

Bài 2

Session, Cookie, Filter, Annotation

1. Mục tiêu

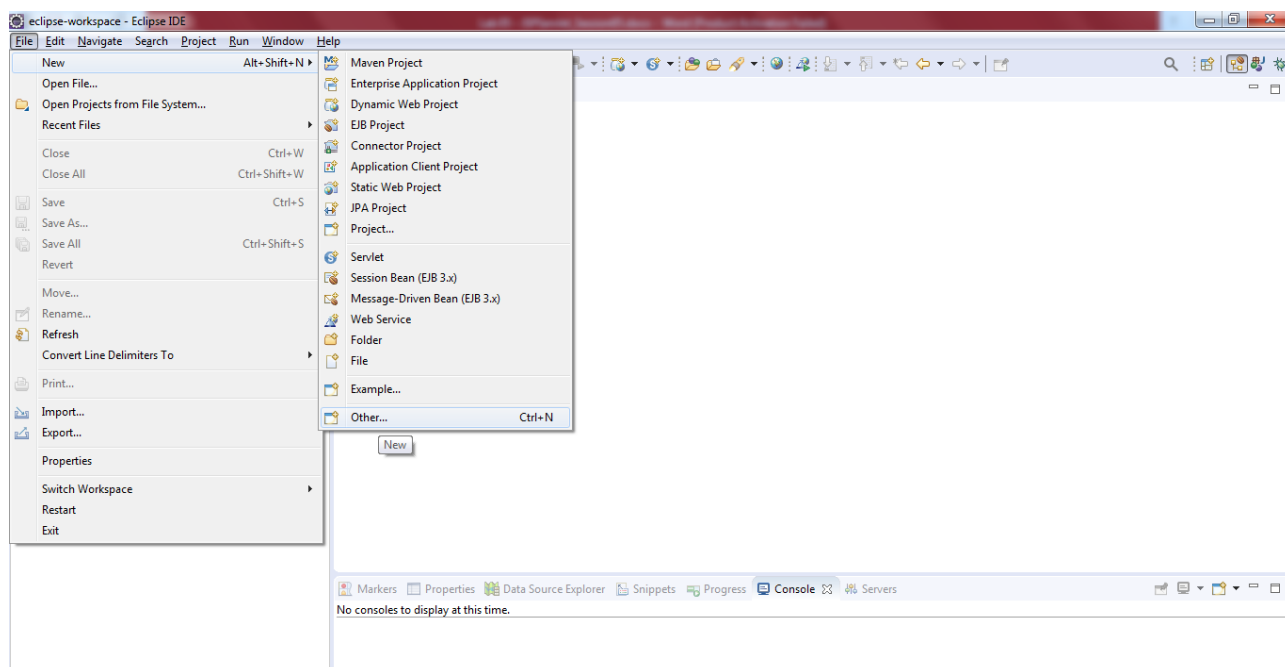
- Hiểu và làm việc được với Session
- Hiểu và làm việc được với Cookie
- Sử dụng filter để thay đổi dữ liệu gửi từ request lên servlet

2. Bài tập Step by Step

Bài toán 1: Sử dụng Session để thực hiện chức năng login và sử dụng cookie để thực hiện chức năng save password

