# 实验八 Ajax的应用

## 实验目的与要求

1. 理解并掌握Ajax的基本应用技术以及JSP+JDBC+JavaBean+Servlet+EL+Ajax模式的Web应用开发技术。
2. 参考教材的有关内容与示例，按要求编写并调试相应的程序。

## 实验内容

参见教材P339～341实验8的实验内容之1～5。

## 实验代码

Web.xml

*<*servlet*>  
 <*servlet-name*>*selectBHByxhServlet*</*servlet-name*>  
 <*servlet-class*>*com.shf.mvc.servlet.selectBHByxhServlet*</*servlet-class*>  
</*servlet*>  
<*servlet-mapping*>  
 <*servlet-name*>*selectBHByxhServlet*</*servlet-name*>  
 <*url-pattern*>*/selectBHByxhServlet*</*url-pattern*>  
</*servlet-mapping*>  
<*servlet*>  
 <*servlet-name*>*selectBHServlet*</*servlet-name*>  
 <*servlet-class*>*com.shf.mvc.servlet.selectBHServlet*</*servlet-class*>  
</*servlet*>  
<*servlet-mapping*>  
 <*servlet-name*>*selectBHServlet*</*servlet-name*>  
 <*url-pattern*>*/selectBHServlet*</*url-pattern*>  
</*servlet-mapping*>  
<*servlet*>  
 <*servlet-name*>*selectXSByBH*</*servlet-name*>  
 <*servlet-class*>*com.shf.mvc.servlet.selectXSByBH*</*servlet-class*>  
</*servlet*>  
<*servlet-mapping*>  
 <*servlet-name*>*selectXSByBH*</*servlet-name*>  
 <*url-pattern*>*/selectXSByBH*</*url-pattern*>  
</*servlet-mapping*>*

*<*servlet*>  
 <*servlet-name*>*addBjServlet*</*servlet-name*>  
 <*servlet-class*>*com.shf.mvc.servlet.addBjServlet*</*servlet-class*>  
</*servlet*>  
<*servlet-mapping*>  
 <*servlet-name*>*addBjServlet*</*servlet-name*>  
 <*url-pattern*>*/addBjServlet*</*url-pattern*>  
</*servlet-mapping*>  
<*servlet*>  
 <*servlet-name*>*isValidBJServlet*</*servlet-name*>  
 <*servlet-class*>*com.shf.mvc.servlet.isValidBJServlet*</*servlet-class*>  
</*servlet*>  
<*servlet-mapping*>  
 <*servlet-name*>*isValidBJServlet*</*servlet-name*>  
 <*url-pattern*>*/isValidBJServlet*</*url-pattern*>  
</*servlet-mapping*>*

*<*servlet*>  
 <*servlet-name*>*isValidUsernameServlet*</*servlet-name*>  
 <*servlet-class*>*com.shf.mvc.servlet.isValidUsernameServlet*</*servlet-class*>  
</*servlet*>  
<*servlet-mapping*>  
 <*servlet-name*>*isValidUsernameServlet*</*servlet-name*>  
 <*url-pattern*>*/isValidUsernameServlet*</*url-pattern*>  
</*servlet-mapping*>  
<*servlet*>  
 <*servlet-name*>*addUsernameServlet*</*servlet-name*>  
 <*servlet-class*>*com.shf.mvc.servlet.addUsernameServlet*</*servlet-class*>  
</*servlet*>  
<*servlet-mapping*>  
 <*servlet-name*>*addUsernameServlet*</*servlet-name*>  
 <*url-pattern*>*/addUsernameServlet*</*url-pattern*>  
</*servlet-mapping*>*

DbBean.java

public static Connection *con*;  
  
static *{* try *{  
 con* = *getConnection()*;  
 *}* catch *(*ClassNotFoundException e*) {* e.printStackTrace*()*;  
 *}* catch *(*SQLException e*) {* e.printStackTrace*()*;  
 *}  
}*public static Connection getConnection*()* throws ClassNotFoundException, SQLException *{* Class.*forName(*"com.mysql.jdbc.Driver"*)*;  
 *con* = DriverManager.*getConnection(*"jdbc:mysql://localhost:3306/test1", "root", "root"*)*;  
 return *con*;  
*}*public static void closeConnection*()* throws SQLException *{  
 con*.close*()*;  
*}*

public static String selectBHBybh*(*String bh*)* throws SQLException *{* PreparedStatement preparedStatement = *con*.prepareStatement*(*"select bjmc from class where bjbn=?"*)*;  
 preparedStatement.setString*(*1, bh*)*;  
 ResultSet resultSet = preparedStatement.executeQuery*()*;  
 resultSet.next*()*;  
 String bjmc = resultSet.getString*(*"bjmc"*)*;  
 preparedStatement.close*()*;  
 return bjmc;  
*}*public static List*<*String*>* selectBH*()* throws SQLException *{* PreparedStatement preparedStatement = *con*.prepareStatement*(*"select distinct bjmc from class"*)*;  
 ResultSet resultSet = preparedStatement.executeQuery*()*;  
 List*<*String*>* list = new ArrayList*<>()*;  
 while *(*resultSet.next*()) {* String bjmc = resultSet.getString*(*"bjmc"*)*;  
 list.add*(*bjmc*)*;  
 *}* preparedStatement.close*()*;  
 return list;  
*}*public static List*<*List*<*String*>>* selectXSByBH*(*String bh*)* throws SQLException *{* PreparedStatement preparedStatement = *con*.prepareStatement*(*"select xh,xm from score where bh=(select bjbn from class where bjmc = ?)"*)*;  
 preparedStatement.setString*(*1, bh*)*;  
 ResultSet resultSet = preparedStatement.executeQuery*()*;  
 List*<*List*<*String*>>* list = new ArrayList*<>()*;  
 while *(*resultSet.next*()) {* String xh = resultSet.getString*(*"xh"*)*;  
 String xm = resultSet.getString*(*"xm"*)*;  
 list.add*(*Arrays.*asList(*xh,xm*))*;  
 *}* preparedStatement.close*()*;  
 return list;  
*}*

