**27. Create a Web application to demonstrate the Servlet Life cycle methods.**

package com.example.lifecycle;

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;

// Map the servlet to a URL pattern

@WebServlet("/LifeCycleDemo")

public class LifeCycleDemoServlet extends HttpServlet {

private static final long serialVersionUID = 1L;

// Called once when the servlet is initialized

@Override

public void init() throws ServletException {

super.init();

System.out.println("Servlet is being initialized (init)");

}

// Called for each client request

@Override

protected void service(HttpServletRequest request, HttpServletResponse response)

throws ServletException, IOException {

System.out.println("Processing client request (service)");

response.setContentType("text/html");

response.getWriter().write("<h1>Welcome to Servlet Life Cycle Demo</h1>");

response.getWriter().write("<p>Check the server logs for lifecycle method details.</p>");

}

// Called once when the servlet is being destroyed

@Override

public void destroy() {

System.out.println("Servlet is being destroyed (destroy)");

super.destroy();

}

}

**28. Develop a web application to accept request parameters from a form and generate the response using servlets.**

package srikar;

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;

@WebServlet("/formHandler")

public class Form extends HttpServlet {

private static final long serialVersionUID = 1L;

protected void doGet(HttpServletRequest request, HttpServletResponse response)

throws ServletException, IOException {

// Generate a form dynamically

response.setContentType("text/html");

response.getWriter().println("<html><body>");

response.getWriter().println("<h1>Submit Your Details</h1>");

response.getWriter().println("<form action='formHandler' method='POST'>");

response.getWriter().println("<label for='name'>Name:</label>");

response.getWriter().println("<input type='text' id='name' name='name' required><br><br>");

response.getWriter().println("<label for='email'>Email:</label>");

response.getWriter().println("<input type='email' id='email' name='email' required><br><br>");

response.getWriter().println("<label for='message'>Message:</label><br>");

response.getWriter().println("<textarea id='message' name='message' rows='5' cols='30' required></textarea><br><br>");

response.getWriter().println("<button type='submit'>Submit</button>");

response.getWriter().println("</form>");

response.getWriter().println("</body></html>");

}

protected void doPost(HttpServletRequest request, HttpServletResponse response)

throws ServletException, IOException {

// Retrieve form parameters

String name = request.getParameter("name");

String email = request.getParameter("email");

String message = request.getParameter("message");

// Generate response

response.setContentType("text/html");

response.getWriter().println("<html><body>");

response.getWriter().println("<h1>Form Submission Details</h1>");

response.getWriter().println("<p><strong>Name:</strong> " + name + "</p>");

response.getWriter().println("<p><strong>Email:</strong> " + email + "</p>");

response.getWriter().println("<p><strong>Message:</strong> " + message + "</p>");

response.getWriter().println("</body></html>");

}

}

**29. Write a JSP page to display current date and time on the server**

<%@ page language="java" contentType="text/html; charset=UTF-8" pageEncoding="UTF-8"%>

<!DOCTYPE html>

<html>

<head>

<title>Current Date and Time</title>

</head>

<body>

<h1>Current Date and Time on the Server</h1>

<p>

<%

java.util.Date currentDate = new java.util.Date();

out.println("Date and Time: " + currentDate.toString());

%>

</p>

</body>

</html>

**30. Write a JSP page to demonstrate the usage of Scripting elements.**

<%@ page language="java" contentType="text/html; charset=UTF-8" pageEncoding="UTF-8"%>

<!DOCTYPE html>

<html>

<head>

<title>JSP Scripting Elements Demo</title>

</head>

<body>

<h1>Demonstrating Scripting Elements in JSP</h1>

<!-- Declaration: Define variables or methods -->

<%!

// Declare a variable

private String greeting = "Welcome to JSP Scripting Elements Demo!";

// Declare a method

public String getDayOfWeek() {

java.util.Date date = new java.util.Date();

java.text.SimpleDateFormat sdf = new java.text.SimpleDateFormat("EEEE");

return sdf.format(date);

}

%>

<!-- Using Scriptlets -->

<h2>Using Scriptlets:</h2>

<p>

<%

// Write Java code directly inside the scriptlet

String message = "This is an example of a scriptlet!";

out.println(message);

%>

</p>

<!-- Using Expressions -->

<h2>Using Expressions:</h2>

<p>

Current Date and Time: <%= new java.util.Date() %> <br>

Greeting Message: <%= greeting %> <br>

Today is: <%= getDayOfWeek() %>

</p>

</body>

</html>