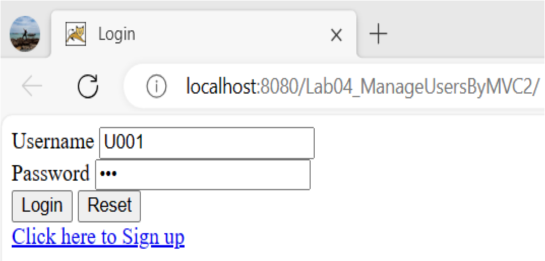
Building an Java Web Application

Using MVC2 & JSP

Requirements

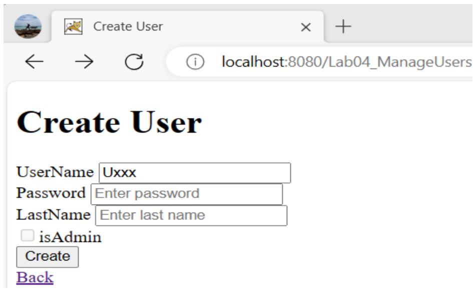
Create an Java web application (using HTML, Servlets , JSP and JDBC) by MVC2 Model to perform functions as manage users.



Username U001

Password •••

Click here to Sign up



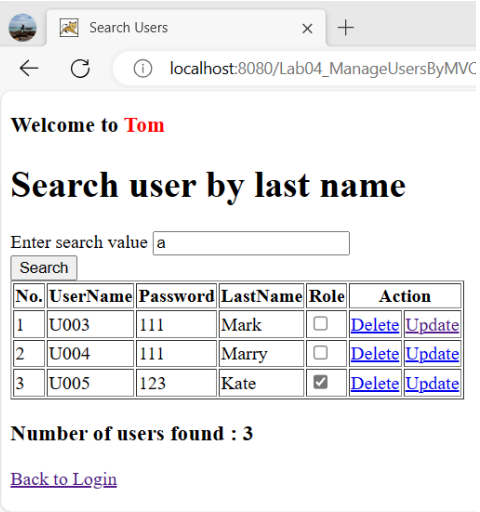
Create User

UserName Uxxx

Password Enter password

LastName Enter last name

□ isAdmin



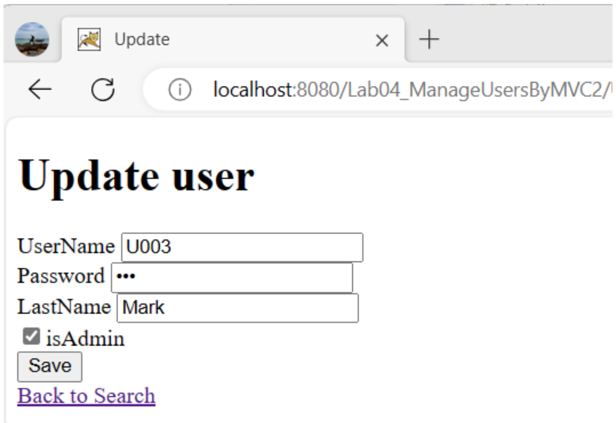
Welcome to Tom

Search user by last name

Enter search value a

No.	UserName	Password	LastName	Role	Action	
1	U003	111	Mark	□	Delete	Update
2	U004	111	Marry	□	Delete	Update
3	U005	123	Kate	☑	Delete	Update

Number of users found : 3



Update user

UserName U003

Password •••

LastName Mark

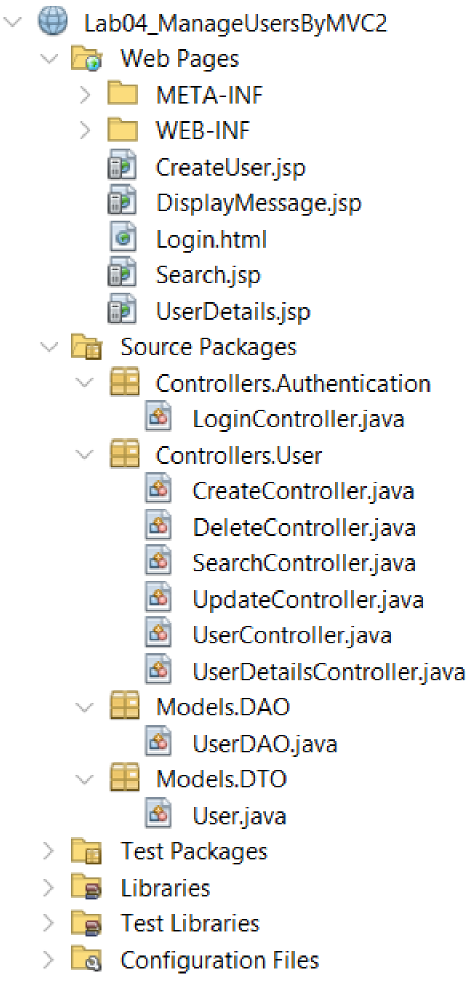
☑ isAdmin

Lab Objectives

In this lab, you will be:

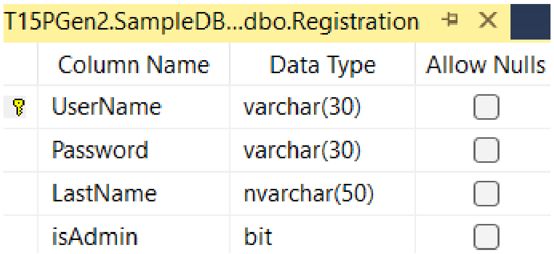
- Create Java web project by MVC2 Model
- Create the web pages by HTML, and JSP (Views)
- Apply passing data from HTML to Servlet by GET and POST method
- Apply RequestDispatcher to pass data between Servlets (Controllers)
- Performs CRUD functions by SqlJDBC driver and SQL Server (Models)
- Run the project and test the functions of the project

Step 01. Create a Java Web App named **Lab04_ManageUsersByMVC2** is structured as follows:



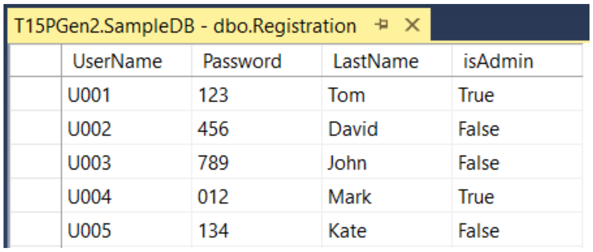
```
Lab04_ManageUsersByMVC2
    Web Pages
        META-INF
        WEB-INF
        CreateUser.jsp
        DisplayMessage.jsp
        Login.html
        Search.jsp
        UserDetails.jsp
    Source Packages
        Controllers.Authentication
            LoginController.java
        Controllers.User
            CreateController.java
            DeleteController.java
            SearchController.java
            UpdateController.java
            UserController.java
            UserDetailsController.java
        Models.DAO
            UserDAO.java
        Models.DTO
            User.java
    Test Packages
    Libraries
    Test Libraries
    Configuration Files
```

-Open SQL Server Management Studio and create a database named **SampleDB** has a table named **Registration** as follows:



T15PGen2.SampleDB...dbo.Registration

Column Name	Data Type	Allow Nulls
UserName	varchar(30)	□
Password	varchar(30)	□
LastName	nvarchar(50)	□
isAdmin	bit	□



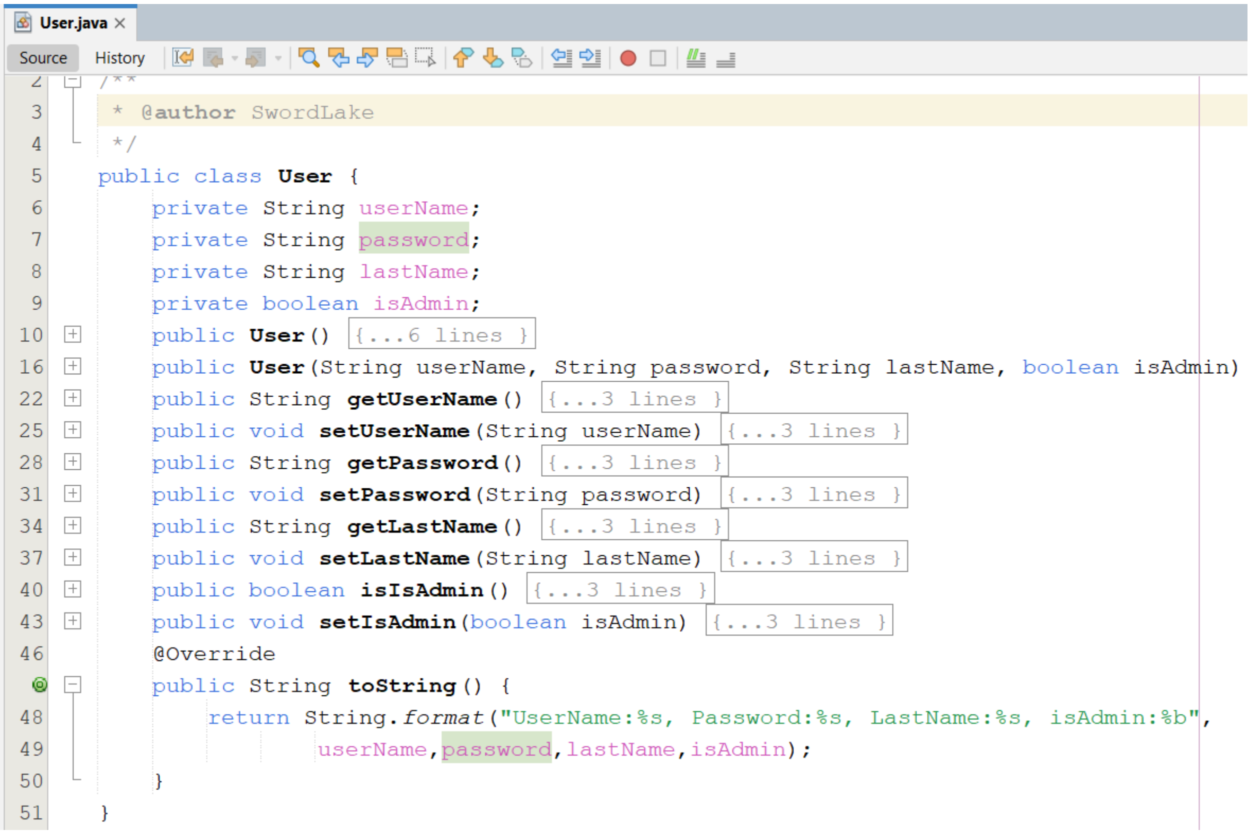
T15PGen2.SampleDB - dbo.Registration

UserName	Password	LastName	isAdmin
U001	123	Tom	True
U002	456	David	False
U003	789	John	False
U004	012	Mark	True
U005	134	Kate	False

Step 02. Write codes for the classes in the **Models.DTO and Models.DAO** packages as the follows:

2.1. **Models.DTO** package

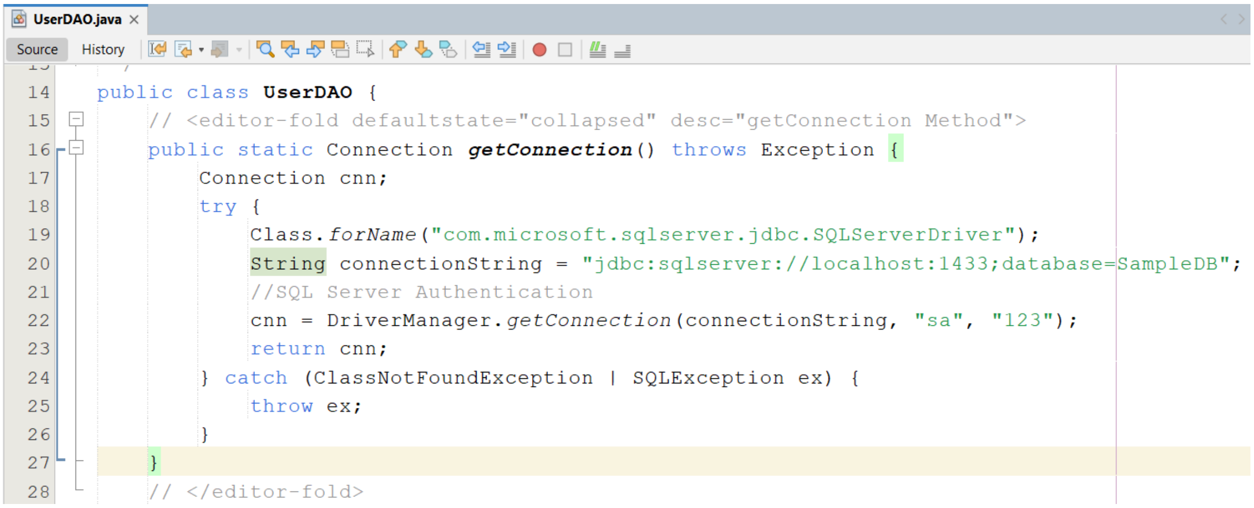
- **User.java**



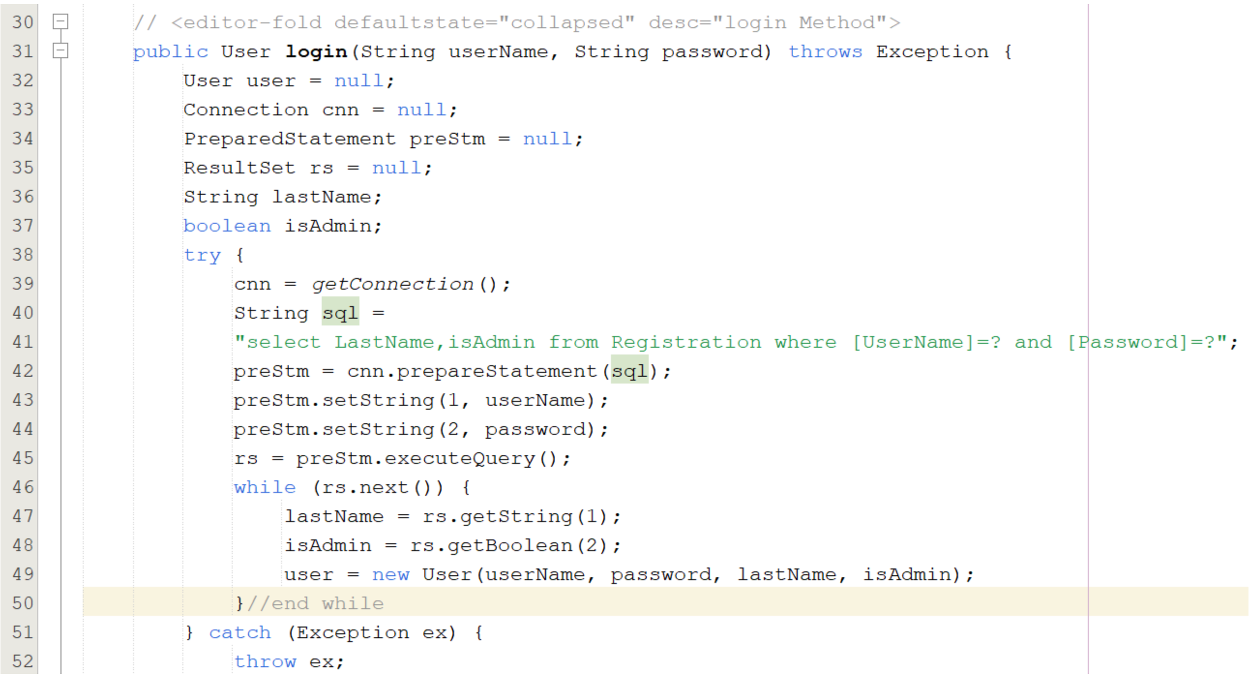
```
/**
 * @author SwordLake
 */
public class User {
    private String userName;
    private String password;
    private String lastName;
    private boolean isAdmin;
    public User() {...6 lines }
    public User(String userName, String password, String lastName, boolean isAdmin)
    public String getUserName() {...3 lines }
    public void setUserName(String userName) {...3 lines }
    public String getPassword() {...3 lines }
    public void setPassword(String password) {...3 lines }
    public String getLastName() {...3 lines }
    public void setLastName(String lastName) {...3 lines }
    public boolean isIsAdmin() {...3 lines }
    public void setIsAdmin(boolean isAdmin) {...3 lines }
    @Override
    public String toString() {
        return String.format("UserName:%s, Password:%s, LastName:%s, isAdmin:%b",
                userName,password,lastName,isAdmin);
    }
}
```

