JavaServer Pages Standard Tag Library

Objectives:

1. Understanding about JSTL.

2. How to using JSTL with SQL.

3. How to using JSTL with EL.

7.1 JSTL and SQL

Step 1. Create database named: "**jsp**". In this lab, I use the MySQL database.

Step 2. In "**jsp**" database, create a table named: "**Users**" with structure as below:

➢ **STT**: int, auto_increment

➢ **HoTen**: varchar(50)

➢ **DiaChi**: varchar(1000)

Step 3. Add some samples data into "**Users**" table.

Step 4. Create a web application in **Netbeans**

Step 5. Add library JSTL for the project.

Step 6. Create a jsp file named: **index.jsp** and add the following code as below:

```jsp
<%--
    Document    : index
    Created on : Mar 16, 2017, 2:12:59 PM
    Author      : lhhuong
--%>


<%@page contentType="text/html" pageEncoding="UTF-8"%>
<%@ taglib prefix="sql" uri="http://java.sun.com/jsp/jstl/sql" %>
<%@ taglib prefix="c" uri="http://java.sun.com/jsp/jstl/core" %>
<!DOCTYPE html>
<html>
    <head>
        <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
        <title>JSP Page</title>
        <style>
            form {
                border: 3px solid #f1f1f1;
            }

            input[type=text]{
                width: 100%;
                padding: 12px 20px;
                margin: 8px 0;
                display: inline-block;
                border: 1px solid #ccc;
                box-sizing: border-box;
            }
```

```css
.btn{
    background-color: #4CAF50;
    color: white;
    padding: 14px 20px;
    margin: 8px 0;
    border: none;
    cursor: pointer;
    width: 100%;
}

.btn:hover {
    opacity: 0.8;
}

.cancelbtn {
    width: auto;
    padding: 10px 18px;
    background-color: #f44336;
}



.sendbtn {
    width: auto;
    padding: 10px 18px;
    background-color: green;
}

.container {
    padding: 16px;
}

span.psw {
    float: right;
    padding-top: 16px;
}

/* Change styles for span and cancel button on extra small
screens */
@media screen and (max-width: 300px) {
```

```
            span.psw {
                display: block;
                float: none;
            }
            .cancelbtn {
                width: 100%;
            }
        }
    </style>
</head>
<body>
    <h1>JSTL and SQL</h1>


    <!-- Bat dau cho xu ly -->
    <!--Kiem tra nguoi dung co nhan nut them khong?-->
    <c:if test="${! empty param.btnAdd}">
        <!-- Neu nguoi dung co nhap ho ten va dia chi -->
        <c:if    test="${!   empty   param.txtFullName   &&   !   empty
param.txtAddress}">
            <!-- Ket noi csdl-->
            <sql:setDataSource var="conn" scope="session"
                               url="jdbc:mysql://localhost/jsp"
user="root" password=""
                               driver="com.mysql.jdbc.Driver"/>


            <!-- Tao cau lenh insert-->
            <sql:update dataSource="${conn}"
                        var="result"
                        scope="session"
                        sql="Insert    into    Users(HoTen,    DiaChi)
values(?,?)">
                <sql:param value="${param.txtFullName}" />
                <sql:param value="${param.txtAddress}" />
            </sql:update>
            <!-- Neu du lieu them thanh cong thi hien thi thong bao -
->
            <c:if test="${result > 0}">
                Data is added into database
            </c:if>
```

```
                    <!-- Hien thi thong bao loi neu khong the them vao csdl -
->
                    <c:if test="${result <= 0}">
                        Cannot add the data into database
                    </c:if>
            </c:if>


            <!-- Hien thi thong bao loi khi nguoi dung khong nhap du lieu
-->
            <c:if       test="${empty      param.txtFullName     ||     empty
param.txtAddress}">
                    Data cannot be null!
            </c:if>
        </c:if>


        <!--Ket thuc xu ly-->



        <form method="post">
            <div class="container">
                <label><b>Full Name</b></label>
                <input  type="text"  placeholder="Enter  your  fullname"
name="txtFullName" required="">


                <label><b>Address</b></label>
                <input   type="text"   placeholder="Enter   your   address"
name="txtAddress" required="">



            </div>


            <div class="container" style="background-color:#f1f1f1">
                <input  type="submit"  class="btn  sendbtn"  name="btnAdd"
value="Add New" />
                <input type="reset" class="btn cancelbtn" />
            </div>
        </form>
    </body>
</html>
```

