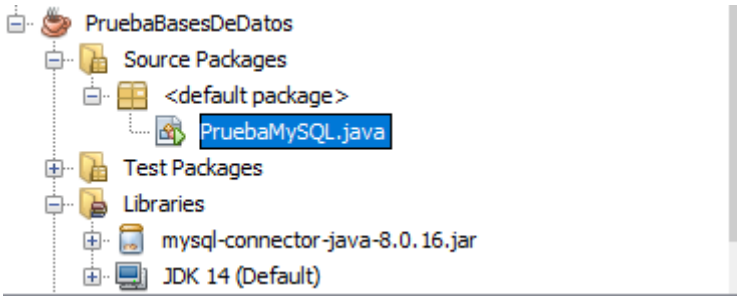
Access to Relational Databases from Java





In the Java program, we must have a connector:



Database access program from Java:

```
/**
*
* @author adelapresa
* Test program for connection to a MySQL database, working almost everything
* from Java source code
*Assumes that the database server is up, available,
* on the default port. (For example, in the XAMPP that we have in the previous document)
* The username and password for connecting to the database must be changed to the
* suitable for our needs.
* By adding the code that deletes the database, it is not necessary to have defined
* previously the structure of it, since all the control of the program is now on the side of the
* host language. However, it is necessary that it has been defined so that it does not give us problems the first time.
* time -since there is nothing to delete.
*
* We create a test database
* has a creditors table with three fields, like this:
* numacree (creditor number)
* creditname (creditor name)
* address
*
```

```
* I fill the table with data and check if I can delete one of them
*
* Afterwards, another table is created in the database, called clients, with a structure
* quite similar:
* customernum
* clientname
* address

*/


import java.sql.Connection;
import java.sql.DriverManager;
import java.sql.ResultSet;
import java.sql.SQLException;
import java.sql.Statement;


/**
* Connection test class with a MySQL database
*/
public class TestMySQL {

/**
* Create an instance of the MySQL class and do all the code
```

```
* connection, query and display of results.

*/

public TestMySQL() throws SQLException

{

// Put everything in a try because of possible MySQL errors

try

{

// MySQL Driver is registered



Class.forName("com.mysql.cj.jdbc.Driver");

} catch (Exception ex) {

// handle the error

System.out.println(ex.getMessage());

}

// A connection to the database is obtained. One has to

// change the user "root" and password ""(It goes without saying that in a real //production environment, the password could not be an empty field) for the

// appropriate to the database we are using.

Connection connection = DriverManager.getConnection(

"jdbc:mysql://localhost/test","root", "");

//If we wanted to access a database in MySQL Workbench, it would be necessary to modify the previous line as follows:

//"jdbc:mysql://localhost/test"+"?useUnicode=true&useJDBCCompliantTimezoneShift=true&useLegacyDatetimeCode=false&serverTimezone=UTC","root", "");

// A Statement is created to perform the query and it is declared that it can be updated

Statement s =
connection.createStatement(ResultSet.TYPE_SCROLL_INSENSITIVE,ResultSet.CONCUR_UPDATABLE);
```

```
//We are going to delete the database so that it does it from scratch every time it starts and does not give us errors

//Which will be the one we will then insert (For this to work, the database must have been previously created

//but we don't need to do anything else)


s.executeUpdate("DROP DATABASE test");

s.executeUpdate("CREATE DATABASE test");

s.executeUpdate("USE test");

s.executeUpdate("CREATE TABLE creditors(numacree INT, creename VARCHAR(25), address VARCHAR(25), PRIMARY KEY(numacree))");


//The following line would delete all the elements of the creditors table if we did not already have it deleted when deleting the database

//s.executeUpdate("DELETE FROM creditors");


//Enter data

s.executeUpdate("INSERT INTO creditors " + "VALUES (1,'Recaredo', 'General Dávila 27')");

s.executeUpdate("INSERT INTO creditors " + "VALUES (2,'Chindasvinto', 'General Dávila 17')");

s.executeUpdate("INSERT INTO creditors " + "VALUES (3,'Leovigildo', 'General Dávila 7')");

// The query is performed. The results are saved in the

// ResultSet rs

ResultSet rs = s.executeQuery("SELECT * FROM creditors");



// The ResultSet is traversed, displaying the results on the screen.

while (rs.next())

{

System.out.println(rs.getInt("numacree") + " " + rs.getString(2)+
```

```
" " + rs.getString(3));

//Let's now delete the second of the inserted records

//using the ResultSet method

if (rs.getString(2).equals("Chindasvinto")){

rs.deleteRow();//This command deletes the record whose second value is Chindasvinto

}

}


System.out.println("Now we are going to view the list of creditors to verify that it has actually been deleted");

ResultSet rs2=s.executeQuery("select numacree, nombacree, address from creditors");


while (rs2.next())

{

System.out.println(rs2.getInt("numacree") + " " + rs2.getString (2)+

" " + rs2.getString(3));}


//Create a new table


s.executeUpdate("CREATE TABLE clients(clientnum INT, clientname VARCHAR(25),address VARCHAR(25))");



// The connection to the database is closed.

connection.close();}
```

