MVC 模式

➤ M：Model，即模型，对于 JavaBean

➤ V：View， 即试图，对应 JSP 页面

➤ C：Controller，即控制器，对应 Servlet

1. 以下为 MVC 实现一个简单的 增删改查 功能

1> 显示记录

2> 增加一条记录

3> 修改一条记录

4> 删除一条记录

■ ■

程序源代码：

M 层：模型层

1.封装一条信息的所有属性 **JavaBean.java** ， 即 **VO**

```java
package muta.bean;
/**
 * @author help
 *封装一条信息的所有属性
 */
public class JavaBean {

    private int id;

    private String name;

    private String password;

    private String sex;

    private int age;
```

```java
public int getId() {

    return id;

}

public void setId(int id) {

    this.id = id;

}

public String getName() {

    return name;

}

public void setName(String name) {

    this.name = name;

}

public String getPassword() {

    return password;

}

public void setPassword(String password) {

    this.password = password;

}

public String getSex() {

    return sex;

}

public void setSex(String sex) {
```

```java
        this.sex = sex;

    }

    public int getAge() {

        return age;

    }

    public void setAge(int age) {

        this.age = age;

    }

}
```

2.封装数据库连接以及操作 JavaBean 所用到的方法，即 DAO

```java
package muta.bean;

import java.sql.Connection;

import java.sql.DriverManager;

import java.sql.PreparedStatement;

import java.sql.ResultSet;

import java.sql.SQLException;

import java.util.ArrayList;

import java.util.List;
```

```java
/**
 * @author help
 *操作数据库的方法
 */
public class SqlBean {
    Connection con;
    PreparedStatement pre;
    ResultSet rs;
    public SqlBean()
    {
        try {
            Class.forName("com.mysql.jdbc.Driver");
        } catch (ClassNotFoundException e) {
            e.printStackTrace();
        }
        try {
    con=DriverManager.getConnection("jdbc:mysql://127.0.0.1:3306/MyServlet","root","122828");
        } catch (SQLException e) {
            e.printStackTrace();
        }
    }
```

```java
/**
 * @author help
 *
 *插入新的一条记录
 * @return
 */
public int getInsert(String sql,JavaBean jBean)
{
    int count =0;
    try {
        pre = con.prepareStatement(sql);
        pre.setString(1,jBean.getName());
        pre.setString(2,jBean.getPassword());
        pre.setString(3,jBean.getSex());
        pre.setInt(4,jBean.getAge());
        count=pre.executeUpdate();
    } catch (SQLException e) {
        e.printStackTrace();
    }
    finally
{
    try {
```

```java
                pre.close();

                con.close();

        } catch (SQLException e) {

            // TODO Auto-generated catch block

            e.printStackTrace();

        }

    }

        return count;

}


    /**
     * @author help
     *
     *删除一条记录
     * @return
     */
    public int getDelete(String sql,int id)
    {
        int count =0;
        try {

            pre = con.prepareStatement(sql);

            pre.setInt(1, id);
```

```java
            count=pre.executeUpdate();
    } catch (SQLException e) {
