

Lab 05

Quản lý Session

Mục tiêu

- Session Tracking sử dụng Cookies
- Session Tracking sử dụng Hidden Form
- Session Tracking sử dụng URL Rewriting
- Session Tracking sử dụng HttpSession

Phần I Bài tập step by step

Bài 1.1

- Thực hành với Cookies
- Login-Logout Servlet, quản lý username bằng cookie

STEP 1: Tạo ứng dụng web để thực hành với Cookie

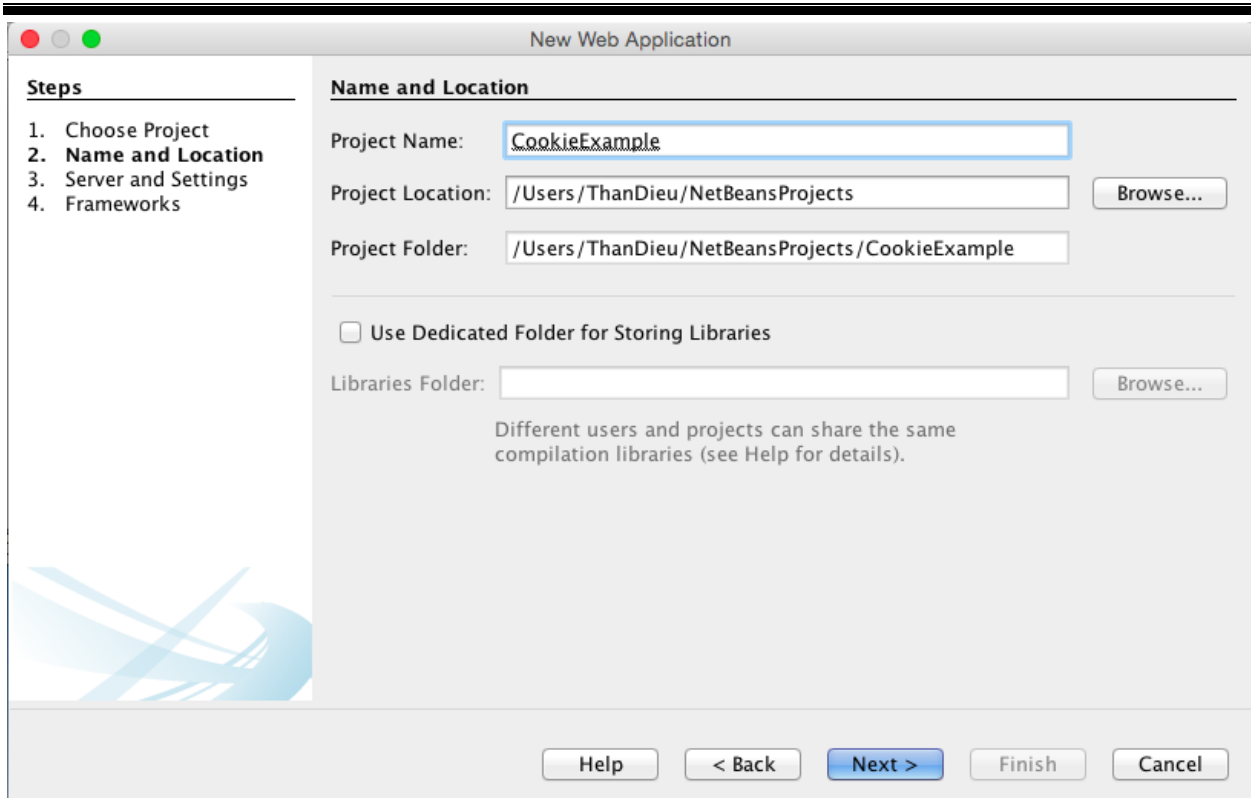
File -> New Project -> Java Web -> Web Application

Project Name: CookieExample

Server: GlassFish

Bỏ chọn Framework

Finish



New Web Application

Steps

1. Choose Project
2. **Name and Location**
3. Server and Settings
4. Frameworks

Name and Location

Project Name:

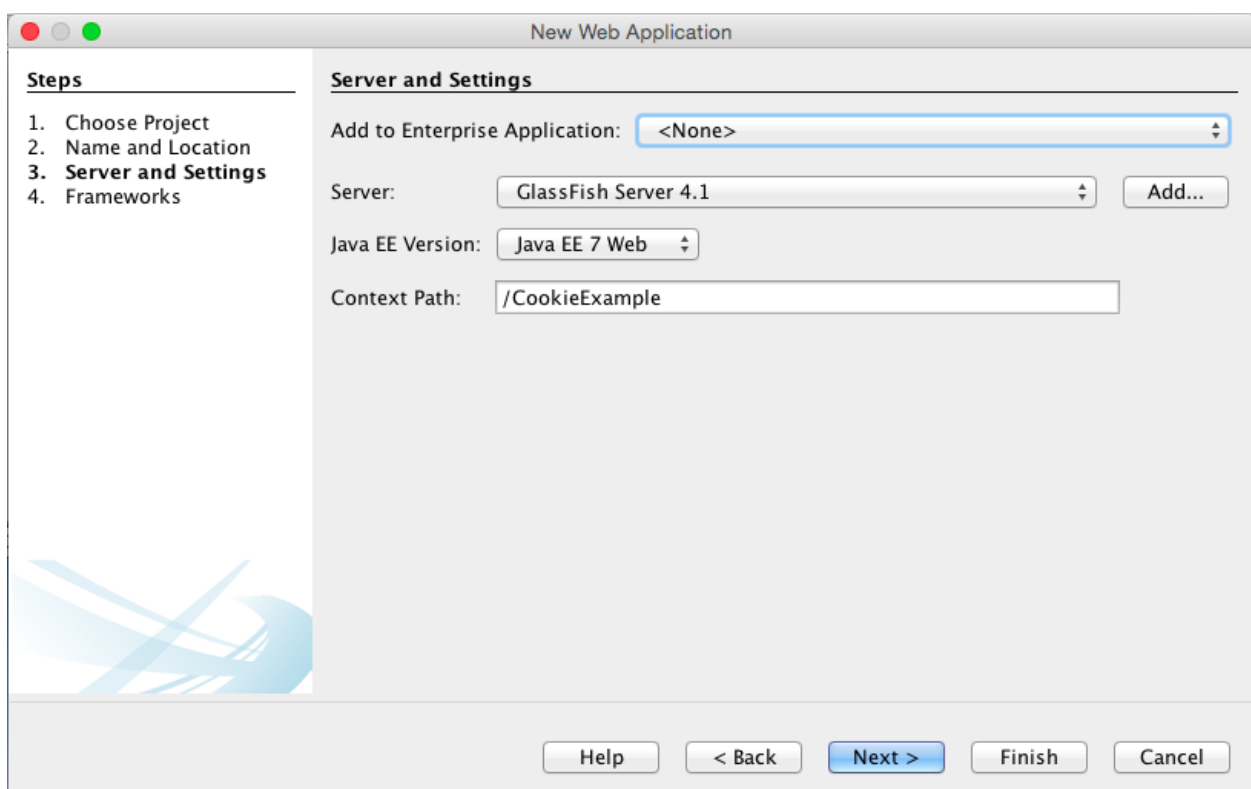
Project Location:

Project Folder:

☐ Use Dedicated Folder for Storing Libraries

Libraries Folder:

Different users and projects can share the same compilation libraries (see Help for details).



New Web Application

Steps

1. Choose Project
2. Name and Location
3. **Server and Settings**
4. Frameworks

Server and Settings

Add to Enterprise Application:

Server:

Java EE Version:

Context Path:

STEP 2: Tạo các trang jsp để view

(1) Sửa lại trang index.html (default created by Netbeans)

```
<!DOCTYPE html>
```

```
<html>

<head>

  <title>Servlet Login Example</title>

  <meta charset="UTF-8">

  <meta name="viewport" content="width=device-width, initial-scale=1.0">

</head>

<body>

  <h1>Login by cookies example</h1>

  <a href="login.html">Login</a>|

  <a href="LogoutServlet">Logout</a>|

  <a href="ProfileServlet">Profile</a>

</body>

</html>
```

(2) login.html

Tạo trang login.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="LoginServlet" method="post">
```

```
    Username: <input type="text" name="user">
```

```
    <br>
```

```
    Password: <input type="password" name="pwd">
```

```
    <br>
```

```
    <input type="submit" value="Login">
```

```
</form>
```

```
</body>
```

```
</html>
```

(3) link.html

```
<a href="login.html">Login</a> |
```

```
<a href="LogoutServlet">Logout</a> |
```

```
<a href="ProfileServlet">Profile</a>
```

```
<hr>
```

Chúng ta tạo trang này để include nội dung html vào response, sẽ hiểu rõ hơn trong LoginServlet.

STEP 3: Tạo các servlet: LoginServlet, LogoutServlet, ProfileServlet

(1) Tạo LoginServlet

New package: servlet

New -> Servlet -> LoginServlet

New Servlet

Steps

1. Choose File Type
2. **Name and Location**
3. Configure Servlet Deployment

Name and Location

Class Name:

Project:

Location:

Package:

Created File:

Help

< Back

Next >

Finish

Cancel

New Servlet

Steps

1. Choose File Type
2. Name and Location
3. **Configure Servlet Deployment**

Configure Servlet Deployment

Register the Servlet with the application by giving the Servlet an internal name (Servlet Name). Then specify patterns that identify the URLs that invoke the Servlet. Separate multiple patterns with commas.

☒ Add information to deployment descriptor (web.xml)

Class Name:

Servlet Name:

URL Pattern(s):

Initialization Parameters:

Name	Value

New

Edit...

Delete

Help

< Back

Next >

Finish

Cancel

```
package servlet;

import java.io.IOException;
import java.io.PrintWriter;
import javax.servlet.ServletException;
import javax.servlet.http.Cookie;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;

public class LoginServlet extends HttpServlet {

    protected void doPost(HttpServletRequest request, HttpServletResponse
response)
        throws ServletException, IOException {
        response.setContentType("text/html");
        PrintWriter out = response.getWriter();

        request.getRequestDispatcher("link.html").include(request, response);

        String name = request.getParameter("name");
        String password = request.getParameter("password");

        if (password.equals("admin123")) {
            out.print("<font color=blue>You are successfully logged
in!</font>");
            out.print("<br>Welcome, " + name);

            Cookie ck = new Cookie("name", name);
            response.addCookie(ck);
        } else {
            out.print("<font color=red>sorry, username or password error!");
            request.getRequestDispatcher("login.html").include(request,
response);
        }

        out.close();
    }
}
```

Luồng làm việc như sau:

Ở trang index.html, khi người dùng click vào link Login → Chuyển đến trang login.html

Sau khi nhập thông tin cho form login, sẽ gọi tới LoginServlet để xử lý tiếp. Trong LoginServlet, đầu tiên, include nội dung trang link.html (các link đến 3 trang login, logout và profile) vào response. Nếu nhập đúng password thì sẽ include thêm nội dung vào response (thông qua writer của response). Nếu sai thì sẽ forward trở lại trang login.html, include thêm thông báo lỗi vào response.

(2) Tạo LogoutServlet