2.2. **Models.DAO** package

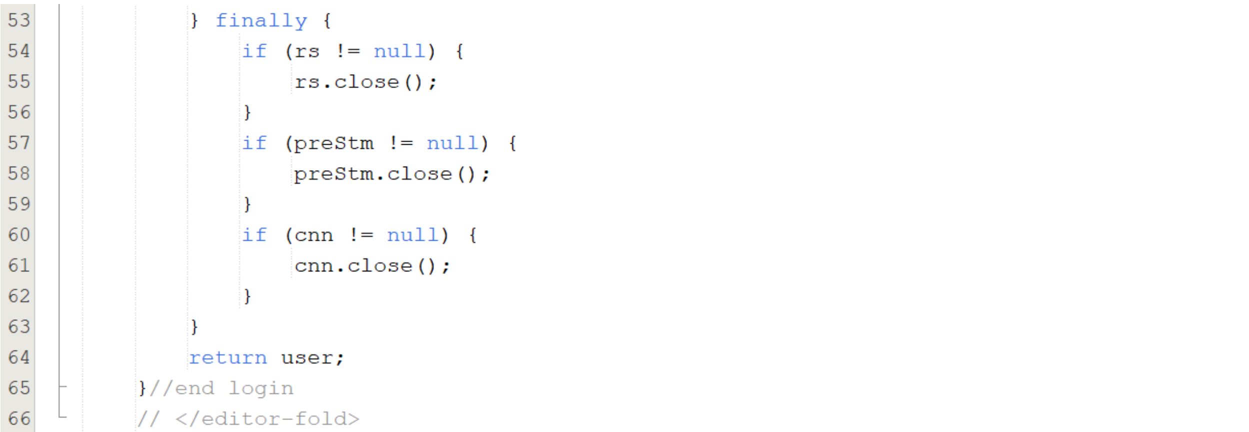
- **UserDAO.java**



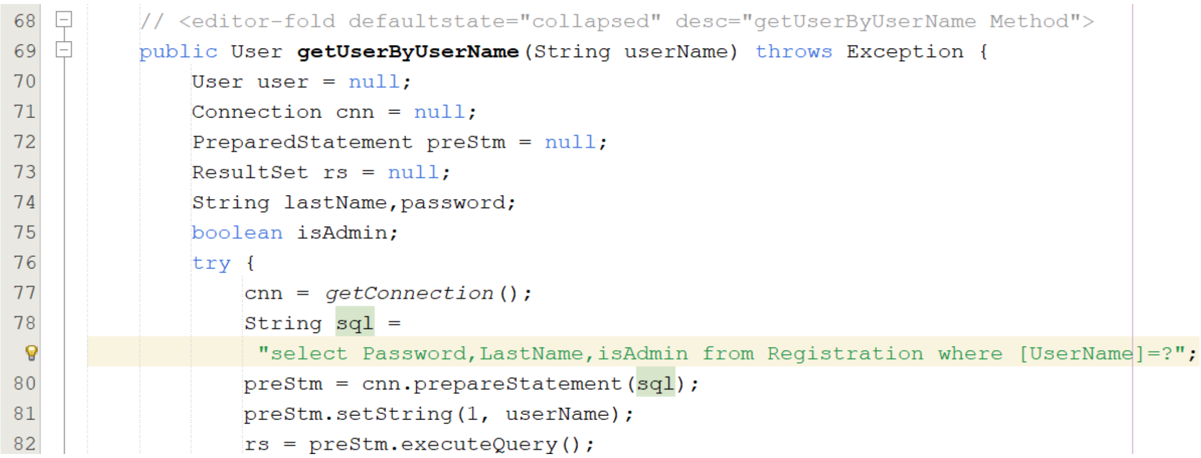
```
public class UserDAO {
    // <editor-fold defaultstate="collapsed" desc="getConnection Method">
    public static Connection getConnection() throws Exception {
        Connection cnn;
        try {
            Class.forName("com.microsoft.sqlserver.jdbc.SQLServerDriver");
            String connectionString = "jdbc:sqlserver://localhost:1433;database=SampleDB";
            //SQL Server Authentication
            cnn = DriverManager.getConnection(connectionString, "sa", "123");
            return cnn;
        } catch (ClassNotFoundException | SQLException ex) {
            throw ex;
        }
    }
    // </editor-fold>
```



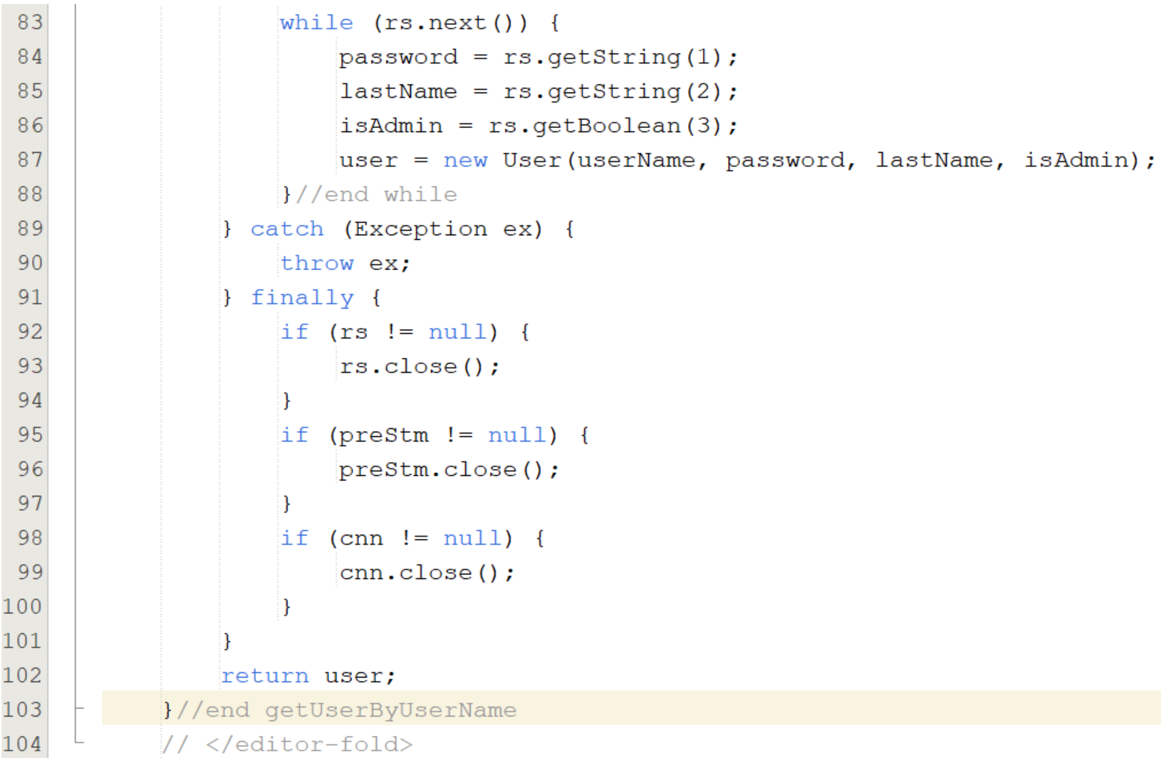
```
// <editor-fold defaultstate="collapsed" desc="login Method">
public User login(String userName, String password) throws Exception {
    User user = null;
    Connection cnn = null;
    PreparedStatement preStm = null;
    ResultSet rs = null;
    String lastName;
    boolean isAdmin;
    try {
        cnn = getConnection();
        String sql =
        "select LastName,isAdmin from Registration where [UserName]=? and [Password]=?";
        preStm = cnn.prepareStatement(sql);
        preStm.setString(1, userName);
        preStm.setString(2, password);
        rs = preStm.executeQuery();
        while (rs.next()) {
            lastName = rs.getString(1);
            isAdmin = rs.getBoolean(2);
            user = new User(userName, password, lastName, isAdmin);
        }//end while
    } catch (Exception ex) {
        throw ex;
```



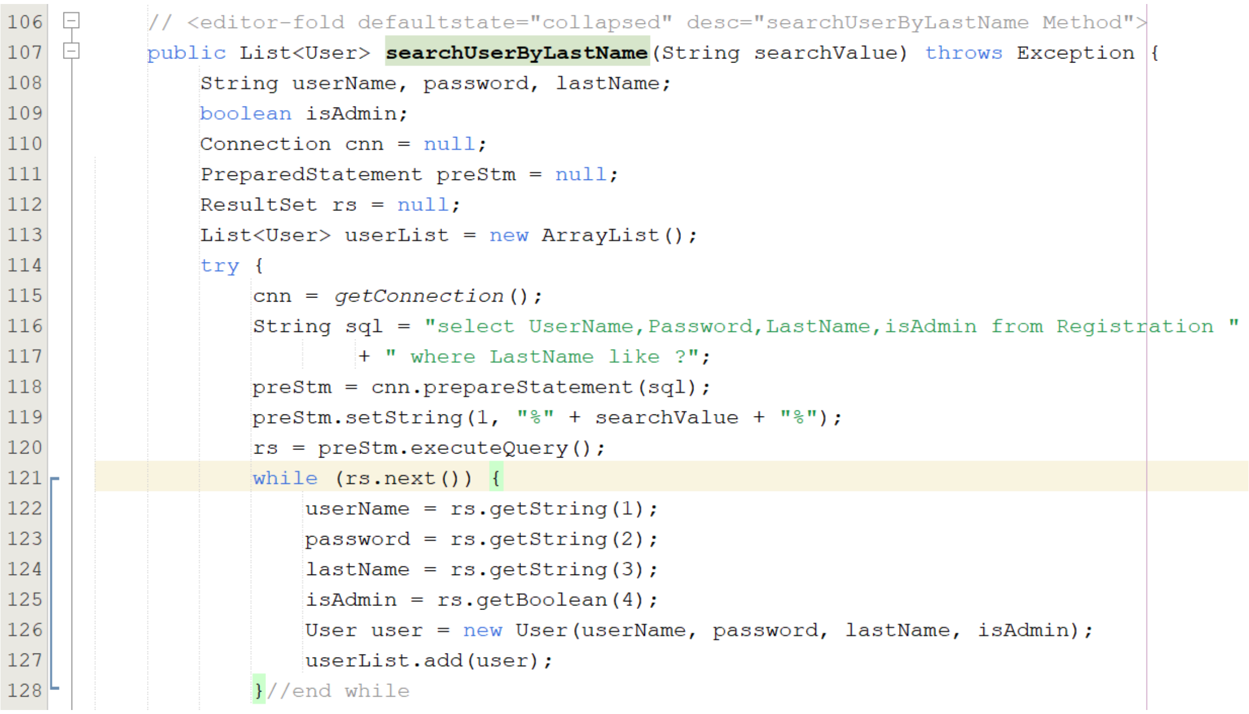
```
    } finally {
        if (rs != null) {
            rs.close();
        }
        if (preStm != null) {
            preStm.close();
        }
        if (cnn != null) {
            cnn.close();
        }
    }
    return user;
}//end login
// </editor-fold>
```



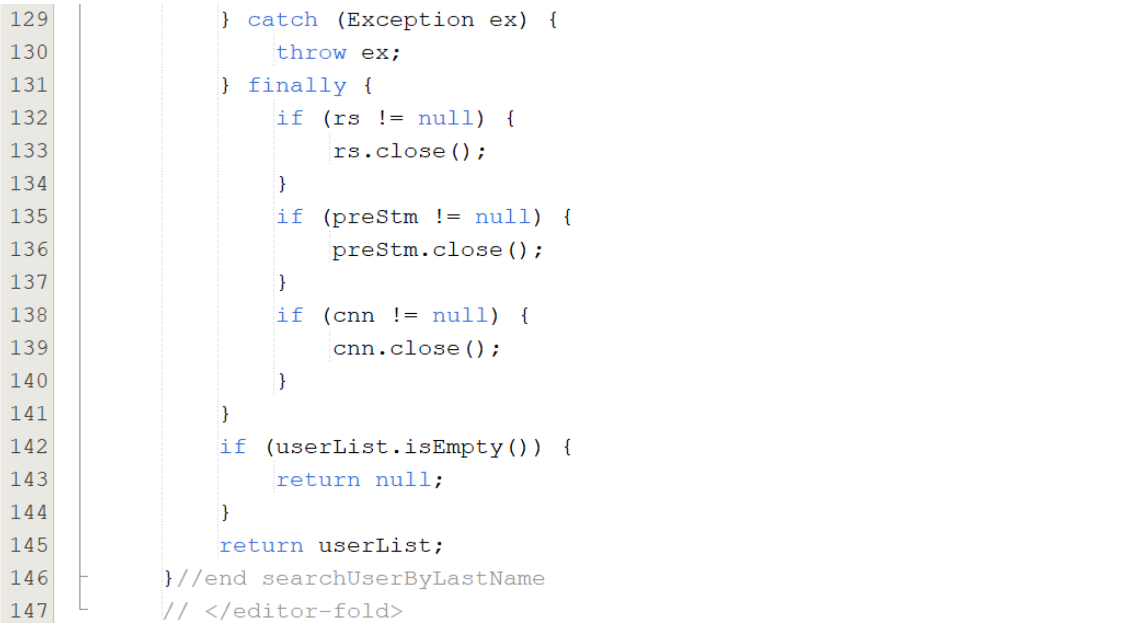
```
// <editor-fold defaultstate="collapsed" desc="getUserByUserName Method">
public User getUserByUserName(String userName) throws Exception {
    User user = null;
    Connection cnn = null;
    PreparedStatement preStm = null;
    ResultSet rs = null;
    String lastName,password;
    boolean isAdmin;
    try {
        cnn = getConnection();
        String sql =
         "select Password,LastName,isAdmin from Registration where [UserName]=?";
        preStm = cnn.prepareStatement(sql);
        preStm.setString(1, userName);
        rs = preStm.executeQuery();
```