7.2 JSTL and EL

Step 1. Create a web application in **Netbeans.**

Step 2. Create a jsp file named **index.jsp** and add following code as below:

```jsp
<%@page contentType="text/html" pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
    <head>
        <meta http-equiv="Content-Type" content="text/html; charset=UTF-
8">
        <title>JSP Page</title>
    </head>
    <body>
        <h1>USING JSTL AND EL</h1>
        <ul>
            <li><a href="insert.jsp">Add New</a></li>
            <li><a href="list.jsp">List All</a></li>
        </ul>
        <div class="footer" align="right">
            <br>
            <hr>
            <h5>Web Component Development</h5>
        </div>
    </body>
</html>
```

Step 3. Create a jsp file named **list.jsp** and add following code as below:

```jsp
<%@page contentType="text/html" pageEncoding="UTF-8"%>
<%@ taglib prefix="c" uri="http://java.sun.com/jsp/jstl/core"%>
<%@ taglib prefix="sql" uri="http://java.sun.com/jsp/jstl/sql"%>
<!DOCTYPE html>
<html>
    <head>
        <link rel="stylesheet" type="text/css" href="Style.css" />
        <title>Database demo</title>
    </head>
    <body>
```

```
<h1>Demo sql tag library</h1>
<a href="insert.jsp">Add new</a>
<sql:setDataSource
driver="com.microsoft.sqlserver.jdbc.SQLServerDriver"
                    url="jdbc:sqlserver://LHHUONG-
PC;database=Northwind;" user="sa"
                    password="sa" var="conn"/>
<sql:update    var="delete"    dataSource="${conn}"    sql="Delete
Employees where
                employeeid='${param.del}'" />
<sql:query var="employees" dataSource="${conn}">
    Select top 5 EmployeeID, FirstName, LastName from employees
</sql:query>
<table width="100%" border="1px" align="center">
    <tr bgcolor="#CFCF99">
        <c:forEach                              var="columnName"
items="${employees.columnNames}">
            <td width="27%"><c:out value="${columnName}"/></td>
        </c:forEach>
        <td>Del</td>
    </tr>
    <c:forEach var="row" items="${employees.rows}">
        <tr>
            <c:forEach var="column" items="${row}">
                <td><c:out value="${column.value}"/></td>
            </c:forEach>
            <td>
                <a href="list.jsp?del=${row.EmployeeID}">Del</a>
                <a
href="edit.jsp?id=${row.EmployeeID}&f=${row.FirstName}&l=${row.LastName}"
>Edit</a>
            </td>
        </tr>
    </c:forEach>
</table>
<div class="footer" align="right">
    <br>
    <hr>
    <h5>Web Component Development</h5>
</div>
</body>
```

```
</html>
```

Step 4. Create jsp file named **insert.jsp** and add the following code as below:

```
<%@page contentType="text/html" pageEncoding="UTF-8"%>
<%@ taglib prefix="sql" uri="http://java.sun.com/jsp/jstl/sql"%>
<%@ taglib prefix="c" uri="http://java.sun.com/jsp/jstl/core"%>
<!DOCTYPE html>
<html>
    <head>
        <link rel="stylesheet" type="text/css" href="myStyle.css" />
        <title>Edit Page</title>
    </head>
    <body>
        <a href="insert.jsp">Add new</a> |
        <a href="list.jsp">Listall</a>
        <form action="edit.jsp" method="post">
            <table align="center">
                <tr><td     colspan="2"     align="center">    <h1>JSP
Page</h1></td></tr>
                <tr>
                    <td>ID</td>
                    <td><input          type="text"          name="txtid"
value="${param.id}"></td>
                </tr>
                <tr>
                    <td>First name</td>
                    <td><input          type="text"        name="txtfirst"
value="${param.f}"></td>
                </tr>
                <tr>
                    <td>Last name</td>
                    <td><input          type="text"         name="txtlast"
value="${param.l}"></td>
                </tr>
                <tr>
                    <td></td>
                    <td><input type="submit" value="Update"></td>
                </tr>
            </table>
            <c:if test="${!empty param.txtid}">
```

```
            <sql:setDataSource
driver="com.microsoft.sqlserver.jdbc.SQLServerDriver"
                            url="jdbc:sqlserver://LHHUONG-
PC;database=Northwind;" user="sa"
                            password="sa" var="conn"/>
            <sql:update var="update" dataSource="${conn}">
                Update Employees set FirstName=?, Lastname=? where
EmployeeID=?
                <sql:param value="${param.txtfirst}"/>
                <sql:param value="${param.txtlast}"/>
                <sql:param value="${param.txtid}"/>
            </sql:update>
        </c:if>
    </form>
    <div class="footer" align="right">
        <br>
        <hr>
        <h5>Web Component Development</h5>
    </div>
    </body>
</html>
```