```
package servlet;

import java.io.IOException;
import java.io.PrintWriter;
import javax.servlet.ServletException;
import javax.servlet.http.Cookie;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;

public class LogoutServlet extends HttpServlet {

    protected void doGet(HttpServletRequest request, HttpServletResponse
response)
        throws ServletException, IOException {
        response.setContentType("text/html");
        PrintWriter out=response.getWriter();
        request.getRequestDispatcher("link.html").include(request, response);

        Cookie ck=new Cookie("name","");
        ck.setMaxAge(0);
        response.addCookie(ck);

        out.print("you are successfully logged out!");
    }
}
```

Reset cookie khi logout khỏi ứng dụng.

(3) ProfileServlet

```
package servlet;

import java.io.IOException;
import java.io.PrintWriter;
import javax.servlet.ServletException;
import javax.servlet.http.Cookie;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;

public class ProfileServlet extends HttpServlet {

    protected void doGet(HttpServletRequest request, HttpServletResponse
response)
        throws ServletException, IOException {
        response.setContentType("text/html");
        PrintWriter out = response.getWriter();
```

```

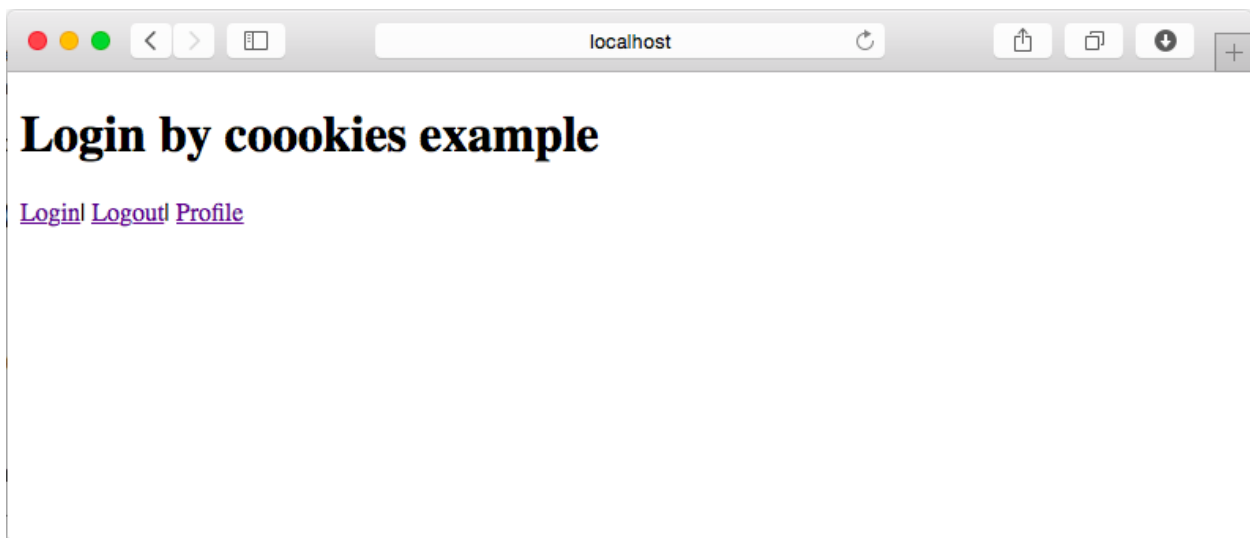
request.getRequestDispatcher("link.html").include(request, response);