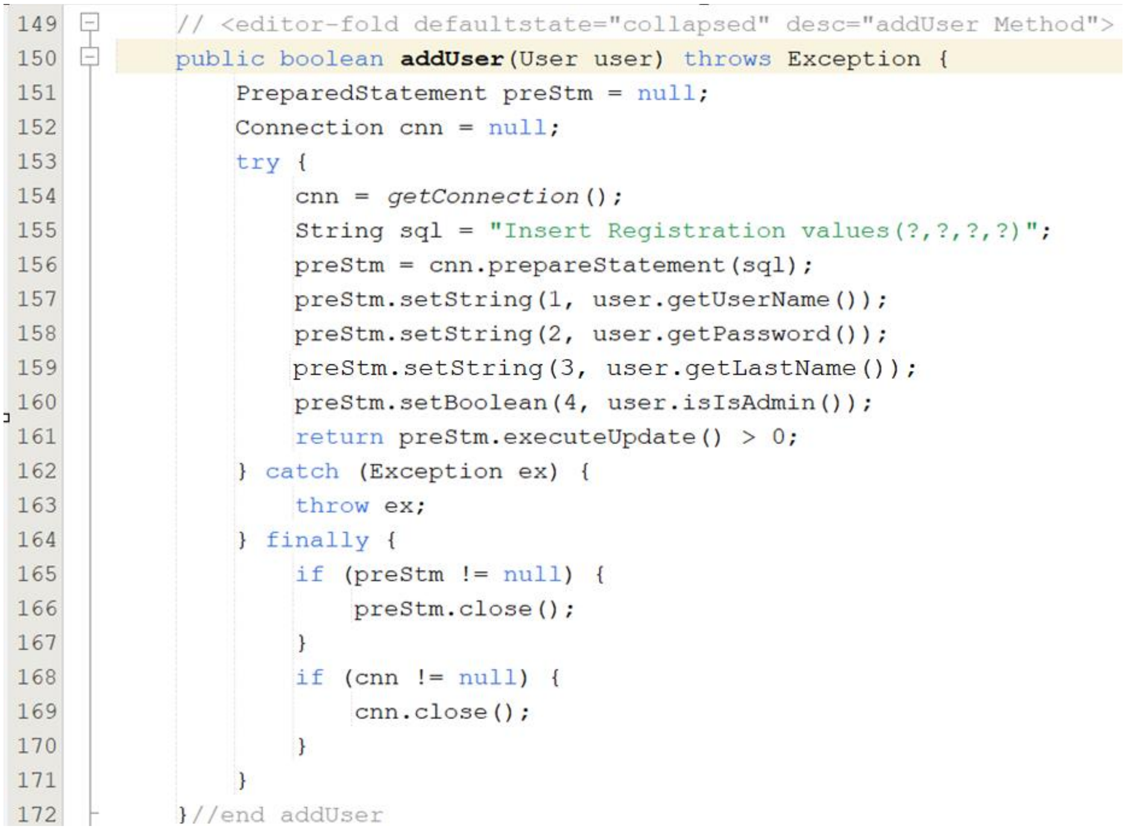
```
                while (rs.next()) {
                    password = rs.getString(1);
                    lastName = rs.getString(2);
                    isAdmin = rs.getBoolean(3);
                    user = new User(userName, password, lastName, isAdmin);
                }//end while
            } catch (Exception ex) {
                throw ex;
            } finally {
                if (rs != null) {
                    rs.close();
                }
                if (preStm != null) {
                    preStm.close();
                }
                if (cnn != null) {
                    cnn.close();
                }
            }
            return user;
        }//end getUserByUserName
        // </editor-fold>
```



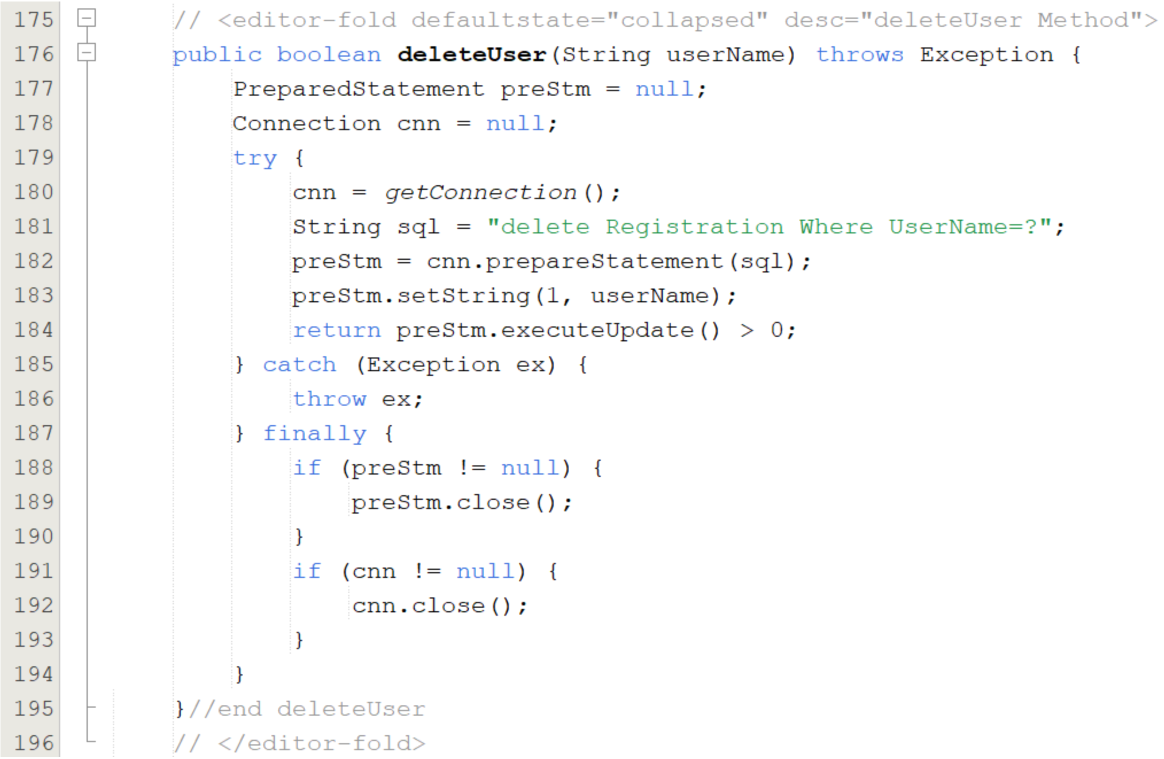
```
    // <editor-fold defaultstate="collapsed" desc="searchUserByLastName Method">
    public List<User> searchUserByLastName(String searchValue) throws Exception {
        String userName, password, lastName;
        boolean isAdmin;
        Connection cnn = null;
        PreparedStatement preStm = null;
        ResultSet rs = null;
        List<User> userList = new ArrayList();
        try {
            cnn = getConnection();
            String sql = "select UserName,Password,LastName,isAdmin from Registration "
                    + " where LastName like ?";
            preStm = cnn.prepareStatement(sql);
            preStm.setString(1, "%" + searchValue + "%");
            rs = preStm.executeQuery();
            while (rs.next()) {
                userName = rs.getString(1);
                password = rs.getString(2);
                lastName = rs.getString(3);
                isAdmin = rs.getBoolean(4);
                User user = new User(userName, password, lastName, isAdmin);
                userList.add(user);
            }//end while
```



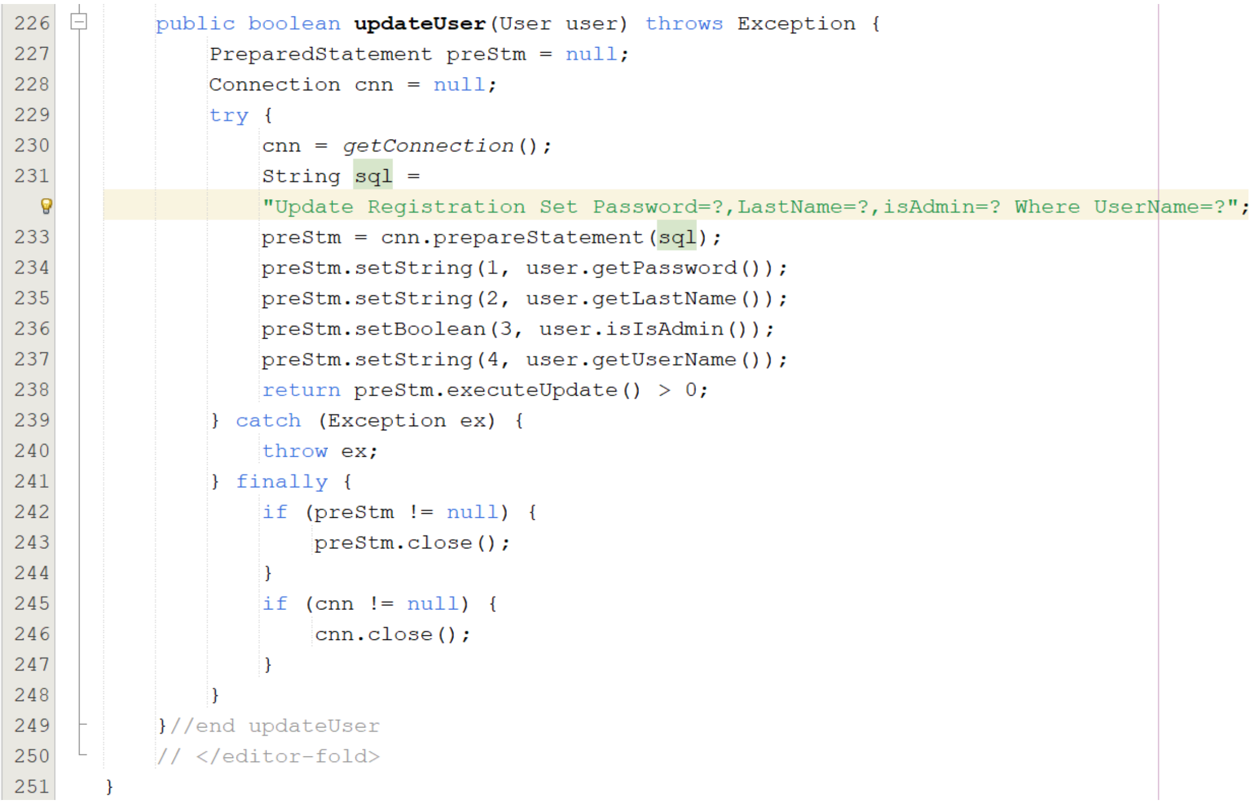
```
        } catch (Exception ex) {
            throw ex;
        } finally {
            if (rs != null) {
                rs.close();
            }
            if (preStm != null) {
                preStm.close();
            }
            if (cnn != null) {
                cnn.close();
            }
        }
        if (userList.isEmpty()) {
            return null;
        }
        return userList;
    }//end searchUserByLastName
    // </editor-fold>
```



```
    // <editor-fold defaultstate="collapsed" desc="addUser Method">
    public boolean addUser(User user) throws Exception {
        PreparedStatement preStm = null;
        Connection cnn = null;
        try {
            cnn = getConnection();
            String sql = "Insert Registration values(?,?,?,?)";
            preStm = cnn.prepareStatement(sql);
            preStm.setString(1, user.getUserName());
            preStm.setString(2, user.getPassword());
            preStm.setString(3, user.getLastName());
            preStm.setBoolean(4, user.isIsAdmin());
            return preStm.executeUpdate() > 0;
        } catch (Exception ex) {
            throw ex;
        } finally {
            if (preStm != null) {
                preStm.close();
            }
            if (cnn != null) {
                cnn.close();
            }
        }
    }//end addUser
```