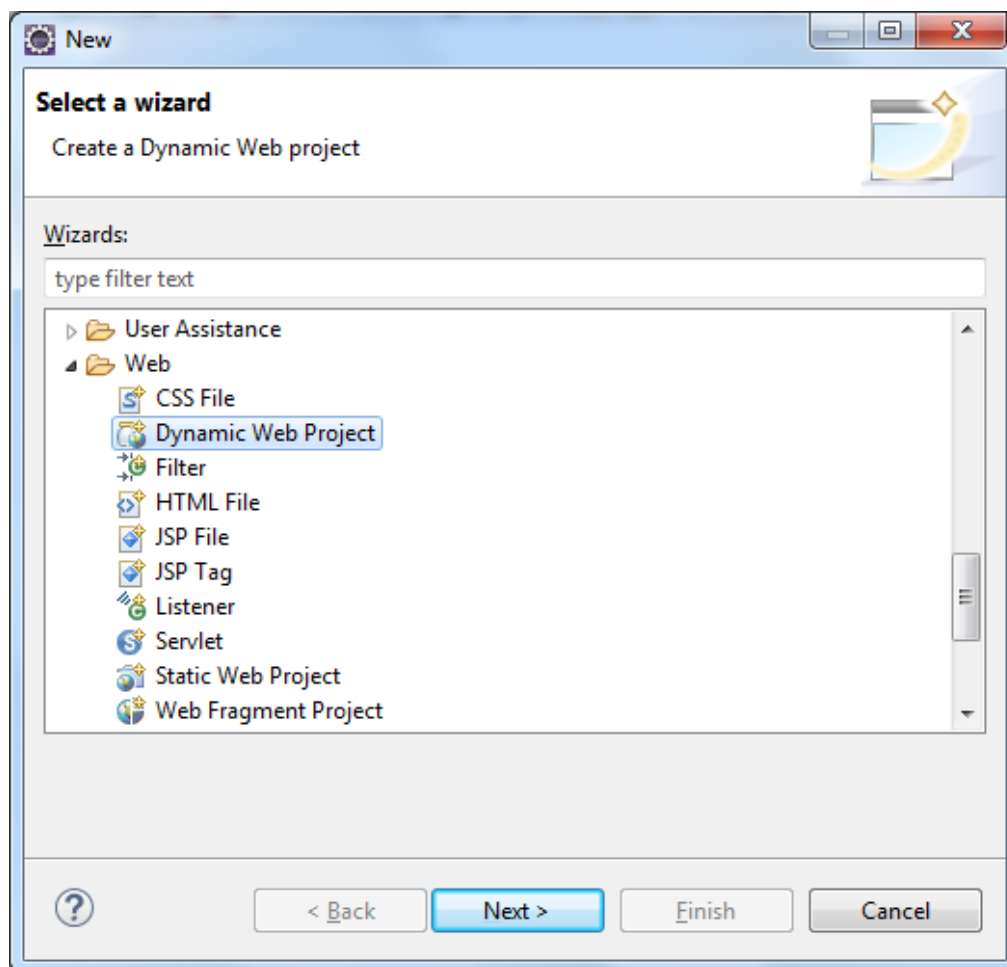
Bước 1: Tạo ứng dụng Dynamic web project

File / New / Other



Chọn Web / Dynamic Web Project





Đặt tên project **JSPServlet_Demo_Login**

- Target runtime nếu chưa có thì phải tạo New Runtime.. cho nó và trở tới thư mục của tomcat.

New Dynamic Web Project

Create a standalone Dynamic Web project or add it to a new or existing Enterprise Application.

Project name: JSPServlet_Demo_Login

Project location

☐ Use default location

Location: \SOAN TAI LIEU 2021\2. JSPSERVLET\Source code\JSPServlet_Demo_Login Browse...

Target runtime

Apache Tomcat v9.0 New Runtime...

Dynamic web module version

4.0

Configuration

Default Configuration for Apache Tomcat v9.0 Modify...

A good starting point for working with Apache Tomcat v9.0 runtime. Additional facets can later be installed to add new functionality to the project.

EAR membership

☐ Add project to an EAR

EAR project name: EAR New Project...

Working sets

☐ Add project to working sets New...

Working sets: Select...

< Back Next > Finish Cancel

Bước 2: Tạo trang index.jsp

Trong phần WebContent của project tạo trang index.jsp có nội dung như sau:

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



```
<!DOCTYPE html>
<html>
<head>
<meta charset="UTF-8">
<title>Insert title here</title>
</head>
<body>
    <h1>Please Login!</h1>
    <h3 style="color:red">${error}</h3>

    <form action="Login" method="post">
        <table>
            <tr>
                <td>Username:</td>
                <td><input type="text" name="username" required="required"
value="${cookie.username.value}"/></td>
            </tr>
            <tr>
                <td>Password:</td>
                <td><input type="password" name="password"
required="required" value="${cookie.password.value}"/></td>
            </tr>
            <tr>
                <td colspan="2">
                    <input type="checkbox" name="savepass" value="true"
${cookie.save.value?"checked":""}>Save Password
                </td>
            </tr>
            <tr>
                <td></td>
                <td>
                    <input type="submit" value="Login"/>
                    <input type="reset" value="Cancel"/>
                </td>
            </tr>
        </table>
    </form>
</body>
</html>
```

