**Java Web开发**

**实验三**

**作业报告**

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| --- | --- |
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# 实验题目

必做，以下三题任选，但必须完成一题。

\* 将第二章实训题的第二题，登录页面，提交用户名、密码，若用户名不为空字符串且长度在6-8位间，密码不为，空长度为6位，则登录成功，显示“\*\*\*（用户名）登录成功！”，否则显示“\*\*\*登录失败”。

\* 猜数页面，猜错猜对及输入不正确的情况分别处理，后台随机生成一个0-100的数，让用户猜。最多猜五次，每次猜完后要对用户提示“猜大了”或“猜小了”，如果相等，提示“猜对了，游戏结束！”

\* *上一周做的注册页面也可，验证条件可以自行设定，注册之后根据用户输入情况进行相应的提示。* （选此题）

注意：若表单文本框中有输入中文的话，也要能够正常支持。

选做

课后第三章第一题。动态生成验证码（选做，生成动态验证码的方法请自行百度）

利用Servlet动态生成验证码，注意只需实现动态产出密

码图片即可，暂时不需要进行验证。如生成图片比较困难，则只需生成动态字符串并显示在页面上。

# 分析与设计

1. register.html 包含注册表单的html文件

success.jsp成功页面, 检测到不合法输入则跳转fail.jsp

fail.jsp失败页面, 显示传递过来的错误信息

1. ValidateCodeServlet.jsp 生成验证码图片

testValidateCode.jsp 显示生成的验证码

# 关键源码（部分）

1. register.html

<!DOCTYPE **HTML** PUBLIC **"-//W3C//DTD HTML 4.01 Transitional//EN"  
 "http://www.w3.org/TR/html4/loose.dtd"**>  
<**html**>  
<**head**>  
 <**meta charset="UTF-8"**>  
 <**meta http-equiv="content-type" content="text/html; charset=utf-8"**>  
 <**title**>注册</**title**>  
 <**style**>  
 **label** {  
 **float**: **left**;  
 **width**: 5**em**;  
 **margin-right**: 1**em**;  
 **text-align**: **right**;  
 }  
 </**style**>  
</**head**>  
<**script type="text/javascript"**>  
 **function** *doyear*() {  
 **var** select = ***document***.getElementById(**"year"**);  
 **var** thisYear = **new *Date***().getFullYear();  
 **for** (**var** i = 1900; i <= thisYear; i++) {  
 **var** option = ***document***.createElement(**"option"**);  
 option.**value** = i;  
 option.**innerText** = i;  
 select.appendChild(option);  
 }  
 }  
  
 **function** *domoth*() {  
 **var** select = ***document***.getElementById(**"month"**);  
 **for** (**var** i = 1; i <= 12; i++) {  
 **var** option = ***document***.createElement(**"option"**);  
 option.**value** = i;  
 option.**innerText** = i;  
 select.appendChild(option);  
 }  
 }  
  
 **function** *doday*() {  
 **var** select = ***document***.getElementById(**"day"**);  
 **var** selectYear = *parseInt*(year.**options**[year.**selectedIndex**].**value**);  
 **var** selectMonth = *parseInt*(month.**options**[month.**selectedIndex**].**value**);  
 **var** date = **new *Date***(selectYear, selectMonth, 0);  
  
 **for** (**var** i = 1; i <= date.getDate(); i++) {  
 **var** option = ***document***.createElement(**"option"**);  
 option.**value** = i;  
 option.**innerText** = i;  
 select.appendChild(option);  
 }  
 }  
  
 **function** *deleteOldChildNodes*() {  
 **var** day = ***document***.getElementById(**"day"**);  
 **var** node = day.**firstChild**;  
 **var** tmpNode;  
 **while** (node != day.**lastChild**) {  
 tmpNode = node.**nextSibling**;  
 day.removeChild(node);  
 node = tmpNode;  
 }  
 day.removeChild(day.**lastChild**);  
 }  
  