//Let's create a new customers table

/**

* Main method, instantiates a TestMySQL class

*

* @param args the command line arguments

*/

public static void main(String[] args) throws SQLException

{

new TestMySQL();

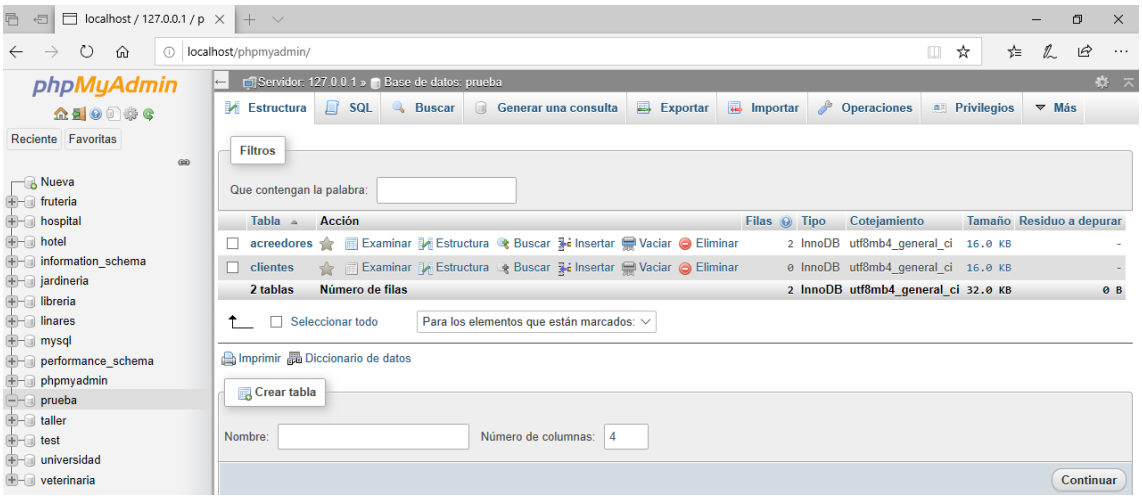
}

}

Executing the above program produces the following output:

```
Output - PruebaBasesDeDatos (run)
run:
com.mysql.cj.jdbc.Driver
1 Recaredo General Dávila 27
2 Chindasvinto General Dávila 17
3 Leovigildo General Dávila 7
Ahora vamos a visualizar el listado de acreedores para comprobar que efectivamente se ha borrado
1 Recaredo General Dávila 27
3 Leovigildo General Dávila 7
BUILD SUCCESSFUL (total time: 1 second)
```

We can check the modifications in the database itself -in phpmyadmin-


localhost / 127.0.0.1 / p
localhost/phpmyadmin/
phpMyAdmin
Reciente
Favoritas
Nueva
fruteria
hospital
hotel
information_schema
jardineria
libreria
linares
mysql
performance_schema
phpmyadmin
prueba
taller
test
universidad
veterinaria
Servidor: 127.0.0.1 » Base de datos: prueba
Estructura
SQL
Buscar
Generar una consulta
Exportar
Importar
Operaciones
Privilegios
Más
Filtros
Que contengan la palabra:
Tabla
Acción
Filas
Tipo
Cotejamiento
Tamaño
Residuo a depurar
acreedores
Examinar
Estructura
Buscar
Insertar
Vaciar
Eliminar
2
InnoDB
utf8mb4_general_ci
16.0 KB
-
clientes
0
InnoDB
utf8mb4_general_ci
16.0 KB
-
2 tablas
Número de filas
2
InnoDB
utf8mb4_general_ci
32.0 KB
0 B
Seleccionar todo
Para los elementos que están marcados:
Imprimir
Diccionario de datos
Crear tabla
Nombre:
Número de columnas:
4
Continuar