山西工程技术学院

**《JavaEE程序设计》实验报告**

（ 2024 - 2025 学年第 学期）

课程名称： Java EE 程序设计

专业班级：22计算机科学与技术一班

学 号： 2210708130

学生姓名： 郝泓毅

任课教师： 王晓霞

2025年 月

实验报告

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 实验名称 | **Java EE开发环境配置** | | | 指导教师 | 王晓霞 |
| 实验类型 | 验证型 | 实验学时 | 2 | 实验时间 |  |
| 1. **实验目的与要求**   了解JAVA虚拟机及JAVA运行环境；安装JDK；安装服务器TOMCAT；安装IDE MyEclipse。 | | | | | |
| **二、实验环境**  多媒体计算机60台。MySQL8.0 | | | | | |
| **三、实验内容和步骤**  1.安装JDK，配置三个环境变量，测试JDK安装是否正确；  2.安装服务器TOMCAT，测试其安装是否正确；  （3）安装 MyEclipse，在MyEclipse中绑定JDK，配置TOMCAT服务器；  （4）练习新建 Java动态项目；  （5）练习JSP文件的运行。 | | | | | |
| 1. **实验小结和思考** | | | | | |
| 实验成绩 |  | 批阅日期 |  | 批阅人 |  |

实验报告

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 实验名称 | **JDBC编程训练** | | | 指导教师 | 王晓霞 |
| 实验类型 | 设计型 | 实验学时 | 4 | 实验时间 |  |
| 1. **实验目的与要求**   通过桥链接数据库，实现对数据的增删改查。  熟练掌握数据库的各种连接方法；  熟练掌握对数据库数据的增、删、改、查。 | | | | | |
| **二、实验环境**  多媒体计算机60台。MySQL8.0 javaweb | | | | | |
| **三、实验内容和步骤**  创建数据库StuManagement,新建表student(sno,sname,ssex,  sage),插入几条记录。创建数据源mytudent，用JDBC-ODBC桥链接，或纯JAVA数据库链接，实现对数据的增、删、改、查。  <%@ page language="java" contentType="text/html; charset=UTF-8" pageEncoding="UTF-8"%>  <%@ page import="java.sql.\*" %>  <!DOCTYPE html>  <html>  <head>      <meta charset="UTF-8">      <title>Student Information Management System</title>      <link rel="stylesheet" href="css/stylesheet.css">      <style>      </style>  </head>  <body>      <h1>Student Information Management System</h1>      <%          Connection con = null;          PreparedStatement pstmt = null;          ResultSet rs = null;          String errorMessage = null;          try {              Class.forName("com.mysql.cj.jdbc.Driver");                // First connect to MySQL server to create database if not exists              con = DriverManager.getConnection("jdbc:mysql://127.0.0.1:3306/?useUnicode=true&characterEncoding=UTF-8&serverTimezone=UTC", "root", "123456");              pstmt = con.prepareStatement("CREATE DATABASE IF NOT EXISTS StuManagement");              pstmt.executeUpdate();                if (pstmt != null) pstmt.close();              if (con != null) con.close();              con = DriverManager.getConnection("jdbc:mysql://127.0.0.1:3306/StuManagement?useUnicode=true&characterEncoding=UTF-8&serverTimezone=UTC", "root", "123456");              // Create student table if not exists              String createTableSQL = "CREATE TABLE IF NOT EXISTS student (" +                      "sno VARCHAR(10) PRIMARY KEY," +                      "sname VARCHAR(50) NOT NULL," +                      "ssex VARCHAR(10) NOT NULL," +                      "sage INT NOT NULL" +                      ")";              pstmt = con.prepareStatement(createTableSQL);              pstmt.executeUpdate();              pstmt.close();              String checkSQL = "SELECT COUNT(\*) FROM student";              pstmt = con.prepareStatement(checkSQL);              rs = pstmt.executeQuery();              rs.next();              int count = rs.getInt(1);              rs.close();              pstmt.close();              if (count == 0) {                  String insertSQL = "INSERT INTO student (sno, sname, ssex, sage) VALUES (?,?,?,?)";                  pstmt = con.prepareStatement(insertSQL);                    pstmt.setString(1, "001");                  pstmt.setString(2, "Zhang San");                  pstmt.setString(3, "Male");                  pstmt.setInt(4, 20);                  pstmt.addBatch();                    pstmt.setString(1, "002");                  pstmt.setString(2, "Li Si");                  pstmt.setString(3, "Female");                  pstmt.setInt(4, 21);                  pstmt.addBatch();                    pstmt.setString(1, "003");                  pstmt.setString(2, "Wang Wu");                  pstmt.setString(3, "Male");                  pstmt.setInt(4, 22);                  pstmt.addBatch();                    pstmt.executeBatch();                  pstmt.close();              }              String action = request.getParameter("action");              if (action != null) {                  if ("add".equals(action)) {                      // Add operation                      String sno = request.getParameter("sno");                      String sname = request.getParameter("sname");                      String ssex = request.getParameter("ssex");                      int sage = Integer.parseInt(request.getParameter("sage"));                        String addSQL = "INSERT INTO student (sno, sname, ssex, sage) VALUES (?,?,?,?)";                      pstmt = con.prepareStatement(addSQL);                      pstmt.setString(1, sno);                      pstmt.setString(2, sname);                      pstmt.setString(3, ssex);                      pstmt.setInt(4, sage);                      pstmt.executeUpdate();                      pstmt.close();                    } else if ("delete".equals(action)) {                      // Delete operation                      String sno = request.getParameter("sno");                      String deleteSQL = "DELETE FROM student WHERE sno = ?";                      pstmt = con.prepareStatement(deleteSQL);                      pstmt.setString(1, sno);                      pstmt.executeUpdate();                      pstmt.close();                    } else if ("update".equals(action)) {                      // Update operation                      String sno = request.getParameter("sno");                      String sname = request.getParameter("sname");                      String ssex = request.getParameter("ssex");                      int sage = Integer.parseInt(request.getParameter("sage"));                        String updateSQL = "UPDATE student SET sname = ?, ssex = ?, sage = ? WHERE sno = ?";                      pstmt = con.prepareStatement(updateSQL);                      pstmt.setString(1, sname);                      pstmt.setString(2, ssex);                      pstmt.setInt(3, sage);                      pstmt.setString(4, sno);                      pstmt.executeUpdate();                      pstmt.close();                  }              }              // Query operation              String selectSQL = "SELECT \* FROM student ORDER BY sno";              pstmt = con.prepareStatement(selectSQL);              rs = pstmt.executeQuery();      %>      <table>          <tr>              <th>Student ID</th>              <th>Name</th>              <th>Gender</th>              <th>Age</th>              <th>Actions</th>          </tr>          <% while (rs.next()) { %>          <tr>              <td><%= rs.getString("sno") %></td>              <td><%= rs.getString("sname") %></td>              <td><%= rs.getString("ssex") %></td>              <td><%= rs.getInt("sage") %></td>              <td>                  <a href="student\_management.jsp?action=delete&sno=<%= rs.getString("sno") %>" onclick="return confirm('Are you sure to delete this student?')">Delete</a>                  <a href="javascript:void(0);" onclick="editStudent('<%= rs.getString("sno") %>', '<%= rs.getString("sname") %>', '<%= rs.getString("ssex") %>', <%= rs.getInt("sage") %>)">Edit</a>              </td>          </tr>          <% } %>      </table>      <form action="student\_management.jsp" method="post">          <input type="hidden" name="action" value="add">          <h2>Add New Student</h2>          <label for="sno">Student ID:</label>          <input type="text" id="sno" name="sno" required><br>          <label for="sname">Name:</label>          <input type="text" id="sname" name="sname" required><br>          <label for="ssex">Gender:</label>          <select id="ssex" name="ssex" required>              <option value="Male">Male</option>              <option value="Female">Female</option>              <option value="Other">Other</option>          </select><br>          <label for="sage">Age:</label>          <input type="number" id="sage" name="sage" min="10" max="50" required><br>          <input type="submit" value="Add Student">      </form>      <script>          function editStudent(sno, sname, ssex, sage) {              var newSname = prompt("Enter new name", sname);              if (newSname === null) return;                var newSsex = prompt("Enter new gender (Male/Female/Other)", ssex);              if (newSsex === null) return;                var newSage = prompt("Enter new age (10-50)", sage);              if (newSage === null) return;                if (newSname && newSsex && newSage) {                  window.location.href = "student\_management.jsp?action=update&sno=" + sno +                                        "&sname=" + encodeURIComponent(newSname) +                                        "&ssex=" + encodeURIComponent(newSsex) +                                        "&sage=" + encodeURIComponent(newSage);              }          }      </script>      <%          } catch (ClassNotFoundException e) {              errorMessage = "Database driver error: " + e.getMessage();          } catch (SQLException e) {              errorMessage = "Database operation error: " + e.getMessage();          } catch (NumberFormatException e) {              errorMessage = "Age must be a number: " + e.getMessage();          } finally {              try {                  if (rs != null) rs.close();                  if (pstmt != null) pstmt.close();                  if (con != null) con.close();              } catch (SQLException e) {                  errorMessage = "Error closing database connection: " + e.getMessage();              }          }          if (errorMessage != null) {              out.println("<p class='error'>Error: " + errorMessage + "</p>");          }      %>  </body>  </html> | | | | | |
| 1. **实验小结和思考** | | | | | |
| 实验成绩 |  | 批阅日期 |  | 批阅人 |  |