Cookie ck[] = request.getCookies();
if (ck != null) {
    String name = ck[0].getValue();
    if (!name.equals("") || name != null) {
        out.print("<b>Welcome to Profile</b>");
        out.print("<br>Welcome, " + name);
    }
} else {
    out.print("<font color=red>Please login first</font>");
    request.getRequestDispatcher("login.html").include(request,
response);
}
out.close();
}
}

```

Để có thể view được profile của user, chúng ta lấy về thông tin user từ cookies của request (request.getCookies()). Nếu không có cookie cần tìm (name) thì sẽ quay trở lại trang login.html.

STEP 4: Chạy ứng dụng



Username:

Password:

[Login](#) | [Logout](#) | [Profile](#)

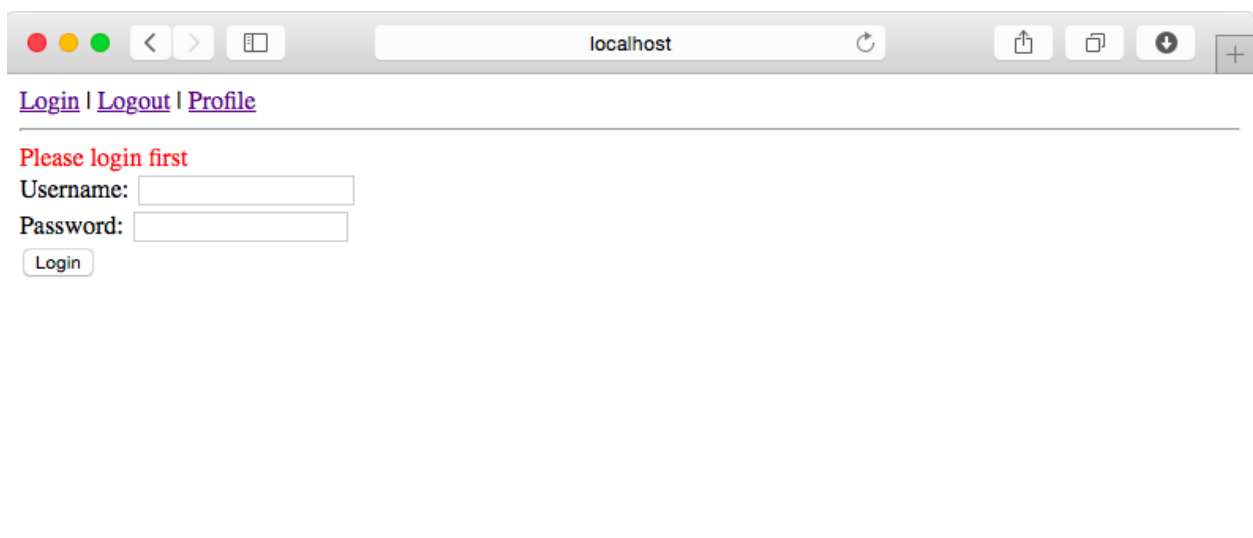
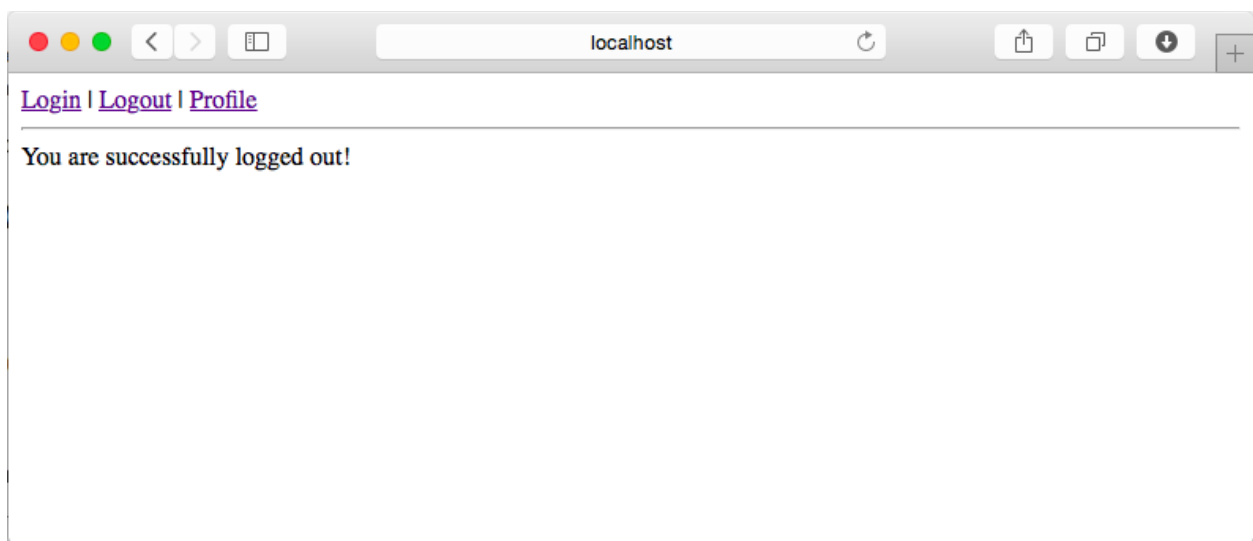
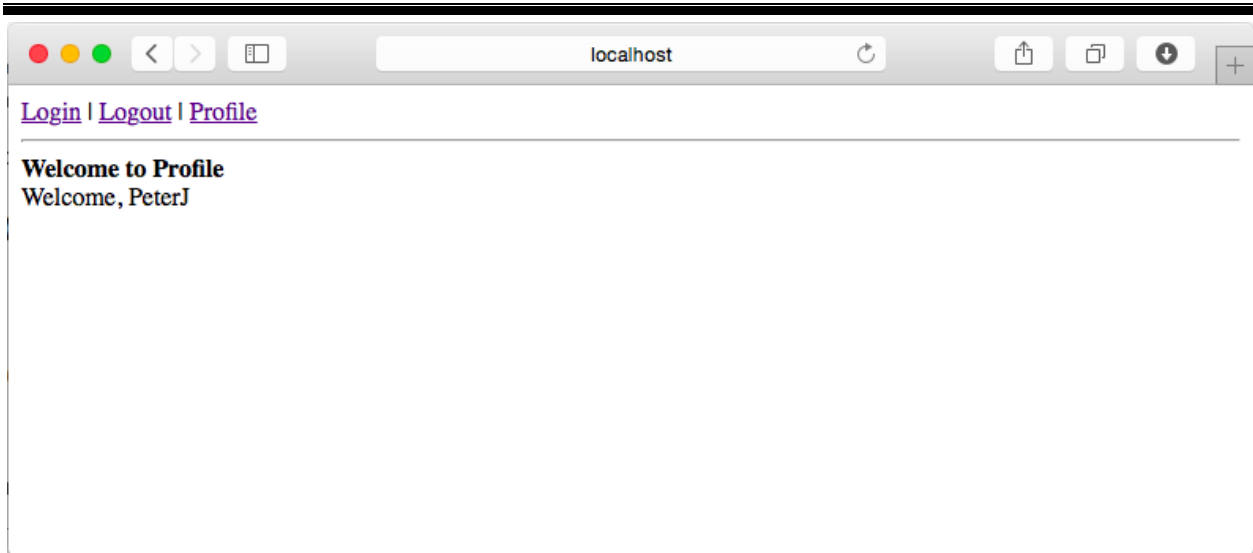
sorry, username or password error!

Username:

Password:

[Login](#) | [Logout](#) | [Profile](#)

You are successfully logged in!
Welcome, PeterJ



Bài 1.2

- Session Tracking sử dụng Hidden Form

STEP 1: Tạo web project HiddenFieldExample

Tương tự như Step 1 của bài 1.1.

STEP 2: Tạo trang login.html

Copy trang login.html từ bài trước.

STEP 3: Tạo các servlet LoginServlet, ProfileServlet

LoginServlet:

```
package servlet;

import java.io.IOException;
import java.io.PrintWriter;
import javax.servlet.ServletException;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;

public class LoginServlet extends HttpServlet {

    protected void doPost(HttpServletRequest request, HttpServletResponse
response)
        throws ServletException, IOException {
        response.setContentType("text/html");
        PrintWriter out = response.getWriter();

        String name = request.getParameter("user");
        String password = request.getParameter("pwd");

        if (password.equals("admin123")) {
            out.print("You are successfully logged in!");
            out.print("<br>Welcome, " + name);
            out.print("<form action='ProfileServlet' method='GET'>");
            out.print("<input type='hidden' name='hUsername' value='" + name
+ "' />");
            out.print("<input type='submit' value='View Profile' />");
            out.print("</form>");
        } else {
            out.print("<font color=red>sorry, username or password
error!</font>");
            request.getRequestDispatcher("login.html").include(request,
response);
        }

        out.close();
    }
}
```

```
}
```

```
}
```

Sau khi đăng nhập, chúng ta tạo một hidden form filed, action='ProfileServlet' để hiển thị thông tin profile.

Bên ProfileServlet, sẽ lấy thông tin user từ hidden field bằng `request.getParameter("hUsername")`.

ProfileServlet

```
package servlet;

import java.io.IOException;
import java.io.PrintWriter;
import javax.servlet.ServletException;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;

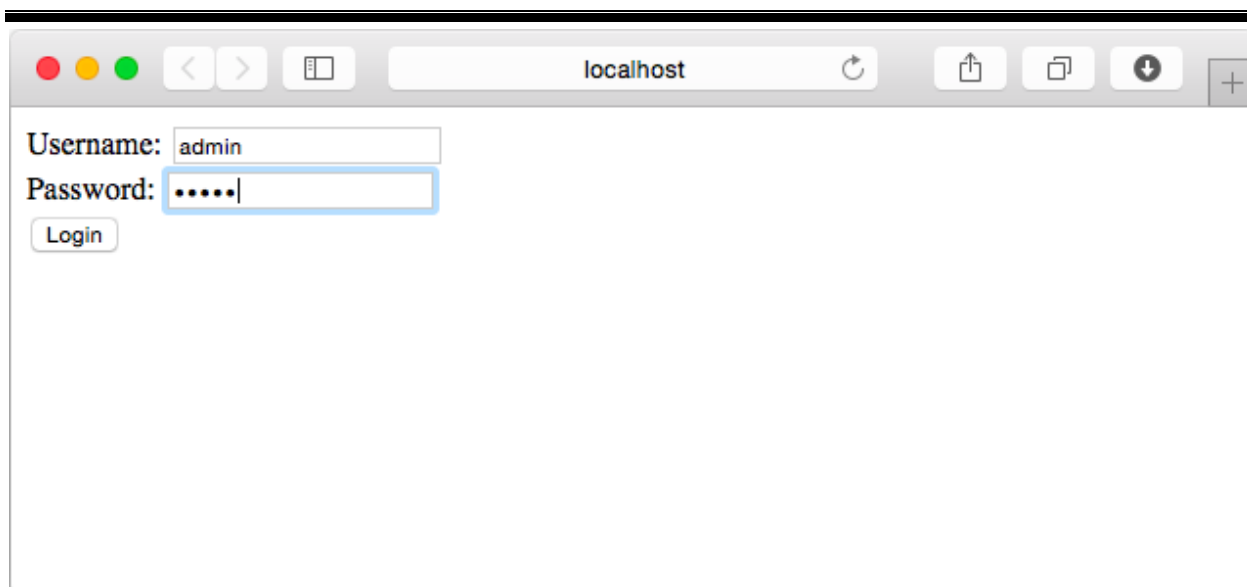
public class ProfileServlet extends HttpServlet {

    protected void doGet(HttpServletRequest request, HttpServletResponse
response)
        throws ServletException, IOException {
        response.setContentType("text/html");
        PrintWriter out = response.getWriter();

        String name = request.getParameter("hUsername");
        if (name != null && !name.equals("")) {
            out.print("<b>Welcome to Profile</b>");
            out.print("<br>Welcome, " + name);
        } else {
            out.print("<font color=red>Please login first</font>");
            request.getRequestDispatcher("login.html").include(request,
response);
        }
        out.close();
    }