public static Boolean isValidBJ*(*String bh*)* throws SQLException *{* PreparedStatement preparedStatement = *con*.prepareStatement*(*"select \* from class where bjbn=?"*)*;  
 preparedStatement.setString*(*1, bh*)*;  
 ResultSet resultSet = preparedStatement.executeQuery*()*;  
 if *(*resultSet.next*()) {* return false;  
 *}* return true;  
*}*public static Boolean addBj*(*ScoreClass scoreClass*)* throws SQLException *{* PreparedStatement preparedStatement = *con*.prepareStatement*(*"insert into class values (?,?)"*)*;  
 preparedStatement.setString*(*1, scoreClass.getBjbn*())*;  
 preparedStatement.setString*(*2, scoreClass.getBjmc*())*;  
 int row = preparedStatement.executeUpdate*()*;  
 preparedStatement.close*()*;  
 if *(*row>0*) {* return true;  
 *}* else *{* return false;  
 *}  
}*

public static Boolean isValidvalidusername*(*String username*)* throws SQLException *{* PreparedStatement preparedStatement = *con*.prepareStatement*(*"select \* from user where username=?"*)*;  
 preparedStatement.setString*(*1, username*)*;  
 ResultSet resultSet = preparedStatement.executeQuery*()*;  
 if *(*resultSet.next*()) {* return false;  
 *}* return true;  
*}*public static Boolean addUsername*(*String username,String pwd*)* throws SQLException *{* PreparedStatement preparedStatement = *con*.prepareStatement*(*"insert into user(username,password) values (?,?)"*)*;  
 preparedStatement.setString*(*1, username*)*;  
 preparedStatement.setString*(*2, pwd*)*;  
 int row = preparedStatement.executeUpdate*()*;  
 preparedStatement.close*()*;  
 if *(*row>0*) {* return true;  
 *}* else *{* return false;  
 *}  
}*

selectBH.jsp

*<%@* taglib prefix="c" uri="http://java.sun.com/jsp/jstl/core" *%>  
<%--  
 Created by IntelliJ IDEA.  
 User: SHF  
 Date: 2021/11/8  
 Time: 21:33  
 To change this template use File | Settings | File Templates.  
--%>  
<%@* page contentType="text/html;charset=UTF-8" language="java" *%>  
<*html*>  
<*head*>  
 <*title*>*Title*</*title*>  
</*head*>  
<*body*>*班级号： *<*input type="text" id="bh"*> <*button id="btn"*>*查询*</*button*><*br*>*名称: *<*h4 id="bm"*></*h4*> <*br*>  
  
<*script*>* let btn = document.getElementById*(*"btn"*)* btn.onclick=function *() {* var bh = document.getElementById*(*"bh"*)*.value  
 var bm = document.getElementById*(*"bm"*)* var url = "/selectBHByxhServlet?bh="+bh *//设置查询字符串* var xmlhttp;  
 if *(*window.XMLHttpRequest*)  
 {  
 // IE7+, Firefox, Chrome, Opera, Safari 浏览器执行代码* xmlhttp=new XMLHttpRequest*()*;  
 *}* else  
 *{  
 // IE6, IE5 浏览器执行代码* xmlhttp=new ActiveXObject*(*"Microsoft.XMLHTTP"*)*;  
 *}* xmlhttp.onreadystatechange=function*()  
 {* if *(*xmlhttp.readyState==4 && xmlhttp.status==200*)  
 {* bm.innerHTML=xmlhttp.responseText  
 *}  
 }* xmlhttp.open*(*"GET",url,true*)*;  
 xmlhttp.send*()*;  
 *}  
  
</*script*>  
</*script*>  
</*body*>  
</*html*>*

selectBHByxhServlet.java

package com.shf.mvc.servlet;  
  
import javax.servlet.ServletException;  
import javax.servlet.http.HttpServlet;  
import javax.servlet.http.HttpServletRequest;  
import javax.servlet.http.HttpServletResponse;  
import java.io.IOException;  
import java.sql.SQLException;  
  
import static com.shf.mvc.beans.DbBean.*selectBHBybh*;  
  
public class selectBHByxhServlet extends HttpServlet *{* @Override  
 protected void doGet*(*HttpServletRequest req, HttpServletResponse resp*)* throws ServletException, IOException *{* doPost*(*req, resp*)*;  
 *}* @Override  
 protected void doPost*(*HttpServletRequest req, HttpServletResponse resp*)* throws ServletException, IOException *{* req.setCharacterEncoding*(*"utf-8"*)*;  
 resp.setContentType*(*"text/html; charset=UTF-8"*)*;  
 String bh = req.getParameter*(*"bh"*)*;  
 String bjmc = null;  
 try *{* bjmc = *selectBHBybh(*bh*)*;  
 *}* catch *(*SQLException e*) {* e.printStackTrace*()*;  
 *}* resp.getWriter*()*.write*(*bjmc*)*;  
 *}  
}*