 **function** *pageInit*() {  
 *doyear*();  
 *domoth*();  
 *doday*();  
 year.onchange = **function** () {  
 *deleteOldChildNodes*();  
 *doday*();  
 };  
 month.onchange = **function** () {  
 *deleteOldChildNodes*();  
 *doday*();  
 };  
 }  
</**script**>  
<**body bgcolor=cyan onload="***pageInit*()**"**>  
<**form action="success.jsp" method=post name=form**>  
 <**p**>  
 <**br**><**label**>邮箱账号</**label**><**input type="text" name="email"**>  
 <**br**><**br**><**label**>昵称</**label**><**input type="text" name="nickName"**>  
 <**br**><**br**><**label**>密码</**label**><**input type="password" name="password"**>  
 <**br**><**br**><**label**>确认密码</**label**><**input type="password" name="passwordAgain"**>  
 <**br**><**br**><**label**>性别</**label**>  
 <**input type="radio" name="sex" value="男" checked="default"**>男  
 <**input type="radio" name="sex" value="女"**>女  
 <**br**><**br**><**label**>生日</**label**>  
 <**select name="calendar"**>  
 <**option value="Gregorian"**>公历</**option**>  
 *<!--<option value="">农历</option>-->* </**select**>  
 <**select name="year" id="year"**></**select**>年  
 <**select name="month" id="month"**></**select**>月  
 <**select name="day" id="day"**></**select**>日  
 <**br**><**br**><**label**>所在地</**label**>  
 <**select name="country"**>  
 <**option value="China"**>中国</**option**>  
 </**select**>  
 <**select name="province"**>  
 <**option value="SD"**>山东</**option**>  
 </**select**>  
 <**select name="city"**>  
 <**option value="Zibo"**>淄博</**option**>  
 </**select**>  
 <**br**><**br**><**label**>验证码</**label**><**input type="text" name="verify"**>  
 <**br**><**br**><**label**>**&nbsp;**</**label**><**input TYPE="submit" value="立即注册" name="register"**>  
 <**br**><**input type="checkbox" name="agreeRegister" value="agreeRegister"**>我已阅读并同意相关服务条款和隐私政策  
 </**p**>  
</**form**>  
</**body**>  
</**html**>

success.jsp

<%@ **page import**="**java.net.URLEncoder**" %><%@ **page contentType**="**text/html;charset=UTF-8**" **language**="**java**" **pageEncoding**="**UTF-8**" %>  
<**html**>  
<**head**>  
 <**title**>注册成功</**title**>  
</**head**>  
<**body**>  
**<%** request.setCharacterEncoding(**"UTF-8"**);  
 String email = request.getParameter(**"email"**);  
 **if**(email == **null** || !email.contains(**"@"**)) {  
 response.sendRedirect(**"fail.jsp?errInfo="**+URLEncoder.*encode*(**"请输入有效邮箱"**, **"UTF-8"**));  
 **return**;  
 }  
 String nickName = request.getParameter(**"nickName"**);  
 **if**(nickName == **null** || nickName.trim().isEmpty()) {  
 response.sendRedirect(**"fail.jsp?errInfo="**+URLEncoder.*encode*(**"请输入昵称"**, **"UTF-8"**));  
 **return**;  
 }  
 String password = request.getParameter(**"password"**);  
 **if**(password == **null** || password.length() < 6) {  
 response.sendRedirect(**"fail.jsp?errInfo="**+URLEncoder.*encode*(**"请输入6位及以上长度的密码"**, **"UTF-8"**));  
 **return**;  
 }  
 String passwordAgain = request.getParameter(**"passwordAgain"**);  
 **if**(!password.equals(passwordAgain)) {  
 response.sendRedirect(**"fail.jsp?errInfo="**+URLEncoder.*encode*(**"两次输入的密码不一致"**, **"UTF-8"**));  
 **return**;  
 }  
 String sex = request.getParameter(**"sex"**);  
 **if**(sex == **null** || sex.trim().isEmpty()) {  
 response.sendRedirect(**"fail.jsp?errInfo="**+URLEncoder.*encode*(**"请选择性别"**, **"UTF-8"**));  
 **return**;  
 }  
 String verify = request.getParameter(**"verify"**);  
 **if**(verify == **null** || verify.trim().isEmpty()) {  
 response.sendRedirect(**"fail.jsp?errInfo="**+URLEncoder.*encode*(**"请输入效验码"**, **"UTF-8"**));  
 **return**;  
 }  
 String agreeRegister = request.getParameter(**"agreeRegister"**);  
 **if**(agreeRegister == **null**) {  
 response.sendRedirect(**"fail.jsp?errInfo="**+URLEncoder.*encode*(**"未同意注册要求"**, **"UTF-8"**));  
 **return**;  
 }  
**%>**<**h2**>**<%=**nickName**%>**，恭喜你！你的**<%=**email**%>**</**h2**>  
</**body**>  
</**html**>

fail.jsp

<%@ **page contentType**="**text/html;charset=UTF-8**" **language**="**java**" **pageEncoding**="**UTF-8**" %>  
<**html**>  
<**head**>  
 <**title**>注册失败</**title**>  
</**head**>  
<**body**>  
**<%** request.setCharacterEncoding(**"UTF-8"**);  
 String errInfo = request.getParameter(**"errInfo"**);  
**%>**<**h1**>注册失败</**h1**>  
<**br**>  
<**h2**>**<%=**errInfo**%>**</**h2**>  
<**a href="register.html"**>返回注册页面</**a**>  
</**body**>  
</**html**>

1. ValidateCodeServlet.java

**import** javax.imageio.ImageIO;  
**import** javax.servlet.ServletException;  
**import** javax.servlet.annotation.WebServlet;  
**import** javax.servlet.http.HttpServlet;  
**import** javax.servlet.http.HttpServletRequest;  
**import** javax.servlet.http.HttpServletResponse;  
**import** java.awt.\*;  
**import** java.awt.image.BufferedImage;  
**import** java.io.IOException;  
**import** java.util.Random;  
  