实验报告

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 实验名称 | **JSP编程练习** | | | 指导教师 | 王晓霞 |
| 实验类型 | 设计型 | 实验学时 | 4 | 实验时间 |  |
| 1. **实验目的与要求**   会正确编写JSP文件并运行出结果。  编写JSP页面、使用注释、编写表达式、程序段、声明的方法以及常见的指令；  练习表单开发；  练习JSP内置对象的使用。 | | | | | |
| **二、实验环境**  多媒体计算机60台。MySQL8.0 javaweb | | | | | |
| **三、实验内容和步骤**  用application编写投票计数程序；  **Vote.jsp:**  <%@ page language="java" contentType="text/html; charset=UTF-8" pageEncoding="UTF-8"%>  <!DOCTYPE html>  <html>  <head>      <meta charset="UTF-8">      <title>Voting Page</title>  </head>  <body>      <h1>Please select the option you support to vote.</h1>      <form action="countVote.jsp" method="post">          <input type="radio" name="option" value="OptionA"> Option A<br>          <input type="radio" name="option" value="OptionB"> Option B<br>          <input type="radio" name="option" value="OptionC"> Option C<br>          <input type="submit" value="Vote">      </form>  </body>  </html>  **Result.jsp:**  <%@ page language="java" contentType="text/html; charset=UTF-8" pageEncoding="UTF-8"%>  <!DOCTYPE html>  <html>  <head>      <meta charset="UTF-8">      <title>Voting Results</title>  </head>  <body>      <h1>Voting Results</h1>      <%          Integer optionAVotes = (Integer) application.getAttribute("OptionA");          Integer optionBVotes = (Integer) application.getAttribute("OptionB");          Integer optionCVotes = (Integer) application.getAttribute("OptionC");          if (optionAVotes == null) {              optionAVotes = 0;          }          if (optionBVotes == null) {              optionBVotes = 0;          }          if (optionCVotes == null) {              optionCVotes = 0;          }      %>      <p>Votes for Option A: <%= optionAVotes %></p>      <p>Votes for Option B: <%= optionBVotes %></p>      <p>Votes for Option C: <%= optionCVotes %></p>      <a href="vote.jsp">Back to the voting page</a>  </body>  </html>  **countVote.jsp:**  <%@ page language="java" contentType="text/html; charset=UTF-8" pageEncoding="UTF-8"%>  <!DOCTYPE html>  <html>  <head>      <meta charset="UTF-8">      <title>Vote Processing</title>  </head>  <body>      <%          String selectedOption = request.getParameter("option");          if (selectedOption != null) {              Integer voteCount = (Integer) application.getAttribute(selectedOption);              if (voteCount == null) {                  voteCount = 0;              }              voteCount++;              application.setAttribute(selectedOption, voteCount);              out.println("You have successfully voted for " + selectedOption + "!");          } else {              out.println("Please select an option to vote!");          }      %>      <br>      <a href="vote.jsp">Back to the voting page</a>      <a href="result.jsp">View the voting results</a>  </body>  </html>  **用session开发购物车。**  **Count.jsp**  <%@ page language="java" import="java.util.\*" pageEncoding="UTF-8"%>  <!DOCTYPE html>  <html lang="en">  <head>      <meta charset="UTF-8">      <meta name="viewport" content="width=device-width, initial-scale=1.0">      <title>count.jsp</title>  </head>  <body>      This is the checkout counter. Please confirm the following information.      <p>          <%              String no = (String) session.getAttribute("no");              out.println("Your membership card number is: " + no);              Enumeration<String> enumGoods = session.getAttributeNames();              out.println("<br>List of goods in the shopping cart: <br>");              while (enumGoods.hasMoreElements()) {                  String key = enumGoods.nextElement();                  String good = (String) session.getAttribute(key);                  if (!(good.equals(no))) {                      out.println("&nbsp;&nbsp;" + good + "<br>");                      session.removeAttribute(key);                  }              }          %>      </p>  </body>  </html>  **Food.jsp**  <%@ page language="java" import="java.util.\*" pageEncoding="UTF-8" session="true"%>  <!DOCTYPE html>  <html>  <head>      <meta charset="UTF-8">      <title>food.jsp</title>  </head>  <body>      <form action="" method="post" name="form">          This is the seasoning counter. Please select the goods you want to purchase:          <br/>          <input type="checkbox" name="food" value="Harmonized Oil">          Harmonized Oil          <input type="checkbox" name="food" value="Fortified Salt">          Fortified Salt          <input type="checkbox" name="food" value="Multivitamin Vinegar">          Multivitamin Vinegar          <input type="checkbox" name="food" value="Green Seasoning">          Green Seasoning          <br/>          <input type="submit" name="submit" value="Shop">          <p>              <a href="LoginID.jsp">Welcome to modify the membership card number</a>              <a href="count.jsp">Welcome to check the shopping cart!