selectXS.jsp

*<%@* taglib prefix="c" uri="http://java.sun.com/jsp/jstl/core" *%>  
<%--  
 Created by IntelliJ IDEA.  
 User: SHF  
 Date: 2021/11/8  
 Time: 21:33  
 To change this template use File | Settings | File Templates.  
--%>  
<%@* page contentType="text/html;charset=UTF-8" language="java" *%>  
<*html*>  
<*head*>  
 <*title*>*Title*</*title*>  
</*head*>  
<*body*>*班级号：  
*<*select name="" id="bh"*>  
 <*option value=""*>*---请选择---*</*option*>  
</*select*>  
<*button id="btn"*>*查询*</*button*><*br*>  
<*table id="box" border="1"*>  
 <*tr*>  
 <*td*>*学号*</*td*>  
 <*td*>*姓名*</*td*>  
 </*tr*>  
</*table*>  
<*script*>* window.onload=function *() {* var bh = document.getElementById*(*"bh"*)* var url = "/selectBHServlet" *//设置查询字符串* var xmlhttp;  
 if *(*window.XMLHttpRequest*)  
 {  
 // IE7+, Firefox, Chrome, Opera, Safari 浏览器执行代码* xmlhttp=new XMLHttpRequest*()*;  
 *}* else  
 *{  
 // IE6, IE5 浏览器执行代码* xmlhttp=new ActiveXObject*(*"Microsoft.XMLHTTP"*)*;  
 *}* xmlhttp.onreadystatechange=function*()  
 {* if *(*xmlhttp.readyState==4 && xmlhttp.status==200*)  
 {* console.log*(*xmlhttp*)* let parse = JSON.parse*(*xmlhttp.responseText*)*;  
 console.log*(*parse*)* for *(*let i = 0; i < parse.length; i++*) {* bh.innerHTML+="*<*option value='"+parse*[*i*]*+"'>"+parse*[*i*]*+"*</*option*>*"  
 *}  
 }  
 }* xmlhttp.open*(*"GET",url,true*)*;  
 xmlhttp.send*()*;  
  
 let btn = document.getElementById*(*"btn"*)*;  
 btn.onclick=function *() {* var url = "/selectXSByBH?bh="+bh.value *//设置查询字符串* var xmlhttp;  
 if *(*window.XMLHttpRequest*)  
 {  
 // IE7+, Firefox, Chrome, Opera, Safari 浏览器执行代码* xmlhttp=new XMLHttpRequest*()*;  
 *}* else  
 *{  
 // IE6, IE5 浏览器执行代码* xmlhttp=new ActiveXObject*(*"Microsoft.XMLHTTP"*)*;  
 *}* xmlhttp.onreadystatechange=function*()  
 {* if *(*xmlhttp.readyState==4 && xmlhttp.status==200*)  
 {* console.log*(*xmlhttp*)* let parse = JSON.parse*(*xmlhttp.responseText*)*;  
 console.log*(*parse*)* let box = document.getElementById*(*"box"*)*;  
 box.innerHTML="*<*tr*><*td*>*学号*</*td*><*td*>*姓名*</*td*></*tr*>*"  
 let str="";  
 for *(*let i = 0; i < parse.length; i++*) {* str+="*<*tr*>*"  
 for *(*let j = 0; j < parse*[*i*]*.length; j++*) {* str+="*<*td*>*"+parse*[*i*][*j*]*+"*</*td*>*"  
 *}* str+="</tr>"  
 *}* box.innerHTML+=str  
 *}  
 }* xmlhttp.open*(*"GET",url,true*)*;  
 xmlhttp.send*()*;  
 *}  
 }  
</*script*>  
</*script*>  
</*body*>  
</*html*>*

selectBHServlet.java

package com.shf.mvc.servlet;  
  
import com.google.gson.Gson;  
  
import javax.servlet.ServletException;  
import javax.servlet.http.HttpServlet;  
import javax.servlet.http.HttpServletRequest;  
import javax.servlet.http.HttpServletResponse;  
import java.io.IOException;  
import java.sql.SQLException;  
import java.util.List;  
  
import static com.shf.mvc.beans.DbBean.*selectBH*;  
  
public class selectBHServlet extends HttpServlet *{* @Override  
 protected void doGet*(*HttpServletRequest req, HttpServletResponse resp*)* throws ServletException, IOException *{* doPost*(*req, resp*)*;  
 *}* @Override  
 protected void doPost*(*HttpServletRequest req, HttpServletResponse resp*)* throws ServletException, IOException *{* resp.setHeader*(*"Access-Control-Allow-Origin", "\*"*)*;  
 resp.setHeader*(*"Cache-Control", "no-cache"*)*;  
 resp.setCharacterEncoding*(*"UTF-8"*)*;  
 resp.setContentType*(*"application/json"*)*;  
 List*<*String*>* bjmc = null;  
 try *{* bjmc = *selectBH()*;  
 *}* catch *(*SQLException e*) {* e.printStackTrace*()*;  
 *}* resp.getWriter*()*.println*(*new Gson*()*.toJson*(*bjmc*))*;  
 resp.getWriter*()*.flush*()*;  
 *}  
}*

selectXSByBH.java

package com.shf.mvc.servlet;  
  
import com.google.gson.Gson;  
import com.shf.mvc.beans.DbBean;  
  
import javax.servlet.ServletException;  
import javax.servlet.http.HttpServlet;  
import javax.servlet.http.HttpServletRequest;  
import javax.servlet.http.HttpServletResponse;  
import java.io.IOException;  
import java.sql.SQLException;  
import java.util.List;  
  
import static com.shf.mvc.beans.DbBean.*selectXSByBH*;  
  
public class selectXSByBH extends HttpServlet *{* @Override  
 protected void doGet*(*HttpServletRequest req, HttpServletResponse resp*)* throws ServletException, IOException *{* doPost*(*req, resp*)*;  
 *}* @Override  
 protected void doPost*(*HttpServletRequest req, HttpServletResponse resp*)* throws ServletException, IOException *{* resp.setHeader*(*"Access-Control-Allow-Origin", "\*"*)*;  
 resp.setHeader*(*"Cache-Control", "no-cache"*)*;  
 resp.setCharacterEncoding*(*"UTF-8"*)*;  
 resp.setContentType*(*"application/json"*)*;  
 String bh = req.getParameter*(*"bh"*)*;  
 List*<*List*<*String*>>* xs = null;  
 try *{* xs = *selectXSByBH(*bh*)*;  
 *}* catch *(*SQLException e*) {* e.printStackTrace*()*;  
 *}* resp.getWriter*()*.println*(*new Gson*()*.toJson*(*xs*))*;  
 resp.getWriter*()*.flush*()*;  
 *}  
}*