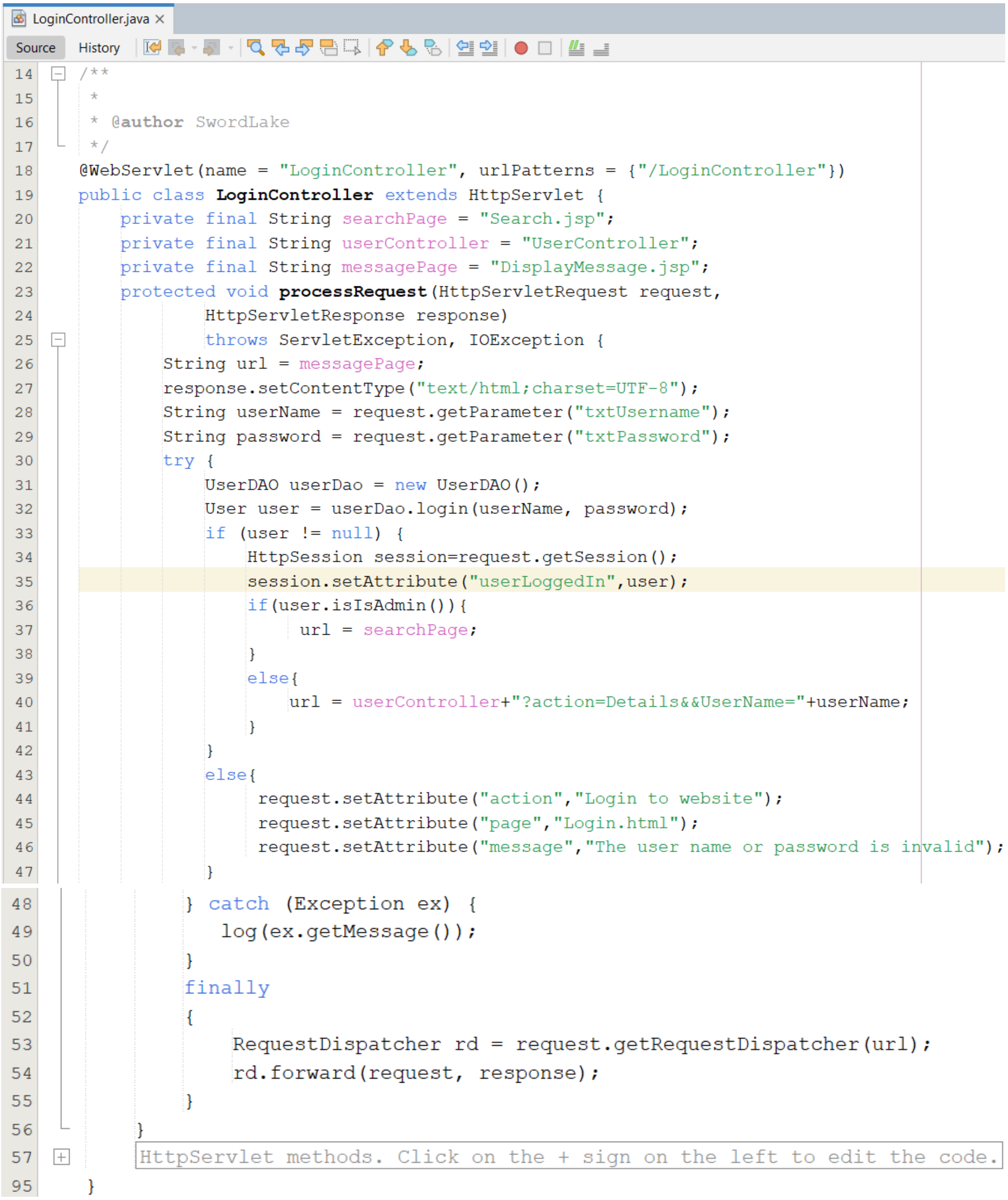
```
    // <editor-fold defaultstate="collapsed" desc="deleteUser Method">
    public boolean deleteUser(String userName) throws Exception {
        PreparedStatement preStm = null;
        Connection cnn = null;
        try {
            cnn = getConnection();
            String sql = "delete Registration Where UserName=?";
            preStm = cnn.prepareStatement(sql);
            preStm.setString(1, userName);
            return preStm.executeUpdate() > 0;
        } catch (Exception ex) {
            throw ex;
        } finally {
            if (preStm != null) {
                preStm.close();
            }
            if (cnn != null) {
                cnn.close();
            }
        }
    }//end deleteUser
    // </editor-fold>
```



```
    public boolean updateUser(User user) throws Exception {
        PreparedStatement preStm = null;
        Connection cnn = null;
        try {
            cnn = getConnection();
            String sql =
            "Update Registration Set Password=?,LastName=?,isAdmin=? Where UserName=?";
            preStm = cnn.prepareStatement(sql);
            preStm.setString(1, user.getPassword());
            preStm.setString(2, user.getLastName());
            preStm.setBoolean(3, user.isIsAdmin());
            preStm.setString(4, user.getUserName());
            return preStm.executeUpdate() > 0;
        } catch (Exception ex) {
            throw ex;
        } finally {
            if (preStm != null) {
                preStm.close();
            }
            if (cnn != null) {
                cnn.close();
            }
        }
    }//end updateUser
    // </editor-fold>
}
```

Step 03. Write codes for the classes in the **Controllers.Authentication** package as the follows:

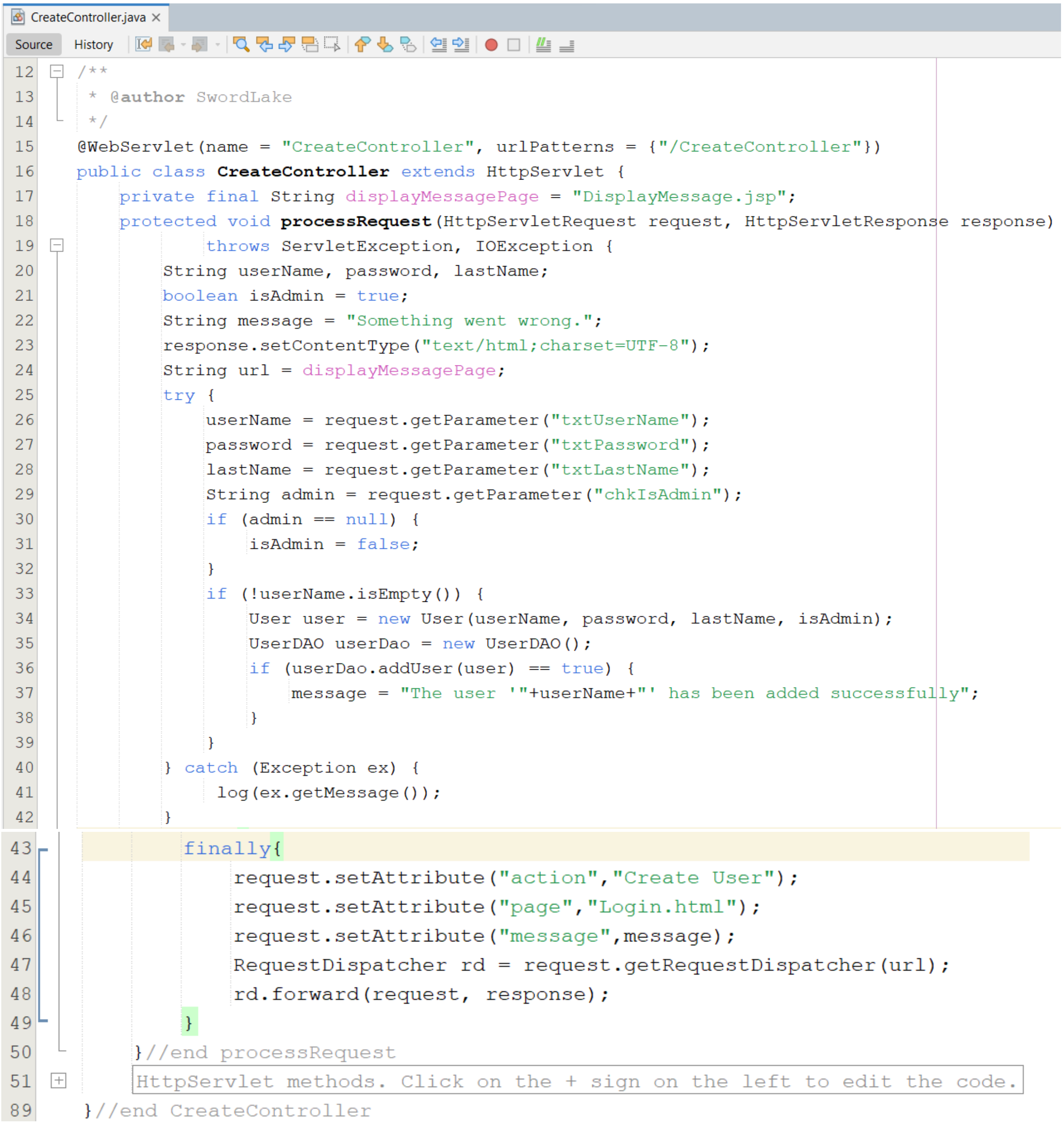
- **LoginController.java**



```
/**
 *
 * @author SwordLake
 */
@WebServlet(name = "LoginController", urlPatterns = {"/LoginController"})
public class LoginController extends HttpServlet {
    private final String searchPage = "Search.jsp";
    private final String userController = "UserController";
    private final String messagePage = "DisplayMessage.jsp";
    protected void processRequest(HttpServletRequest request,
            HttpServletResponse response)
            throws ServletException, IOException {
        String url = messagePage;
        response.setContentType("text/html;charset=UTF-8");
        String userName = request.getParameter("txtUsername");
        String password = request.getParameter("txtPassword");
        try {
            UserDAO userDao = new UserDAO();
            User user = userDao.login(userName, password);
            if (user != null) {
                HttpSession session=request.getSession();
                session.setAttribute("userLoggedIn",user);
                if(user.isIsAdmin()){
                     url = searchPage;
                }
                else{
                    url = userController+"?action=Details&&UserName="+userName;
                }
            }
            else{
                 request.setAttribute("action","Login to website");
                 request.setAttribute("page","Login.html");
                 request.setAttribute("message","The user name or password is invalid");
            }
        } catch (Exception ex) {
            log(ex.getMessage());
        }
        finally
        {
            RequestDispatcher rd = request.getRequestDispatcher(url);
            rd.forward(request, response);
        }
    }
    HttpServlet methods. Click on the + sign on the left to edit the code.
}
```

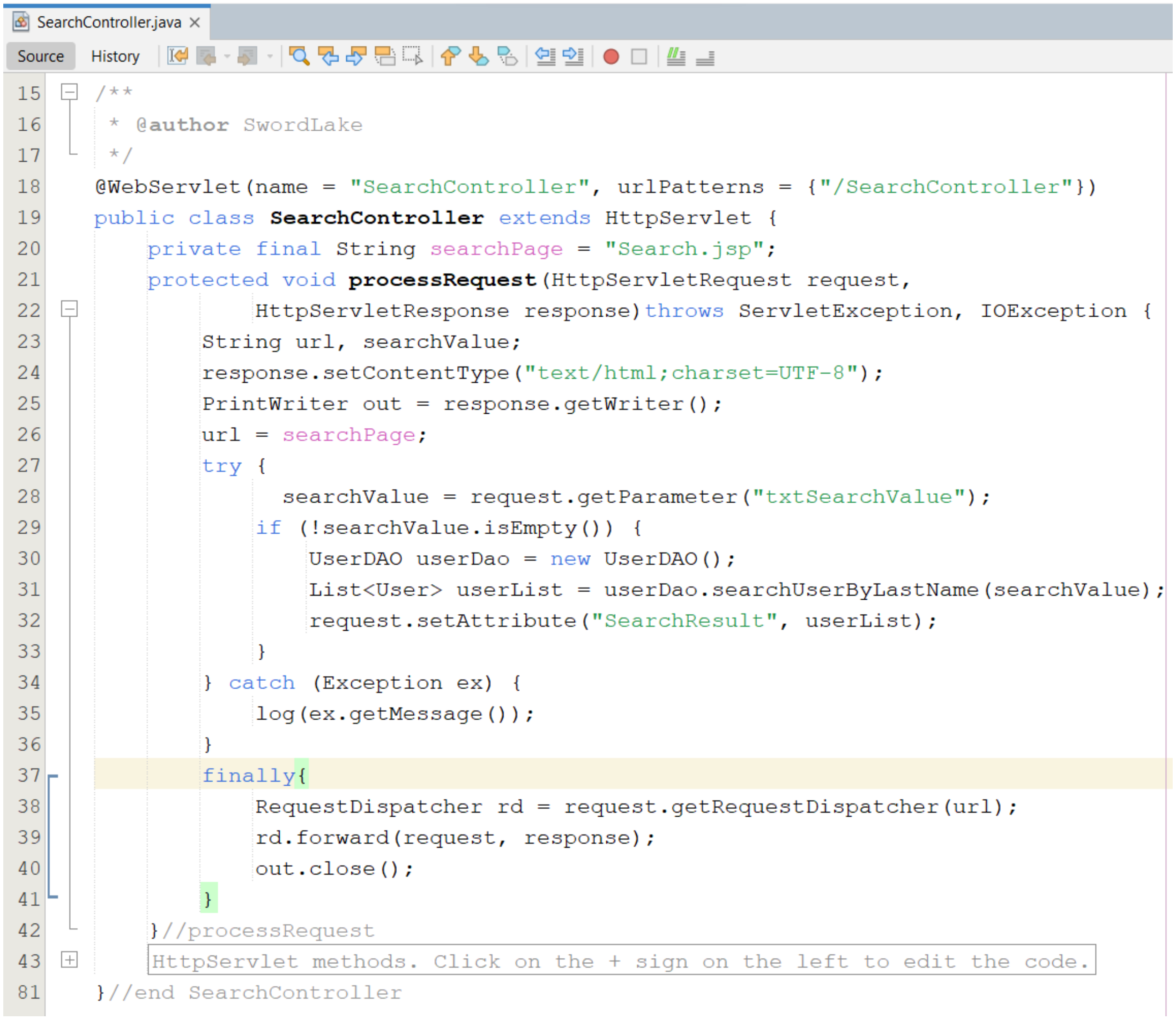
Step 04. Write codes for the classes in the **Controllers.User** package as the follows:

- **CreateController.java**



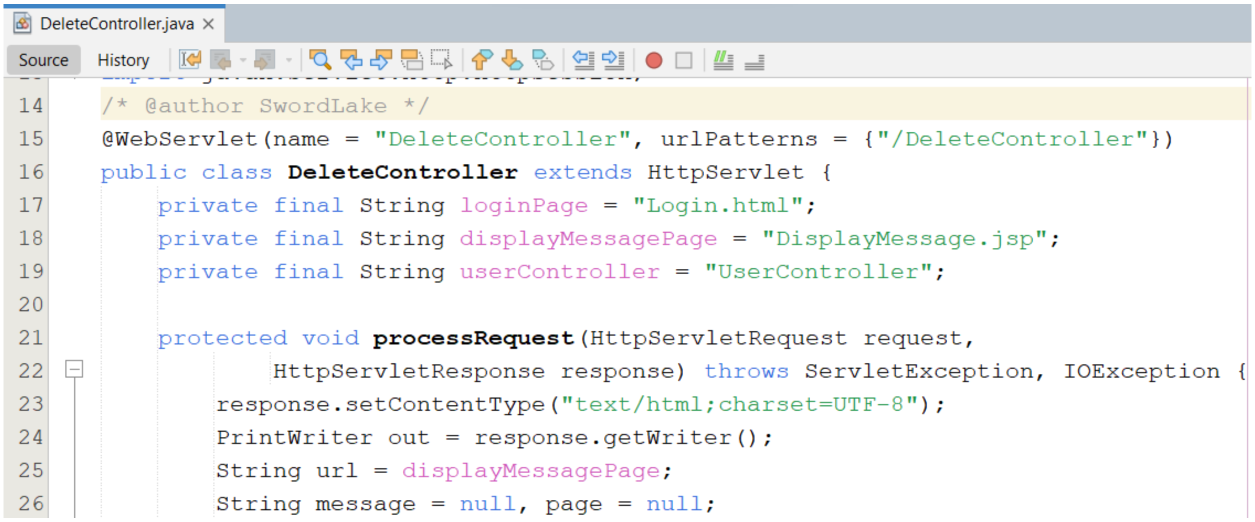
```
/**
 * @author SwordLake
 */
@WebServlet(name = "CreateController", urlPatterns = {"/CreateController"})
public class CreateController extends HttpServlet {
    private final String displayMessagePage = "DisplayMessage.jsp";
    protected void processRequest(HttpServletRequest request, HttpServletResponse response)
            throws ServletException, IOException {
        String userName, password, lastName;
        boolean isAdmin = true;
        String message = "Something went wrong.";
        response.setContentType("text/html;charset=UTF-8");
        String url = displayMessagePage;
        try {
            userName = request.getParameter("txtUserName");
            password = request.getParameter("txtPassword");
            lastName = request.getParameter("txtLastName");
            String admin = request.getParameter("chkIsAdmin");
            if (admin == null) {
                isAdmin = false;
            }
            if (!userName.isEmpty()) {
                User user = new User(userName, password, lastName, isAdmin);
                UserDAO userDao = new UserDAO();
                if (userDao.addUser(user) == true) {
                    message = "The user '"+userName+"' has been added successfully";
                }
            }
        } catch (Exception ex) {
             log(ex.getMessage());
        }
        finally{
            request.setAttribute("action","Create User");
            request.setAttribute("page","Login.html");
            request.setAttribute("message",message);
            RequestDispatcher rd = request.getRequestDispatcher(url);
            rd.forward(request, response);
        }
    }//end processRequest
    HttpServlet methods. Click on the + sign on the left to edit the code.
}//end CreateController
```