        e.printStackTrace();
    }
    finally
    {
        try {
            pre.close();
            con.close();
        } catch (SQLException e) {
            // TODO Auto-generated catch block
            e.printStackTrace();
        }
    }
    return count;
}
```

```java
/**
 * @author help
 *
 *根据ID查询某一条记录
 * @return
 */
public JavaBean getSearchById(String sql,int id)
{
    JavaBean jBean = new JavaBean();


    try {
        pre = con.prepareStatement(sql);

        pre.setInt(1, id);

        rs=pre.executeQuery();


        while(rs.next())
        {
            jBean.setId(rs.getInt("id"));

            jBean.setName(rs.getString("name"));

            jBean.setPassword(rs.getString("password"));

            jBean.setSex(rs.getString("sex"));

            jBean.setAge(rs.getInt("age"));
```

```java
        }

    } catch (SQLException e)

    {

        e.printStackTrace();

    }

    return jBean;

}


/**

 * @author help

 *

 *更新某一条记录

 * @return

 */

public int getUpdate(String sql,JavaBean jBean)

{

    int count =0;

    try {

        pre = con.prepareStatement(sql);

        pre.setInt(5,jBean.getId());

        pre.setString(1,jBean.getName());

        pre.setString(2,jBean.getPassword());
```

```java
            pre.setString(3,jBean.getSex());

            pre.setInt(4,jBean.getAge());

            count = pre.executeUpdate();

        } catch (SQLException e) {

            // TODO Auto-generated catch block

            e.printStackTrace();

        }

        finally

        {

            try {

                pre.close();

                con.close();

            } catch (SQLException e) {

                // TODO Auto-generated catch block

                e.printStackTrace();

            }

        }

        return count;

    }
```

```java
/**
 * @author help
 *
 *显示所有记录
 * @return
 */
public List getSearch(String sql)
{
    List list = new ArrayList();

    //获取prepareStatement对象
    try {
        pre = con.prepareStatement(sql);
        rs    =pre.executeQuery();

        while(rs.next())
        {
            JavaBean jBean =new JavaBean();
            jBean.setId(rs.getInt("id"));
            jBean.setName(rs.getString("name"));
            jBean.setPassword(rs.getString("password"));
            jBean.setSex(rs.getString("sex"));
```

```java
                jBean.setAge(rs.getInt("age"));

                list.add(jBean);

            }

        } catch (SQLException e) {

            // TODO Auto-generated catch block

            e.printStackTrace();

        }


        finally

        {

            try {

                pre.close();

                con.close();

            } catch (SQLException e) {

                // TODO Auto-generated catch block

                e.printStackTrace();

            }

        }

        return list;

    }

}
```