addBJ.jsp

*<%--  
 Created by IntelliJ IDEA.  
 User: SHF  
 Date: 2021/11/9  
 Time: 9:28  
 To change this template use File | Settings | File Templates.  
--%>  
<%@* page contentType="text/html;charset=UTF-8" language="java" *%>  
<*html*>  
<*head*>  
 <*title*>*Title*</*title*>  
</*head*>  
<*body*>*班级编号： *<*input type="text" id="bjbn" value="" name="bjbn"*> <*span id="info" style="font-size: 30px;color: red"*></*span*><*br*>*班级名称： *<*input type="text" id="bjmc" value="" name="bjmc"*> <*br*>  
<*button id="btn"*>*添加班级*</*button*>  
<*script*>* let flag = true  
 let btn = document.getElementById*(*"btn"*)* let bjbn = document.getElementById*(*"bjbn"*)* let bjmc = document.getElementById*(*"bjmc"*)* let info = document.getElementById*(*"info"*)* bjbn.onblur=function *() {* var url = "/isValidBJServlet?bh="+bjbn.value *//设置查询字符串* var xmlhttp;  
 if *(*window.XMLHttpRequest*)  
 {  
 // IE7+, Firefox, Chrome, Opera, Safari 浏览器执行代码* xmlhttp=new XMLHttpRequest*()*;  
 *}* else  
 *{  
 // IE6, IE5 浏览器执行代码* xmlhttp=new ActiveXObject*(*"Microsoft.XMLHTTP"*)*;  
 *}* xmlhttp.onreadystatechange=function*()  
 {* if *(*xmlhttp.readyState==4 && xmlhttp.status==200*)  
 {* if *(*xmlhttp.responseText=="false"*){* info.innerHTML="班级号不可用"  
 flag=false  
 *}* else*{* info.innerHTML="班级号可用"  
 flag=true  
 *}  
 }  
 }* xmlhttp.open*(*"POST",url,true*)*;  
 xmlhttp.send*()*;  
 *}* btn.onclick=function *() {* if *(*flag==false*){  
 alert(*"班级编号不可用，请重新输入！！！"*)*;  
 return;  
 *}* var url = "/addBjServlet?bjbn="+bjbn.value+"&bjmc="+bjmc.value *//设置查询字符串* var xmlhttp;  
 if *(*window.XMLHttpRequest*)  
 {  
 // IE7+, Firefox, Chrome, Opera, Safari 浏览器执行代码* xmlhttp=new XMLHttpRequest*()*;  
 *}* else  
 *{  
 // IE6, IE5 浏览器执行代码* xmlhttp=new ActiveXObject*(*"Microsoft.XMLHTTP"*)*;  
 *}* xmlhttp.onreadystatechange=function*()  
 {* if *(*xmlhttp.readyState==4 && xmlhttp.status==200*)  
 {* if *(*xmlhttp.responseText=="false"*){* info.innerHTML="添加失败"  
 *}* else*{* info.innerHTML="添加成功"  
 *}  
 }  
 }* xmlhttp.open*(*"GET",url,true*)*;  
 xmlhttp.send*()*;  
 *}  
</*script*>  
</*body*>  
</*html*>*

isValidBJServlet.java

package com.shf.mvc.servlet;  
  
import com.google.gson.Gson;  
  
import javax.servlet.ServletException;  
import javax.servlet.http.HttpServlet;  
import javax.servlet.http.HttpServletRequest;  
import javax.servlet.http.HttpServletResponse;  
import java.io.IOException;  
import java.sql.SQLException;  
  
import static com.shf.mvc.beans.DbBean.*isValidBJ*;  
  
public class isValidBJServlet extends HttpServlet *{* @Override  
 protected void doGet*(*HttpServletRequest req, HttpServletResponse resp*)* throws ServletException, IOException *{* doPost*(*req, resp*)*;  
 *}* @Override  
 protected void doPost*(*HttpServletRequest req, HttpServletResponse resp*)* throws ServletException, IOException *{* String bh = req.getParameter*(*"bh"*)*;  
 Boolean validBJ = true;  
 try *{* validBJ = *isValidBJ(*bh*)*;  
 *}* catch *(*SQLException e*) {* e.printStackTrace*()*;  
 *}* resp.getWriter*()*.write*(*String.*valueOf(*validBJ*))*;  
 *}  
}*

addBjServlet.java

package com.shf.mvc.servlet;  
  
import com.shf.mvc.beans.ScoreClass;  
  
import javax.servlet.ServletException;  
import javax.servlet.http.HttpServlet;  
import javax.servlet.http.HttpServletRequest;  
import javax.servlet.http.HttpServletResponse;  
import java.io.IOException;  
import java.sql.SQLException;  
  
import static com.shf.mvc.beans.DbBean.*addBj*;  
  
public class addBjServlet extends HttpServlet *{* @Override  
 protected void doGet*(*HttpServletRequest req, HttpServletResponse resp*)* throws ServletException, IOException *{* doPost*(*req, resp*)*;  
 *}* @Override  
 protected void doPost*(*HttpServletRequest req, HttpServletResponse resp*)* throws ServletException, IOException *{* String bjbn = req.getParameter*(*"bjbn"*)*;  
 String bjmc = req.getParameter*(*"bjmc"*)*;  
 ScoreClass scoreClass = new ScoreClass*(*bjbn, bjmc*)*;  
 Boolean isTrue = false;  
 try *{* isTrue = *addBj(*scoreClass*)*;  
 *}* catch *(*SQLException e*) {* e.printStackTrace*()*;  
 *}* resp.getWriter*()*.write*(*String.*valueOf(*isTrue*))*;  
 *}  
}*

