信 工 学 院

实 验 报 告

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| --- | --- |
| 课程名称 | Web应用程序设计 |
| 专业 | 计算机科学与技术 |
| 班级 | 计工本1702 |
| 学号 | 201711010202 |
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2018年5月17日

1. **实验课题**

Servlet的高级应用.

1. **实验目的**

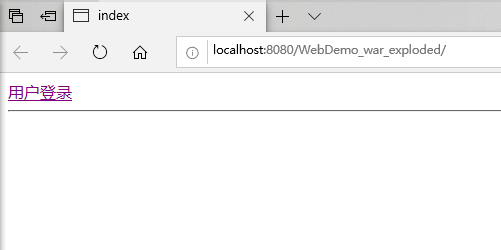
使用Eclipse开发Filter；

1. **实验内容**
   1. 完成课本242页任务8-1;
   2. 完成课本249页任务8-2;
2. **实验步骤**

在以下表格中给出实验内容的相应代码

|  |
| --- |
| * 1. 任务8-1 使用Filter实现用户自动登录   Index.jsp  01 <%--  02 Created by IntelliJ IDEA.  03 User: HP  04 Date: 2019/4/9  05 Time: 14:52  06 To change **this** template use File | Settings | File Templates.  07 --%>  08 <%@ page contentType="text/html;charset=UTF-8" language="java" **import**="java.util.\*" %>  09 <%@ taglib prefix="c" uri="http://java.sun.com/jsp/jstl/core"%>  10 <html>  11 <head>  12 <title>index</title>  13 </head>  14 <body>  15 <c:choose>  16 <c:when test="${sessionScope.user==null}">  17 <a href="${pageContext.request.contextPath}/login.jsp">用户登录</a>  18 </c:when>  19 <c:otherwise>  20 欢迎你，${sessionScope.user.username}!  21 <a href="${pageContext.request.contextPath}/LogoutServlet">注销</a>  22 </c:otherwise>  23 </c:choose>  24 <%-- <a href="login.jsp">登录</a>--%>  25 <hr>  26 </body>  27 </html>  Login.jsp  01 <%--  02 Created by IntelliJ IDEA.  03 User: HP  04 Date: 2019/4/9  05 Time: 14:53  06 To change **this** template use File | Settings | File Templates.  07 --%>  08 <%@ page contentType="text/html;charset=UTF-8" language="java" **import**="java.util.\*" %>  09 <html>  10 <head>  11 <style type="text/css">  12 .input\_box{  13 color: gray;  14 height:40px;  15 width: 250px;  16 font-size: large;  17 font-family: 等线;  18 padding: 8px;  19 margin-top: 16px;  20 border-color: gainsboro;  21 border-style:solid;  22 border-width: 1px;  23 }  24 </style>  25 <title>login</title>  26 <%-- <%--%>  27 <%--*// session.setAttribute("state",null);--%>*  28 <%-- String uname = request.**getParameter**("username");--%>  29 <%-- String pword = request.**getParameter**("password");--%>  30 <%-- String u = "sdnu";--%>  31 <%-- String p = "1234";--%>  32 <%-- **if**(u.**equals**(uname)&&p.**equals**(pword)){--%>  33 <%-- session.**setAttribute**("username",u);--%>  34 <%-- session.**setAttribute**("state","登录成功");--%>  35 <%-- request.**getRequestDispatcher**("welcome.jsp").**forward**(request,response);--%>  36 <%-- }--%>  37 <%-- **else if**(uname!=**null**){--%>  38 <%-- session.**setAttribute**("state","登录失败");--%>  39 <%-- %>--%>  40 <%-- <%=session.**getAttribute**("state")%>--%>  41 <%-- <%--%>  42 <%-- }--%>  43 <%-- **else if**(session.**getAttribute**("state")!=**null**){--%>  44 <%-- %>--%>  45 <%-- <%=session.**getAttribute**("state")%>--%>  46 <%-- <%--%>  47 <%-- }--%>  48  49 <%-- %>--%>  50 </head>  51  52 <body>  53 <br><br><hr>  54  55 <center>  56 <form action="LoginServlet" method="post">  57 <input type="text" **class**="input\_box" placeholder="账号" name="username" >  58 <br>  59 <input type="password" **class**="input\_box" placeholder="密码" name="password">  60 <br>自动登录时间<br>  61 <input type="radio" name="autologin" value="${60\*60\*24\*31}">一个月  62 <input type="radio" name="autologin" value="${60\*60\*24\*31\*3}">三个月  63 <input type="radio" name="autologin" value="${60\*60\*24\*31\*6}">半年  64 <input type="radio" name="autologin" value="${60\*60\*24\*31\*12}">一年  65 <br>  66 <input type="submit" **class**="input\_box" value="登录">  67 <br>  68 <input type="reset" value="重置">  69  70 </form>  71 </center>  72  73 </body>  74 </html>  LoginServlet.java  01 **package** servelt;  02  03 **import** com.sdnu.wry.User;  04  05 **import** javax.servlet.ServletException;  06 **import** javax.servlet.annotation.WebServlet;  07 **import** javax.servlet.http.