V 层：试图层

1. 显示记录集的页面 SearchList.jsp

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

pageEncoding="UTF-8"%>

<%

String path = request.getContextPath();

String basePath =

request.getScheme()+"://"+request.getServerName()

+":"+request.getServerPort()+path+"/";

%>


<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01

Transitional//EN">

<html>

<head>

<meta http-equiv="Content-Type"

content="text/html; charset=UTF-8">

<title>显示记录</title>

</head>

<body>

<center >

<font color=red size=72>学生信息如下：</font>
```

```
<hr>

<table border=1 bgColor="#ffffff" width="500px"
height="100px">

<tr>

<td>ID</td>

<td>姓名</td>

<td>密码</td>

<td>性别</td>

<td>年龄</td>

<td><center>操作</center></td>

</tr>


<jsp:useBean id="sBean"class="muta.bean.SqlBean"/>

<jsp:useBean id="jBean"

class="muta.bean.JavaBean"/>

<%

    String sql ="select * from student order by id";

    java.util.List list =sBean.getSearch(sql);


    for(java.util.Iterator it
=list.iterator();it.hasNext();)

    {
```

```jsp
        //获取一个JavaBean对象

        jBean =(muta.bean.JavaBean)it.next();
  %>

  <tr>

      <td><%=jBean.getId() %></td>

      <td><%=jBean.getName() %></td>

      <td><%=jBean.getPassword() %></td>

      <td><%=jBean.getSex() %></td>

      <td><%=jBean.getAge() %></td>


      <td>

          <a href="Insert.jsp">增加</a>

          <a href="Delete?id=<%=jBean.getId()%>">删
除</a> 

          <a
href="SearchById?id=<%=jBean.getId()%>">更新</a>

      </td>

  </tr>


  <% }%>


</table>
```

```
</center>

</body>

</html>
```

2. 插入页面 Insert.jsp

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

pageEncoding="UTF-8"%>

<%

String path = request.getContextPath();

String basePath =

request.getScheme()+"://"+request.getServerName()

+":"+request.getServerPort()+path+"/";

%>


<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01

Transitional//EN">

<html>

<head>

<meta http-equiv="Content-Type"

content="text/html; charset=UTF-8">

<title>插入新值</title>

</head>
```

```html
<body>
 <center >
 <font color=red size=72>学生管理页面</font>
<hr>
<form action="Insert" method="post">
<table border="1">
<tr>
<td>姓名：</td>
<td><input name ="name"></td>
</tr>


<tr>
<td>密码：</td>
<td><input type="password" name ="password"></td>
</tr>


<tr>
<td>性别：</td>
<td><input type="radio" name ="sex" value="男">男
       <input type="radio" name ="sex" value="女">
女
 </td>
```

```html
</tr>


<tr>

<td>年龄：</td>

<td><input type="text" name ="age"></td>

</tr>


<tr>

<td colspan="2">

 <center>

 <input type="submit" value="提交">

 <input type="reset" value="重置">

</center>

</td>

</tr>


</table>

</form>

<a href="SearchList.jsp">查询</a>

 </center>

</body>

</html>
```

3. 更新页面 Update.jsp

```jsp
<%@ page language="java" import="java.util.*"
pageEncoding="UTF-8"%>
<%
String path = request.getContextPath();
String basePath =
request.getScheme()+"://"+request.getServerName()
+":"+request.getServerPort()+path+"/";
%>


<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01
Transitional//EN">
<html>
<head>
<meta http-equiv="Content-Type"
content="text/html; charset=UTF-8">
<title>更新</title>
</head>
<body>
<center>
<font color=red size=72>学生管理页面</font>
```

```html
<hr>

<form action="Update" method="post""">

<table border="1">

<tr>

<td>学生ID：</td>

<td><input name="id"

value="<%=request.getAttribute("id")  %>"

readonly></td>

</tr>


<tr>

<td>学生姓名：</td>

<td><input name="name"

value="<%=request.getAttribute("name")  %>" ></td>

</tr>


<tr>

<td>学生密码：</td>

<td><input type="password"  name="password"

value="<%=request.getAttribute("password")  %>"

></td>

</tr>
```

```html
<tr>

<td>学生性别：</td>

<td><input type="radio" name ="sex" value="男
"<%=request.getAttribute("man") %>>男

        <input type="radio" name ="sex" value="女
"<%=request.getAttribute("woman") %>>女

 </td>

</tr>


<tr>

<td>学生年龄：</td>

<td><input type="text" name="age"

value="<%=request.getAttribute("age") %>" ></td>

</tr>


<tr>

<td colspan="2">

 <center>

 <input type="submit" value="提交">

 <input type="reset" value="重置">

</center>
```

```html
</td>

</tr>

</table>


</form>

<a href="SearchList.jsp">查询</a>

</center>

</body>

</html>
```

4. 出错页面 Error.jsp

```jsp
<%@ page language="java" import="java.util.*"
pageEncoding="UTF-8"%>

<%

String path = request.getContextPath();

String basePath =

request.getScheme()+"://"+request.getServerName()

+":"+request.getServerPort()+path+"/";

%>


<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01

Transitional//EN">
```

```html
<html>

<head>

<meta http-equiv="Content-Type"

content="text/html; charset=UTF-8">

<title>出错啦！！！</title>

</head>


<body>

    对不起！您<%=request.getAttribute("error") %>失败

</body>

</html>
```

