

OOP Lab: Experiment 12

Submitted By: Aryan Saxena

Batch: B1

SAP Id: 500082431

Roll No.: R214220274

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

Solution:

a) servletcontextinterface

```
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();
    }
}
```

b) 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>
```