- **SearchController.java**

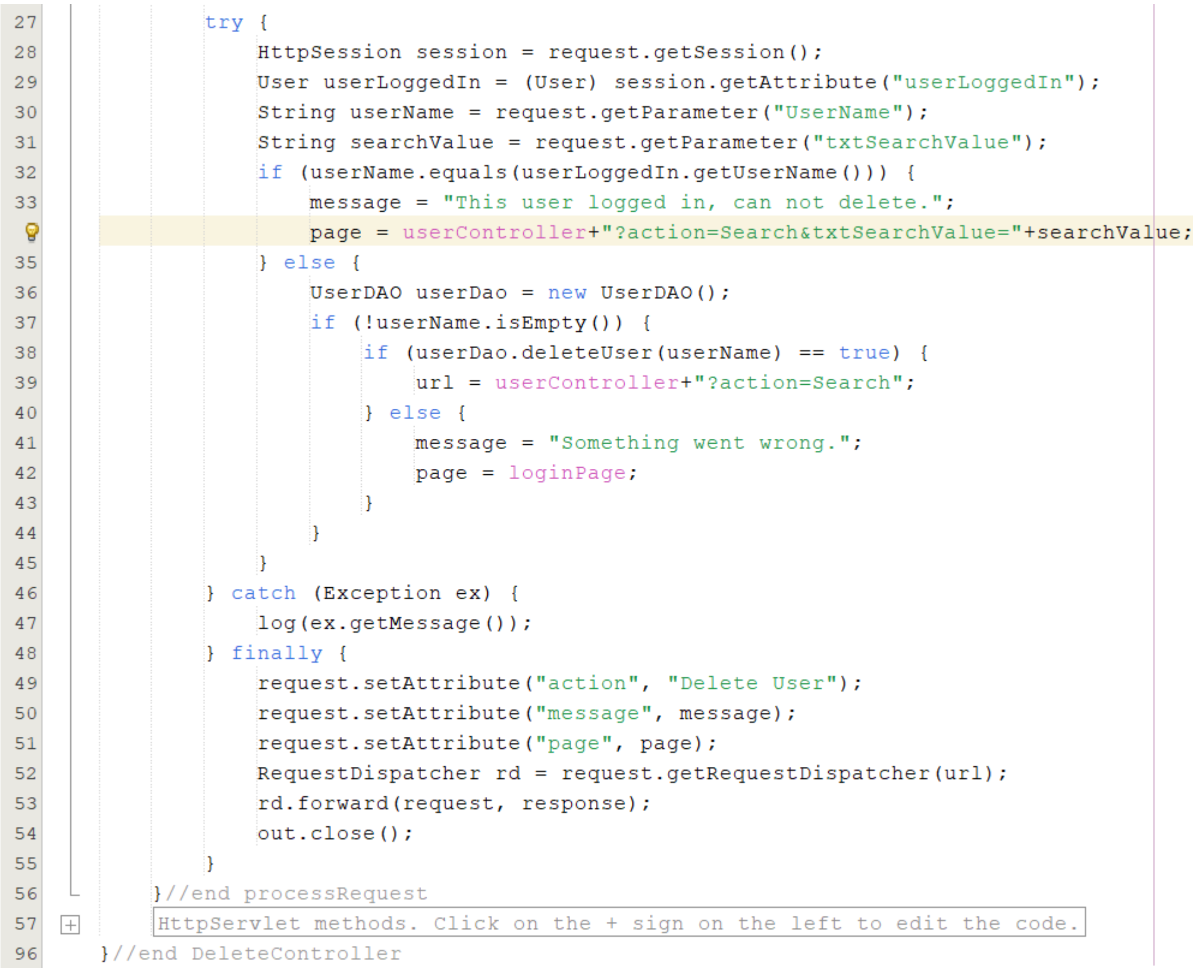


```java
/**
 * @author SwordLake
 */
@WebServlet(name = "SearchController", urlPatterns = {"/SearchController"})
public class SearchController extends HttpServlet {
    private final String searchPage = "Search.jsp";
    protected void processRequest(HttpServletRequest request,
            HttpServletResponse response)throws ServletException, IOException {
        String url, searchValue;
        response.setContentType("text/html;charset=UTF-8");
        PrintWriter out = response.getWriter();
        url = searchPage;
        try {
            searchValue = request.getParameter("txtSearchValue");
            if (!searchValue.isEmpty()) {
                UserDAO userDao = new UserDAO();
                List<User> userList = userDao.searchUserByLastName(searchValue);
                request.setAttribute("SearchResult", userList);
            }
        } catch (Exception ex) {
            log(ex.getMessage());
        }
        finally{
            RequestDispatcher rd = request.getRequestDispatcher(url);
            rd.forward(request, response);
            out.close();
        }
    }//processRequest
    HttpServlet methods. Click on the + sign on the left to edit the code.
}//end SearchController
```

- **DeleteController.java**

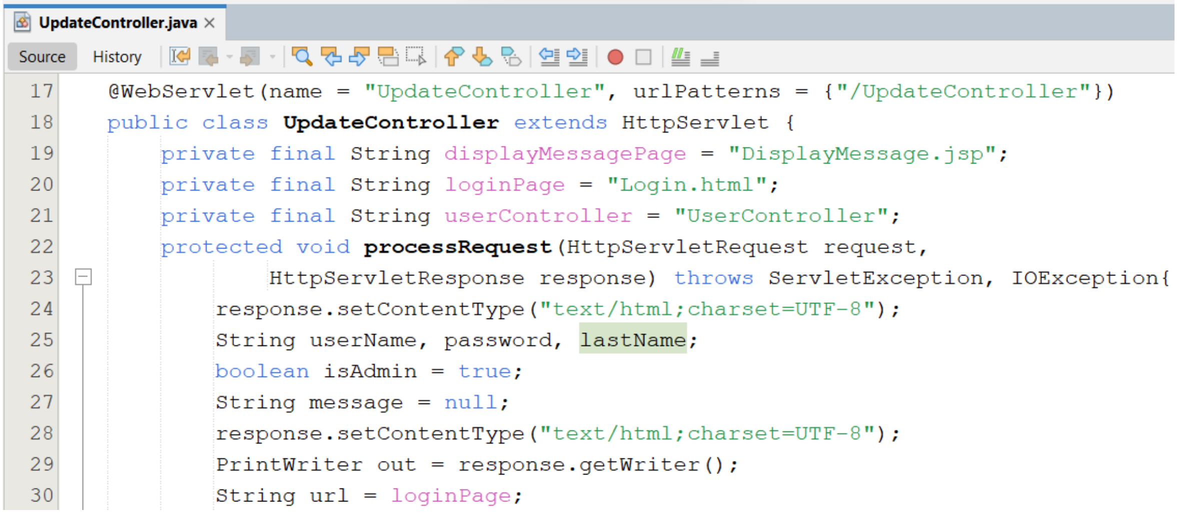


```java
/* @author SwordLake */
@WebServlet(name = "DeleteController", urlPatterns = {"/DeleteController"})
public class DeleteController extends HttpServlet {
    private final String loginPage = "Login.html";
    private final String displayMessagePage = "DisplayMessage.jsp";
    private final String userController = "UserController";

    protected void processRequest(HttpServletRequest request,
            HttpServletResponse response) throws ServletException, IOException {
        response.setContentType("text/html;charset=UTF-8");
        PrintWriter out = response.getWriter();
        String url = displayMessagePage;
        String message = null, page = null;
```

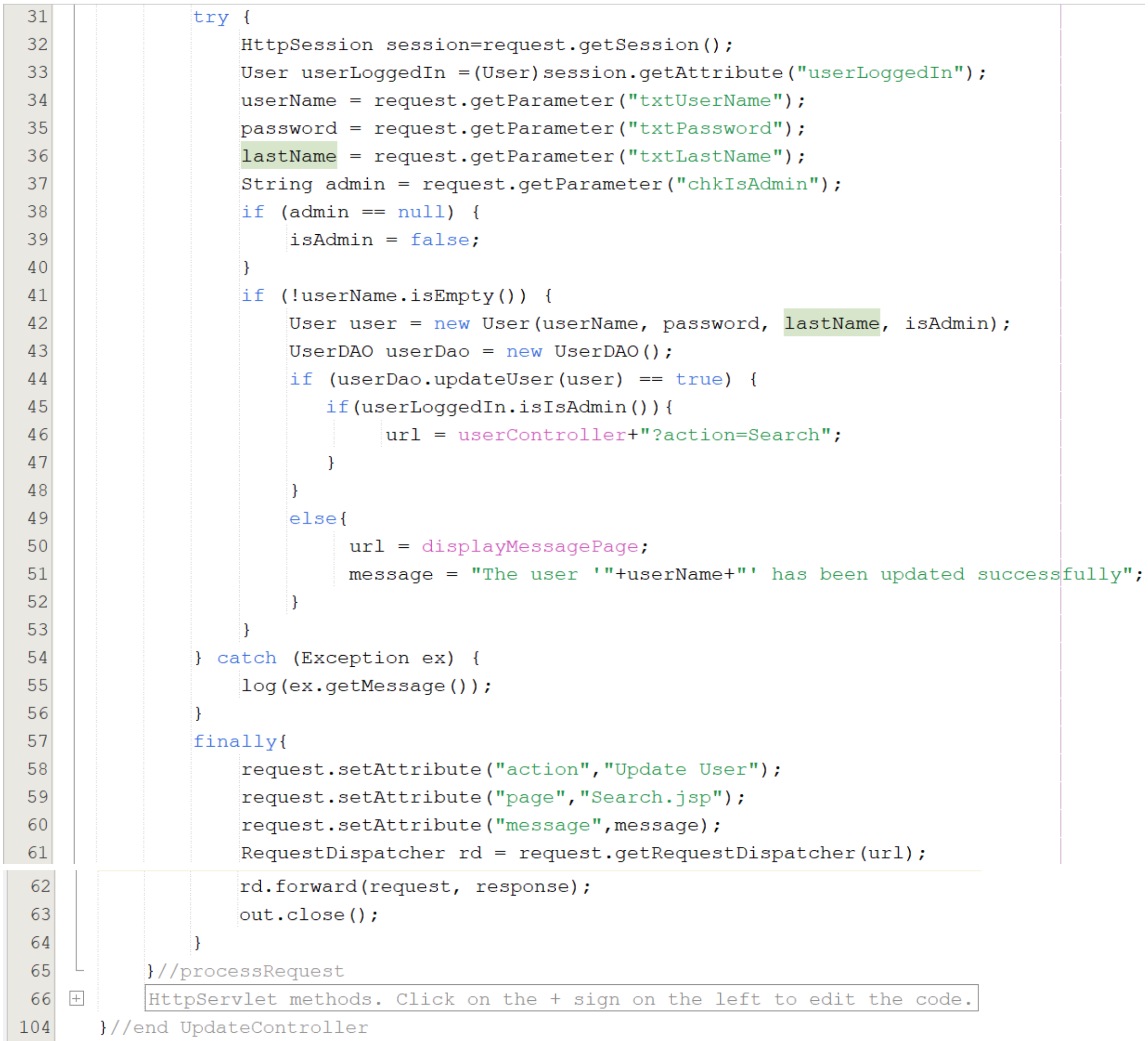


```
        try {
            HttpSession session = request.getSession();
            User userLoggedIn = (User) session.getAttribute("userLoggedIn");
            String userName = request.getParameter("UserName");
            String searchValue = request.getParameter("txtSearchValue");
            if (userName.equals(userLoggedIn.getUserName())) {
                message = "This user logged in, can not delete.";
                page = userController+"?action=Search&txtSearchValue="+searchValue;
            } else {
                UserDAO userDao = new UserDAO();
                if (!userName.isEmpty()) {
                    if (userDao.deleteUser(userName) == true) {
                        url = userController+"?action=Search";
                    } else {
                        message = "Something went wrong.";
                        page = loginPage;
                    }
                }
            }
        } catch (Exception ex) {
            log(ex.getMessage());
        } finally {
            request.setAttribute("action", "Delete User");
            request.setAttribute("message", message);
            request.setAttribute("page", page);
            RequestDispatcher rd = request.getRequestDispatcher(url);
            rd.forward(request, response);
            out.close();
        }
    }//end processRequest
    HttpServlet methods. Click on the + sign on the left to edit the code.
}//end DeleteController
```