ScoreClass.java

package com.shf.mvc.beans;  
  
public class ScoreClass *{* private String bjbn;  
 private String bjmc;  
  
 public ScoreClass*() {  
 }* public ScoreClass*(*String bjbn, String bjmc*) {* this.bjbn = bjbn;  
 this.bjmc = bjmc;  
 *}* public String getBjbn*() {* return bjbn;  
 *}* public void setBjbn*(*String bjbn*) {* this.bjbn = bjbn;  
 *}* public String getBjmc*() {* return bjmc;  
 *}* public void setBjmc*(*String bjmc*) {* this.bjmc = bjmc;  
 *}* @Override  
 public String toString*() {* return "ScoreClass{" +  
 "bjbn='" + bjbn + '\'' +  
 ", bjmc='" + bjmc + '\'' +  
 '}';  
 *}  
}*

isValidUsernameServlet.java

package com.shf.mvc.servlet;  
  
import javax.servlet.ServletException;  
import javax.servlet.http.HttpServlet;  
import javax.servlet.http.HttpServletRequest;  
import javax.servlet.http.HttpServletResponse;  
import java.io.IOException;  
import java.sql.SQLException;  
  
import static com.shf.mvc.beans.DbBean.*isValidBJ*;  
import static com.shf.mvc.beans.DbBean.*isValidvalidusername*;  
  
public class isValidUsernameServlet extends HttpServlet *{* @Override  
 protected void doGet*(*HttpServletRequest req, HttpServletResponse resp*)* throws ServletException, IOException *{* doPost*(*req, resp*)*;  
 *}* @Override  
 protected void doPost*(*HttpServletRequest req, HttpServletResponse resp*)* throws ServletException, IOException *{* String username = req.getParameter*(*"username"*)*;  
 Boolean validusername = true;  
 try *{* validusername = *isValidvalidusername(*username*)*;  
 *}* catch *(*SQLException e*) {* e.printStackTrace*()*;  
 *}* resp.getWriter*()*.write*(*String.*valueOf(*validusername*))*;  
 *}  
}*

addUsernameServlet.java

package com.shf.mvc.servlet;  
  
import com.shf.mvc.beans.ScoreClass;  
  
import javax.servlet.ServletException;  
import javax.servlet.http.HttpServlet;  
import javax.servlet.http.HttpServletRequest;  
import javax.servlet.http.HttpServletResponse;  
import java.io.IOException;  
import java.sql.SQLException;  
  
import static com.shf.mvc.beans.DbBean.*addUsername*;  
  
public class addUsernameServlet extends HttpServlet *{* @Override  
 protected void doGet*(*HttpServletRequest req, HttpServletResponse resp*)* throws ServletException, IOException *{* doPost*(*req, resp*)*;  
 *}* @Override  
 protected void doPost*(*HttpServletRequest req, HttpServletResponse resp*)* throws ServletException, IOException *{* String username = req.getParameter*(*"username"*)*;  
 String pwd = req.getParameter*(*"pwd"*)*;  
 Boolean isTrue = false;  
 try *{* isTrue = *addUsername(*username,pwd*)*;  
 *}* catch *(*SQLException e*) {* e.printStackTrace*()*;  
 *}* req.setAttribute*(*"username",username*)*;  
 req.getSession*()*.setAttribute*(*"username",username*)*;  
 resp.getWriter*()*.write*(*String.*valueOf(*isTrue*))*;  
 *}  
}*

regist.jsp

*<%--  
 Created by IntelliJ IDEA.  
 User: SHF  
 Date: 2021/11/9  
 Time: 10:29  
 To change this template use File | Settings | File Templates.  
--%>  
<%@* page contentType="text/html;charset=UTF-8" language="java" *%>  
<*html*>  
<*head*>  
 <*title*>*Title*</*title*>  
</*head*>  
<*body*>  
<*h1*>*用户注册*</*h1*>*用户名： *<*input type="text" id="username"*> <*span style="color: red; font-size: 30px" id="info"*></*span*><*br*>*密码： *<*input type="text" id="pwd"*> <*br*>  
<*button id="btn"*>*注册*</*button*>  
<*script*>* let flag = true  
 let btn = document.getElementById*(*"btn"*)* let username = document.getElementById*(*"username"*)* let pwd = document.getElementById*(*"pwd"*)* let info = document.getElementById*(*"info"*)* username.onblur=function *() {* var url = "/isValidUsernameServlet?username="+username.value *//设置查询字符串* var xmlhttp;  
 if *(*window.XMLHttpRequest*)  
 {  
 // IE7+, Firefox, Chrome, Opera, Safari 浏览器执行代码* xmlhttp=new XMLHttpRequest*()*;  
 *}* else  
 *{  
 // IE6, IE5 浏览器执行代码* xmlhttp=new ActiveXObject*(*"Microsoft.XMLHTTP"*)*;  
 *}* xmlhttp.onreadystatechange=function*()  
 {* if *(*xmlhttp.readyState==4 && xmlhttp.status==200*)  
 {* if *(*xmlhttp.responseText=="false"*){* info.innerHTML="用户名不可用"  
 flag=false  
 *}* else*{* info.innerHTML="用户名可用"  
 flag=true  
 *}  
 }  
 }* xmlhttp.open*(*"POST",url,true*)*;  
 xmlhttp.send*()*;  
 *}* btn.onclick=function *() {* if *(*flag==false*){  
 alert(*"用户名不可用，请重新输入！！！"*)*;  
 return;  
 *}* var url = "/addUsernameServlet?username="+username.value+"&pwd="+pwd.value *//设置查询字符串* var xmlhttp;  
 if *(*window.XMLHttpRequest*)  
 {  
 // IE7+, Firefox, Chrome, Opera, Safari 浏览器执行代码* xmlhttp=new XMLHttpRequest*()*;  
 *}* else  
 *{  
 // IE6, IE5 浏览器执行代码* xmlhttp=new ActiveXObject*(*"Microsoft.XMLHTTP"*)*;  
 *}* xmlhttp.onreadystatechange=function*()  
 {* if *(*xmlhttp.readyState==4 && xmlhttp.status==200*)  
 {* if *(*xmlhttp.responseText=="false"*){* info.innerHTML="注册失败"  
 location.href="/demo8/error.jsp"  
 *}* else*{* info.innerHTML="注册成功"  
 location.href="/demo8/success.jsp"  
 *}  
 }  
 }* xmlhttp.open*(*"GET",url,true*)*;  
 xmlhttp.send*()*;  
 *}  
</*script*>  
</*body*>  
</*html*>*

