# User Guide

## JSP and Java Beans
## Connecting, Retrieving and Updating

The description of assignment 3 mentions using the MVC architecture to develop the search module.
*Model–View–Controller (MVC) is a software architecture, currently considered an architectural pattern used in software engineering. The pattern isolates "domain logic" (the application logic for the user) from input and presentation (GUI), permitting independent development, testing and maintenance of each[1].*
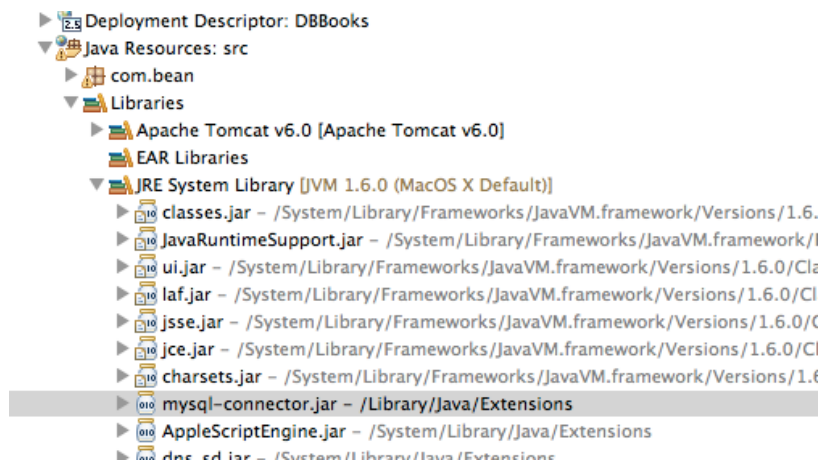
To prepare us for the assignment i have remodeled this JSP database tutorial to a JSP and Java Beans tutorial.

*This tutorial assumes you have read and followed Isabelle's user guide.*

Step 1:

The first step is to download and install the JDBC MySQL driver:

1. Download the **JDBC Driver for MySQL (Connector/J)** from:
http://www.mysql.com/products/connector/ (You will need to create an account)

2. Unzip the folder and copy the ***mysql-connector-java-5.1.12-bin.jar*** to the java libraries. On the MAC i copied it the /Library/Java/Extension. If you copied to the right folder then you will see it in Java Resources: src > JRE System Library of your eclipse project:



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[1] Model–view–controller - Wikipedia
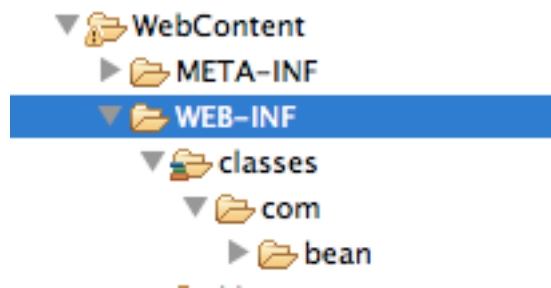
Step 2: Create the database and table in MySQL

1. Create a database named books: *create database books;*

2. Create table name books_details:

```
CREATE TABLE `books_details`
(
    `id` INT( 11 ) NOT NULL AUTO_INCREMENT ,
    `book_name` VARCHAR( 100 ) NOT NULL ,
    `author` VARCHAR( 100 ) NOT NULL ,
    PRIMARY KEY ( `id` )
) TYPE = MYISAM ;
```

Step3: Create Java Bean and JSP page to interact with Database

1.In Eclipse under WEB-INF in WebContent create the following structure:



2. Right click on the bean folder and select create new and then click on class. If you don't see class then click and other and then on class. Name the class DB.