- **UpdateController.java**

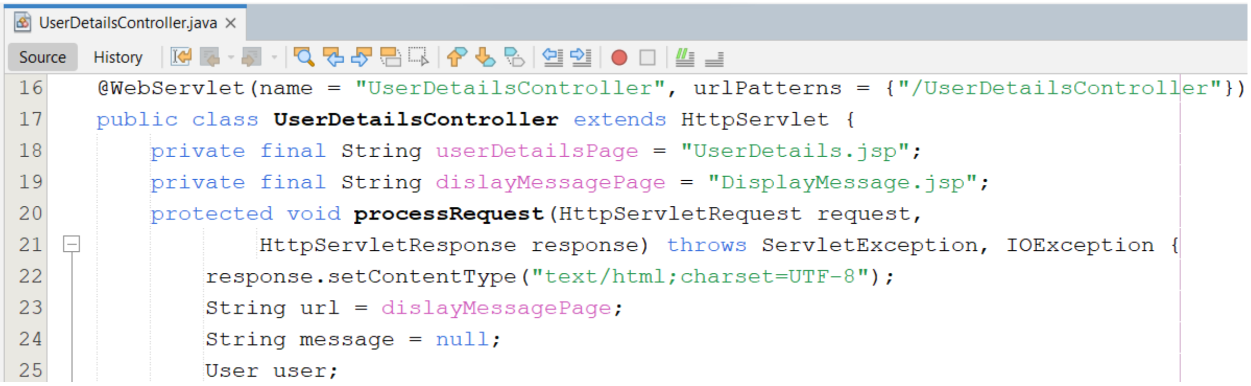


```
@WebServlet(name = "UpdateController", urlPatterns = {"/UpdateController"})
public class UpdateController extends HttpServlet {
    private final String displayMessagePage = "DisplayMessage.jsp";
    private final String loginPage = "Login.html";
    private final String userController = "UserController";
    protected void processRequest(HttpServletRequest request,
            HttpServletResponse response) throws ServletException, IOException{
        response.setContentType("text/html;charset=UTF-8");
        String userName, password, lastName;
        boolean isAdmin = true;
        String message = null;
        response.setContentType("text/html;charset=UTF-8");
        PrintWriter out = response.getWriter();
        String url = loginPage;
```

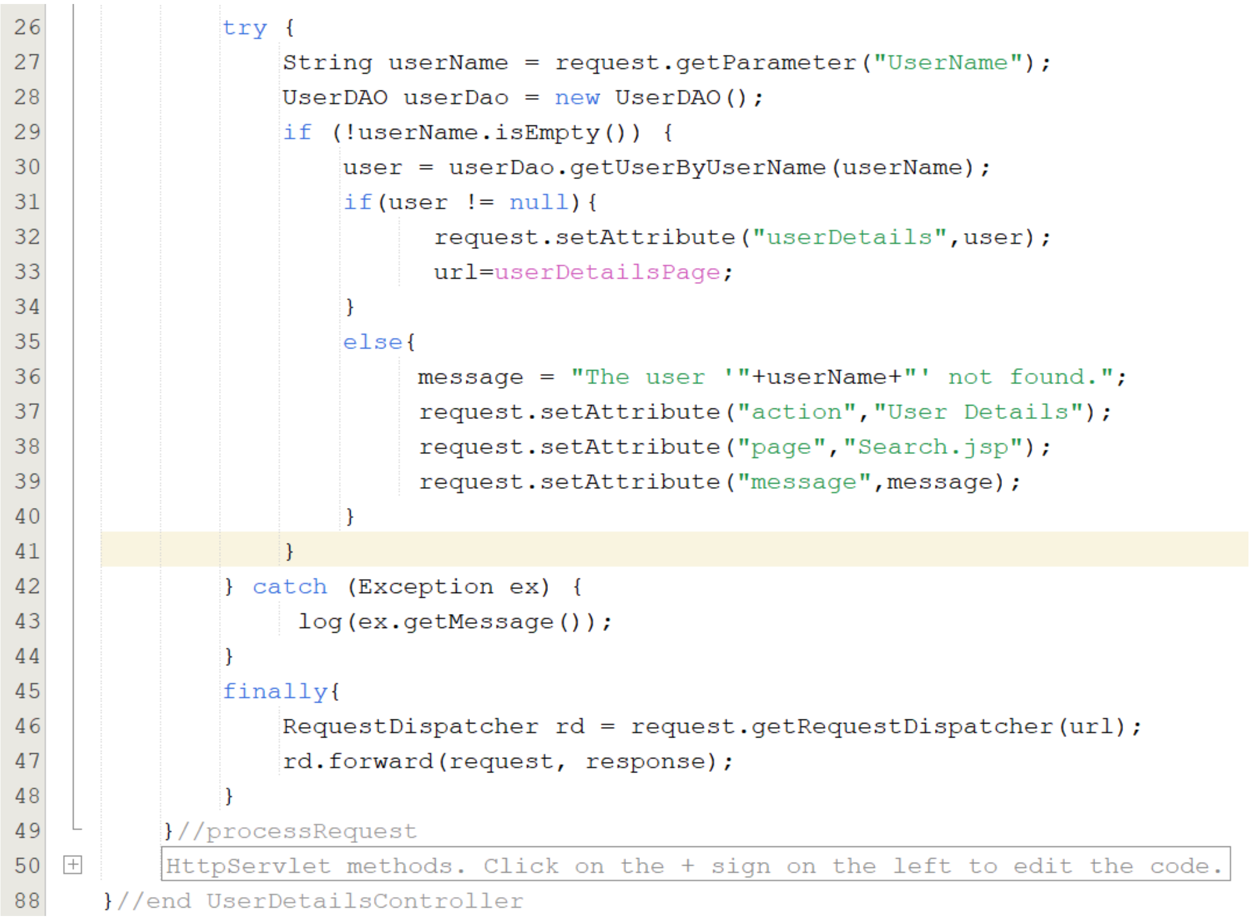


```
        try {
            HttpSession session=request.getSession();
            User userLoggedIn =(User)session.getAttribute("userLoggedIn");
            userName = request.getParameter("txtUserName");
            password = request.getParameter("txtPassword");
            lastName = request.getParameter("txtLastName");
            String admin = request.getParameter("chkIsAdmin");
            if (admin == null) {
                isAdmin = false;
            }
            if (!userName.isEmpty()) {
                User user = new User(userName, password, lastName, isAdmin);
                UserDAO userDao = new UserDAO();
                if (userDao.updateUser(user) == true) {
                   if(userLoggedIn.isIsAdmin()){
                        url = userController+"?action=Search";
                   }
                }
                else{
                     url = displayMessagePage;
                     message = "The user '"+userName+"' has been updated successfully";
                }
            }
        } catch (Exception ex) {
            log(ex.getMessage());
        }
        finally{
            request.setAttribute("action","Update User");
            request.setAttribute("page","Search.jsp");
            request.setAttribute("message",message);
            RequestDispatcher rd = request.getRequestDispatcher(url);
            rd.forward(request, response);
            out.close();
        }
    }//processRequest
    HttpServlet methods. Click on the + sign on the left to edit the code.
}//end UpdateController
```

- **UserDetailsController.java**

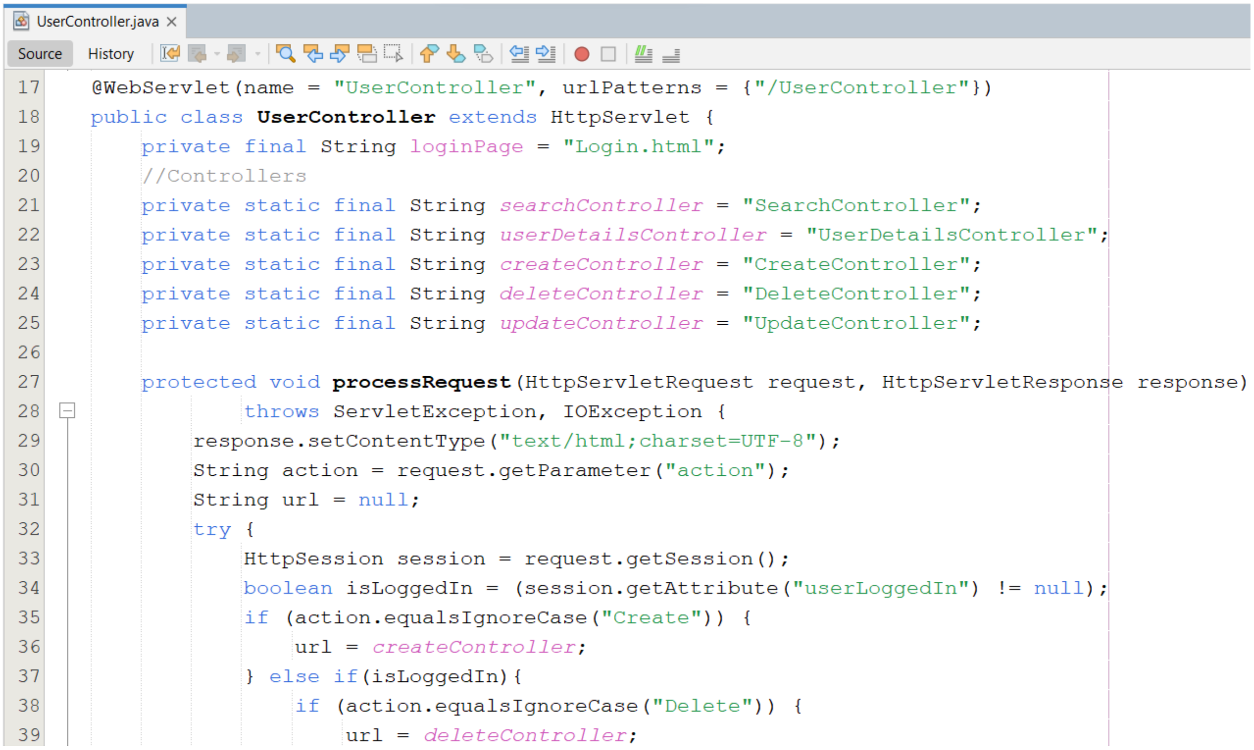


```
@WebServlet(name = "UserDetailsController", urlPatterns = {"/UserDetailsController"})
public class UserDetailsController extends HttpServlet {
    private final String userDetailsPage = "UserDetails.jsp";
    private final String dislayMessagePage = "DisplayMessage.jsp";
    protected void processRequest(HttpServletRequest request,
            HttpServletResponse response) throws ServletException, IOException {
        response.setContentType("text/html;charset=UTF-8");
        String url = dislayMessagePage;
        String message = null;
        User user;
```

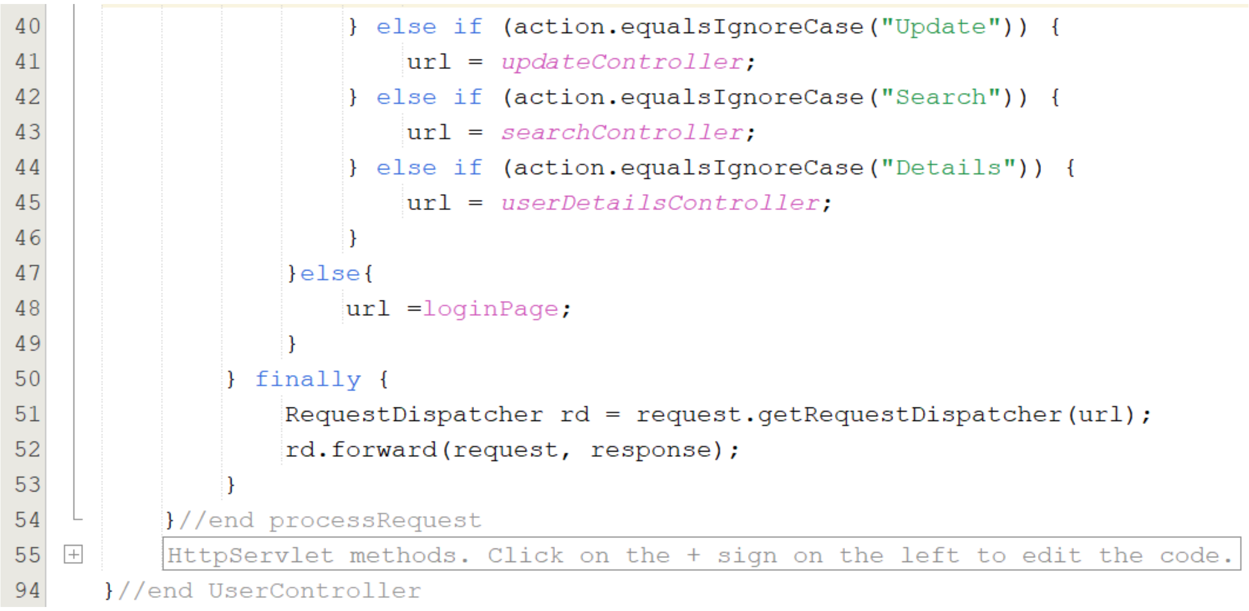


```
        try {
            String userName = request.getParameter("UserName");
            UserDAO userDao = new UserDAO();
            if (!userName.isEmpty()) {
                user = userDao.getUserByUserName(userName);
                if(user != null){
                      request.setAttribute("userDetails",user);
                      url=userDetailsPage;
                }
                else{
                     message = "The user '"+userName+"' not found.";
                     request.setAttribute("action","User Details");
                     request.setAttribute("page","Search.jsp");
                     request.setAttribute("message",message);
                }
            }
        } catch (Exception ex) {
             log(ex.getMessage());
        }
        finally{
            RequestDispatcher rd = request.getRequestDispatcher(url);
            rd.forward(request, response);
        }
    }//processRequest
    HttpServlet methods. Click on the + sign on the left to edit the code.
}//end UserDetailsController
```