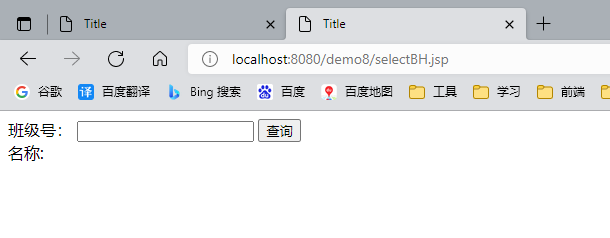
Success.jsp

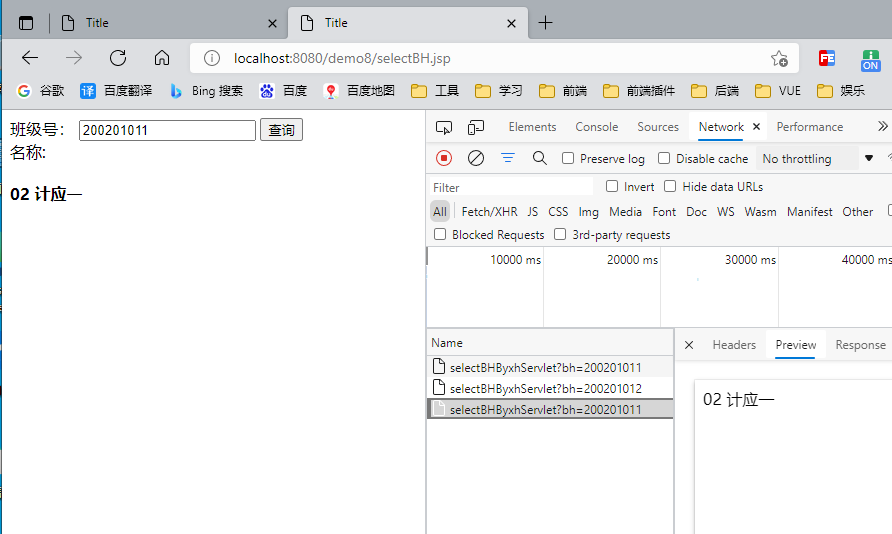
*<%--  
 Created by IntelliJ IDEA.  
 User: SHF  
 Date: 2021/11/9  
 Time: 10:30  
 To change this template use File | Settings | File Templates.  
--%>  
<%@* page contentType="text/html;charset=UTF-8" language="java" *%>  
<*html*>  
<*head*>  
 <*title*>*Title*</*title*>  
</*head*>  
<*body*>  
<*h1*>*${username} ,您好，您已注册成功。*</*h1*>  
</*body*>  
</*html*>*

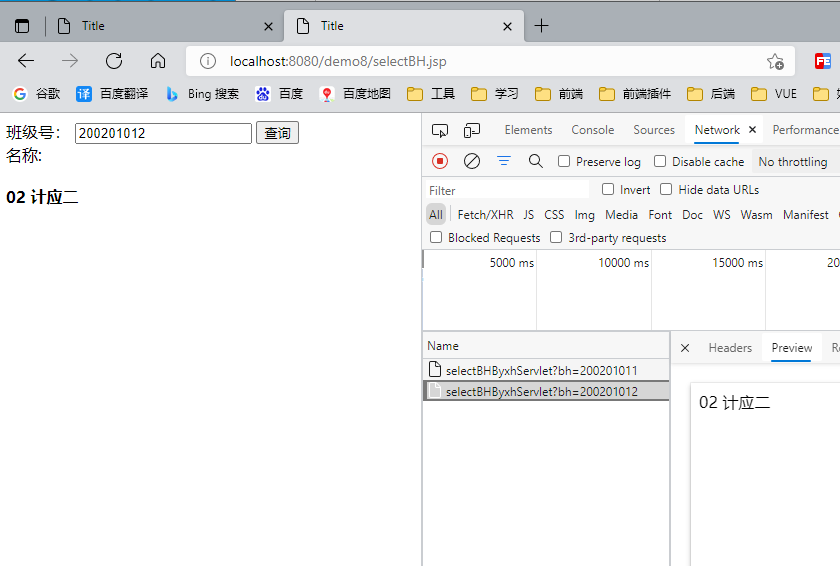
Error.jsp

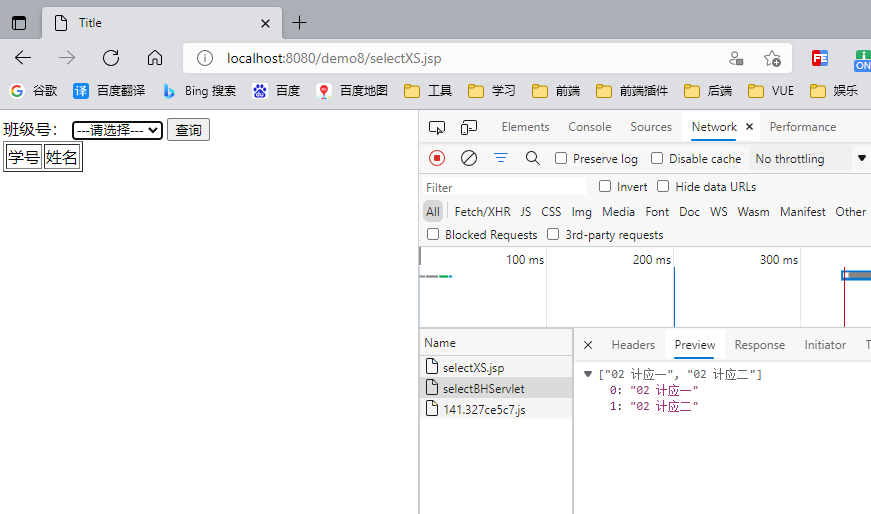
*<%--  
 Created by IntelliJ IDEA.  
 User: SHF  
 Date: 2021/11/9  
 Time: 10:44  
 To change this template use File | Settings | File Templates.  
--%>  
<%@* page contentType="text/html;charset=UTF-8" language="java" *%>  
<*html*>  
<*head*>  
 <*title*>*Title*</*title*>  
</*head*>  
<*body*>  
<*h1*>*对不起， 用户名 ${username} 已存在，注册失败~*</*h1*>  
</*body*>  
</*html*>*

