

西南民族大学

实验报告

2018 -----2019 学年第 2 学期

课程名称：Web 应用开发（Java）

学 院：计算机科学与技术学院

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西南民族大学学生实验报告

教学单位：计科学院 实验室名称：计算机应用实验室 实验时间：2019 年 5 月 31 日

实验名称 JSP 和 JavaBean

实验编号 10

实验成绩

教师签名

教师评阅：

实验项目报告内容

1、实验目的

A. 熟悉 Servlet

2、实验内容

2.1. 自主编程

- (1) 编写一个JavaBean: Book.java, 含有属性: bookid (String)、bookname (String)、bookprice (double), 并编写getter、setter函数。
- (2) 编写一个JavaBean: Customer.java, 含有属性: account (String)、password (String)、cname (String); 给这个JavaBean增加一个属性member (boolean, 表示是否是会员) 并编写相应访问函数。
- (3) 编写一个登录页面, 输入学号和姓名, 在数据库中进行验证, 如果验证通过, 则在另一个页中显示顾客的姓名。要求使用JavaBean来封装顾客信息, 使用DAO查询数据库。
- (4) 使用Servlet、DAO、和VO来完成学生的模糊查询 (也就是将DAO和VO的调用放在Servlet中完成)

3、实验要求

4、实验主要过程与结果

4.1. 自主编程

- (1) 编写一个JavaBean: Book.java, 含有属性: bookid (String)、bookname (String)、bookprice (double), 并编写getter、setter函数。

```
Book.java
1 package beans;
2
3 public class Book {
4     private String bookid, bookname;
5     private double bookprice;
6     public String getBookid() {
7         return bookid;
8     }
9     public void setBookid(String bookid) {
10        this.bookid = bookid;
11    }
12    public String getBookname() {
13        return bookname;
14    }
15    public void setBookname(String bookname) {
16        this.bookname = bookname;
17    }
18    public double getBookprice() {
19        return bookprice;
20    }
21    public void setBookprice(double bookprice) {
22        this.bookprice = bookprice;
23    }
24 }
25
```

- (2) 编写一个JavaBean: Customer.java, 含有属性: account (String)、password (String)、cname (String); 给这个JavaBean增加一个属性member (boolean, 表示是否是会员) 并编写相应访问函数。

```
Book.java Customer.java LoginServlet.java login.jsp
1 package beans;
2
3 public class Customer {
4     private String account, password, cname;
5     private boolean member;
6     public String getAccount() {
7         return account;
8     }
9     public void setAccount(String account) {
10        this.account = account;
11    }
12    public String getPassword() {
13        return password;
14    }
15    public void setPassword(String password) {
16        this.password = password;
17    }
18    public String getCname() {
19        return cname;
20    }
21    public void setCname(String cname) {
22        this.cname = cname;
23    }
24    public boolean isMember() {
25        return member;
26    }
27    public void setMember(boolean member) {
28        this.member = member;
29    }
30 }
31
32
```

- (3) 编写一个登录页面, 输入学号和姓名, 在数据库中进行验证, 如果验证通过, 则在另一个页中显示顾客的姓名。要求使用JavaBean来封装顾客信息, 使用DAO查询数据库。

登录界面:

```
Customer.java MemberDAO.java login.jsp welcome.jsp
1 <%@ page language="java" contentType="text/html; charset=UTF-8" pageEncoding="
2 <!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN" "http://www.w3.
3 <html>
4 <head>
5     <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
6     <title>登录</title>
7 </head>
8 <body>
9     <h2>登录</h2>
10    <form action="welcome.jsp">
11        学号: <input type="text" name="account"><br>
12        姓名: <input type="text" name="cname"><br>
13        <input type="submit" value="登录">
14    </form>
15 </body>
16 </html>
```

欢迎界面:

```
welcome.jsp login.jsp Customer.java 欢迎
1 <%@ page language="java" contentType="text/html; charset=UTF-8" import="java.util.*, java.sql.*" pageEncoding="UTF-8"%>
2 <%@ page import="dao.CustomerDAO" %>
3 <%@ page import="beans.Customer" %>
4 <!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN" "http://www.w3.org/TR/html4/loose.dtd">
5 <html>
6 <head>
7     <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
8     <title>欢迎</title>
9 </head>
10 <body>
11    <%
12        CustomerDAO customerDAO = new CustomerDAO();
13        ArrayList<Customer> customers = customerDAO.queryByAccount(request.getParameter("account"));
14        if(customers != null && customers.size() > 0){
15            Customer customer = customers.get(0);
16            if(customer.getCname().equals(request.getParameter("cname"))){
17                out.println("欢迎您, " + customer.getCname() + "!<br>");
18            }
19            else out.println("登录失败!<br>");
20        }
21        else out.println("登录失败!<br>");
22    %>
23 </body>
24 </html>
```

