# 实验三 EL、JSTL及MVC

**实验内容**

EL表达式、JSTL及MVC开发模式

**实验目的**

掌握EL表达式的使用

掌握JSTL核心标签库的使用

了解MVC开发模式理念，掌握MVC开发模式方法

**环境要求**

服务器：tomcat6.0或更高、mysql5或更高

集成开发环境：MyEclipse 2014或更高

**实验指导**

1. 学习课堂上和书中MVC的例子
2. 自己实现该例子（控制器使用servlet或Filter实现）

**Filter的控制器：**

package controllers;

import java.io.IOException;

import java.util.List;

import javax.servlet.Filter;

import javax.servlet.FilterChain;

import javax.servlet.FilterConfig;

import javax.servlet.ServletException;

import javax.servlet.ServletRequest;

import javax.servlet.ServletResponse;

import javax.servlet.http.HttpServletRequest;

import javax.servlet.http.HttpServletResponse;

import beans.Student;

import util.StudentProcess;

public class CtrlFilter implements Filter {

@Override

public void destroy() {

}

@Override

public void doFilter(ServletRequest arg0, ServletResponse arg1,

FilterChain arg2) throws IOException, ServletException {

HttpServletRequest request = (HttpServletRequest)arg0;

HttpServletResponse response = (HttpServletResponse)arg1;

request.setCharacterEncoding("utf-8");

String uri = request.getRequestURI();

StudentProcess stuProcess = new StudentProcess();

uri = uri.replace(request.getContextPath(), "");

uri = uri.replaceFirst("^/", "").replaceFirst("/$", "");

//保存上下文路径

request.setAttribute("root", request.getContextPath());

String[] param = uri.split("/");

try{

if(param.length > 1){

if("list".equals(param[1])){

List<Student> stus = stuProcess.getAllStudent();

request.setAttribute("stus", stus);

request.getRequestDispatcher("/WEB-INF/views/list.jsp").forward(request, response);

}

else if("add".equals(param[1])){

request.getRequestDispatcher("/WEB-INF/views/edit.jsp").forward(request, response);

}

else if("edit".equals(param[1])){

if(param.length<3)

throw new Exception("无效参数...");

Student stu = stuProcess.getById(param[2]);

request.setAttribute("stu", stu);

request.getRequestDispatcher("/WEB-INF/views/edit.jsp").forward(request, response);

}

else if("save".equals(param[1])){

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

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

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

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

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

Student stu = new Student();

stu.setId(id);

stu.setUname(uname);

stu.setClassName(className);

stu.setAge(Integer.parseInt(ages));

if("".equals(oldId)){

stuProcess.insert(stu);

}

else {

stuProcess.update(stu,oldId);

}

response.sendRedirect("list");

}

else if("delete".equals(param[1])){

if(param.length<3)

throw new Exception("无效参数...");

stuProcess.delete(param[2]);

response.sendRedirect("../list");

}

else{

throw new Exception("请求无效....");

}

}

else {

throw new Exception("请求无效....");

}

}

catch (Exception e) {

e.printStackTrace();

request.setAttribute("errMsg", e.getMessage());

request.getRequestDispatcher("/WEB-INF/views/error.jsp").forward(request, response);

}

}

@Override

public void init(FilterConfig arg0) throws ServletException {

// TODO Auto-generated method stub

}

}

**Filter的控制器：**

import java.io.IOException;

import javax.servlet.ServletException;

import javax.servlet.http.HttpServlet;

import javax.servlet.http.HttpServletRequest;

import javax.servlet.http.HttpServletResponse;

public class Controller extends HttpServlet{

public void doGet(HttpServletRequest request,HttpServletResponse response)

throws ServletException,IOException{

doPost(request,response);

}

public void doPost(HttpServletRequest request,HttpServletResponse response)

throws ServletException,IOException{

String forward="";//保存forward的URL

String redirect="";//保存redirect的URL

try{

DBProcess db= new DBProcess(request);