C 层：控制层—Servlet

1. 显示记录集的 Servlet----SearchById.java

```java
package muta.servlet;


import java.io.IOException;

import javax.servlet.ServletException;

import javax.servlet.http.HttpServlet;

import javax.servlet.http.HttpServletRequest;

import javax.servlet.http.HttpServletResponse;


import muta.bean.JavaBean;

import muta.bean.SqlBean;


public class SearchById extends HttpServlet {

    private static final long serialVersionUID = 1L;


    /**

     * The doDelete method of the servlet. <br>

     *

     * This method is called when a HTTP delete request is received.

     *

     * @param request the request send by the client to the server

     * @param response the response send by the server to the client
```

```java
     * @throws ServletException if an error occurred

     * @throws IOException if an error occurred

     */

    public void doDelete(HttpServletRequest request,

            HttpServletResponse response) throws ServletException,

IOException {


        // Put your code here

    }



    /**

     * The doGet method of the servlet. <br>

     *

     * This method is called when a form has its tag value method equals

to get.

     *

     * @param request the request send by the client to the server

     * @param response the response send by the server to the client

     * @throws ServletException if an error occurred

     * @throws IOException if an error occurred

     */

    public void doGet(HttpServletRequest request, HttpServletResponse
```

```java
response)

        throws ServletException, IOException {


    doPost(request,response);

}



/**

 * The doPost method of the servlet. <br>

 *

 * This method is called when a form has its tag value method equals
to post.

 *

 * @param request the request send by the client to the server

 * @param response the response send by the server to the client

 * @throws ServletException if an error occurred

 * @throws IOException if an error occurred

 */
public void doPost(HttpServletRequest request,

HttpServletResponse response)

        throws ServletException, IOException {
```

```java
response.setContentType("text/html");

request.setCharacterEncoding("utf-8");

response.setCharacterEncoding("utf-8");


//获取用户ID

String sid = request.getParameter("id");

int        id    =Integer.parseInt(sid);


String sql ="select * from student where id=?";

SqlBean    sBean = new SqlBean();

JavaBean jBean = sBean.getSearchById(sql, id);


//用户ID

request.setAttribute("id",jBean.getId());

//用户姓名

request.setAttribute("name",jBean.getName());

//用户密码

request.setAttribute("password",jBean.getPassword());


//用户性别

String sex="";

String man="";
```

```java
String woman="";

if(jBean.getSex()!=null)

{

    sex=jBean.getSex().trim();

    if(sex.equals("男"))

    {

        man ="checked";

    }

    else

    {

        woman ="checked";

    }

}

request.setAttribute("man",man);

request.setAttribute("woman",woman);



//用户年龄

request.setAttribute("age",jBean.getAge());



//转发

request.getRequestDispatcher("Update.jsp").forward(request,
```

```
response);

    }

}
```

2. 增加记录的 Servlet----Insert.java

```java
package muta.servlet;



import java.io.IOException;

import javax.servlet.ServletException;

import javax.servlet.http.HttpServlet;

import javax.servlet.http.HttpServletRequest;

import javax.servlet.http.HttpServletResponse;



import muta.bean.SqlBean;

import muta.bean.JavaBean;



public class Insert extends HttpServlet {



    /**

     *

     */
```

```java
    private static final long serialVersionUID = 1L;


    /**

     * The doDelete method of the servlet. <br>

     *

     * This method is called when a HTTP delete request is received.

     *

     * @param request the request send by the client to the server

     * @param response the response send by the server to the client

     * @throws ServletException if an error occurred

     * @throws IOException if an error occurred

     */
    public void doDelete(HttpServletRequest request,

            HttpServletResponse response) throws ServletException,

IOException {


        // Put your code here

    }


    /**

     * The doGet method of the servlet. <br>

     *
```

```java
     * This method is called when a form has its tag value method equals
to get.
     *
     * @param request the request send by the client to the server
     * @param response the response send by the server to the client
     * @throws ServletException if an error occurred
     * @throws IOException if an error occurred
     */
    public void doGet(HttpServletRequest request, HttpServletResponse
response)
            throws ServletException, IOException {

        response.setContentType("text/html");
        doPost(request,response);

    }


    /**
     * The doPost method of the servlet. <br>
     *
     * This method is called when a form has its tag value method equals
to post.
```

```java
 *
 * @param request the request send by the client to the server
 * @param response the response send by the server to the client
 * @throws ServletException if an error occurred
 * @throws IOException if an error occurred
 */
public void doPost(HttpServletRequest request,
HttpServletResponse response)
        throws ServletException, IOException {


    response.setContentType("text/html");

    request.setCharacterEncoding("utf-8");

    response.setCharacterEncoding("utf-8");
    //获取前台页面数据
    String name =request.getParameter("name");

    String password =request.getParameter("password");

    String sex =request.getParameter("sex");

    String sage = request.getParameter("age");

    int        age    =Integer.parseInt(sage);



    //封装到JavaBean对象中去

    JavaBean jBean = new JavaBean();
```

```
jBean.setName(name);

jBean.setPassword(password);

jBean.setSex(sex);

jBean.setAge(age);


//调用模型层
String sql = "insert into student(name,password,sex,age)
values(?,?,?,?)";

SqlBean    sBean = new SqlBean();

int count =sBean.getInsert(sql,jBean);

String url="";

if(count>0)
{
    url="SearchList.jsp";
}
else
{
    url ="error.jsp";
    request.setAttribute("error", "ッ��");
}
//转发т
```

```
        request.getRequestDispatcher("SearchList.jsp").forward(request,

response);

    }

}
```

