| Practical 9 | JSP – Custom Tags |

* SortNumbersTag.java

```java
package customtags;

import java.io.IOException;
import java.util.Arrays;
import jakarta.servlet.jsp.tagext.TagSupport;
import jakarta.servlet.jsp.JspException;
import jakarta.servlet.jsp.JspWriter;

public class SortNumbersTag extends TagSupport {

    private String numbers;
    private String orders;

    public void setNumbers (String numbers) {
        this.numbers = numbers;
    }
    public void setOrder (String order) {
        this.order = order;
    }


    @Override
    public int doStartTag () throws JspException {
        if (numbers == null || numbers.trim().isEmpty()) {
            return SKIP_BODY;
        }
        String[] numArray = numbers.split(",");
```

```
int[] intArray = new int [numArray.length];
try {
    for (int i = 0; i < numArray.length; i++) {
        intArray[i] = Integer.parseInt(numArray[i].trim());
    }
} catch ( NumberFormatException e ) {
    throw new JspException("Invalid number format!", e);
}


Arrays.sort(intArray);
if ("desc".equalsIgnoreCase(order)) {
    for (int i = 0; i < intArray.length /2; i++) {
        int temp = intArray[i];
        intArray[i] = intArray[intArray.length -1 -i];
        intArray[intArray.length -1 -i] = temp;
    }
}


JspWriter out = pageContext.getOut();
try {
    out.print (Arrays.toString(intArray));
} catch (IOException e) {
    throw new JspException("Error in SortNumbersTag", e);
}
return SKIP_BODY;
    }
}
```

* index.jsp

```jsp
<%@ taglib prefix="c" uri="/WEB-INF/tlds/sortNumbers.tld"%>

<html>
    <head>
        <title>Sort Numbers Custom Tag</title>
    </head>
    <body>
        <h2>Enter 10 Numbers (comma-separated)</h2>
        <form method="post">
            <input type="text" name="numbers" required />
            <select name="order">
                <option value="asc">Ascending</option>
                <option value="desc">Descending</option>
            </select>
            <input type="submit" value="Sort" />
        </form>
        <% String numbers = request.getParameter("numbers");
           String order = request.getParameter("order");
           if(numbers != null && !numbers.isEmpty()) { %>
        <h3>Sorted Numbers:</h3>
        <c:SortNumbers numbers="<%= numbers %>"
                       order="<%= order %>" />
        <% } %>
    </body>
<html>
```

* SortNumbers.tld

```xml
<?xml version="1.0" encoding="UTF-8"?>
<taglib version="2.1" xmlns="http://java.sun.com/xml/ns/javaee"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xsi:schemalocation="http://java.sun.com/xml/ns/javaee
                        http://java.sun.com/xml/ns/javaee/web-
                        jsptaglibrary_2.1.xsd">
    <tlib-version>1.0</tlib-version>
    <tag>
        <name>SortNumbers</name>
        <tag-class>customtags.SortNumbersTag</tag-class>
        <body-content>empty</body-content>
        <attribute>
            <name>numbers</name>
            <required>true</required>
            <rtexprvalue>true</rtexprvalue>
        </attribute>
        <attribute>
            <name>order</name>
            <required>false</required>
            <rtexprvalue>true</rtexprvalue>
        </attribute>
    </tag>
</taglib>
```