</a>          </p>          <%              request.setCharacterEncoding("utf-8");              String goods[] = request.getParameterValues("food");              if (goods != null && goods.length != 0) {                  for (int i = 0; i < goods.length; i++) {                      session.setAttribute(goods[i], goods[i]);                  }              }          %>      </form>  </body>  </html>  **LoginID.jsp:**  <%@ page language="java" import="java.util.\*" pageEncoding="gb2312"%>  <!DOCTYPE html>  <html>      <head>          <meta charset="UTF-8">          <title>LoginID.jsp</title>      </head>      <body>          <form action="shop.jsp" method="post">              Welcome to the supermarket. Please enter your membership card number:<br>              <input type="text" name = "no">              <input type="submit" value="Submit" name="submit">          </form>      </body>  </html>  **Shop.jsp:**  <%@ page language="java" import="java.util.\*" pageEncoding="UTF-8"%>  <html>  <head>      <meta charset="UTF-8">      <title>shop.jsp</title>  </head>  <body>      <%      String no = request.getParameter("no");      if(no == null){          no = "";      } else{          session.setAttribute("no", no);      }%>      <a href="food.jsp">This is the seasoning counter. Welcome to make your purchase.</a><br>      <a href="LoginID.jsp">Welcome to modify the membership card number.</a>  </body>  </html>          Countvote.jsp  <%@ page language="java" contentType="text/html; charset=UTF-8" pageEncoding="UTF-8"%>  <!DOCTYPE html>  <html>  <head>      <meta charset="UTF-8">      <title>Vote Processing</title>  </head>  <body>      <%          String selectedOption = request.getParameter("option");          if (selectedOption != null) {              Integer voteCount = (Integer) application.getAttribute(selectedOption);              if (voteCount == null) {                  voteCount = 0;              }              voteCount++;              application.setAttribute(selectedOption, voteCount);              out.println("You have successfully voted for " + selectedOption + "!");          } else {              out.println("Please select an option to vote!");          }      %>      <br>      <a href="vote.jsp">Back to the voting page</a>      <a href="result.jsp">View the voting results</a>  </body>  </html>  Resule.jsp  <%@ page language="java" contentType="text/html; charset=UTF-8" pageEncoding="UTF-8"%>  <!DOCTYPE html>  <html>  <head>      <meta charset="UTF-8">      <title>Voting Results</title>  </head>  <body>      <h1>Voting Results</h1>      <%          Integer optionAVotes = (Integer) application.getAttribute("OptionA");          Integer optionBVotes = (Integer) application.getAttribute("OptionB");          Integer optionCVotes = (Integer) application.getAttribute("OptionC");          if (optionAVotes == null) {              optionAVotes = 0;          }          if (optionBVotes == null) {              optionBVotes = 0;          }          if (optionCVotes == null) {              optionCVotes = 0;          }      %>      <p>Votes for Option A: <%= optionAVotes %></p>      <p>Votes for Option B: <%= optionBVotes %></p>      <p>Votes for Option C: <%= optionCVotes %></p>      <a href="vote.jsp">Back to the voting page</a>  </body>  </html>  Vote.jsp  <%@ page language="java" contentType="text/html; charset=UTF-8" pageEncoding="UTF-8"%>  <!DOCTYPE html>  <html>  <head>      <meta charset="UTF-8">      <title>Voting Page</title>  </head>  <body>      <h1>Please select the option you support to vote.</h1>      <form action="countVote.jsp" method="post">          <input type="radio" name="option" value="OptionA"> Option A<br>          <input type="radio" name="option" value="OptionB"> Option B<br>          <input type="radio" name="option" value="OptionC"> Option C<br>          <input type="submit" value="Vote">      </form>  </body>  </html> | | | | | |
| 1. **实验小结和思考** | | | | | |
| 实验成绩 |  | 批阅日期 |  | 批阅人 |  |