JavaBean Customer类:

```
welcome.jsp login.jsp Customer.java 欢迎
1 package beans;
2
3 public class Customer {
4     private String account, password, cname;
5     private boolean member;
6     public String getAccount() {
7         return account;
8     }
9     public void setAccount(String account) {
10        this.account = account;
11    }
12    public String getName() {
13        return cname;
14    }
15    public void setName(String cname) {
16        this.cname = cname;
17    }
18 }
```

CustomerDAO, 用来查询数据库:

```
welcome.jsp login.jsp Customer.java 欢迎 CustomerDAO.java
2
3 *import java.sql.Connection;
11
12 public class CustomerDAO {
13     public ArrayList<Customer> queryByAccount(String account) {
14         Connection conn = null;
15         String DB_URL = "jdbc:mysql://localhost:3306/test?useUnicode=true&characterEncoding=utf-8&serverTimezone=GMT%2B8";
16         String DB_USER = "root";
17         String DB_PASSWORD = "root";
18         ArrayList<Customer> customers = new ArrayList<Customer>();
19         try {
20             Class.forName("com.mysql.cj.jdbc.Driver");
21             conn = DriverManager.getConnection(DB_URL, DB_USER, DB_PASSWORD);
22             String sql = "select * from customer where account='" + account + "'";
23             PreparedStatement smt = conn.prepareStatement(sql);
24             ResultSet rs = smt.executeQuery();
25             while(rs.next()) {
26                 Customer customer = new Customer();
27                 customer.setAccount(rs.getString("account"));
28                 customer.setName(rs.getString("cname"));
29                 customers.add(customer);
30             }
31             rs.close();
32             smt.close();
33             conn.close();
34         } catch (ClassNotFoundException e) {
35             // TODO Auto-generated catch block
36             e.printStackTrace();
37         } catch (SQLException e) {
38             // TODO Auto-generated catch block
39             e.printStackTrace();
40         } catch (Exception e) {
41             // TODO Auto-generated catch block
42             e.printStackTrace();
43         } finally {
44             try {
45                 if(conn != null) {
46                     conn.close();
47                     conn = null;
48                 }
49             } catch (Exception ex) {}
50         }
51     }
52     return customers;
53 }
54 }
55 }
```

数据库中的记录为

对象 customer @test (mysql) - 表

开始事务 文本 筛选 排序

account	cname
123	zhangsan

welcome.jsp login.jsp Customer.java 登录 欢迎 CustomerDAO.java

http://localhost:8080/myweb/jsp/login.jsp

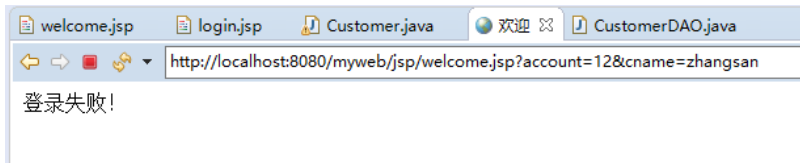
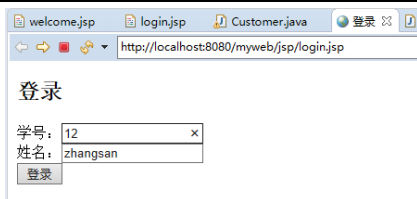
登录

学号: 123
姓名: zhangsan
登录

welcome.jsp login.jsp Customer.java 欢迎 CustomerDAO.java

http://localhost:8080/myweb/jsp/welcome.jsp?account=123&cname=zhangsan

欢迎您, zhangsan!



