

JSP Custom Tags

Objectives:

1. Understanding about Custom tags in JSP.
2. How to define a custom tag in JSP.
3. How to use customer in JSP.

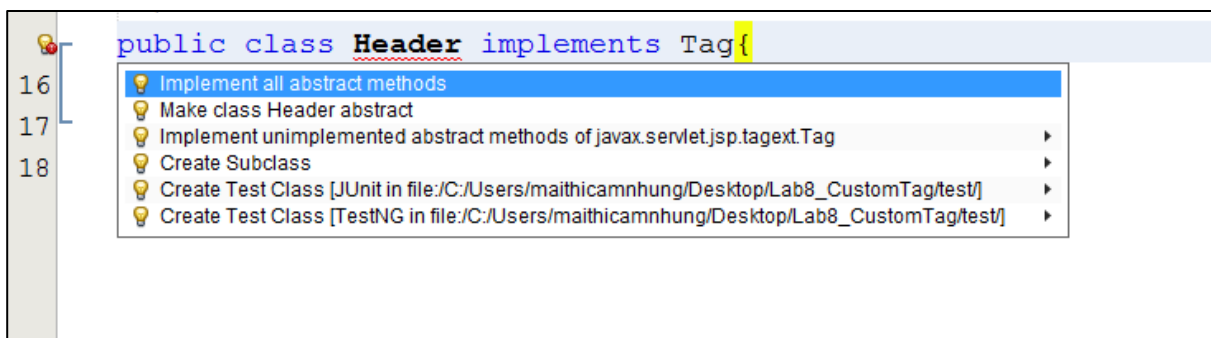
8.1 Create a custom tag: empty tag

➤ Create Header tag

Step 1. Create Tag Library Descriptor (customTag.tlb) file and insert xml section below:

```
<tag>
  <name>header</name>
  <tag-class>mySource.Header</tag-class>
  <body-content>empty</body-content>
  <attribute>
    <name>companyName</name>
    <required>true</required>
  </attribute>
</tag>
```

Step 2. Create java class (Header.java) in MySource package implement Tag interface.



Step 3. Adding the following code in Header class:

```
package mySource;

import java.io.IOException;
import java.util.logging.Level;
import java.util.logging.Logger;
import javax.servlet.jsp.JspException;
import javax.servlet.jsp.PageContext;
import javax.servlet.jsp.tagext.Tag;

public class Header implements Tag{

    private String companyName = "";

    public void setCompanyName(String companyName) {
```

```

        this.companyName = companyName;
    }

    PageContext pageContext;
    Tag parent;

    @Override
    public void setPageContext(PageContext pc) {
        this.pageContext = pc;
    }

    @Override
    public void setParent(Tag t) {
        this.parent = t;
    }

    @Override
    public Tag getParent() {
        return parent;
    }

    @Override
    public int doStartTag() throws JspException {
        try {
            pageContext.getOut().print("<h1>" + companyName + "</h1>");
            pageContext.getOut().print("<h3>Education Department</h3>");
        } catch (IOException ex) {
            Logger.getLogger(Header.class.getName()).log(Level.SEVERE, null,
ex);
        }
        return SKIP_BODY;
    }

    @Override
    public int doEndTag() throws JspException {
        return SKIP_BODY;
    }

    @Override
    public void release() {

```

```
}
```

Step 4. Create jsp page (home.jsp), using taglib tag register header tag:

```
<%@page contentType="text/html" pageEncoding="UTF-8"%>
<%@taglib uri="/WEB-INF/tlds/customTag.tld" prefix="my" %>
<!DOCTYPE html>
<html>
  <head>
    <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
    <title>Home</title>
  </head>
  <body>
    <my:header companyName="Can Tho University Software Center (CUSC)" />
  </body>
</html>
```