Bước 3 Tạo servlet Login và cài đặt lệnh như sau:

```
package servlet;

import java.io.IOException;
import javax.servlet.ServletException;
import javax.servlet.annotation.WebServlet;
import javax.servlet.http.Cookie;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.HttpSession;

/**
 * Servlet implementation class Login
 */
```



```
*/
@WebServlet("/Login")
public class Login extends HttpServlet {
    private static final long serialVersionUID = 1L;

    /**
     * @see HttpServlet#HttpServlet()
     */
    public Login() {
        super();
        // TODO Auto-generated constructor stub
    }

    /**
     * @see HttpServlet#doGet(HttpServletRequest request, HttpServletResponse
     * response)
     */
    protected void doGet(HttpServletRequest request, HttpServletResponse response)
        throws ServletException, IOException {
        String username = request.getParameter("username");
        String pass = request.getParameter("password");

        if (username.equals("admin") && pass.equals("12345")) {
            HttpSession session = request.getSession(true);
            session.setAttribute("username", username);

            // xử lý save pass
            String save = request.getParameter("savepass");
            Cookie cUser;
            Cookie cPass;
            Cookie cCheckbox;

            if (save!=null && save.equals("true")) {
                cUser = new Cookie("username", username);
                cPass = new Cookie("password", pass);
                cCheckbox = new Cookie("save", "true");
            } else {
                cUser = new Cookie("username", "");
                cPass = new Cookie("password", "");
                cCheckbox = new Cookie("save", "");
            }

            cUser.setMaxAge(60);
            cPass.setMaxAge(60);
            cCheckbox.setMaxAge(60);

            response.addCookie(cUser);
            response.addCookie(cPass);
            response.addCookie(cCheckbox);

            response.sendRedirect("home.jsp");
        } else {
            request.setAttribute("error", "Wrong username or password!");
            request.getRequestDispatcher("index.jsp").forward(request,
response);
        }
    }
}
```



```
}

/**
 * @see HttpServlet#doPost(HttpServletRequest request, HttpServletResponse
 *      response)
 */
protected void doPost(HttpServletRequest request, HttpServletResponse response)
    throws ServletException, IOException {
    // TODO Auto-generated method stub
    doGet(request, response);
}
}
```

Bước 4: Tạo trang home.jsp có nội dung như sau

```
<%@ page language="java" contentType="text/html; charset=UTF-8"
    pageEncoding="UTF-8"%>
<%@taglib prefix="c" uri="http://java.sun.com/jsp/jstl/core" %>
<!DOCTYPE html>
<html>
<head>
<meta charset="UTF-8">
<title>Insert title here</title>
</head>
<body>
    <c:if test="${empty username}">
        <jsp:forward page="index.jsp"></jsp:forward>
    </c:if>

    <h1>Welcome: ${username}!!!</h1>
    <br/>
    <a href="Logout">Logout</a>
</body>
</html>
```