- (4) 使用Servlet、DAO、和VO来完成学生的模糊查询（也就是将DAO和VO的调用放在Servlet中完成）
模糊查询页面：

```
search.jsp StudentDAO.java SearchServlet.java 学生模糊查询
1 <%@ page language="java" pageEncoding="gb2312" import="java.util.*"%>
2 <%@ page import="dao.StudentDAO, beans.Student"%>
3 <!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN" "http://www.w3.org/TR/html4/loose.dtd">
4 <html>
5 <head>
6 <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
7 <title>学生模糊查询</title>
8 </head>
9 <body>
10 <h2>学生模糊查询</h2>
11 <form action="../servlets/SearchServlet" method="post">
12 请输入学生姓名: <input name="sname" type="text"><br>
13 <input type="submit" value="查找">
14 </form>
15 <%
16 ArrayList<Student> students = (ArrayList<Student>)session.getAttribute("students");
17 if(students != null){
18     if(students.size() == 0) out.println("没有查询到相关学生信息! <br>");
19     else{
20         for(Student student : students){
21             out.println(student.getSid() + " " + student.getSname() + " ";
22             if(student.getSex() == 1) out.println("男<br>");
23             else out.println("女<br>");
24         }
25     }
26 }
27 %>
28 </body>
29 </html>
```

StudentDAO

```
search.jsp StudentDAO.java SearchServlet.java 学生模糊查询
17 public class StudentDAO {
18     public ArrayList<Student> fuzzyQuery(String sname){
19         String q = "%";
20         for(int i = 0; i < sname.length(); i++) q = q + sname.charAt(i) + "%";
21         System.out.println(q);
22         Connection conn = null;
23         String DB_URL = "jdbc:mysql://localhost:3306/test?useUnicode=true&characterEncoding=utf-8&serverTimezone=GMT%2B8";
24         String DB_USER = "root";
25         String DB_PASSWORD = "root";
26         ArrayList<Student> students = new ArrayList<Student>();
27         PreparedStatement smt = null;
28         ResultSet rs = null;
29         try {
30             Class.forName("com.mysql.cj.jdbc.Driver");
31             conn = DriverManager.getConnection(DB_URL, DB_USER, DB_PASSWORD);
32             String sql = "select * from student where sname LIKE '" + q + "'";
33             smt = conn.prepareStatement(sql);
34             rs = smt.executeQuery();
35             while (rs.next()) {
36                 Student student = new Student();
37                 student.setSex(rs.getInt("sex"));
38                 student.setSid(rs.getString("sid"));
39                 student.setSname(rs.getString("sname"));
40                 students.add(student);
41             }
42             rs.close();
43             smt.close();
44             conn.close();
45         } catch (ClassNotFoundException e) {
46             // TODO Auto-generated catch block
47             e.printStackTrace();
48         } catch (SQLException e) {
49             // TODO Auto-generated catch block
50             e.printStackTrace();
51         } catch (Exception e) {
52             // TODO Auto-generated catch block
53             e.printStackTrace();
54         } finally {
55             try {
56                 if(conn != null) {
57                     conn.close();
58                     conn = null;
59                 }
60             } catch (Exception ex) {}
61         }
62         return students;
63     }
64 }
```

SearchServlet

```
1 package servlets;
2
3 import java.io.IOException;
4 import java.util.ArrayList;
5 import java.util.Map;
6 import java.util.Set;
7
8 import javax.servlet.ServletException;
9 import javax.servlet.annotation.WebServlet;
10 import javax.servlet.http.HttpServlet;
11 import javax.servlet.http.HttpServletRequest;
12 import javax.servlet.http.HttpServletResponse;
13 import javax.servlet.http.HttpSession;
14
15 import beans.Student;
16 import dao.StudentDAO;
17
18
19 @WebServlet("/SearchServlet")
20 public class SearchServlet extends HttpServlet {
21     private static final long serialVersionUID = 1L;
22
23     protected void doGet(HttpServletRequest request, HttpServletResponse response) throws ServletException, IOException {
24         // TODO Auto-generated method stub
25         StudentDAO studentDAO = new StudentDAO();
26         request.setCharacterEncoding("gb2312");
27         String sname = request.getParameter("sname");
28         System.out.println(sname);
29         ArrayList<Student> students = studentDAO.fuzzyQuery(sname);
30         HttpSession session = request.getSession();
31         session.setAttribute("students", students);
32         response.sendRedirect("../jsp/search.jsp");
33     }
34
35     protected void doPost(HttpServletRequest request, HttpServletResponse response) throws ServletException, IOException {
36         // TODO Auto-generated method stub
37         doGet(request, response);
38     }
39 }
```

数据库中内容

对象 student @test (mysql) - 表			
sid	sname	sex	
123	张三	0	
124	李四	1	
125	张三三	0	
126	王三	1	

查询结果

search.jsp StudentDAO.java SearchServlet.java 学生模糊查询

http://localhost:8080/myweb/jsp/search.jsp

学生模糊查询

请输入学生姓名: 张

查找

123 张三 女

125 张三三 女

5、简答题

注：实验报告的内容及格式可由学院根据学科专业特点确定；全校各专业必须使用学校统一封面。