3. 更新记录的 Servlet----Updated.java

```java
package muta.servlet;


import java.io.IOException;

import java.io.PrintWriter;


import javax.servlet.ServletException;

import javax.servlet.http.HttpServlet;

import javax.servlet.http.HttpServletRequest;

import javax.servlet.http.HttpServletResponse;


import muta.bean.JavaBean;

import muta.bean.SqlBean;


public class Update extends HttpServlet {
```

```java
/**
 *
 */
private static final long serialVersionUID = 1L;

/**
 * The doDelete method of the servlet. <br>
 *
 * This method is called when a HTTP delete request is received.
 *
 * @param request the request send by the client to the server
 * @param response the response send by the server to the client
 * @throws ServletException if an error occurred
 * @throws IOException if an error occurred
 */
public void doDelete(HttpServletRequest request,
        HttpServletResponse response) throws ServletException,
IOException {

    // Put your code here

}
```

```java
    /**
     * The doGet method of the servlet. <br>
     *
     * This method is called when a form has its tag value method equals
to get.
     *
     * @param request the request send by the client to the server
     * @param response the response send by the server to the client
     * @throws ServletException if an error occurred
     * @throws IOException if an error occurred
     */
    public void doGet(HttpServletRequest request, HttpServletResponse
response)
            throws ServletException, IOException {

        doPost(request,response);
    }


    /**
     * The doPost method of the servlet. <br>
     *
```

```java
    * This method is called when a form has its tag value method equals
to post.
    *
    * @param request the request send by the client to the server
    * @param response the response send by the server to the client
    * @throws ServletException if an error occurred
    * @throws IOException if an error occurred
    */
    public void doPost(HttpServletRequest request,
HttpServletResponse response)
            throws ServletException, IOException {


        response.setContentType("text/html");

        request.setCharacterEncoding("utf-8");

        response.setCharacterEncoding("utf-8");


        //获得前台表单信息
        String sid = request.getParameter("id");

        int        id    =Integer.parseInt(sid);



        String name =request.getParameter("name");

        String password =request.getParameter("password");
```

```java
        String sex =request.getParameter("sex");


        String sage = request.getParameter("age");

        int         age   =Integer.parseInt(sage);


        //封装到JavaBean对象中去

        JavaBean jBean = new JavaBean();

        jBean.setId(id);

        jBean.setName(name);

        jBean.setPassword(password);

        jBean.setSex(sex);

        jBean.setAge(age);


        String sql ="update student set name=?,password=?,sex=?,age=?
where id=?";

        SqlBean    sBean = new SqlBean();

        int count =sBean.getUpdate(sql,jBean);

        String url="";

        if(count>0)

        {

            url="SearchList.jsp";

        }
```

```
        else

        {

            url ="error.jsp";

            request.setAttribute("error", "更新");

        }

        request.getRequestDispatcher("SearchList.jsp").forward(request,
response);

    }

}
```