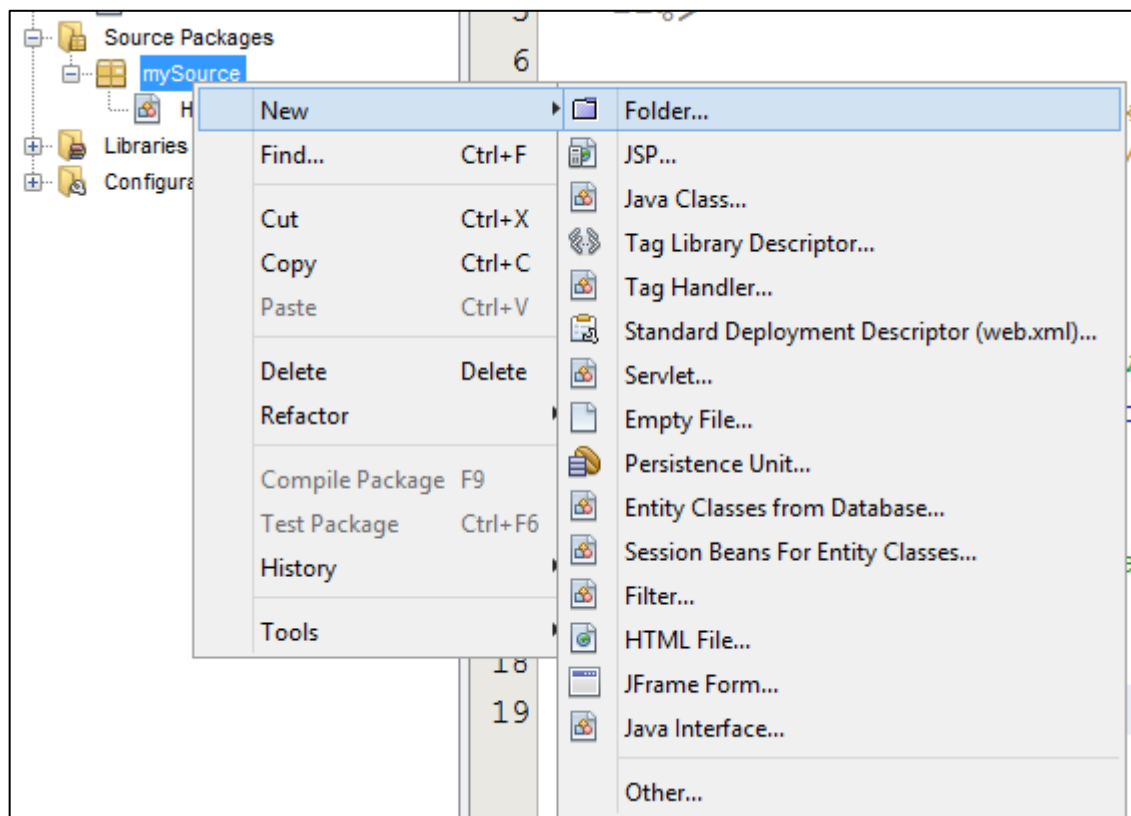
Step 5. Now build and run home.jsp page

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