NUMBER GAME

CSS:

```
NumberGuessingGame/
├── src/
│   └── com/
│       └── example/
│           └── NumberGuessServlet.java
├── web/
│   ├── index.jsp
│   └── WEB-INF/
│       └── web.xml
└── build/
```

JAVA:

```java
package com.example;

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;
import javax.servlet.http.HttpSession;

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

```java
    protected void doGet(HttpServletRequest request, HttpServletResponse response) throws
ServletException, IOException {

        HttpSession session = request.getSession();

        Integer targetNumber = (Integer) session.getAttribute("targetNumber");


        if (targetNumber == null) {

            targetNumber = (int) (Math.random() * 100) + 1;

            session.setAttribute("targetNumber", targetNumber);

            session.setAttribute("attempts", 0);

        }


        request.getRequestDispatcher("index.jsp").forward(request, response);

    }


    protected void doPost(HttpServletRequest request, HttpServletResponse response) throws
ServletException, IOException {

        HttpSession session = request.getSession();

        Integer targetNumber = (Integer) session.getAttribute("targetNumber");

        Integer attempts = (Integer) session.getAttribute("attempts");


        if (targetNumber == null) {

            targetNumber = (int) (Math.random() * 100) + 1;

            session.setAttribute("targetNumber", targetNumber);

            attempts = 0;

            session.setAttribute("attempts", attempts);

        }


        String guessStr = request.getParameter("guess");
```

```java
        String message = "";
        int guess = 0;

        try {
            guess = Integer.parseInt(guessStr);
            attempts++;
            session.setAttribute("attempts", attempts);

            if (guess < targetNumber) {
                message = "Too low!";
            } else if (guess > targetNumber) {
                message = "Too high!";
            } else {
                message = "Correct! The number was " + targetNumber + ". You guessed it in " +
attempts + " attempts.";

                session.invalidate();
            }
        } catch (NumberFormatException e) {
            message = "Please enter a valid number.";
        }

        request.setAttribute("message", message);
        request.getRequestDispatcher("index.jsp").forward(request, response);
    }
}
```

JSP:

```jsp
<%@ page contentType="text/html;charset=UTF-8" language="java" %>
<!DOCTYPE html>
<html>
<head>
    <title>Number Guessing Game</title>
</head>
<body>
    <h1>Number Guessing Game</h1>
    <p>Guess a number between 1 and 100.</p>
    <form action="guess" method="post">
        <input type="text" name="guess" required>
        <input type="submit" value="Guess">
    </form>
    <p><%= request.getAttribute("message") != null ? request.getAttribute("message") : "" %></p>
</body>
</html>
```

XML:

```xml
<?xml version="1.0" encoding="UTF-8"?>
<web-app xmlns="http://xmlns.jcp.org/xml/ns/javaee"
         xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
         xsi:schemaLocation="http://xmlns.jcp.org/xml/ns/javaee
         http://xmlns.jcp.org/xml/ns/javaee/web-app_3_1.xsd"
         version="3.1">
    <servlet>
        <servlet-name>NumberGuessServlet</servlet-name>
        <servlet-class>com.example.NumberGuessServlet</servlet-class>
```

```xml
    </servlet>
    <servlet-mapping>
        <servlet-name>NumberGuessServlet</servlet-name>
        <url-pattern>/guess</url-pattern>
    </servlet-mapping>
</web-app>
```