\*;  08 **import** java.io.IOException;  09 **import** java.io.PrintWriter;  10  11 **@WebServlet**(name = "LoginServlet",urlPatterns = "/LoginServlet")  12 **public class** LoginServlet **extends** HttpServlet {  13 **protected void** **doPost**(HttpServletRequest request, HttpServletResponse response) **throws** ServletException, IOException {  14 PrintWriter out = response.**getWriter**();  15 HttpSession session = request.**getSession**();  16 String username = request.**getParameter**("username");  17 String password = request.**getParameter**("password");  18 out.**println**(username);  19 out.**println**(password);  20 **if**("hhh".**equals**(username)&&"123456".**equals**(password)) {  21 *//登陆成功*  22 User user = **new** **User**();  23 user.**setUsername**(username);  24 user.**setPassword**(password);  25 session.**setAttribute**("user", user);  26 String autoLogin = request.**getParameter**("autulogin");  27 **if** (autoLogin != **null**) {  28 Cookie cookie = **new** **Cookie**("autologin", username + "-" + password);  29 cookie.**setMaxAge**(Integer.**parseInt**(autoLogin));  30 cookie.**setPath**(request.**getContextPath**());  31 response.**addCookie**(cookie);  32 }  33 response.**sendRedirect**(request.**getContextPath**() + "/index.jsp");  34 }**else** {  35 request.**setAttribute**("errormsg","用户名或密码错误");  36 request.**getRequestDispatcher**("/login.jsp").**forward**(request,response);  37 }  38 }  39  40 **protected void** **doGet**(HttpServletRequest request, HttpServletResponse response) **throws** ServletException, IOException {  41 **doPost**(request,response);  42 }  43 }  LogoutServlet.java  01 **package** servelt;  02  03 **import** javax.servlet.ServletException;  04 **import** javax.servlet.annotation.WebServlet;  05 **import** javax.servlet.http.\*;  06 **import** java.io.IOException;  07  08 **@WebServlet**(name = "LogoutServlet",urlPatterns = "/LogoutServlet")  09 **public class** LogoutServlet **extends** HttpServlet {  10 **protected void** **doPost**(HttpServletRequest request, HttpServletResponse response) **throws** ServletException, IOException {  11 HttpSession session = request.**getSession**();  12 session.**removeAttribute**("user");  13 Cookie cookie = **new** **Cookie**("autologin","msg");  14 cookie.**setPath**(request.**getContextPath**());  15 cookie.**setMaxAge**(0);  16 response.**addCookie**(cookie);  17 response.**sendRedirect**(request.**getContextPath**()+"/index.jsp");  18  19 }  20  21 **protected void** **doGet**(HttpServletRequest request, HttpServletResponse response) **throws** ServletException, IOException {  22 **doPost**(request,response);  23 }  24 }  AutoLoginFilter.java  01 **package** filter;  02  03 **import** com.sdnu.wry.User;  04  05 **import** javax.servlet.\*;  06 **import** javax.servlet.annotation.WebFilter;  07 **import** javax.servlet.http.Cookie;  08 **import** javax.servlet.http.HttpServletRequest;  09 **import** java.io.IOException;  10  11 **@WebFilter**(filterName = "AutoLoginFilter",urlPatterns = "/\*")  12 **public class** AutoLoginFilter **implements** Filter {  13 **public void** **destroy**() {  14 }  15  16 **public void** **doFilter**(ServletRequest req, ServletResponse resp, FilterChain chain) **throws** ServletException, IOException {  17 HttpServletRequest request = (HttpServletRequest)req;  18 Cookie[] cookies = request.**getCookies**();  19 String autologin = **null**;  20 **for**(**int** i = 0;cookies!=**null**&&i<cookies.length;i++){  21 **if**("autologin".**equals**(cookies[i].**getName**())){  22 autologin = cookies[i].**getValue**();  23 **break**;  24 }  25 }  26 **if**(autologin!=**null**){  27 String[] parts = autologin.**split**("-");  28 String username = parts[0];  29 String password = parts[1];  30 **if**("hhh".**equals**(username)&&"123456".**equals**(password)){  31 User user = **new** **User**();  32 user.**setUsername**(username);  33 user.