Bước 5: Tạo servlet Logout

```
package servlet;

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

/**
 * Servlet implementation class Logout
 */
@WebServlet("/Logout")
public class Logout extends HttpServlet {
    private static final long serialVersionUID = 1L;
```



```
/**
 * @see HttpServlet#HttpServlet()
 */
public Logout() {
    super();
    // TODO Auto-generated constructor stub
}

/**
 * @see HttpServlet#doGet(HttpServletRequest request, HttpServletResponse
 response)
 */
protected void doGet(HttpServletRequest request, HttpServletResponse response)
throws ServletException, IOException {
    // TODO Auto-generated method stub
    request.getSession().invalidate();
    response.sendRedirect("index.jsp");
}

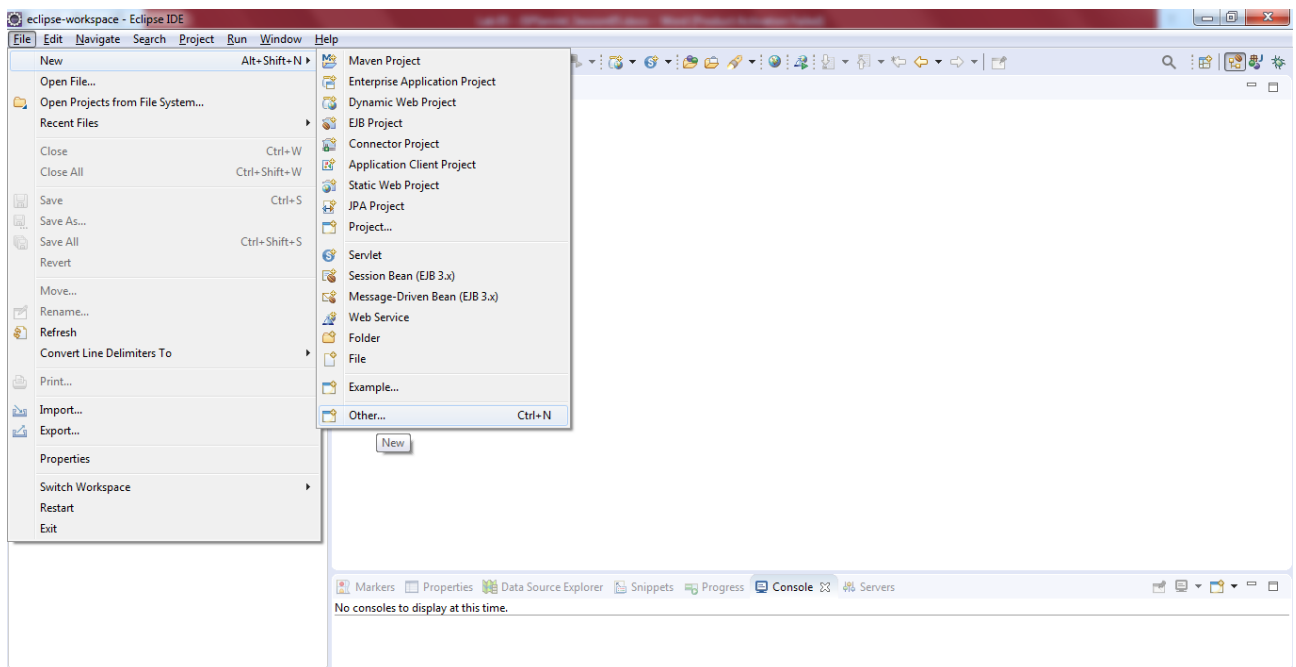
/**
 * @see HttpServlet#doPost(HttpServletRequest request, HttpServletResponse
 response)
 */
protected void doPost(HttpServletRequest request, HttpServletResponse response)
throws ServletException, IOException {
    // TODO Auto-generated method stub
    doGet(request, response);
}
}
```

Bài toán 2: Sử dụng Filter để thay đổi giá trị tham số từ request gửi tới servlet

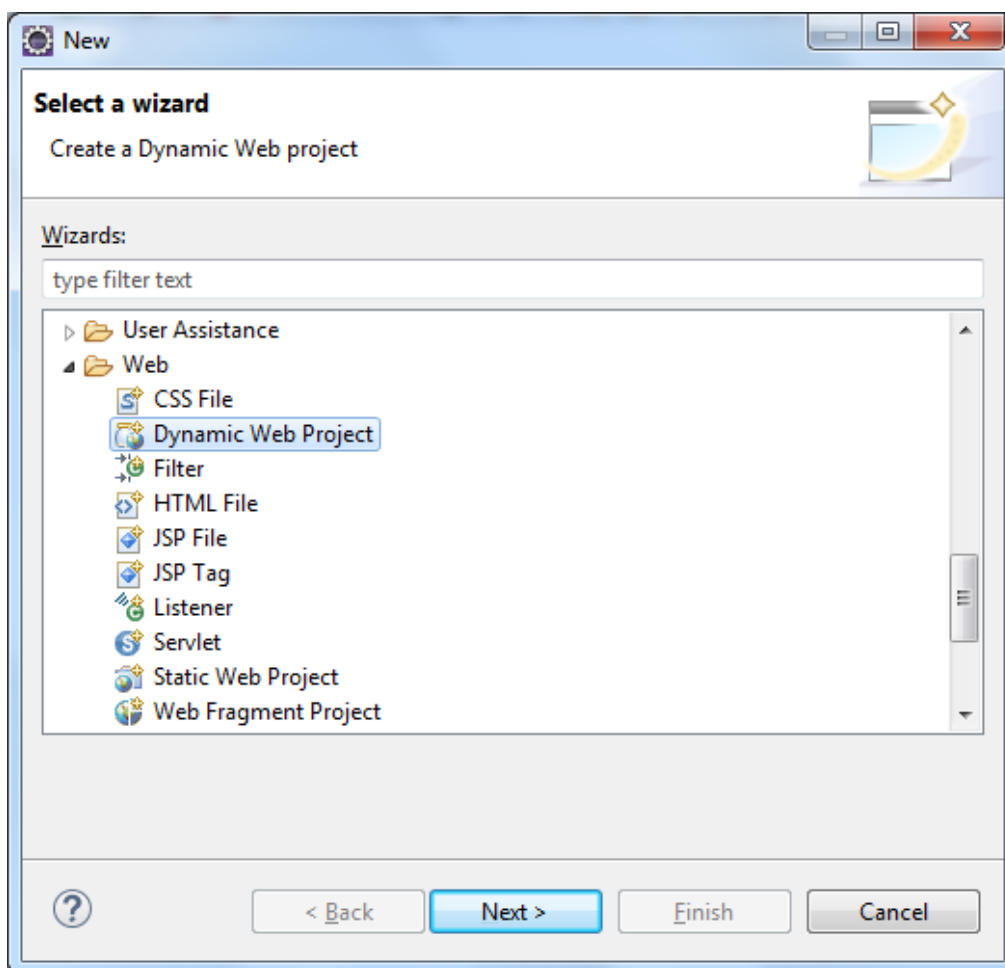
Bước 1: Tạo ứng dụng Dynamic web project