}

}

}

1. 为该示例添加用户认证，只有登录用户才能进行操作。

提示：在数据库中添加user表，存放用户信息（用户名、口令等）。

**login.jsp**

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

<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN">

<html>

<head>

<title>My JSP 'login.jsp' starting page</title>

<meta http-equiv=*"pragma"* content=*"no-cache"*>

<meta http-equiv=*"cache-control"* content=*"no-cache"*>

<meta http-equiv=*"expires"* content=*"0"*>

<meta http-equiv=*"keywords"* content=*"keyword1,keyword2,keyword3"*>

<meta http-equiv=*"description"* content=*"This is my page"*>

<!--

<link rel="stylesheet" type="text/css" href="styles.css">

-->

</head>

<body>

<form action=*"Ctrl?action=login"* method=*"post"*>

LoginName:<input name=*"loginName"* /><br />

Password: <input type=*"password"* name=*"passwd"* /><br />

<button type=*"submit"*>Login</button>

</form>

</body>

</html>

**Index.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>

<base href=*"*<%=basePath%>*"*>

<title>My JSP 'index.jsp' starting page</title>

<meta http-equiv=*"pragma"* content=*"no-cache"*>

<meta http-equiv=*"cache-control"* content=*"no-cache"*>

<meta http-equiv=*"expires"* content=*"0"*>

<meta http-equiv=*"keywords"* content=*"keyword1,keyword2,keyword3"*>

<meta http-equiv=*"description"* content=*"This is my page"*>

<!--

<link rel="stylesheet" type="text/css" href="styles.css">

-->

</head>

<body>

<script type=*"text/javascript"*>

location = "Ctrl?action=list";

</script>

</body>

</html>

**edit.jsp**

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

<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN">

<html>

<head>

<title>My JSP 'edit.jsp' starting page</title>

</head>

<body>

<form action=*"Ctrl?action=save"* method=*"post"*>

<table width=*"500"* align=*"center"*>

<caption>添加/编辑信息</caption>

<tr>

<td>学号</td>

<td><input name=*"id"* value=*"*${stu.id}*"* /></td>

</tr>

<tr>

<td>姓名</td>

<td><input name=*"uname"* value=*"*${stu.uname}*"* /></td>

</tr>

<tr>

<td>班级</td>

<td><input name=*"className"* value=*"*${stu.className}*"* /></td>

</tr>

<tr>

<td>年龄</td>

<td><input name=*"age"* value=*"*${stu.age}*"* /></td>

</tr>

<tr>

<td colspan=*"2"*>

<input name=*"oldId"* value=*"*${stu.id}*"* type=*"hidden"* />

<input type=*"submit"* value=*"提交"*/>

</td>

</tr>

</table>

</form>

</body>

</html>

**error.jsp**

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

<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN">

<html>

<head>

<title>My JSP 'error.jsp' starting page</title>

</head>

<body>

<h1>出错了！！</h1>

${errMsg}

</body>

</html>

**list.jsp**

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

<%@taglib prefix=*"c"* uri=*"http://java.sun.com/jsp/jstl/core"*%>

<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN">

<html>

<head>

<title>My JSP 'list.jsp' starting page</title>

<meta http-equiv=*"pragma"* content=*"no-cache"*>

<meta http-equiv=*"cache-control"* content=*"no-cache"*>

<meta http-equiv=*"expires"* content=*"0"*>

<meta http-equiv=*"keywords"* content=*"keyword1,keyword2,keyword3"*>

<meta http-equiv=*"description"* content=*"This is my page"*>

<!--

<link rel="stylesheet" type="text/css" href="styles.css">

-->

<style type=*"text/css"*>

*.bg*{

background-color: *#f0f0f0*;

}

</style>

</head>

<body>

<table width=*"500"* align=*"center"* border=*"1"*>

<caption>

<a href=*"Ctrl?action=add"*>添加</a>

</caption>

<tr>

<th>学号</th>

<th>姓名</th>

<th>班级</th>

<th>年龄</th>

<th>操作</th>

</tr>

<c:forEach items=*"*${stus}*"* var=*"stu"* varStatus=*"stat"*>

<tr

<c:if test="${stat.index **mod** 2 == 0 }">

class="bg"