}
```

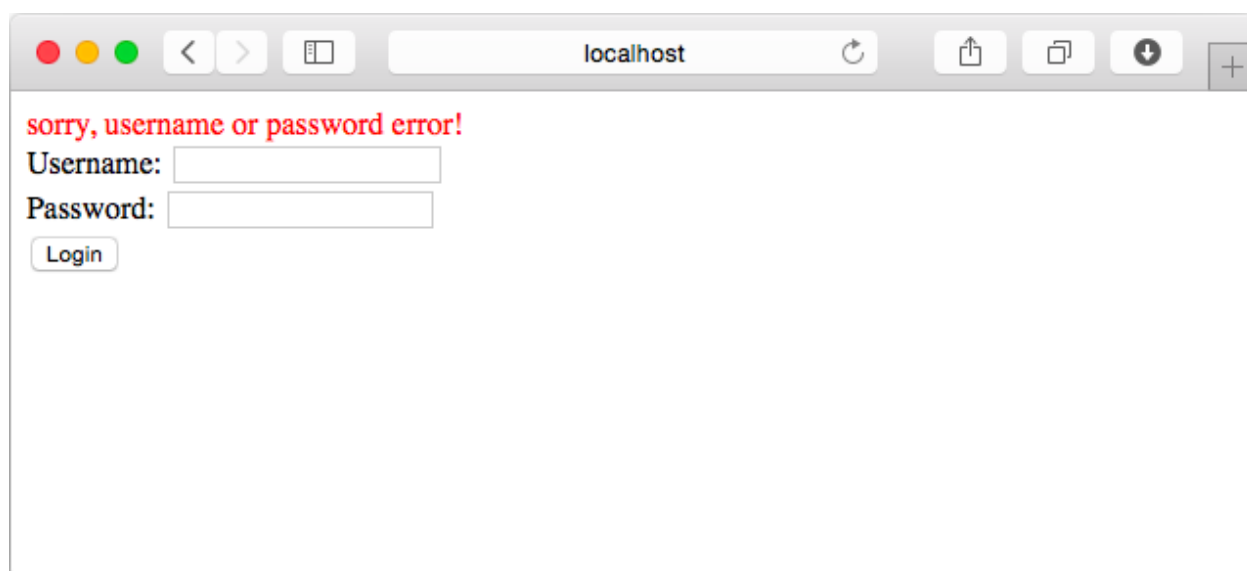
STEP 4: Chạy project



Username:

Password:

Login

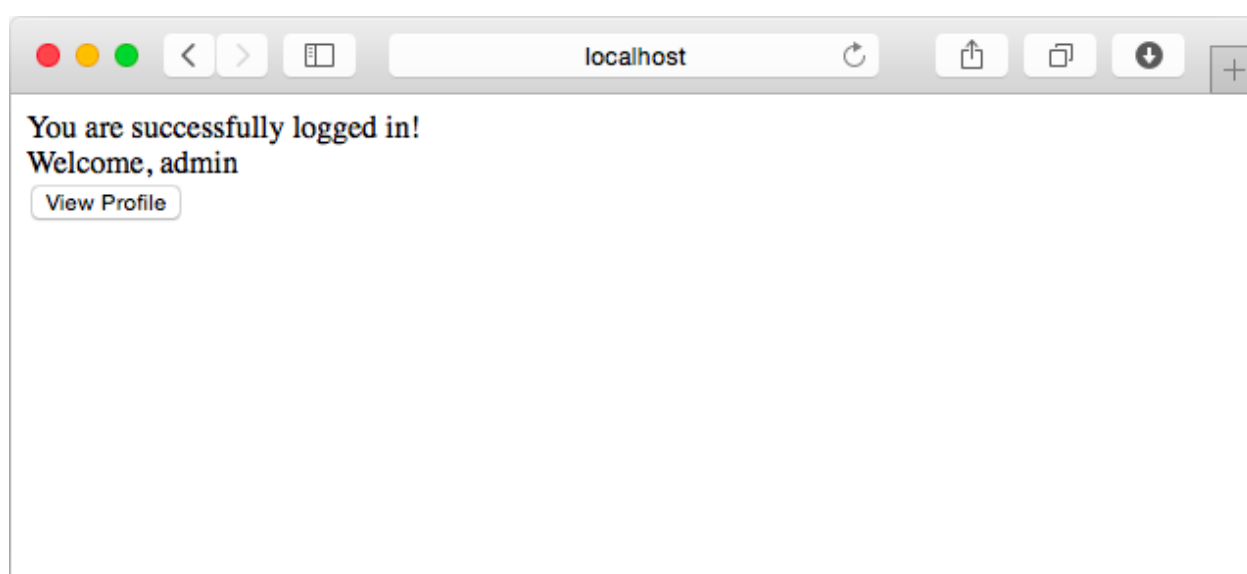


sorry, username or password error!

Username:

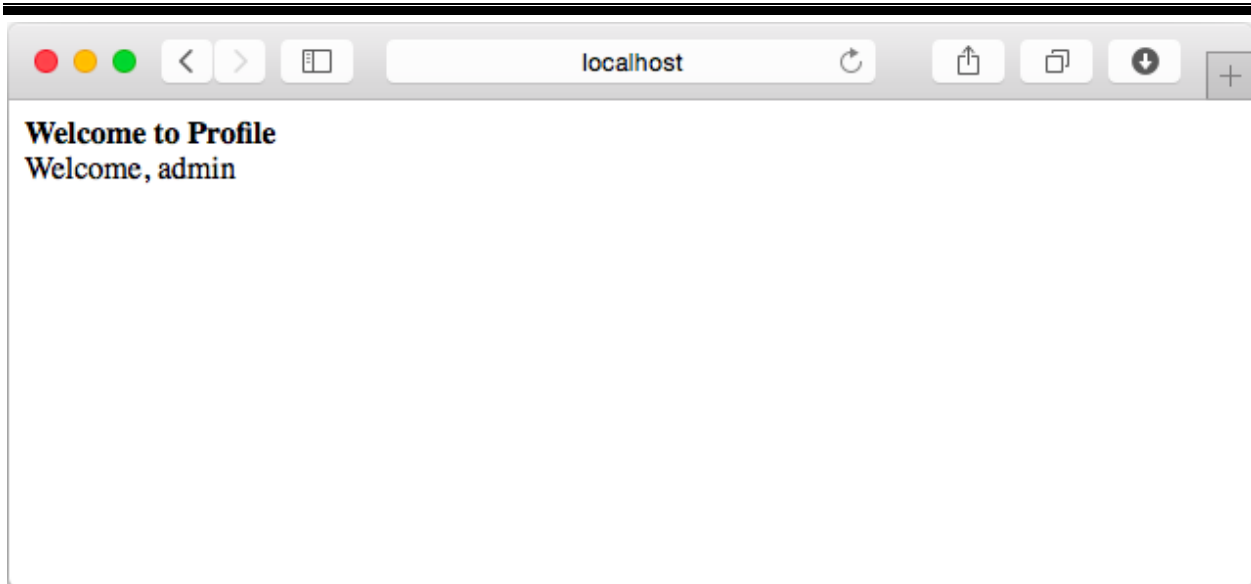
Password:

Login



You are successfully logged in!
Welcome, admin

View Profile



Hidden Form Field thực hiện bên server side, mỗi một form submission cần phải được tạo cho mỗi một page (nếu chúng ta muốn lưu thông tin user qua nhiều page, thì qua mỗi page đều phải tạo một hidden form field).

BÀI 1.3:

- **Session tracking sử dụng URL rewriting**

STEP 1: Tạo web project

File -> New Project -> Java Web -> Web Application

Project Name: URLRewritingExample

Server: GlassFish

Bỏ chọn framework -> Finish

STEP 2: Tạo các trang view

Tạo trang login.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="LoginServlet" method="post">

        Username: <input type="text" name="user">

        <br>

        Password: <input type="password" name="pwd">

        <br>

        <input type="submit" value="Login">

    </form>

</body>

</html>
```