- **UserController.java**



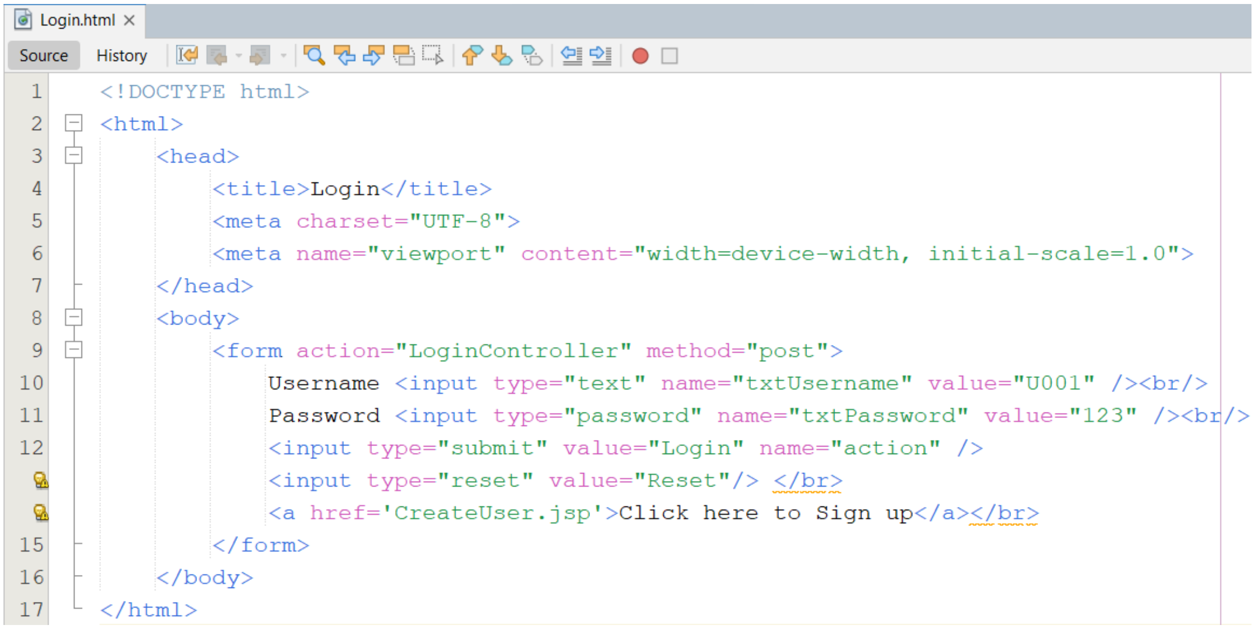
```
@WebServlet(name = "UserController", urlPatterns = {"/UserController"})
public class UserController extends HttpServlet {
    private final String loginPage = "Login.html";
    //Controllers
    private static final String searchController = "SearchController";
    private static final String userDetailsController = "UserDetailsController";
    private static final String createController = "CreateController";
    private static final String deleteController = "DeleteController";
    private static final String updateController = "UpdateController";

    protected void processRequest(HttpServletRequest request, HttpServletResponse response)
            throws ServletException, IOException {
        response.setContentType("text/html;charset=UTF-8");
        String action = request.getParameter("action");
        String url = null;
        try {
            HttpSession session = request.getSession();
            boolean isLoggedIn = (session.getAttribute("userLoggedIn") != null);
            if (action.equalsIgnoreCase("Create")) {
                url = createController;
            } else if(isLoggedIn){
                if (action.equalsIgnoreCase("Delete")) {
                    url = deleteController;
```



```
                } else if (action.equalsIgnoreCase("Update")) {
                    url = updateController;
                } else if (action.equalsIgnoreCase("Search")) {
                    url = searchController;
                } else if (action.equalsIgnoreCase("Details")) {
                    url = userDetailsController;
                }
            }else{
                url =loginPage;
            }
        } finally {
            RequestDispatcher rd = request.getRequestDispatcher(url);
            rd.forward(request, response);
        }
    }//end processRequest
    HttpServlet methods. Click on the + sign on the left to edit the code.
}//end UserController
```

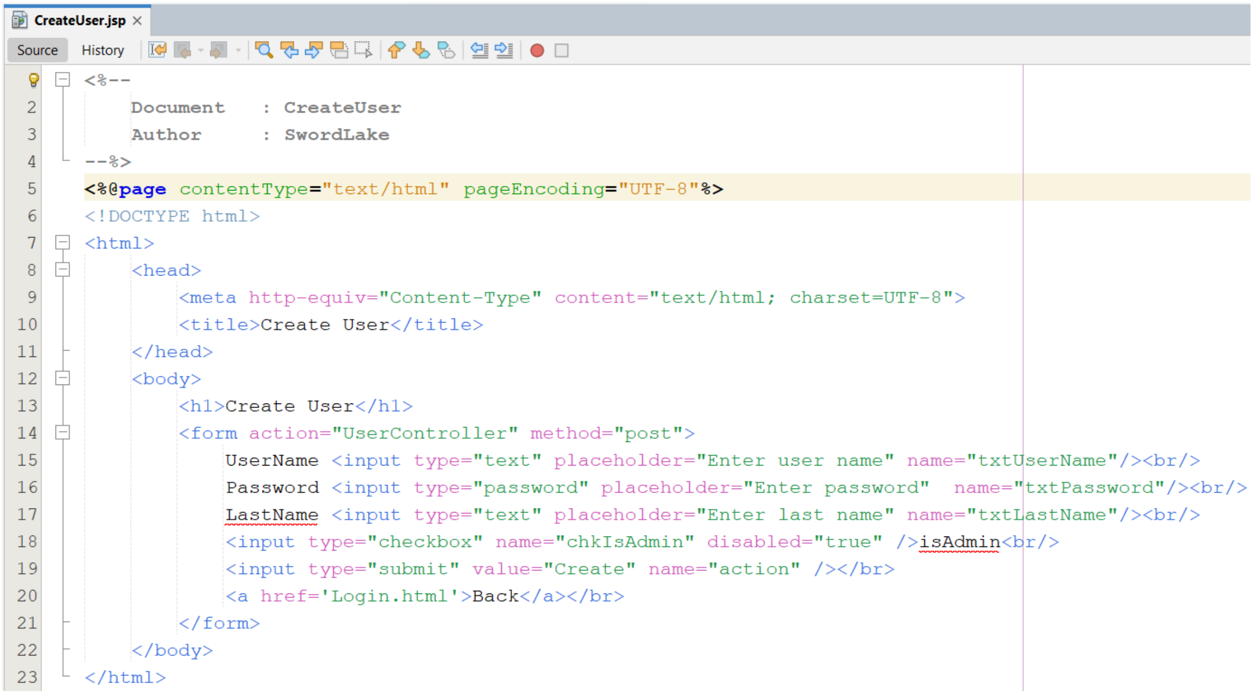
Step 05. Write codes for the web pages as the follows:

- **Login.html page**



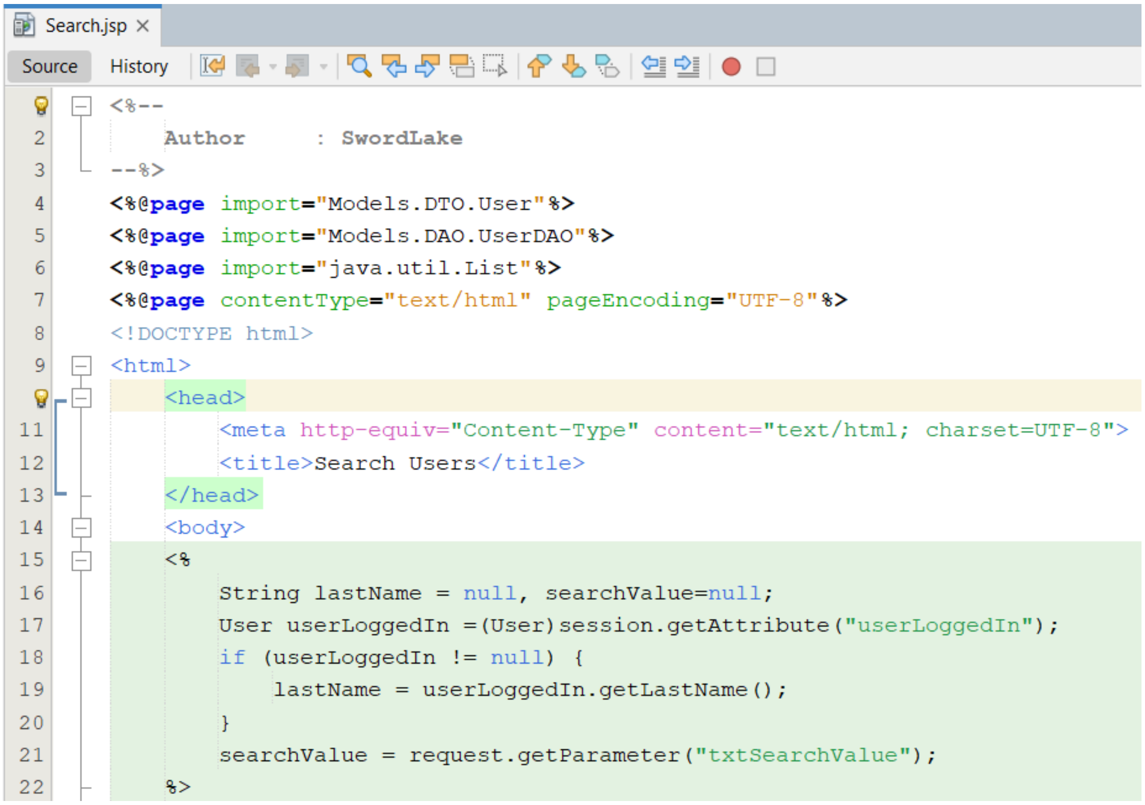
```
<!DOCTYPE html>
<html>
    <head>
        <title>Login</title>
        <meta charset="UTF-8">
        <meta name="viewport" content="width=device-width, initial-scale=1.0">
    </head>
    <body>
        <form action="LoginController" method="post">
            Username <input type="text" name="txtUsername" value="U001" /><br/>
            Password <input type="password" name="txtPassword" value="123" /><br/>
            <input type="submit" value="Login" name="action" />
            <input type="reset" value="Reset"/> </br>
            <a href='CreateUser.jsp'>Click here to Sign up</a></br>
        </form>
    </body>
</html>
```

- **CreateUser.jsp page**

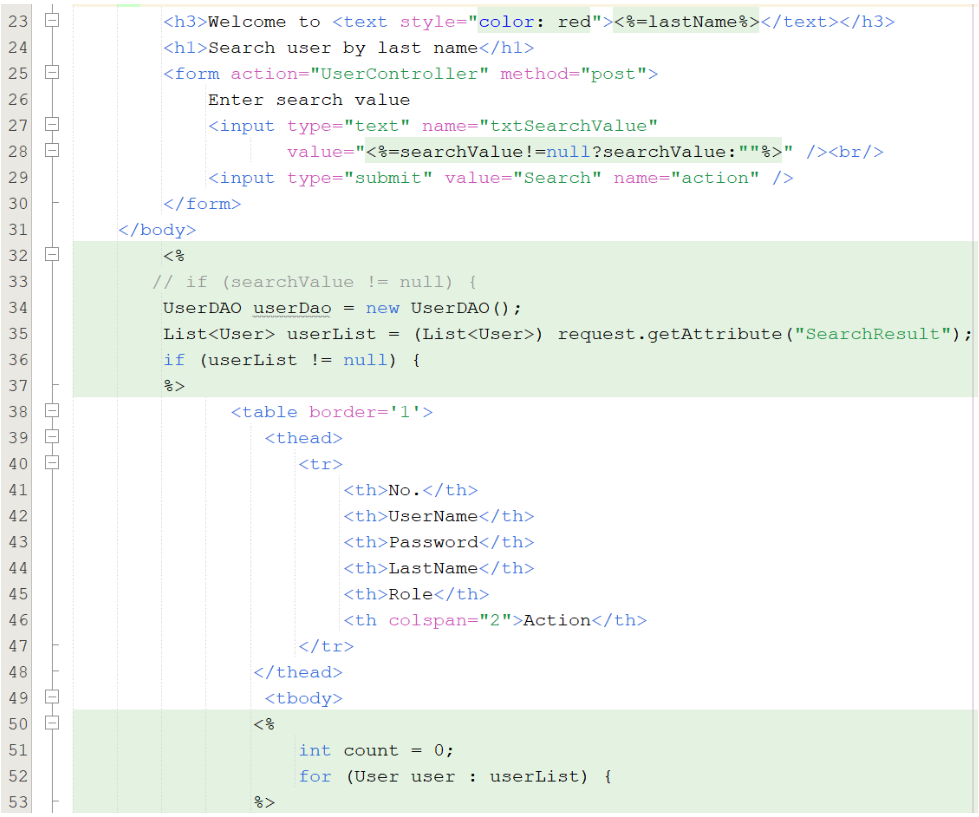


```
<%--
    Document   : CreateUser
    Author     : SwordLake
--%>
<%@page contentType="text/html" pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
    <head>
        <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
        <title>Create User</title>
    </head>
    <body>
        <h1>Create User</h1>
        <form action="UserController" method="post">
            UserName <input type="text" placeholder="Enter user name" name="txtUserName"/><br/>
            Password <input type="password" placeholder="Enter password"  name="txtPassword"/><br/>
            LastName <input type="text" placeholder="Enter last name" name="txtLastName"/><br/>
            <input type="checkbox" name="chkIsAdmin" disabled="true" />isAdmin<br/>
            <input type="submit" value="Create" name="action" /></br>
            <a href='Login.html'>Back</a></br>
        </form>
    </body>
</html>
```

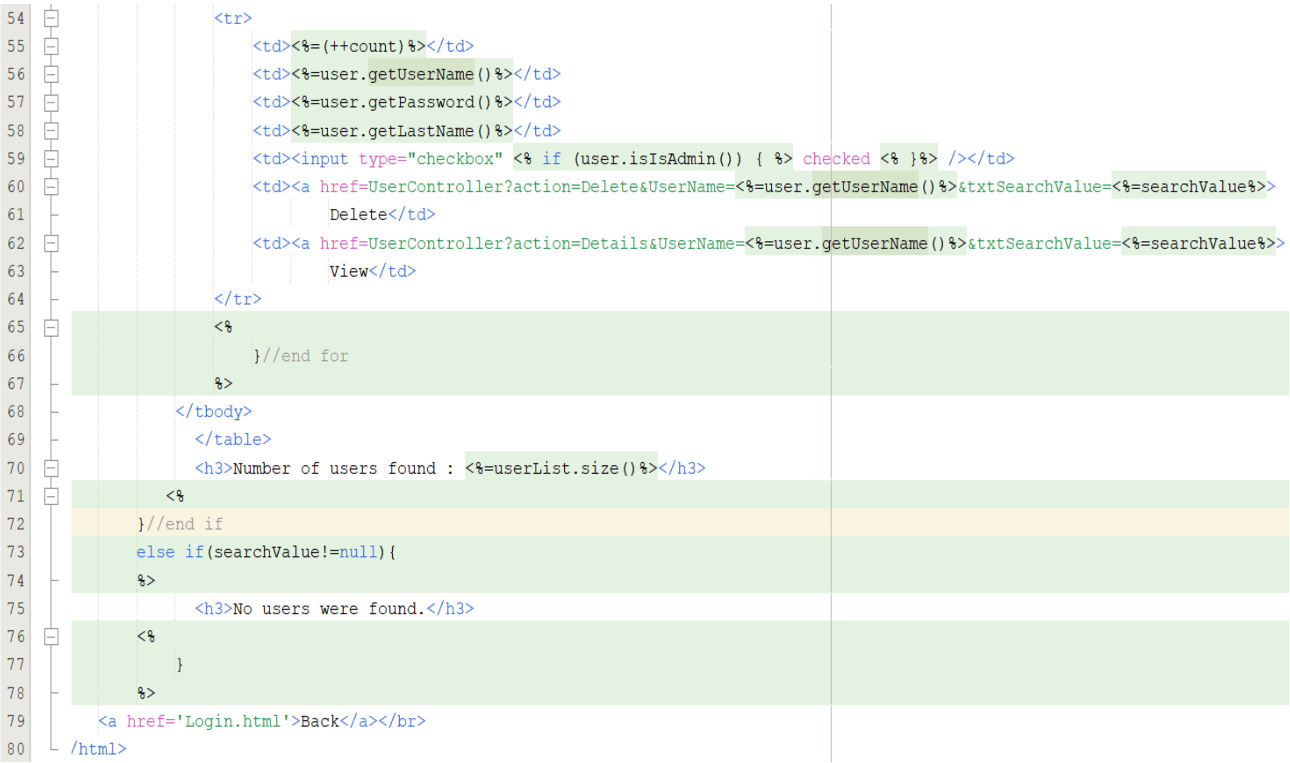
- **Search.jsp page**



```
<%--
    Author     : SwordLake
--%>
<%@page import="Models.DTO.User"%>
<%@page import="Models.DAO.UserDAO"%>
<%@page import="java.util.List"%>
<%@page contentType="text/html" pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
    <head>
        <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
        <title>Search Users</title>
    </head>
    <body>
    <%
        String lastName = null, searchValue=null;
        User userLoggedIn =(User)session.getAttribute("userLoggedIn");
        if (userLoggedIn != null) {
            lastName = userLoggedIn.getLastName();
        }
        searchValue = request.getParameter("txtSearchValue");
    %>
```