File / New / Other





Chọn Web / Dynamic Web Project



Đặt tên project **JSPServlet_Demo_Filter**

New Dynamic Web Project

Create a standalone Dynamic Web project or add it to a new or existing Enterprise Application.

Project name:

Project location

☐ Use default location

Location:

Target runtime

Dynamic web module version

Configuration

A good starting point for working with Apache Tomcat v9.0 runtime. Additional facets can later be installed to add new functionality to the project.

EAR membership

☐ Add project to an EAR

EAR project name:

Working sets

☐ Add project to working sets

Working sets:

Bước 2: Tạo trang index.jsp có nội dung như sau

```
<%@ page language="java" contentType="text/html; charset=UTF-8"
    pageEncoding="UTF-8"%>
<!DOCTYPE html>
```

```
<html>
<head>
<meta charset="UTF-8">
<title>Demo Filter</title>
</head>
<body>
    <form action="InsertProduct" method="post">
        <table>
            <tr>
                <td>Product Id</td>
                <td>
                    <input type="text" name="proId"/>
                </td>
            </tr>
            <tr>
                <td>Product Name</td>
                <td>
                    <input type="text" name="proName"/>
                </td>
            </tr>
            <tr>
                <td>Producer</td>
                <td>
                    <input type="text" name="producer"/>
                </td>
            </tr>
            <tr>
                <td></td>
                <td>
                    <input type="submit" value="submit"/>
                    <input type="reset" value="clear"/>
                </td>
            </tr>
        </table>
    </form>
</body>
</html>
```

Bước 3: Tạo Filter ChangeData có nội dung như sau

```
package filter;

import java.io.IOException;
import javax.servlet.Filter;
import javax.servlet.FilterChain;
import javax.servlet.FilterConfig;
import javax.servlet.ServletException;
import javax.servlet.ServletRequest;
import javax.servlet.ServletResponse;
import javax.servlet.annotation.WebFilter;
import javax.servlet.annotation.WebInitParam;

/**
```

```
* Servlet Filter implementation class ChangeData
*/
@WebFilter(
    urlPatterns = { "/ChangeData" },
    initParams = {
        @WebInitParam(name = "n", value = "100")
    })
public class ChangeData implements Filter {
    FilterConfig config;
    /**
     * Default constructor.
     */
    public ChangeData() {
        // TODO Auto-generated constructor stub
    }

    /**
     * @see Filter#destroy()
     */
    public void destroy() {
        // TODO Auto-generated method stub
    }

    /**
     * @see Filter#doFilter(ServletRequest, ServletResponse, FilterChain)
     */
    public void doFilter(ServletRequest request, ServletResponse response,
        FilterChain chain) throws IOException, ServletException {
        // TODO Auto-generated method stub
        // place your code here
        String id = request.getParameter("proId");
        String name = request.getParameter("proName");
        String producer = request.getParameter("producer");

        if(name!=null) {
            name = name.toUpperCase();
            request.setAttribute("name", name);
        }
        if(producer!=null) {
            producer = producer.toUpperCase();
            request.setAttribute("producer", producer);
        }

        String n = config.getInitParameter("n");
        request.setAttribute("n", n);

        // pass the request along the filter chain
        chain.doFilter(request, response);
    }

    /**
     * @see Filter#init(FilterConfig)
     */
    public void init(FilterConfig fConfig) throws ServletException {
        // TODO Auto-generated method stub
        this.config = fConfig;
    }
}
```



```
}  
  
}
```

