OOP Lab: Experiment 12

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**Exercise 1:** Servlet: a) ServletContext interface b)getParameterValues( ) of Servlet Request.

Solution:

1. serveletcontextinterface

package practice\_servlet;

import java.io.IOException;

import java.io.PrintWriter;

import javax.servlet.ServletContext;

import javax.servlet.ServletException;

import javax.servlet.http.HttpServlet;

import javax.servlet.http.HttpServletRequest;

import javax.servlet.http.HttpServletResponse;

public class S\_context extends HttpServlet

{

    protected void processRequest(HttpServletRequest request,

    HttpServletResponse response)

    throws ServletException, IOException

    {

        response.setContentType("text/html;charset=UTF-8");

        PrintWriter pw=response.getWriter();

        ServletContext context=getServletContext();

        String driverName=context.getInitParameter("driver\_name");

        pw.println("driver name is="+driverName);

        pw.close();

    }

}

1. getParameterValues( ) of Servlet Request

package practice\_servlet;

import java.io.IOException;

import java.io.PrintWriter;

import javax.servlet.ServletException;

import javax.servlet.http.HttpServlet;

import javax.servlet.http.HttpServletRequest;

import javax.servlet.http.HttpServletResponse;

public class add extends HttpServlet

{

    protected void processRequest(HttpServletRequest request, HttpServletResponse

    response)

    throws ServletException, IOException

    {

        response.setContentType("text/html;charset=UTF-8");

        try (PrintWriter out = response.getWriter()) {

        int a=Integer.parseInt(request.getParameter("no1"));

        int b=Integer.parseInt(request.getParameter("no2"));

        out.println("Addition is: "+(a+b));

        }

    }

    @Override

    protected void doGet(HttpServletRequest request, HttpServletResponse

    response)

    throws ServletException, IOException

    {

        processRequest(request, response);

    }

}

**Index**

<!DOCTYPE html>

<!--

To change this license header, choose License Headers in Project Properties.

To change this template file, choose Tools | Templates

and open the template in the editor.

-->

<html>

<head>

<title>Addition</title>

<meta charset="UTF-8">

<meta name="viewport" content="width=device-width, initial-scale=1.0">

</head>

<body>

<form action="add" method="get">

number1: <input type="text" name="no1"> <br> <br>

number2: <input type="text" name="no2"> <br> <br>

<input type="submit" name="binod" value="Add">

</form>

</body>

</html>

**Exercise 2:** Write a Servlet page to display current date of the server.

Code:

import java.io.\*;

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("/First")

public class Second extends HttpServlet

{

    private static final long serialVersionUID = 1L;

    public Second(){}

    protected void doGet(HttpServletRequest req, HttpServletResponse res) throws ServletException, IOException

    {

          res.setContentType("text/html");

          PrintWriter print = res.getWriter();

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

          print.println("<h2>"+" Date & Time: " +date.toString()+"</h2>");

          print.close();

    }

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

    {

        doGet(request, response);

    }

}

**Exercise 3:** Write a Servletpage to which include the two other Servlet page through of include directives feature provided in Servlet.

Code:

**Servlet 1:** **add.java**

package new1;

import java.io.IOException;

import java.io.PrintWriter;

import javax.servlet.RequestDispatcher;

import javax.servlet.ServletException;

import javax.servlet.http.HttpServlet;

import javax.servlet.http.HttpServletRequest;

import javax.servlet.http.HttpServletResponse;

public class add extends HttpServlet

{

    protected void processRequest(HttpServletRequest request, HttpServletResponse

    response)

    throws ServletException, IOException

    {

        response.setContentType("text/html;charset=UTF-8");

        try (PrintWriter out = response.getWriter())

        {

            int a=Integer.parseInt(request.getParameter("no1"));

            int b=Integer.parseInt(request.getParameter("no2"));

            int c=(a+b);

            if(c%2==0)

            {

                out.println("Addition is: "+(a+b));

            }

            else

            {

                RequestDispatcher rd=request.getRequestDispatcher("servlet2");

                rd.forward(request, response);

            }

        }

    }

}

**Servlet 2:** **NewServlet.java**

package new1;

import java.io.IOException;

import java.io.PrintWriter;

import javax.servlet.ServletException;

import javax.servlet.http.HttpServlet;

import javax.servlet.http.HttpServletRequest;

import javax.servlet.http.HttpServletResponse;

import javax.servlet.RequestDispatcher;

public class NewServlet extends HttpServlet

{

    protected void processRequest(HttpServletRequest request, HttpServletResponse response)

    throws ServletException, IOException

    {

        response.setContentType("text/html;charset=UTF-8");