实验报告

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 实验名称 | **练习使用JavaBean** | | | 指导教师 | 王晓霞 |
| 实验类型 | 设计型 | 实验学时 | 4 | 实验时间 |  |
| 1. **实验目的与要求**   练习在JSP中使用JavaBean。 | | | | | |
| **二、实验环境**  多媒体计算机60台。MySQL8.0 javaweb | | | | | |
| **三、实验内容和步骤**  编程实现学生JavaBean。  Index.jsp  <%@ page language="java" contentType="text/html; charset=UTF-8" pageEncoding="UTF-8"%>  <%@ page import="com.example.Student" %>  <!DOCTYPE html>  <html>  <head>      <meta charset="UTF-8">      <title>学生信息</title>  </head>  <body>      <jsp:useBean id="student" class="com.example.Student" scope="request">          <jsp:setProperty name="student" property="id" value="001" />          <jsp:setProperty name="student" property="name" value="张三" />          <jsp:setProperty name="student" property="age" value="20" />      </jsp:useBean>      <h2>学生信息</h2>      <p>学号: <jsp:getProperty name="student" property="id" /></p>      <p>姓名: <jsp:getProperty name="student" property="name" /></p>      <p>年龄: <jsp:getProperty name="student" property="age" /></p>  </body>  </html>  Student.java  package com.example;  public class Student {      private String id;      private String name;      private int age;      public Student() {      }      public Student(String id, String name, int age) {          this.id = id;          this.name = name;          this.age = age;      }      public String getId() {          return id;      }      public void setId(String id) {          this.id = id;      }      public String getName() {          return name;      }      public void setName(String name) {          this.name = name;      }      public int getAge() {          return age;      }      public void setAge(int age) {          this.age = age;      }  } | | | | | |
| 1. **实验小结和思考** | | | | | |
| 实验成绩 |  | 批阅日期 |  | 批阅人 |  |