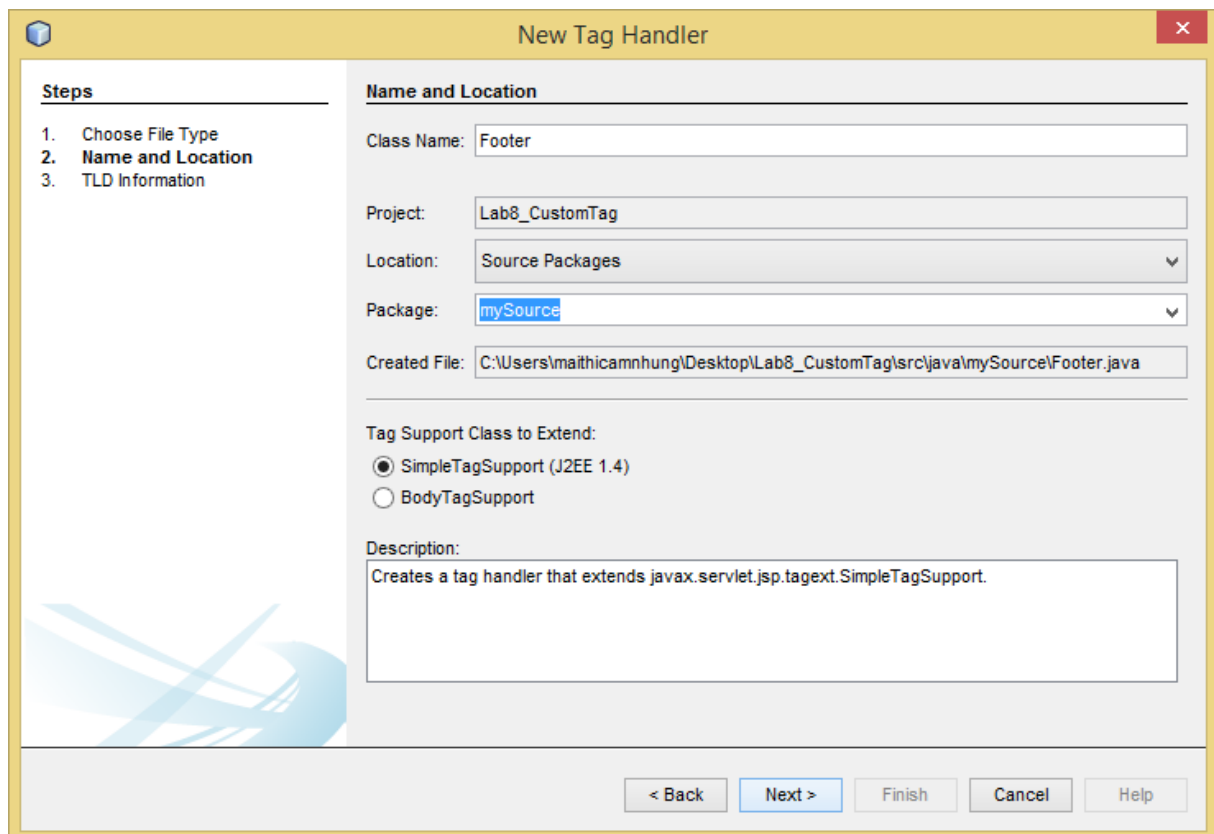
Education Department

➤ Create Footer tag

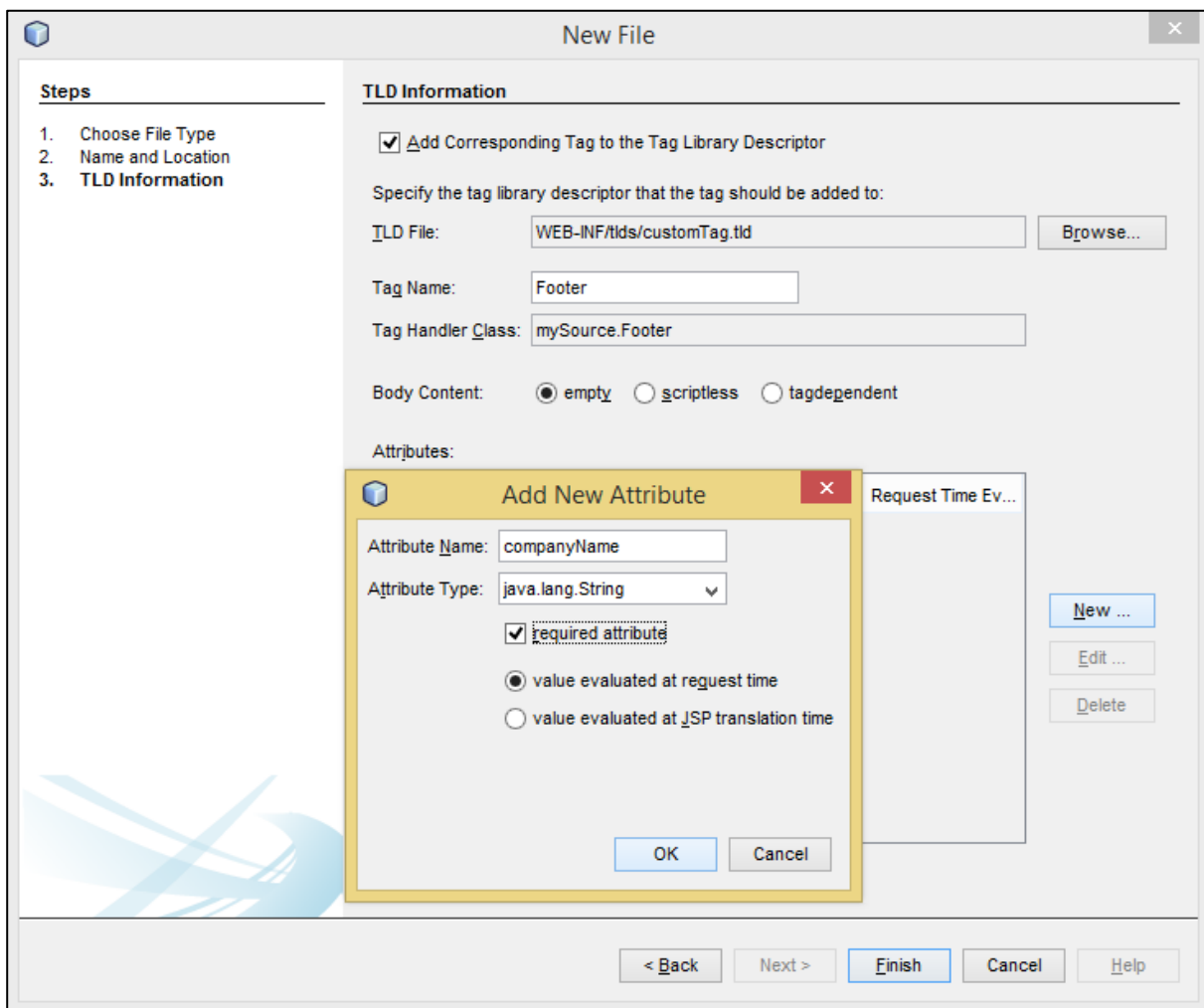
Step 6. Create Tag Handler (Footer.java):