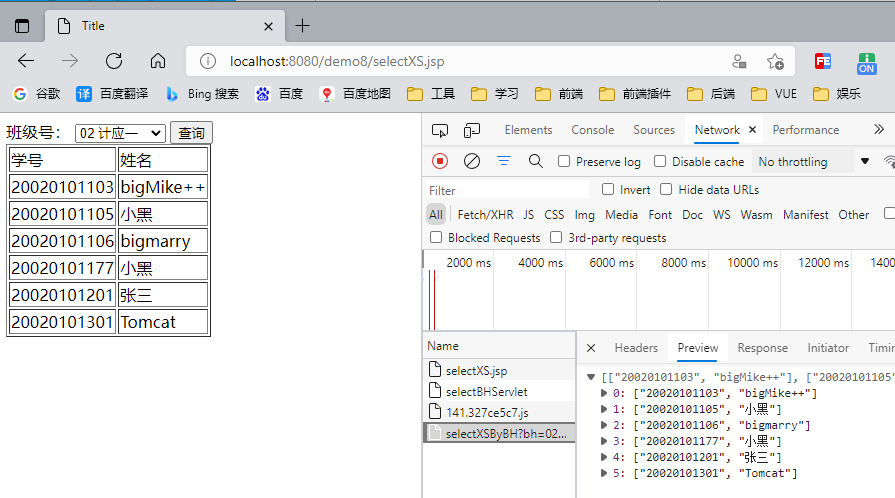
## 实验截图

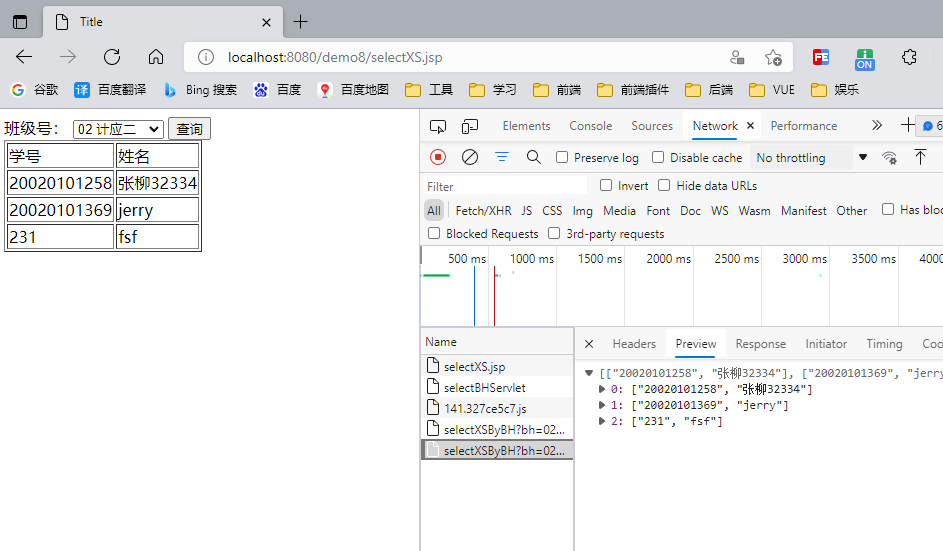


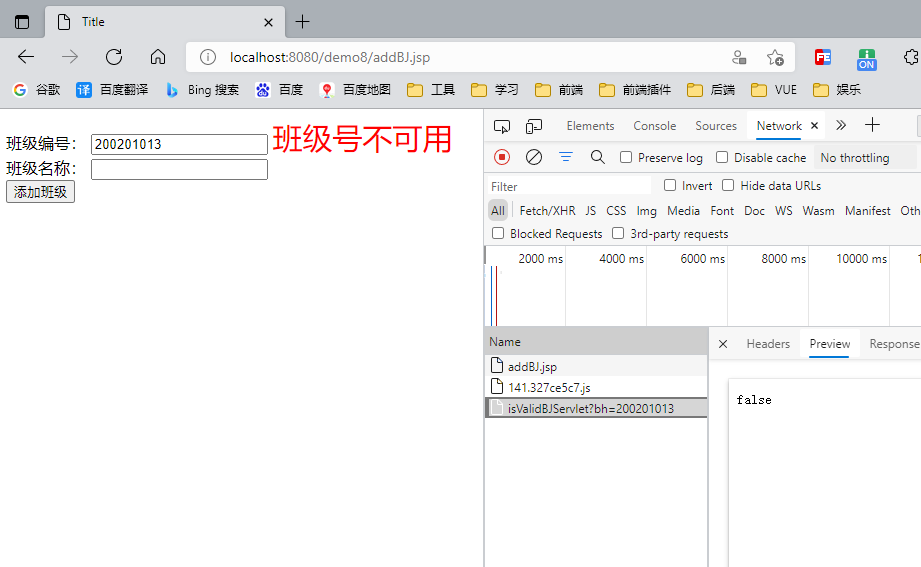


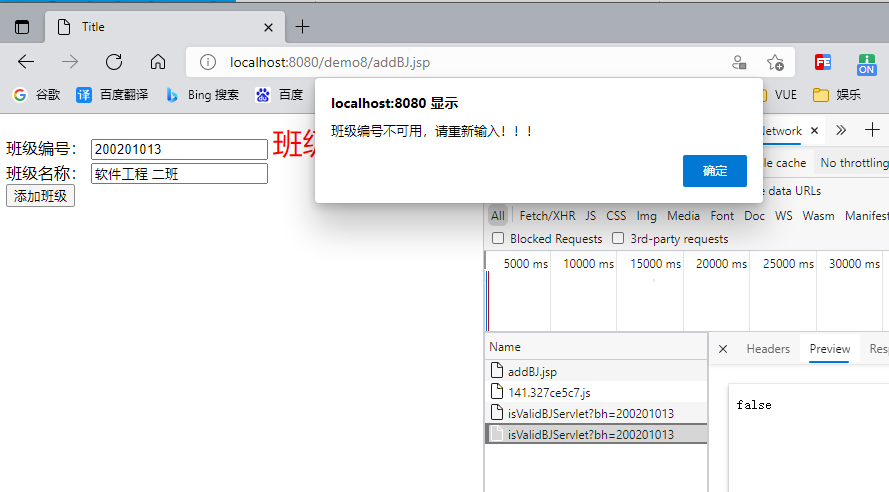


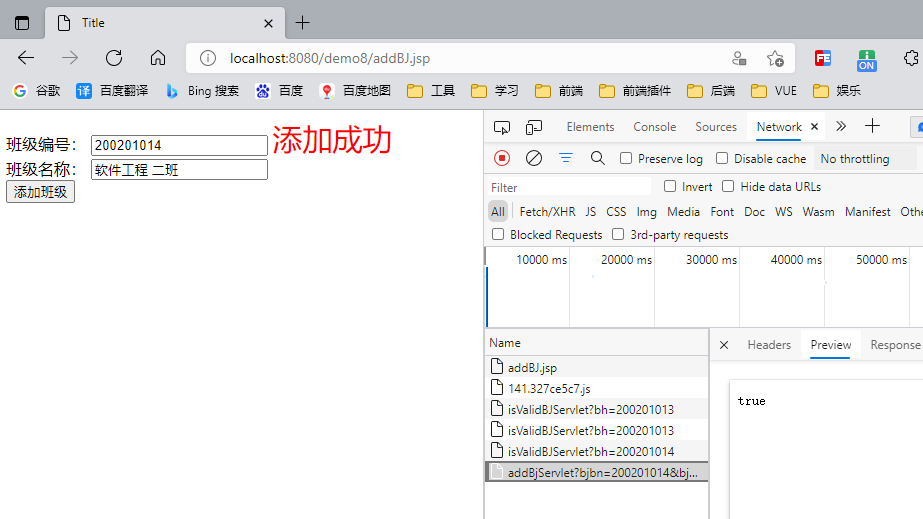


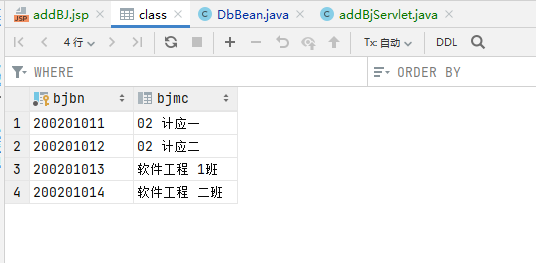


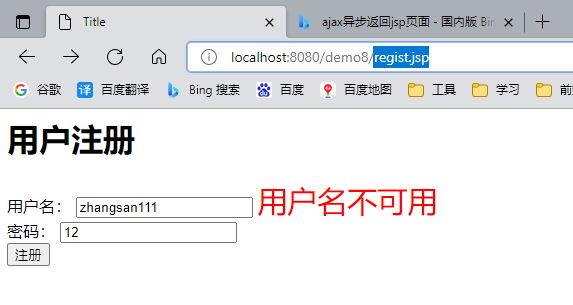


