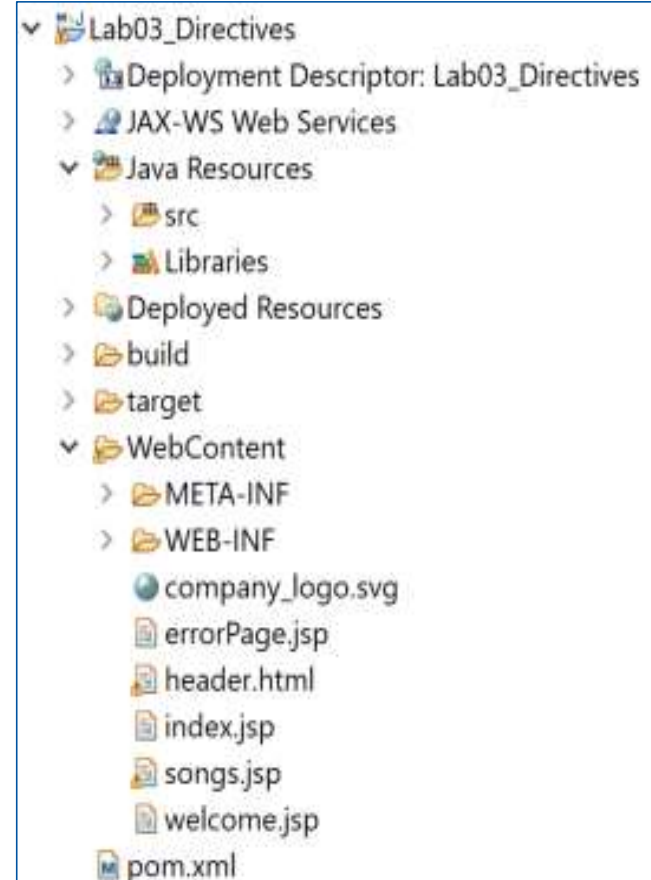# Lab 3 – Directives

Import the Lab03_Directives_STARTER project

- **This project is our finished Lab02_ScriptingElements with three additional files:**
  - **company_logo.svg**
  - **header.html**
  - **errorPage.jsp**
- **Review the files briefly, then rename the project to Lab03_Directives**

```
v 🖥️ Lab03_Directives
  > 📄 Deployment Descriptor: Lab03_Directives
  > 🔷 JAX-WS Web Services
  v 📂 Java Resources
    > 📂 src
    > 📚 Libraries
  > 📂 Deployed Resources
  > 📂 build
  > 📂 target
  v 📂 WebContent
    > 📂 META-INF
    > 📂 WEB-INF
      🌐 company_logo.svg
      📄 errorPage.jsp
      📄 header.html
      📄 index.jsp
      📄 songs.jsp
      📄 welcome.jsp
    📄 pom.xml
```

Lab 3 – Directives

In index.jsp add a scriptlet that prints the browser information and IP Address
- Be sure to use the implicit references for "request" and "out"

```
<h3>Welcome to Simple Song Service</h3>
        <br>
        <%
          out.println("Your browser information:" + request.getHeader("User-Agent"));
          out.println("Your IP address is:" + request.getRemoteAddr());
        %>
        <hr>
```

Lab 3 – Directives

localhost:8081/Lab02_ScriptingElements/index.jsp

Welcome to Simple Song Service

Your browser information:Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/96.0.4664.45 Safari/537.36 Your IP address is:127.0.0.1

Please enter your user name

User Name: [   ]

Next

Lab 3 – Directives

To practice interweaving code with HTML, let's add a table to format our songs
- Work in songs.jsp and edit the file to:
  - Create a table with each row representing a song
  - Within each row there should be 3 cells for Id, Title, and Artist
  - No header row is required

```
<% List<Song> songs = (List<Song>) session.getAttribute("Songs"); %>
<table style=margin: "8"; cellpadding="9" cellspacing="3" border="4">
    <% for (Song _song : songs) { %>
      <tr>
        <td> <% out.print(_song.getId()); %> </td>
        <td> <% out.print(_song.getTitle()); %> </td>
        <td> <% out.print(_song.getArtist()); %> </td>
      </tr>
</table>
```

101	Baby Love	The Supremes
102	Pancho and Lefty	Townes Van Zandt
103	Truth Hurts	Lizzo
104	Take It Easy	The Eagles
105	Your're So Vain	Carly Simon