Step 5. Create jsp file named **edit.jsp** and add the following code as below:

```
<%@page contentType="text/html" pageEncoding="UTF-8"%>
<%@ taglib prefix="sql" uri="http://java.sun.com/jsp/jstl/sql"%>
<%@ taglib prefix="c" uri="http://java.sun.com/jsp/jstl/core"%>
<!DOCTYPE html>
<html>
    <head>
        <link rel="stylesheet" type="text/css" href="myStyle.css" />
        <title>Edit Page</title>
    </head>
    <body>
        <a href="insert.jsp">Add new</a> |
        <a href="list.jsp">Listall</a>
        <form action="edit.jsp" method="post">
            <table align="center">
                <tr><td    colspan="2"    align="center">    <h1>JSP
Page</h1></td></tr>
                <tr>
```

```html
                    <td>ID</td>
                    <td><input            type="text"            name="txtid"
value="${param.id}"></td>
                </tr>
                <tr>
                    <td>First name</td>
                    <td><input           type="text"          name="txtfirst"
value="${param.f}"></td>
                </tr>
                <tr>
                    <td>Last name</td>
                    <td><input           type="text"          name="txtlast"
value="${param.l}"></td>
                </tr>
                <tr>
                    <td></td>
                    <td><input type="submit" value="Update"></td>
                </tr>
            </table>
            <c:if test="${!empty param.txtid}">
                <sql:setDataSource
driver="com.microsoft.sqlserver.jdbc.SQLServerDriver"
                            url="jdbc:sqlserver://LHHUONG-
PC;database=Northwind;" user="sa"
                            password="sa" var="conn"/>
                <sql:update var="update" dataSource="${conn}">
                    Update Employees set FirstName=?, Lastname=? where
EmployeeID=?
                    <sql:param value="${param.txtfirst}"/>
                    <sql:param value="${param.txtlast}"/>
                    <sql:param value="${param.txtid}"/>
                </sql:update>
            </c:if>
        </form>
        <div class="footer" align="right">
            <br>
            <hr>
            <h5>Web Component Development</h5>
        </div>
    </body>
</html>
```

Step 6. Create jsp file named **transaction.jsp** and add the following code as below:

```
<%@page              contentType="text/html"              pageEncoding="UTF-8"
errorPage="ExceptionHandler.jsp" %>
<%@taglib uri="http://java.sun.com/jsp/jstl/core" prefix="c"%>
<%@taglib uri="http://java.sun.com/jsp/jstl/sql" prefix="sql"%>
<!DOCTYPE html>
<html>
    <head>
        <link rel="stylesheet" type="text/css" href="myStyle.css" />
        <title>Transaction</title>
    </head>
    <body>
        <h1>Transaction demo</h1>
        <sql:setDataSource
driver="com.microsoft.sqlserver.jdbc.SQLServerDriver"
                        url="jdbc:sqlserver://LHHUONG-
PC;database=Northwind;" user="sa"
                        password="sa" var="conn"/>
        <sql:transaction dataSource="${conn}">
            <sql:update var="update">
                Update  Employees  set  FirstName=?,  Lastname=?  where
EmployeeID=?
                <sql:param value="Mr"/>
                <sql:param value="Beeeeeeen"/>
                <sql:param value="1"/>
            </sql:update>
            <sql:update var="update1">
                Update  Employees  set  FirstName=?,  Lastname=?  where
EmployeeID=?
                <sql:param value="Mr"/>
                <sql:param value="Jacky"/>
                <sql:param value="a"/>
            </sql:update>
        </sql:transaction>
    </body>
</html>
```

Step 7. Create css file named **myStyle.css** and add the following code as below:

```
body{
```

```css
    background-color:#FFFFFE;
    text-align:left;
}
h1{
    color:orange;
}
h2{
    color:Gray;
}
h5{
    color:Gray;
}
p{
    font-family:"Times New Roman";font-size:20px;
}
hr {
    border: 0;
    color: orange;
    background-color: #d0e4fe;
    height: 1px;
    width: 100%;
    text-align: left;
}
input{
    border: 1px solid #006;
    background: #ffc;
}
input:hover {
    border: 1px solid #f00;
    background: #ff6;
}
textarea{
    border: 1px solid #006;
    background: #ffc;
}
textarea:hover {
    border: 1px solid #f00;
    background: #ff6;
}
```

```css
submit{
    border: none;
    background: url('/forms/up.png') no-repeat top left;
    padding: 2px 8px;
}
submit:hover{
    border: none;
    background: url('/forms/down.png') no-repeat top left;
    padding: 2px 8px;
}
label{
    display: block;
    width: 150px;
    float: left;
    margin: 2px 4px 6px 4px;
    text-align: right;
}
br { clear: left; }
table, td{
    border-top: 1px solid #d0e4fe;
    border-right: 1px solid #d0e4fe;
    border-bottom: 1px solid #d0e4fe;
    border-left: 1px solid #d0e4fe;
    border-spacing: 0px;
}
td{
    padding: 5px;
}
```