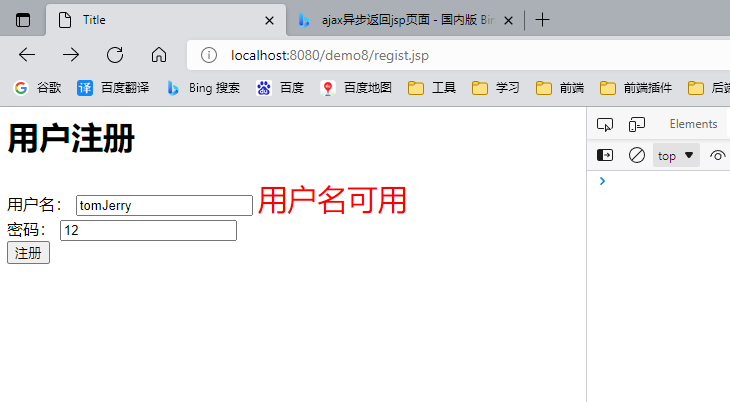


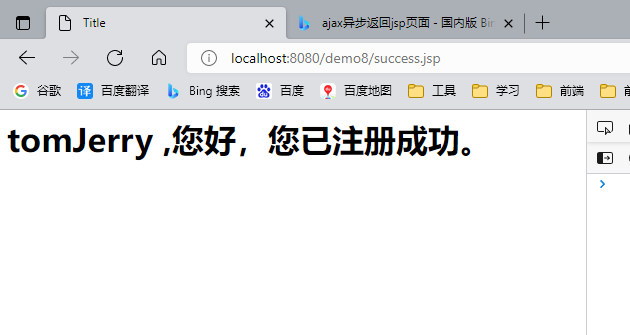














## 实验小结

通过本次实验我学会使用ajax（Asynchronous JavaScript and XML（异步的 JavaScript 和 XML））。ajax在不重新加载整个页面的情况下，可以与服务器交换数据并更新部分网页内容。本次实验中通过发送ajax请求，通过servlet接收请求，servlet通过连接池访问MySQL数据库，从数据库中读取数据，并通过异步的方式返回给客户端，进而实现无刷新更新数据。