Lab 3 – Directives

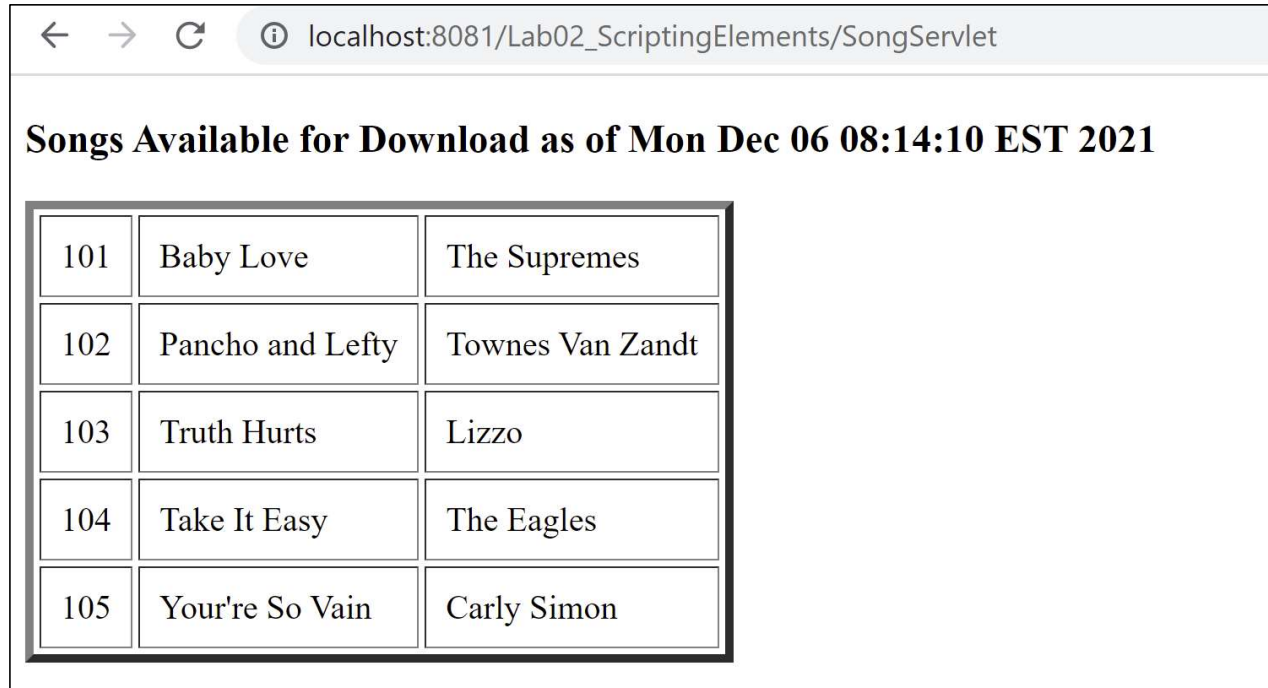Now, let's work with the page directive
- Work in songs.jsp and edit the file to:
    - Add an h3 header with the phrase "Songs Available for Download as of "
        - Use an expression to add the current date and time inside the header
    - Edit the <%@ page %> directive to include any imports needed

```
<body>
  <h3>

        Songs Available for Download as of
          <%=new Date().toString()%>
  </h3>
```

```
<%@ page language="java" contentType="text/html; charset=ISO-8859-1" pageEncoding="ISO-8859-1"
  import="java.util.List, com.music.model.Song, java.util.Date "%>
```

Lab 3 – Directives

localhost:8081/Lab02_ScriptingElements/SongServlet

Songs Available for Download as of Mon Dec 06 08:14:10 EST 2021

101	Baby Love	The Supremes
102	Pancho and Lefty	Townes Van Zandt
103	Truth Hurts	Lizzo
104	Take It Easy	The Eagles
105	Your're So Vain	Carly Simon

Lab 3 – Directives

It's time to put our error page to work
- In songs.jsp edit your code to throw a NoSuchElementException if your song list is null

```
<% List<Song> songs = (List<Song>) session.getAttribute("Songs");
  if(songs != null) { %>
    <table style=margin: "8"; cellpadding="9" cellspacing="3" border="4">
    <% for (Song _song : songs) {    %>
        . . . //nothing changes in your table, omitted for brevity
     <%  } } else {
   throw new NoSuchElementException("The requested attribute was not found in the session");
      } %>
   </table>
```

Lab 3 – Directives

Examine errorPage.jsp and note the page directive contains isErrorPage = 'true'

```
<%@ page isErrorPage='true' %>
```

Now, let's wire up the error page
- If you haven't already, add the import for java.util.NoSuchElementException
- Wire up the errorPage.jsp inside of songs.jsp

```
<%@ page language="java" contentType="text/html; charset=ISO-8859-1"
        pageEncoding="ISO-8859-1"
        import="java.util.List, com.music.model.Song, java.util.Date, java.util.NoSuchElementException"
        errorPage="errorPage.jsp"%>
```

Lab 3 – Directives

Test your error page by changing the value of the getAttribute method in songs.jsp

List<Song> songs = (List<Song>) session.getAttribute("GoFish");

Should be "Songs"

Run your application again and you should get something similar to the page below

← → C ⓘ localhost:8081/Lab03_Directives/SongServlet

Sorry, an unexpected error was encountered.

Error Details

java.util.NoSuchElementException: The requested attribute was not found in the session

Lab 3 – Directives

For our final step, let's include our header file in every page
- Add an include directive to index.jsp, welcome.jsp, and songs.jsp

```
<body>
    <%@ include file="header.html" %>
```

Check all 3 pages to ensure the header (logo) shows up

← → C ⓘ localhost:8081/Lab03_Directives/index.jsp

coursera

Welcome to Simple Song Service

Your browser information:Mozilla/5.0 (Windows NT 10.0; Win64;

Please enter your user name

User Name: The Dude

Next

← → C ⓘ localhost:8081/Lab03_Directives/welcome.jsp?username=The+Dude

coursera

Welcome to Simple Song Service

Welcome The Dude

Use this code to get an additional 10% discount:

VIPCUST10

Show All Songs

← → C ⓘ localhost:8081/Lab03_Directives/SongServlet

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Songs Available for Download as of Mon Dec 06 11:24:36 EST 2021

101	Baby Love	The Supremes
102	Pancho and Lefty	Townes Van Zandt
103	Truth Hurts	Lizzo
104	Take It Easy	The Eagles
105	Your're So Vain	Carly Simon

STOP