3. Replace any code in the DB.java with the following:

```java
package com.bean;

import java.sql.*;
import java.io.*;

public class DB{

  String dbURL = "jdbc:mysql://localhost/books?user=root&password=test";
 // String dbDriver = "com.bean.Driver";
  private Connection dbCon;

  public DB(){
      super();
      }

  public boolean connect() throws ClassNotFoundException,SQLException{
        //Class.forName(dbDriver);
        dbCon = DriverManager.getConnection(dbURL);
        return true;
      }



  public void close() throws SQLException{
       dbCon.close();
      }

  public ResultSet execSQL(String sql) throws SQLException{

             Statement s = dbCon.createStatement();
             ResultSet r = s.executeQuery(sql);
             return (r == null) ? null : r;
             }

  public int updateSQL(String sql) throws SQLException{
             Statement s = dbCon.createStatement();
             int r = s.executeUpdate(sql);
             return (r == 0) ? 0 : r;
           }

}
```

4. Create a JSP page names Bean.jsp and replace all the code with the following:

```jsp
<%@ page language="java" import="java.sql.*" %>

<jsp:useBean id="db" scope="request" class="com.bean.DB" />

<jsp:setProperty name="db" property="*" />


<%!
        ResultSet rs = null ;
        ResultSetMetaData rsmd = null ;
        int numColumns ;
        int i;
%>

<%
    db.connect();

    if(request.getParameter("action") != null){
            String bookname=request.getParameter("bookname");
            String author=request.getParameter("author");
            i = db.updateSQL("insert into books_details(book_name,author) values
('"+bookname+"','"+author+"')");
            rs = db.execSQL("select * from books_details");
%>
            <html>
            <body>
            <center>
                <h2>Books List</h2>
                <table border="1" cellspacing="0" cellpadding
="0">
                <tr>
                    <td><b>ID</b></td>
                    <td><b>Book Name</b></td>
                    <td><b>Author</b></td>
                </tr>
                    <%
                    int no=1;
                    while(rs.next()){
                    %>
                    <tr>
                      <td><%=no%></td>
                      <td><%=rs.getString("book_name")%></td>
                      <td> <%=rs.getString("author")%> </td>
                    </tr>
                    <%
                    no++;
        }
        db.close();
%>
                </table>
```

```jsp
			</center>
		</body>
	</html>
<%}else{%>
	<html>
	<head>
		<title>Book Entry FormDocument</title>
		<script language="javascript">
			function validate(objForm){
				if(objForm.bookname.value.length==0){
				alert("Please enter Book Name!");
				objForm.bookname.focus();
				return false;
				}
				if(objForm.author.value.length==0){
				alert("Please enter Author name!");
				objForm.author.focus();
				return false;
				}
				return true;
					}
			</script>
		</head>
<body>
			<center>
<form action="Bean.jsp" method="post"
name="entry" onSubmit="return
 validate(this)">
	<input type="hidden" value="list" name="action">
	<table border="1" cellpadding="0" cellspacing="0">
	<tr>
		<td>
			<table>
				<tr>
				<td colspan="2" align="center">
<h2>Book Entry Form</h2></td>
				</tr>
				<tr>
				<td colspan="2"> </td>
				</tr>
				<tr>
				<td>Book Name:</td>
				<td><input name="bookname" type=
"text" size="50"></td>
				</tr>
				<tr>
				<td>Author:</td><td><input name=
"author" type="text" size="50"></td>
				</tr>
				<tr>
					<td colspan="2" align="center">
<input type="submit" value="Submit"></td>
					</tr>
				</table>
```

```
                        </td>
                </tr>
        </table>
</form>
                        </center>
                </body>
        </html>
<%}%>
```

4. Save Project and Run within Eclipse with Tomcat Server.

You Should see the following:

**Book Entry Form**

Book Name: [                    ]
Author: [                    ]
( Submit )

Enter a Book Name:    Java
Author Name: Sergei Mokhov

**Book Entry Form**

Book Name: [Java                ]
Author: [Sergei Mokhov          ]
( Submit )

Click Submit and if everything works you should see the following:

## Books List

| ID | Book Name | Author |
|---|---|---|
| 1 | test | test2 |
| 2 | test | test2 |
| 3 | hello world | 22222 |
| 4 | Sourceforge | Isa |
| 5 | Test | Test Author |
| 6 | 1984 | George Orwell |
| 7 | Java | Sergei Mokhov |

You should see the seventh record as your first without all the rest of the records.