**setPassword**(password);  34 request.**getSession**().**setAttribute**("user",user);  35 }  36 }  37 chain.**doFilter**(req, resp);  38 }  39  40 **public void** **init**(FilterConfig config) **throws** ServletException {  41  42 }  43  44 }   * 1. 任务8-2 使用Filter实现统一全站编码   form.jsp  01 <%--  02 Created by IntelliJ IDEA.  03 User: Ash  04 Date: 2019/5/24  05 Time: 20:48  06 To change **this** template use File | Settings | File Templates.  07 --%>  08 <%@ page contentType="text/html;charset=UTF-8" language="java" %>  09 <html>  10 <head>  11 <title></title>  12 </head>  13 <body>  14 <a href="<%=request.getContextPath()%>/CharacterServlet?username=GET&password=123456">点击登录</a>  15 <form action="<%=request.getContextPath()%>/CharacterServlet" method="post">  16 用户名：<input type="text" name="username"><br>  17 密码：<input type="password" name="password"><br>  18 <input type="submit" value="登录"><br>  19 <input type="reset" value="重置"><br>  20  21 </form>  22 </body>  23 </html>  CharacterServlet.java  01 **package** servelt;  02  03 **import** javax.servlet.ServletException;  04 **import** javax.servlet.annotation.WebServlet;  05 **import** javax.servlet.http.HttpServlet;  06 **import** javax.servlet.http.HttpServletRequest;  07 **import** javax.servlet.http.HttpServletResponse;  08 **import** java.io.IOException;  09  10 **@WebServlet**(name = "CharacterServlet",urlPatterns = "/CharacterServlet")  11 **public class** CharacterServlet **extends** HttpServlet {  12 **protected void** **doPost**(HttpServletRequest request, HttpServletResponse response) **throws** ServletException, IOException {  13 System.out.**println**(request.**getParameter**("username"));  14 System.out.**println**(request.**getParameter**("password"));  15  16 }  17  18 **protected void** **doGet**(HttpServletRequest request, HttpServletResponse response) **throws** ServletException, IOException {  19 **doPost**(request,response);  20 }  21 }  CharacterFilter.java  01 **package** filter;  02  03 **import** javax.servlet.\*;  04 **import** javax.servlet.annotation.WebFilter;  05 **import** javax.servlet.http.HttpServletRequest;  06 **import** javax.servlet.http.HttpServletRequestWrapper;  07 **import** javax.servlet.http.HttpServletResponse;  08 **import** java.io.IOException;  09 **import** java.io.UnsupportedEncodingException;  10  11 **@WebFilter**(filterName = "CharacterFilter",urlPatterns = "/\*")  12 **public class** CharacterFilter **implements** Filter {  13 **public void** **destroy**() {  14 }  15  16 **public void** **doFilter**(ServletRequest req, ServletResponse resp, FilterChain chain) **throws** ServletException, IOException {  17 HttpServletRequest request = (HttpServletRequest)req;  18 HttpServletResponse response = (HttpServletResponse)resp;  19 request.**setCharacterEncoding**("utf-8");  20 response.**setContentType**("text/html;charset-utf-8");  21 CharacterRequest characterRequest = **new** **CharacterRequest**(request);  22  23  24 chain.**doFilter**(req, resp);  25 }  26  27 **public void** **init**(FilterConfig config) **throws** ServletException {  28  29 }  30  31 }  32 **class** CharacterRequest **extends** HttpServletRequestWrapper{  33 **private** HttpServletRequest request;  34 **public** **CharacterRequest**(HttpServletRequest request){  35 **super**(request);  36 **this**.request=request;  37 }  38 **public** String **getParameter**(String name){  39 String value = **super**.**getParameter**(name);  40 **if**(value==**null**){  41 **return** **null**;  42 }  43 String method = **super**.**getMethod**();  44 **if**("get".**equalsIgnoreCase**(method)){  45 **try** {  46 value = **new** **String**(value.**getBytes**("iso-8859-1"),"utf-8");  47 }**catch** (UnsupportedEncodingException e){  48 **throw new** **RuntimeException**(e);  49 }  50 }  51 **return** value;  52 }  53 } |