实验报告

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 实验名称 | **Servlet的使用** | | | 指导教师 | 王晓霞 |
| 实验类型 | 设计型 | 实验学时 | 4 | 实验时间 |  |
| 1. **实验目的与要求**   学会Servlet的开发方法、Servlet的生命周期以及在Servlet中如何使用JSP页面中常用的内置对象等内容。 | | | | | |
| **二、实验环境**  多媒体计算机60台。MySQL8.0 javaweb | | | | | |
| 三、实验内容和步骤  练习Servlet的开发方法。  Index.jsp  <%@ page language="java" contentType="text/html; charset=UTF-8" pageEncoding="UTF-8"%>  <!DOCTYPE html>  <html>  <head>      <meta charset="UTF-8">      <title>欢迎页面</title>  </head>  <body>      <h1>欢迎使用 Servlet 示例</h1>      <form action="hello" method="get">          <label for="name">请输入你的名字：</label>          <input type="text" id="name" name="name">          <input type="submit" value="提交">      </form>  </body>  </html>  HelloServlet.java  package com.example;  import jakarta.servlet.ServletException;  import jakarta.servlet.annotation.WebServlet;  import jakarta.servlet.http.HttpServlet;  import jakarta.servlet.http.HttpServletRequest;  import jakarta.servlet.http.HttpServletResponse;  import java.io.IOException;  import java.io.PrintWriter;  @WebServlet("/hello")  public class HelloServlet extends HttpServlet {      @Override      public void init() throws ServletException {          super.init();          System.out.println("HelloServlet 初始化");      }      @Override      protected void doGet(HttpServletRequest request, HttpServletResponse response) throws ServletException, IOException {          response.setContentType("text/html;charset=UTF-8");          PrintWriter out = response.getWriter();          try {              out.println("<html>");              out.println("<head><title>Hello Servlet</title></head>");              out.println("<body>");              out.println("<h1>Hello, Servlet!</h1>");              String name = request.getParameter("name");              if (name != null && !name.isEmpty()) {                  out.println("<p>你好, " + name + "!</p>");              }              out.println("</body>");              out.println("</html>");          } finally {              out.close();          }      }      @Override      protected void doPost(HttpServletRequest request, HttpServletResponse response) throws ServletException, IOException {          doGet(request, response);      }      @Override      public void destroy() {          super.destroy();          System.out.println("HelloServlet 销毁");      }  } | | | | | |
| 1. **实验小结和思考** | | | | | |
| 实验成绩 |  | 批阅日期 |  | 批阅人 |  |

实验报告

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 实验名称 | **SSH项目训练** | | | 指导教师 | 王晓霞 |
| 实验类型 | 设计型 | 实验学时 | 4 | 实验时间 |  |
| 1. **实验目的与要求**   学会用SSH进行项目开发。 | | | | | |
| **二、实验环境**  多媒体计算机60台。MySQL8.0 javaweb | | | | | |
| **三、实验内容和步骤**  使用Struts、Spring、Hibernate进行综合项目开发。 | | | | | |
| 1. **实验小结和思考** | | | | | |
| 实验成绩 |  | 批阅日期 |  | 批阅人 |  |