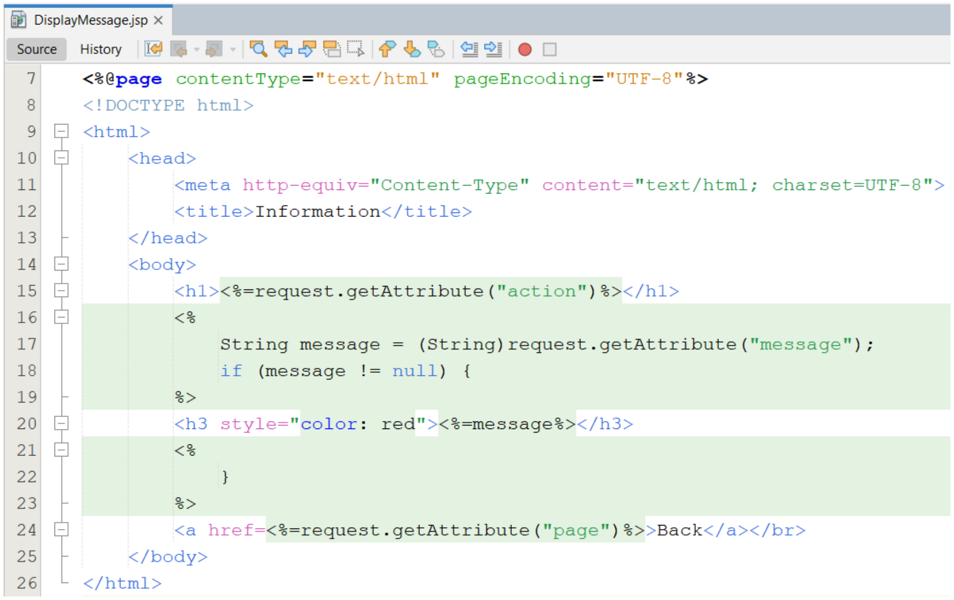


```
        <h3>Welcome to <text style="color: red"><%=lastName%></text></h3>
        <h1>Search user by last name</h1>
        <form action="UserController" method="post">
            Enter search value
            <input type="text" name="txtSearchValue"
                   value="<%=searchValue!=null?searchValue:""%>" /><br/>
            <input type="submit" value="Search" name="action" />
        </form>
    </body>
        <%
       // if (searchValue != null) {
        UserDAO userDao = new UserDAO();
        List<User> userList = (List<User>) request.getAttribute("SearchResult");
        if (userList != null) {
        %>
              <table border='1'>
                 <thead>
                    <tr>
                        <th>No.</th>
                        <th>UserName</th>
                        <th>Password</th>
                        <th>LastName</th>
                        <th>Role</th>
                        <th colspan="2">Action</th>
                    </tr>
                </thead>
                 <tbody>
                <%
                    int count = 0;
                    for (User user : userList) {
                %>
```



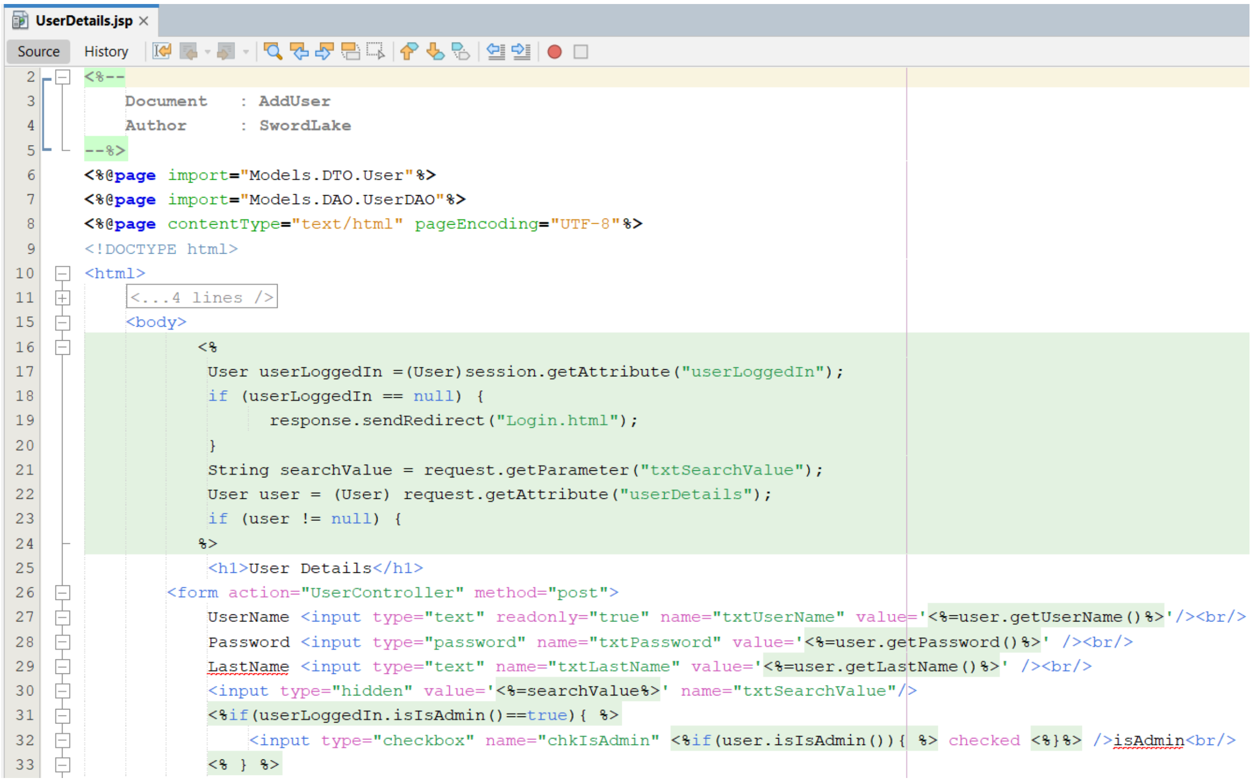
```
               <tr>
                   <td><%=(++count)%></td>
                   <td><%=user.getUserName()%></td>
                   <td><%=user.getPassword()%></td>
                   <td><%=user.getLastName()%></td>
                   <td><input type="checkbox" <% if (user.isIsAdmin()) { %> checked <% }%> /></td>
                   <td><a href=UserController?action=Delete&UserName=<%=user.getUserName()%>&txtSearchValue=<%=searchValue%>>
                           Delete</td>
                   <td><a href=UserController?action=Details&UserName=<%=user.getUserName()%>&txtSearchValue=<%=searchValue%>>
                           View</td>
               </tr>
               <%
                   }//end for
               %>
           </tbody>
             </table>
             <h3>Number of users found : <%=userList.size()%></h3>
          <%
       }//end if
       else if(searchValue!=null){
       %>
             <h3>No users were found.</h3>
       <%
           }
       %>
   <a href='Login.html'>Back</a></br>
/html>
```

- **DisplayMessage.jsp page**

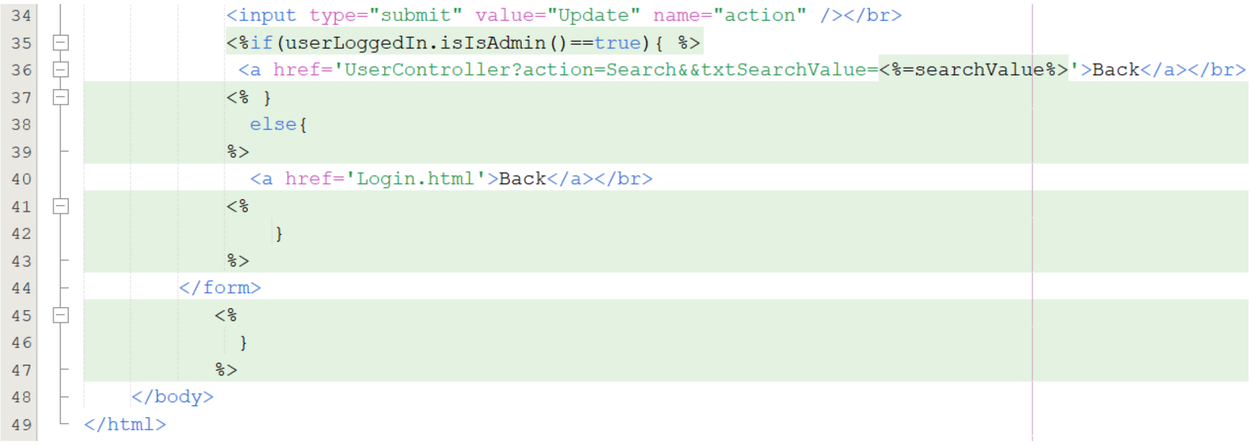


```
<%@page contentType="text/html" pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
    <head>
        <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
        <title>Information</title>
    </head>
    <body>
        <h1><%=request.getAttribute("action")%></h1>
        <%
            String message = (String)request.getAttribute("message");
            if (message != null) {
        %>
        <h3 style="color: red"><%=message%></h3>
        <%
            }
        %>
        <a href=<%=request.getAttribute("page")%>>Back</a></br>
    </body>
</html>
```

- ## UserDetails.jsp page

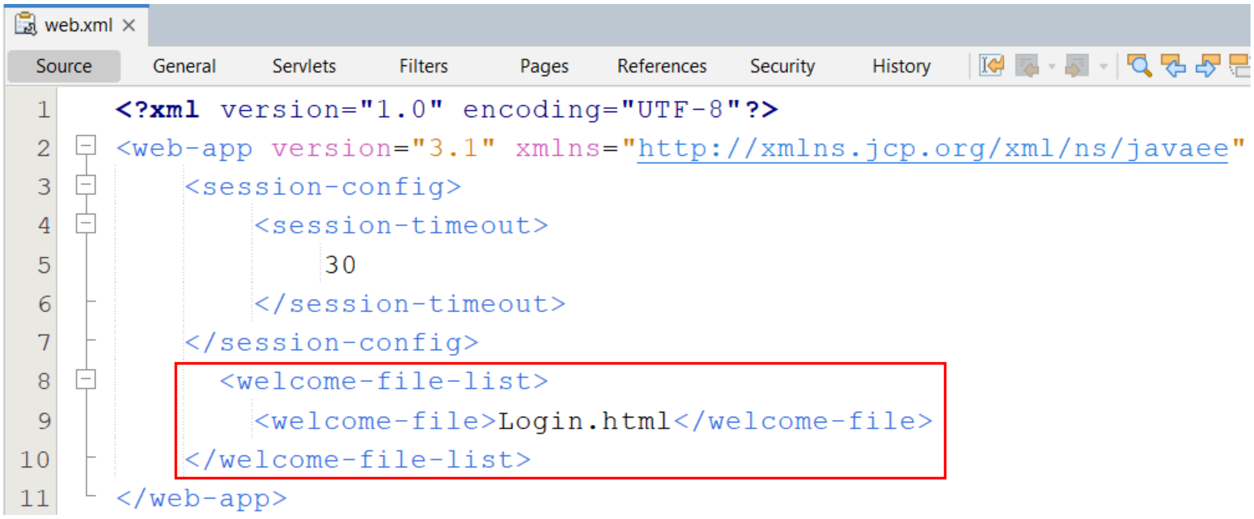


```
<%--
    Document   : AddUser
    Author     : SwordLake
--%>
<%@page import="Models.DTO.User"%>
<%@page import="Models.DAO.UserDAO"%>
<%@page contentType="text/html" pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
    <...4 lines />
    <body>
          <%
           User userLoggedIn =(User)session.getAttribute("userLoggedIn");
           if (userLoggedIn == null) {
                response.sendRedirect("Login.html");
           }
           String searchValue = request.getParameter("txtSearchValue");
           User user = (User) request.getAttribute("userDetails");
           if (user != null) {
          %>
           <h1>User Details</h1>
       <form action="UserController" method="post">
           UserName <input type="text" readonly="true" name="txtUserName" value='<%=user.getUserName()%>'/><br/>
           Password <input type="password" name="txtPassword" value='<%=user.getPassword()%>' /><br/>
           LastName <input type="text" name="txtLastName" value='<%=user.getLastName()%>' /><br/>
           <input type="hidden" value='<%=searchValue%>' name="txtSearchValue"/>
           <%if(userLoggedIn.isIsAdmin()==true){ %>
                <input type="checkbox" name="chkIsAdmin" <%if(user.isIsAdmin()){ %> checked <%}%> />isAdmin<br/>
           <% } %>
```



```
                <input type="submit" value="Update" name="action" /></br>
                <%if(userLoggedIn.isIsAdmin()==true){ %>
                 <a href='UserController?action=Search&&txtSearchValue=<%=searchValue%>'>Back</a></br>
                <% }
                  else{
                %>
                  <a href='Login.html'>Back</a></br>
                <%
                    }
                %>
            </form>
               <%
                 }
               %>
        </body>
</html>
```

Step 05. Open the **web.xml** in the WEB-INF folder then update as the follows:



```
<?xml version="1.0" encoding="UTF-8"?>
<web-app version="3.1" xmlns="http://xmlns.jcp.org/xml/ns/javaee"
    <session-config>
        <session-timeout>
            30
        </session-timeout>
    </session-config>
      <welcome-file-list>
        <welcome-file>Login.html</welcome-file>
    </welcome-file-list>
</web-app>
```

Step 06. Right-click on **Lab04_ManageUsersByMVC2** project, select Run to run the web app then test all functions.