Bước 4: Tạo Servlet InsertProduct có nội dung như sau

```
package servlet;  
  
import java.io.IOException;  
import javax.servlet.ServletException;  
import javax.servlet.annotation.WebServlet;  
import javax.servlet.http.HttpServlet;  
import javax.servlet.http.HttpServletRequest;  
import javax.servlet.http.HttpServletResponse;  
  
/**  
 * Servlet implementation class InsertProduct  
 */  
@WebServlet(urlPatterns = {"/InsertProduct"}, asyncSupported = true)  
public class InsertProduct extends HttpServlet {  
    private static final long serialVersionUID = 1L;  
  
    /**  
     * @see HttpServlet#HttpServlet()  
     */  
    public InsertProduct() {  
        super();  
        // TODO Auto-generated constructor stub  
    }  
  
    /**  
     * @see HttpServlet#doGet(HttpServletRequest request, HttpServletResponse  
     response)  
     */  
    protected void doGet(HttpServletRequest request, HttpServletResponse response)  
    throws ServletException, IOException {  
        // TODO Auto-generated method stub  
        request.setCharacterEncoding("UTF-8");  
  
        String proId = request.getParameter("proId");  
        String proName = request.getParameter("proName");  
        String producer = request.getParameter("producer");  
  
        String name = (String) request.getAttribute("name");  
        String prod = (String) request.getAttribute("producer");  
        String n = (String) request.getAttribute("n");  
  
        request.setAttribute("proId", proId);  
        request.setAttribute("proName", proName);  
        request.setAttribute("producer", producer);  
        request.setAttribute("proNameUpper", name);  
        request.setAttribute("producerUpper", prod);  
        request.setAttribute("n", n);  
    }  
}
```



```
        request.getRequestDispatcher("viewProduct.jsp").forward(request,
response);
    }

    /**
     * @see HttpServlet#doPost(HttpServletRequest request, HttpServletResponse
response)
     */
    protected void doPost(HttpServletRequest request, HttpServletResponse response)
throws ServletException, IOException {
        // TODO Auto-generated method stub
        doGet(request, response);
    }
}
```

Bước 5: Tạo trang viewProduct.jsp có nội dung như sau

```
<%@ page language="java" contentType="text/html; charset=UTF-8"
    pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
<head>
<meta charset="UTF-8">
<title>View Product</title>
</head>
<body>
    <table>
        <tr>
            <td>Product Id:</td>
            <td>${proId}</td>
        </tr>
        <tr>
            <td>Product Name:</td>
            <td>${proName}</td>
        </tr>
        <tr>
            <td>Producer:</td>
            <td>${producer}</td>
        </tr>
        <tr>
            <td>Product Name Upper:</td>
            <td>${proNameUpper}</td>
        </tr>
        <tr>
            <td>Producer Upper:</td>
            <td>${producerUpper}</td>
        </tr>
    </table>
    <p>Value of n:${n}</p>
    <a href="index.jsp">Back</a>
</body>
</html>
```



3. Bài tập tự làm

Bài 1. Tạo form để nhập vào thông tin của 1 sinh viên:

- Mã sinh viên
- Họ tên
- Giới tính
- Ngày sinh
- Quê quán
- Lớp

Sử dụng HttpSession mang dữ liệu từ Servlet đến trang jsp để hiển thị.

Bài 2. Tạo form để nhập vào thông tin của 1 sinh viên:

- Mã sinh viên
- Họ tên
- Giới tính
- Ngày sinh
- Quê quán
- Lớp

Sử dụng Cookie mang dữ liệu từ Servlet đến trang jsp để hiển thị.

➔ Mở rộng thêm với cách hủy Session và Cookie trong ứng dụng.