Lab 13: JDBC

Objective(s):

1. Overview of JDBC

1: Overview of JDBC

To connect Java application with the MySQL database, we need to follow 5 following steps.

In this example we are using MySql as the database. So we need to know following informations for the mysql database:

1. **Driver class:** The driver class for the mysql database is **com.mysql.jdbc.Driver**.

2. **Connection URL:** The connection URL for the mysql database is **jdbc:mysql://localhost:3306/sonoo** where jdbc is the API, mysql is the database, localhost is the server name on which mysql is running, we may also use IP address, 3306 is the port number and sonoo is the database name. We may use any database, in such case, we need to replace the sonoo with our database name.

3. **Username:** The default username for the mysql database is **root**.

4. **Password:** It is the password given by the user at the time of installing the mysql database. In this example, we are going to use root as the password.

Let's first create a table in the mysql database, but before creating table, we need to create database first.

```
create database lab;
use lab;
create table emp(id int(10),name varchar(40),age int(3));
```

Example to Connect Java Application with mysql database

In this example, lab is the database name, root is the username and password both.

```
import java.sql.*;
```

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```java
class MysqlCon{
    public static void main(String args[]){
        try{
            Class.forName("com.mysql.jdbc.Driver");
            Connection con=DriverManager.getConnection(
            "jdbc:mysql://localhost:3306/lab","root","");
            //here lab is database name, root is username and pass
        word is empty (if any password set you can use it)
            Statement stmt=con.createStatement();
            ResultSet rs=stmt.executeQuery("select * from emp");
            while(rs.next())
            System.out.println(rs.getInt(1)+"  "+rs.getString(2)+"
              "+rs.getString(3));
            con.close();
            }
        catch (ClassNotFoundException e){
                System.out.println(e.getMessage());
            }
            catch (Exception e) {
                    System.out.println(e.getMessage());
            }
    }
}
```

The above example will fetch all the records of emp table.

To connect java application with the mysql database, **mysqlconnector.jar** file is required to be loaded.

download the jar file mysql-connector.jar

If you are not using any IDE then you need to follow following steps:

1. Download mysql-connector.jar file.
2. Move it(jar) to your project directory where main class exist.
3. Run command `javac Main.java`
4. Run command `java -cp ".;mysql-connector.jar" Main`

If you are working on InteliJ IDE then you need to follow following given steps.
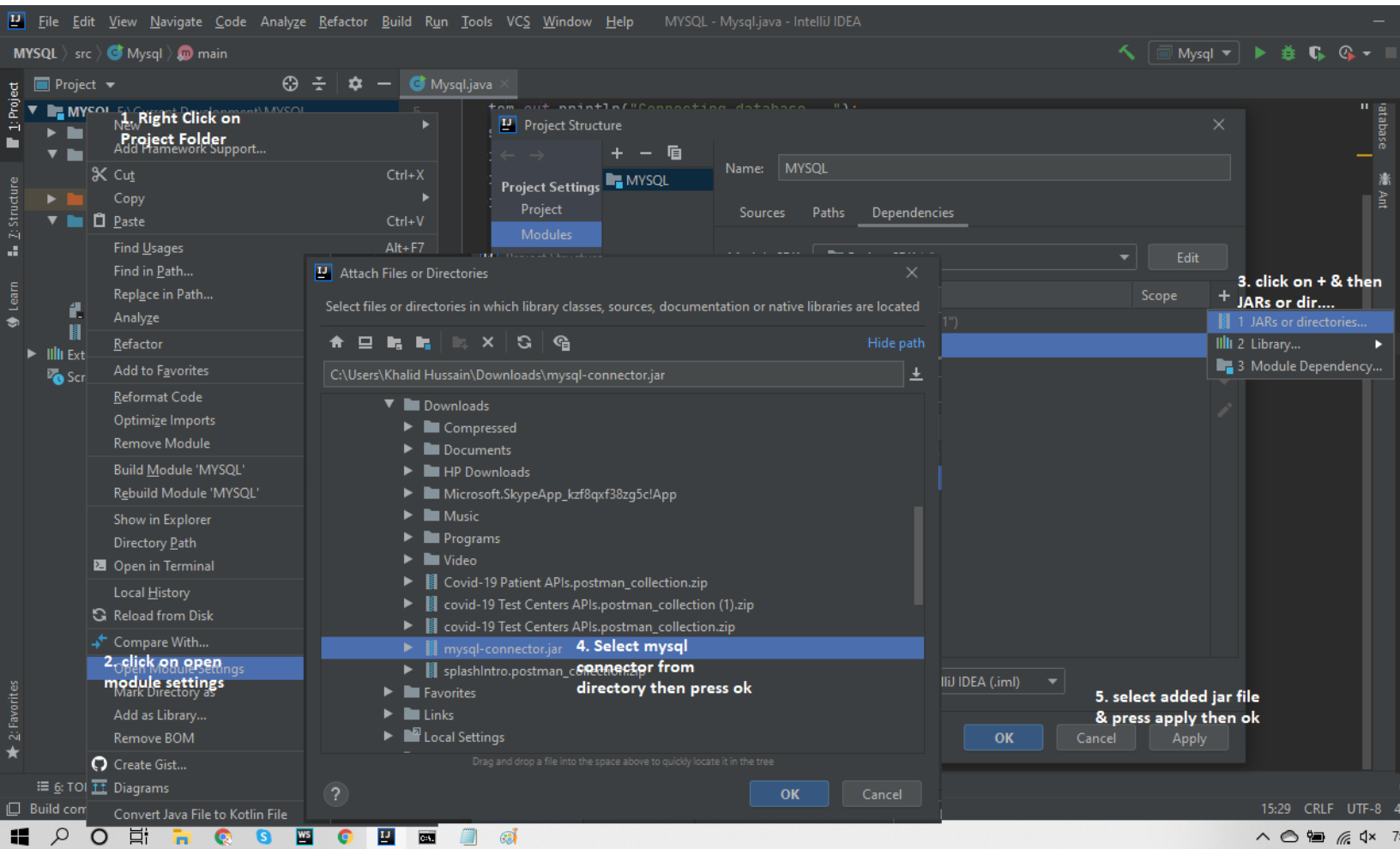
Lab Tasks:

Exercise 1

Create a program to connect with MySQL database. You need to create a database and using that database, create a student table with (id, name, phone, semester, cgpa) attributes.

You need to create a GUI application where you need to add CRUD (Create, Read, Update & Delete) operations. All operations should be done with created student in database.

END