Step 7. Select Tag Handler from netbean template:



Step 8. Provide tag name as footer and click next:



Step 9. Click Browse to select tld file, click New to add companyname attribute as figure above.

Step 10. Modified code as below:

```

public class Footer extends SimpleTagSupport {
    private String companyName;

    /**
     * Called by the container to invoke this tag. The implementation of this
     * method is provided by the tag library developer, and handles all tag
     * processing, body iteration, etc.
     */
    @Override
    public void doTag() throws JspException {
        JspWriter out = getJspContext().getOut();

        try {
            JspFragment f = getJspBody();
            out.print("<hr/><div align='right'><h4>" + companyName + "</h4>");
            out.print("<h5>Education Department</h5>");
            out.print("<h6>Jsp lab - 2013</h6></div>");
            if (f != null) {
                f.invoke(out);
            }
        } catch (java.io.IOException ex) {
            throw new JspException("Error in Footer tag", ex);
        }
    }

    public void setCompanyName(String companyName) {
        this.companyName = companyName;
    }
}

```

Step 11. Modified home.jsp as below:

```

<%@page contentType="text/html" pageEncoding="UTF-8"%>
<%@taglib uri="/WEB-INF/tlds/customTag.tld" prefix="my" %>
<!DOCTYPE html>
<html>
    <head>
        <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
        <title>Home</title>
    </head>
    <body>
        <my:header companyName="Can Tho University Software Center (CUSC)" />
        <my:Footer companyName="Can Tho University Software Center (CUSC)" />
    </body>
</html>

```

Step 12. Now build and run home.jsp page.

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8.2 Create custom tag: loop tag

Step 1. Create Tag Handler (Loop.java) extend from Simple Body Tag Support, with 2 attribute start and end.

New Tag Handler

Steps

1. Choose File Type
2. **Name and Location**
3. TLD Information

Name and Location

Class Name:

Project:

Location:

Package:

Created File:

Tag Support Class to Extend:

☐ SimpleTagSupport (J2EE 1.4)

☒ BodyTagSupport

Description:

< Back Next > Finish Cancel Help

New File

Steps

1. Choose File Type
2. Name and Location
3. TLD Information

TLD Information

☒ Add Corresponding Tag to the Tag Library Descriptor

Specify the tag library descriptor that the tag should be added to:

TLD File: WEB-INF/tlds/customTag.tld Browse...