Tạo trang viewProfile.jsp

```
<%@page contentType="text/html" pageEncoding="UTF-8"%>

<!DOCTYPE html>

<html>

    <head>

        <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">

        <title>URL Rewriting Example</title>

    </head>

    <body>

        <h1>Welcome to profile!</h1>
```

```
<h2>Welcome, <%=request.getParameter("name")%> </h2>
```

```
</body>
```

```
</html>
```

STEP 3: Tạo LoginServlet

Tạo mới package servlet -> New Servlet: LoginServlet

Chọn Add information to deployment descriptor (web.xml)

```
package servlet;

import java.io.IOException;
import java.io.PrintWriter;
import javax.servlet.ServletException;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;

public class LoginServlet extends HttpServlet {

    protected void doPost(HttpServletRequest request, HttpServletResponse
response)
        throws ServletException, IOException {
        response.setContentType("text/html");
        PrintWriter out = response.getWriter();

        String name = request.getParameter("user");
        String password = request.getParameter("pwd");

        if (password.equals("admin123")) {
            String url = response.encodeRedirectURL("viewProfile.jsp?name=" +
name);
            response.sendRedirect(url);
        } else {
            out.print("<font color=red>sorry, username or password
error!</font>");
            request.getRequestDispatcher("login.html").include(request,
response);
        }

        out.close();
    }
}
```

Chúng ta đã sử dụng:

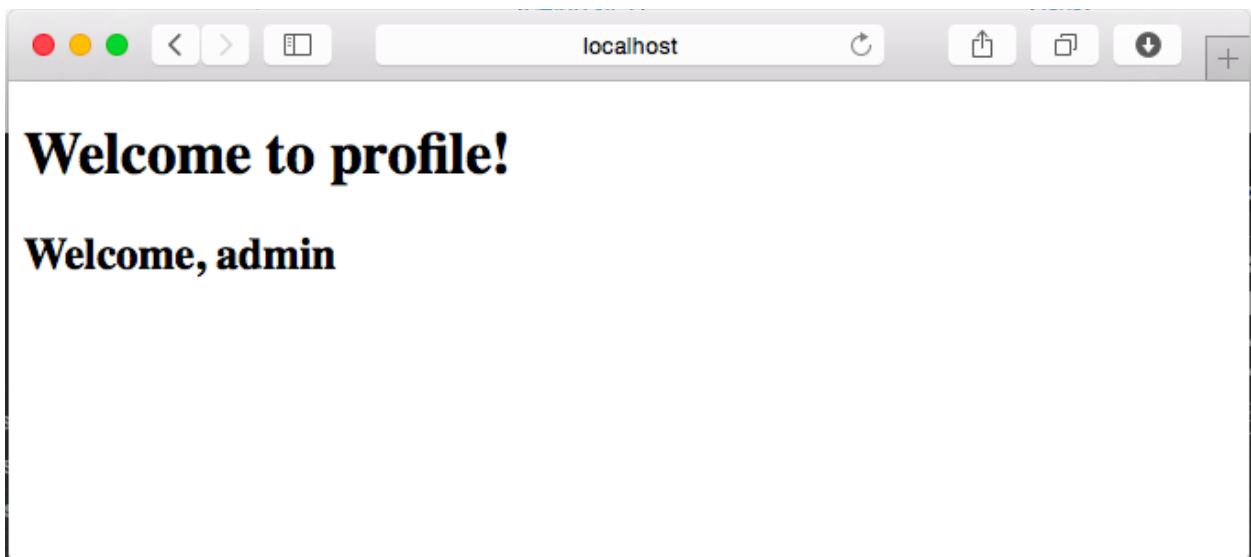
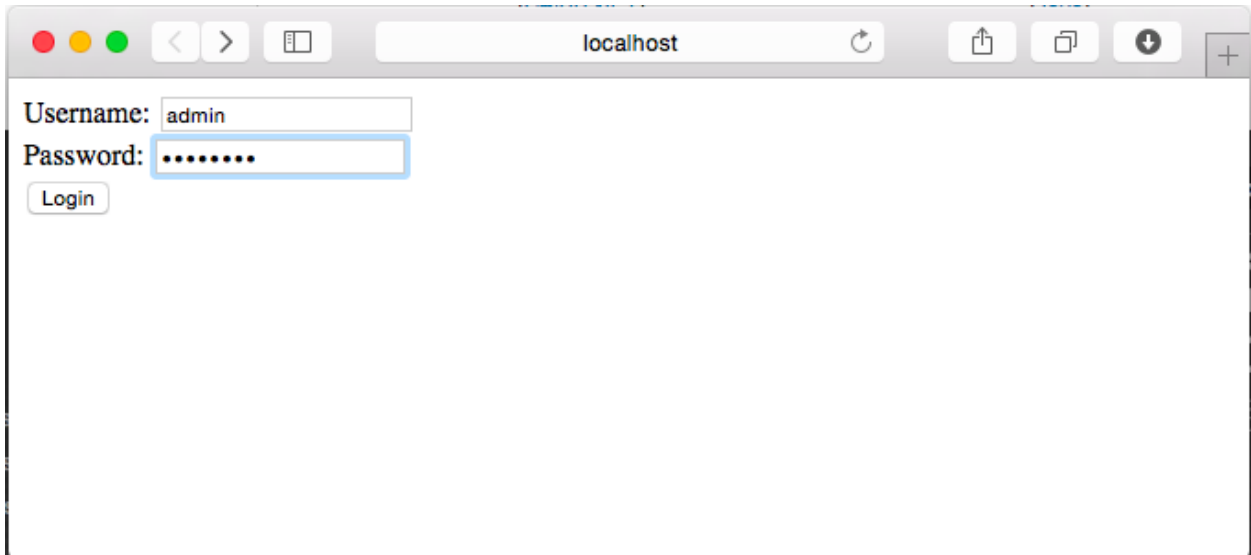
```
String url = response.encodeRedirectURL("viewProfile.jsp?name=" + name);
```



```
response.sendRedirect(url);
```