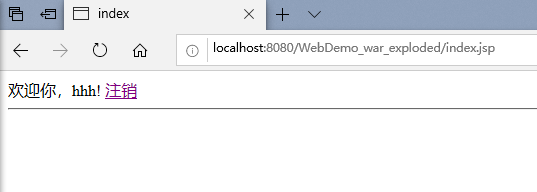
1. **实验结果（截图）**
   1. 任务8-1 使用Filter实现用户自动登录
      * + 打开index.jsp，检测到cookie为空，停留登录页面



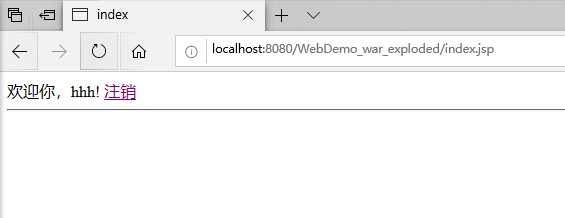
* + - * 点击用户登录



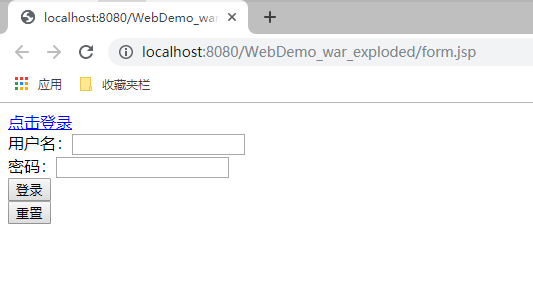
* + - * 输入账号密码，登录



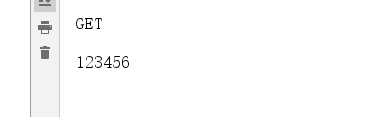
* + - * 再次进入index.jsp，检测到cookie参数，实现自动登录



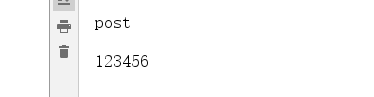
* 1. 任务8-2 使用Filter实现全站统一编码
     + - form.jsp



* + - * 点击超链接，使用GET方式登录，后台接受参数打印



* + - * 通过表单，使用POST方式登录，后台接收参数打印



1. **心得与体会（不少于200字）**

过滤器作为强大的工具，可以轻松实现用户在访问某个目标资源之前，对访问的请求和响应进行拦截。在IJ中，可以像Servlet一样，使用注释的方式对url-patterns进行设置。

灵活地运用Filter，可以轻松地实现许多功能，如本次作业中的全站统一编码、cookie自动登录等操作。验证cookie自动登录，通过将用户输入用户名与密码储存在cookie中，并设置存储时间，在该段时间内，用户登录网页，跳转至filter验证cookie中存储的用户名与密码，若匹配则自动登录。全站统一编码，通过设置filter的url-parrterns为/\*，实现跳转任意网页首先通过filter进行编码，大大减少每个网页中编码的工作。

此外，filter本质为一java类，可以在访问请求和响应时实现各种各样的功能，灵活而强大。