@WebServlet(name = **"ValidateCodeServlet"**, urlPatterns = **"/ValidateCodeServlet"**)  
**public class** ValidateCodeServlet **extends** HttpServlet {  
 **private** Random **random** = **new** Random();  
 **private** String[] **fontNames** = {**"宋体"**, **"华文楷体"**, **"黑体"**, **"微软雅黑"**};  
  
 **protected void** doPost(HttpServletRequest request, HttpServletResponse response) **throws** ServletException, IOException {  
 *// 让浏览器禁用缓存* response.setHeader(**"Pragma"**, **"No-Cache"**);  
 response.setHeader(**"Cache-Control"**, **"no-cache"**);  
 response.setDateHeader(**"Expries"**, 0);  
  
 **int** size = 5; *// 验证码的位数  
  
 // 定义变量保存生成的验证码* StringBuilder vCode = **new** StringBuilder();  
 **char** c;  
 *// 产生验证码* **for** (**int** i = 0; i < size; i++) {  
 **int** number = **random**.nextInt();  
 *// 如果生成的是偶数，则随机生成一个数字, 奇数，则随机生成一个字母* **if** (number % 2 == 0) {  
 c = (**char**) (**'0'** + ((**int**) (Math.*random*() \* 10)));  
 } **else** {  
 c = (**char**) (**'A'** + ((**int**) (Math.*random*() \* 26)));  
 }  
 vCode.append(c);  
 }  
  
 *// 保存验证码* request.getSession().setAttribute(**"vCode"**, vCode.toString());  
  
 *// 验证码图片的生成  
 // 定义图片的宽度和高度* **int** width = (**int**) Math.*ceil*(size \* 20);  
 **int** height = 30;  
 BufferedImage image = **new** BufferedImage(width, height, BufferedImage.***TYPE\_INT\_RGB***);  
 *// 获取图片的上下文* Graphics gr = image.getGraphics();  
 *// 设定背景色与画图片边框* gr.setColor(Color.***WHITE***);  
 gr.fillRect(0, 0, width, height);  
 gr.setColor(Color.***GRAY***);  
 gr.drawRect(0, 0, width - 1, height - 1);  
 *// 画干扰线* **for** (**int** i = 0; i < **random**.nextInt(5)+3; i++) {  
 **int** x1 = **random**.nextInt(width);  
 **int** y1 = **random**.nextInt(height);  
 **int** x2 = **random**.nextInt(width);  
 **int** y2 = **random**.nextInt(height);  
 gr.setColor(randomColor());  
 gr.drawLine(x1, y1, x2, y2);  
 }  
 *// 设置字体，画验证码* gr.setColor(randomColor());  
 gr.setFont(randomFont());  
 gr.drawString(vCode.toString(), 10, 22);  
 *// 图像生效* gr.dispose();  
 *// 输出到页面* ImageIO.*write*(image, **"JPEG"**, response.getOutputStream());  
 }  
  
 **protected void** doGet(HttpServletRequest request, HttpServletResponse response) **throws** ServletException, IOException {  
 doPost(request, response);  
 }  
  
 *// 生成随机的颜色* **private** Color randomColor() {  
 **int** red = **random**.nextInt(150);  
 **int** green = **random**.nextInt(150);  
 **int** blue = **random**.nextInt(150);  
 **return new** Color(red, green, blue);  
 }  
  
 *// 生成随机的字体* **private** Font randomFont() {  
 **int** index = **random**.nextInt(**fontNames**.**length**);  
 String fontName = **fontNames**[index];*// 生成随机的字体名称* **int** style = **random**.nextInt(4);  
 **int** size = **random**.nextInt(3) + 24; *// 生成随机字号, 24 ~ 28* **return new** Font(fontName, style, size);  
 }  
}

testValidateCode.jsp

<%@ **page contentType**="**text/html;charset=UTF-8**" **language**="**java**" **pageEncoding**="**UTF-8**" %>  
<**html**>  
<**script type="text/javascript"**>  
 **function** *$*(id){  
 **return *document***.getElementById(id);  
 }  
 **function** *changeCode*(){  
 *$*(**"code"**).**src** = **"ValidateCodeServlet?a="**+**new *Date***();  
 }  
</**script**>  
<**head**>  
 <**title**>测试验证码</**title**>  
</**head**>  
<**body**>  
<**form method="post"**>  
 <**input name="validate\_code" placeholder="验证码" required="" type="text"**>  
 <**img src="ValidateCodeServlet" id="code"** />  
 <**a href="javascript:***changeCode***()"**>换一张</**a**>  
</**form**>  
</**body**>  
</**html**>

# 运行效果图



图片包含 屏幕截图

描述已自动生成

图片包含 屏幕截图

描述已自动生成图片包含 屏幕截图

描述已自动生成

1. 

# 收获与问题

禁用缓存与生成随机字符串参数双管齐下更新验证码图片比较稳妥