để redirect tới trang viewProfile nhưng rewriting lại url này bằng cách thêm vào parameter “name”.

STEP 4: Chạy project



Bài 1.4:

- Session Tracking sử dụng HttpSession

STEP 1: Tạo web project HttpSessionExample

STEP 2: Tạo các trang view login.html, link.html, index.html

Copy các trang này từ bài 1.1

STEP 3: Tạo các servlet LoginServlet, LogoutServlet, ProfileServlet

Sử dụng HttpSession trong các servlet để set và get attribute lấy về username khi login.

LoginServlet:

```
package servlet;

import java.io.IOException;
import java.io.PrintWriter;
import javax.servlet.ServletException;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;

public class LoginServlet extends HttpServlet {

    protected void doPost(HttpServletRequest request, HttpServletResponse
response)
        throws ServletException, IOException {
        response.setContentType("text/html");
        PrintWriter out = response.getWriter();

        request.getRequestDispatcher("link.html").include(request, response);

        String name = request.getParameter("user");
        String password = request.getParameter("pwd");

        if (password.equals("admin123")) {
            out.print("You are successfully logged in!");
            out.print("<br>Welcome, " + name);
            HttpSession session = request.getSession();
            session.setAttribute("name", name);
        } else {
            out.print("<font color=red>sorry, username or password
error!</font>");
            request.getRequestDispatcher("login.html").include(request,
response);
        }

        out.close();
    }
}
```

LogoutServlet

```
package servlet;

import java.io.IOException;
import java.io.PrintWriter;
import javax.servlet.ServletException;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;

public class LogoutServlet extends HttpServlet {

    protected void doGet(HttpServletRequest request, HttpServletResponse
response)
        throws ServletException, IOException {
        response.setContentType("text/html");
        PrintWriter out=response.getWriter();
        request.getRequestDispatcher("link.html").include(request, response);

        HttpSession session = request.getSession(false);
        System.out.println("User="+session.getAttribute("name"));
        if (session != null)
            session.invalidate();
        out.print("You are successfully logged out!");
    }
}
```

ProfileServlet:

```
package servlet;

import java.io.IOException;
import java.io.PrintWriter;
import javax.servlet.ServletException;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;

public class ProfileServlet extends HttpServlet {

    protected void doGet(HttpServletRequest request, HttpServletResponse
response)
        throws ServletException, IOException {
        response.setContentType("text/html");
        PrintWriter out = response.getWriter();

        request.getRequestDispatcher("link.html").include(request, response);

        HttpSession session = request.getSession();
```

```

        if (session.getAttribute("name") != null) {
            String name = (String)session.getAttribute("name");
            if (name != null) {
                out.print("<b>Welcome to Profile</b>");
                out.print("<br>Welcome, " + name);
            }
        } else {
            out.print("<font color=red>Please login first</font>");
            request.getRequestDispatcher("login.html").include(request,
response);
        }
        out.close();
    }
}

```

STEP 4: Chạy project

Kết quả như bài 1.1.

PHẦN 2: BÀI TẬP TỰ LÀM

Hãy tạo trang Register.jsp cho project BookStoreOnl. Sau khi tạo xong user, add vào bảng Reader. Set trạng thái đăng nhập thông qua session, chứa username của reader. Tạo trang ViewProfile.jsp cho phép review lại thông tin Reader. Sau khi register/login, luôn luôn lưu lại tên đăng nhập của Reader trên session. Có thể set session time out trong web.xml để xoá trạng thái đăng nhập của Reader khi người dùng ko có thao tác mới trong một khoảng thời gian (Thời gian timeout).

HẾT