</c:if>

>

<td>${stu.id}</td>

<td>${stu.uname }</td>

<td>${stu.className }</td>

<td>${stu.age }</td>

<td>

<a href=*"?action=edit&id=*${stu.id}*"*>编辑</a> |

<a href=*"?action=delete&id=*${stu.id}*"*>删除</a>

</td>

</tr>

</c:forEach>

</table>

</body>

</html>

**web.xml**

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

<web-app version=*"3.0"*

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

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

xsi:schemaLocation=*"http://java.sun.com/xml/ns/javaee*

*http://java.sun.com/xml/ns/javaee/web-app\_3\_0.xsd"*>

<display-name></display-name>

<servlet>

<servlet-name>Ctrl</servlet-name>

<servlet-class>controllers.Ctrl</servlet-class>

</servlet>

<servlet-mapping>

<servlet-name>Ctrl</servlet-name>

<url-pattern>/Ctrl</url-pattern>

</servlet-mapping>

<filter>

<filter-name>loginFilter</filter-name>

<filter-class>filters.LoginFilter</filter-class>

</filter>

<filter-mapping>

<filter-name>loginFilter</filter-name>

<url-pattern>/Ctrl</url-pattern>

</filter-mapping>

<welcome-file-list>

<welcome-file>Ctrl?action=list</welcome-file>

</welcome-file-list>

</web-app>

**student.java**

**package** beans;

**public** **class** Student {

**private** String id;

**private** String uname;

**private** String className;

**private** Integer age;

**public** String getId() {

**return** id;

}

**public** **void** setId(String id) {

**this**.id = id;

}

**public** String getUname() {

**return** uname;

}

**public** **void** setUname(String uname) {

**this**.uname = uname;

}

**public** String getClassName() {

**return** className;

}

**public** **void** setClassName(String className) {

**this**.className = className;

}

**public** Integer getAge() {

**return** age;

}

**public** **void** setAge(Integer age) {

**this**.age = age;

}

}

**User.java**

**package** beans;

**public** **class** User {

**private** Integer id;

**private** String loginName;

**private** String passwd;

**public** Integer getId() {

**return** id;

}

**public** **void** setId(Integer id) {

**this**.id = id;

}

**public** String getLoginName() {

**return** loginName;

}

**public** **void** setLoginName(String loginName) {

**this**.loginName = loginName;

}

**public** String getPasswd() {

**return** passwd;

}

**public** **void** setPasswd(String passwd) {

**this**.passwd = passwd;

}

**Ctrl.java**

}

**package controllers;**

**import java.io.IOException;**

**import java.io.PrintWriter;**

**import java.util.List;**

**import javax.servlet.ServletException;**

**import javax.servlet.http.HttpServlet;**

**import javax.servlet.http.HttpServletRequest;**

**import javax.servlet.http.HttpServletResponse;**

**import javax.servlet.http.HttpSession;**

**import beans.Student;**

**import beans.User;**

**import util.DBUtil;**

**public class Ctrl extends HttpServlet {**

**public void doGet(HttpServletRequest request, HttpServletResponse response)**

**throws ServletException, IOException {**

**request.setCharacterEncoding("utf-8");**

**String action = request.getParameter("action");**

**DBUtil db =new DBUtil();**

**try{**

**if("list".equals(action)){**

**List<Student> stus = db.getAllStudent();**

**request.setAttribute("stus", stus);**

**request.getRequestDispatcher("/WEB-INF/list.jsp").forward(request, response);**

**}**

**else if("add".equals(action)){**

**request.getRequestDispatcher("/WEB-INF/edit.jsp").forward(request, response);**

**}**

**else if("edit".equals(action)){**

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

**Student stu = db.getById(id);**

**request.setAttribute("stu", stu);**

**request.getRequestDispatcher("/WEB-INF/edit.jsp").forward(request, response);**

**}**

**else if("save".equals(action)){**

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

**String uname = request.getParameter("uname");**

**String className = request.getParameter("className");**

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

**Student stu = new Student();**

**stu.setId(id);**

**stu.setUname(uname);**

**stu.setClassName(className);**

**stu.setAge(Integer.parseInt(age));**

**String oldId = request.getParameter("oldId");**

**if("".equals(oldId)){**

**db.insert(stu);**

**}**

**else{**

**db.update(stu, oldId);**

**}**

**response.sendRedirect("Ctrl?action=list");**

**}**

**else if("delete".equals(action)){**

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

**db.delete(id);**

**response.sendRedirect("Ctrl?action=list");**

**}**

**else if("login".equals(action)){**

**String loginName = request.getParameter("loginName");**

**String passwd = request.getParameter("passwd");**

**User user = db.login(loginName, passwd);**

**if(user != null){**

**HttpSession session = request.getSession();**

**session.setAttribute("loginUser", user);**

**response.sendRedirect("Ctrl?action=list");**

**}**

**else{**

**response.sendRedirect("login.jsp");**

**}**

**}**

**else{**

**throw new Exception("无效请求...");**

**}**

**}**

**catch (Exception e) {**

**e.printStackTrace();**

**String errMsg = e.getMessage();**

**request.setAttribute("errMsg", errMsg);**

**request.getRequestDispatcher("/WEB-INF/error.jsp").forward(request, response);**

**}**

**}**

**public void doPost(HttpServletRequest request, HttpServletResponse response)**

**throws ServletException, IOException {**

**doGet(request, response);**

**}**

**}**

**Loginfilter.java**

**package** filters;

**import** java.io.IOException;

**import** javax.servlet.Filter;

**import** javax.servlet.FilterChain;

**import** javax.servlet.FilterConfig;

**import** javax.servlet.ServletException;

**import** javax.servlet.ServletRequest;

**import** javax.servlet.ServletResponse;

**import** javax.servlet.http.HttpServletRequest;

**import** javax.servlet.http.HttpServletResponse;

**import** javax.servlet.http.HttpSession;

**public** **class** LoginFilter **implements** Filter {

@Override

**public** **void** destroy() {

// **TODO** Auto-generated method stub

}

@Override

**public** **void** doFilter(ServletRequest arg0, ServletResponse arg1,

FilterChain arg2) **throws** IOException, ServletException {

HttpServletRequest req = (HttpServletRequest)arg0;