4. 删除记录的 Servlet----Delete.java

```java
package muta.servlet;


import java.io.IOException;


import javax.servlet.ServletException;

import javax.servlet.http.HttpServlet;

import javax.servlet.http.HttpServletRequest;

import javax.servlet.http.HttpServletResponse;
```

```java
import muta.bean.SqlBean;


public class Delete extends HttpServlet {

    private static final long serialVersionUID = 1L;

    /**

     * The doDelete method of the servlet. <br>

     *

     * This method is called when a HTTP delete request is received.

     *

     * @param request the request send by the client to the server

     * @param response the response send by the server to the client

     * @throws ServletException if an error occurred

     * @throws IOException if an error occurred

     */
    public void doDelete(HttpServletRequest request,

            HttpServletResponse response) throws ServletException,

IOException {


        // Put your code here

    }


    /**
```

```java
 * The doGet method of the servlet. <br>
 *
 * This method is called when a form has its tag value method equals
to get.
 *
 * @param request the request send by the client to the server
 * @param response the response send by the server to the client
 * @throws ServletException if an error occurred
 * @throws IOException if an error occurred
 */
public void doGet(HttpServletRequest request, HttpServletResponse
response)
        throws ServletException, IOException {

    response.setContentType("text/html");
    doPost(request,response);
}


/**
 * The doPost method of the servlet. <br>
 *
 * This method is called when a form has its tag value method equals
```

```java
to post.
     *
     * @param request the request send by the client to the server
     * @param response the response send by the server to the client
     * @throws ServletException if an error occurred
     * @throws IOException if an error occurred
     */
    public void doPost(HttpServletRequest request,
HttpServletResponse response)
            throws ServletException, IOException {


        response.setContentType("text/html");


        //获取超链接传来的数据
        String sId = request.getParameter("id");
        int       id   =Integer.parseInt(sId);


        //
        //调用模型层删除方法
        String sql = "delete from student where id=?";
        SqlBean    sBean = new SqlBean();
        int count =sBean.getDelete(sql, id);
```

```java
        String url="";

        if(count>0)

        {

            url="SearchList.jsp";

        }

        else

        {

            url ="error.jsp";

            request.setAttribute("error", "删除");

        }

        //转发

        request.getRequestDispatcher(url).forward(request, response);

    }

}
```

XML 文件

```xml
<?xml version="1.0" encoding="UTF-8"?>

<web-app version="2.5"

    xmlns="http://java.sun.com/xml/ns/javaee"

    xmlns:xsi="http://www.w3.org/2001/XMLSchema-in

stance"
```

```xml
    xsi:schemaLocation="http://java.sun.com/xml/ns
/javaee
    http://java.sun.com/xml/ns/javaee/web-app_2_5.
xsd">
  <servlet>
    <servlet-name>Update</servlet-name>

<servlet-class>muta.servlet.Update</servlet-class
>
  </servlet>
  <servlet>
    <servlet-name>SearchById</servlet-name>

<servlet-class>muta.servlet.SearchById</servlet-c
lass>
  </servlet>
  <servlet>
    <servlet-name>Insert</servlet-name>

<servlet-class>muta.servlet.Insert</servlet-class
>
  </servlet>
```

```xml
  <servlet>

    <servlet-name>Delete</servlet-name>


<servlet-class>muta.servlet.Delete</servlet-class
>

  </servlet>




  <servlet-mapping>

    <servlet-name>Update</servlet-name>

    <url-pattern>/Update</url-pattern>

  </servlet-mapping>

  <servlet-mapping>

    <servlet-name>SearchById</servlet-name>

    <url-pattern>/SearchById</url-pattern>

  </servlet-mapping>

  <servlet-mapping>

    <servlet-name>Insert</servlet-name>

    <url-pattern>/Insert</url-pattern>

  </servlet-mapping>
```

```xml
  <servlet-mapping>

    <servlet-name>Delete</servlet-name>

    <url-pattern>/Delete</url-pattern>

  </servlet-mapping>

  <welcome-file-list>

    <welcome-file>index.jsp</welcome-file>

  </welcome-file-list>

</web-app>
```