        PrintWriter out = response.getWriter();

        out.println("Addition is odd");

    }

}

**index.html**

<html>

<head>

<title>TODO supply a title</title>

<meta charset="UTF-8">

<meta name="viewport" content="width=device-width, initial-scale=1.0">

</head>

<body>

<form action="servlet1" method="get">

number1: <input type="text" name="no1"> <br> <br>

number2: <input type="text" name="no2"> <br> <br>

<input type="submit" name="btnadd" value="Add">

</form>

</body>

</html>

**web.xml**

<?xml version="1.0" encoding="UTF-8"?>

<web-app version="3.1" 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">

<servlet>

<servlet-name>add</servlet-name>

<servlet-class>new1.add</servlet-class>

</servlet>

<servlet>

<servlet-name>NewServlet</servlet-name>

<servlet-class>new1.NewServlet</servlet-class>

</servlet>

<servlet-mapping>

<servlet-name>add</servlet-name>

<url-pattern>/servlet1</url-pattern>

</servlet-mapping>

<servlet-mapping>

<servlet-name>NewServlet</servlet-name>

<url-pattern>/servlet2</url-pattern>

</servlet-mapping>

<welcome-file-list>

<welcome-file>index.html</welcome-file>

</welcome-file-list>

<session-config>

<session-timeout>

30

</session-timeout>

</session-config>

</web-app>

**Exercise 4:** Write a Servletpage to create a simple calculator.

Code:

**calculator.java**

import java.io.IOException;

import java.io.PrintWriter;

import javax.servlet.ServletException;

import javax.servlet.http.HttpServlet;

import javax.servlet.http.HttpServletRequest;

import javax.servlet.http.HttpServletResponse;

public class calculator extends HttpServlet {

    protected void processRequest(HttpServletRequest request, HttpServletResponse

    response)

    throws ServletException, IOException

    {

        response.setContentType("text/html;charset=UTF-8");

        PrintWriter out = response.getWriter();

        String n1 = request.getParameter("txt1");

        String n2 = request.getParameter("txt2");

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

        if(op.equals("Addition"))

        {

            out.println((Integer.parseInt(n1) + Integer.parseInt(n2)));

        }

        else if(op.equals("Subtraction"))

        {

            out.println(Integer.parseInt(n1) - Integer.parseInt(n2));

        }

        else if(op.equals("multiplication"))

        {

            out.println(Integer.parseInt(n1) \* Integer.parseInt(n2));

        }

        else

        {

            out.println(Integer.parseInt(n1) / Integer.parseInt(n2));

        }

    }

    @Override

    protected void doGet(HttpServletRequest request, HttpServletResponse response)

    throws ServletException, IOException

    {

        processRequest(request, response);

    }

    @Override

    protected void doPost(HttpServletRequest request, HttpServletResponse

    response)

    throws ServletException, IOException

    {

        processRequest(request, response);

    }

    @Override

    public String getServletInfo()

    {

        return "Short description";

    }

}

**Create index.html**

<html>

<head>

<title>calculator</title>

<meta charset="UTF-8">

<meta name="viewport" content="width=device-width, initial-scale=1.0">

</head>

<body>

<h1 style="border:2px solid Tomato;">4 function calculator</h1>

<form action="calculator" method="get" name="frm">

Enter first number:

<input name="txt1" type="text" /><br> <br>

Enter second number:

<input name="txt2" type="text" /><br> <br>

Operator

<select name="op">

<option value="Addition">Addition</option>

<option value="Subtraction">Subtraction</option>

<option value="multiplication">multiplication</option>

<option value="division">division</option>

</select>

<input type="submit" value="submit" />

</form>

</body>

</html>

**web.xml**

<?xml version="1.0" encoding="UTF-8"?>

<web-app version="3.1" 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">

<servlet>

<servlet-name>calculator</servlet-name>

<servlet-class>exp11.calculator</servlet-class>

</servlet>

<servlet-mapping>

<servlet-name>calculator</servlet-name>

<url-pattern>/calculator</url-pattern>

</servlet-mapping>

<session-config>

<session-timeout>

30

</session-timeout>

</session-config>

</web-app>