HttpServletResponse res = (HttpServletResponse)arg1;

String action = req.getParameter("action");

**if**("login".equals(action)){

arg2.doFilter(arg0, arg1);

**return**;

}

HttpSession session = req.getSession();

Object loginUser = session.getAttribute("loginUser");

**if**(loginUser == **null**){

res.sendRedirect("login.jsp");

}

**else**{

arg2.doFilter(arg0, arg1);

}

}

@Override

**public** **void** init(FilterConfig arg0) **throws** ServletException {

// **TODO** Auto-generated method stub

}

}

**DBUtil.java**

**package** util;

**import** java.sql.Connection;

**import** java.sql.DriverManager;

**import** java.sql.PreparedStatement;

**import** java.sql.ResultSet;

**import** java.sql.SQLException;

**import** java.sql.Statement;

**import** java.util.ArrayList;

**import** java.util.List;

**import** beans.Student;

**import** beans.User;

**public** **class** DBUtil {

**static** Connection *conn*;

**static** String *ALLSQL* = "select \* from student";

**static** String *OneSQL* = "select \* from student where id=?";

**static** String *InsertSQL* = "insert into student(id,uname,age,className) values(?,?,?,?)";

**static** String *UpdateSQL* = "update student set id=?,uname=?,age=?,className=? where id=?";

**static** String *DeleteSql* = "delete from student where id=?";

**static** String *UserLogin* = "select \* from user where loginName=? and passwd=?";

**private** **void** getConn() **throws** ClassNotFoundException, SQLException{

**if**(*conn* == **null**){

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

*conn* =DriverManager.*getConnection*("jdbc:mysql://localhost:3306/test?characterEncoding=UTF-8","root","");

}

}

**public** List<Student> getAllStudent() **throws** ClassNotFoundException, SQLException{

List<Student> stus = **new** ArrayList<Student>();

getConn();

Statement stat = *conn*.createStatement();

ResultSet rs = stat.executeQuery(*ALLSQL*);

**while**(rs.next()){

stus.add(getStudent(rs));

}

rs.close();

stat.close();

**return** stus;

}

**public** Student getById(String id) **throws** ClassNotFoundException, SQLException{

getConn();

PreparedStatement pstat = *conn*.prepareStatement(*OneSQL*);

pstat.setString(1,id);

ResultSet rs = pstat.executeQuery();

**if**(rs.next()){

**return** getStudent(rs);

}

**else**{

**return** **null**;

}

}

**public** **void** insert(Student stu) **throws** ClassNotFoundException, SQLException{

getConn();

PreparedStatement pstat = *conn*.prepareStatement(*InsertSQL*);

pstat.setString(1, stu.getId());

pstat.setString(2, stu.getUname());

pstat.setInt(3, stu.getAge());

pstat.setString(4, stu.getClassName());

pstat.executeUpdate();

}

**public** **void** update(Student stu,String oldId) **throws** SQLException, ClassNotFoundException{

getConn();

PreparedStatement pstat = *conn*.prepareStatement(*UpdateSQL*);

pstat.setString(1,stu.getId());

pstat.setString(2,stu.getUname());

pstat.setInt(3, stu.getAge());

pstat.setString(4, stu.getClassName());

pstat.setString(5, oldId);

pstat.executeUpdate();

}

**public** **void** delete(String stuid) **throws** SQLException, ClassNotFoundException{

getConn();

PreparedStatement pstat = *conn*.prepareStatement(*DeleteSql*);

pstat.setString(1, stuid);

pstat.executeUpdate();

}

**private** Student getStudent(ResultSet rs) **throws** SQLException{

Student stu = **new** Student();

stu.setId(rs.getString("id"));

stu.setUname(rs.getString("uname"));

stu.setAge(rs.getInt("age"));

stu.setClassName(rs.getString("className"));

**return** stu;

}

**public** User login(String loginName,String passwd) **throws** SQLException, ClassNotFoundException{

User user = **null**;

getConn();

PreparedStatement pstat = *conn*.prepareStatement(*UserLogin*);

pstat.setString(1, loginName);

pstat.setString(2, passwd);

ResultSet res = pstat.executeQuery();

**if**(res.next()){

user = **new** User();

user.setId(res.getInt("id"));

user.setLoginName(res.getString("loginName"));

user.setPasswd(res.getString("passwd"));

}

**return** user;

}

}

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