Tag Name: Loop

Tag Handler Class: mySource.Loop

Body Content:
☐ empty
☒ JSP
☐ tagdependent

Attributes:

Name	Type	Required	Request Time Ev...
start	int	true	true
end	int	true	true

New ...

Edit ...

Delete

< Back

Next >

Finish

Cancel

Help

Step 2. Modified writeTagBodyContent as below:

```
private void writeTagBodyContent(JspWriter out, BodyContent bodyContent)
    throws IOException {
    if(start < end)
    {
        out.print("<ol>");
        while(start < end)
        {
            out.print("<li>");
            bodyContent.writeOut(out);
            out.print("</li>");
            start++;
        }
        out.print("</ol>");
    }
    bodyContent.clearBody();
}
```

Step 3. Modified home.jsp as below:

```

<body>
  <my:header companyName="Can Tho University Software Center (CUSC)" />
  <hr/>
  <my:Loop start="0" end="10">
    <%= new java.util.Date() %>
  </my:Loop>
  <my:Footer companyName="Can Tho University Software Center (CUSC)" />
</body>

```

Step 4. Now build and run home.jsp page:

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Education Department

1. Mon May 14 08:28:31 ICT 2018
2. Mon May 14 08:28:31 ICT 2018
3. Mon May 14 08:28:31 ICT 2018
4. Mon May 14 08:28:31 ICT 2018
5. Mon May 14 08:28:31 ICT 2018
6. Mon May 14 08:28:31 ICT 2018
7. Mon May 14 08:28:31 ICT 2018
8. Mon May 14 08:28:31 ICT 2018
9. Mon May 14 08:28:31 ICT 2018
10. Mon May 14 08:28:31 ICT 2018

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8.3 Create custom tag: list tag

Step 1. Create Tag Handler (employee.java) extend from BodyTagSupport (same above). Modified Employee.java as:

```

private void writeTagBodyContent(JspWriter out, BodyContent bodyContent)
    throws IOException {
    try {
        Class.forName("com.microsoft.sqlserver.jdbc.SQLServerDriver");
        Connection conn;
        String user = "sa", pass = "sa", url = "jdbc:sqlserver://localhost;databaseName=Northwind;";
        Class.forName("com.microsoft.sqlserver.jdbc.SQLServerDriver");
        conn = DriverManager.getConnection(url, user, pass);
        PreparedStatement command = conn.prepareStatement(bodyContent.getString());
        java.sql.ResultSet result = command.executeQuery();
        ResultSetMetaData meta = result.getMetaData();
        out.print("<table border='1px'><tr bgcolor='#ACE768'>");
        int count = 1;
        while (count <= meta.getColumnCount()) {
            out.print("<td>" + meta.getColumnName(count) + "</td>");
            count++;
        }
        out.print("</tr>");
        while (result.next()) {
            count = 1;
            out.print("<tr>");
            while (count <= meta.getColumnCount()) {
                out.print("<td>" + result.getString(meta.getColumnName(count)) + "</td>");
                count++;
            }
            out.print("</tr>");
        }
        out.print("</table>");
        conn.close();
    } catch (Exception ex) {
        out.print(ex.toString());
    }
    bodyContent.clearBody();
}

```

Step 2. Open home.jsp, insert code as:

```

<body>
    <my:header companyName="Can Tho University Software Center (CUSC)" />
    <hr/>
    <my:Loop start="0" end="2">
        <%= new java.util.Date() %>
    </my:Loop>
    <my:Employee>
        select top 5 Emp_id, Emp_name, Salary from Employee
    </my:Employee>
    <my:Footer companyName="Can Tho University Software Center (CUSC)" />
</body>

```

Step 3. Now build and run home.jsp page:

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1. Mon May 14 15:54:35 ICT 2018
2. Mon May 14 15:54:35 ICT 2018

Emp_id	Emp_name	Salary
1	Lan	2000
2	Sam	2500
3	Clarke	4000
4	Monica	4000
5	User	null

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