Experiment No.___ *Date___/___/2022*

TITLE OF EXPERIMENT: - A JAVA Program to create a simple calculator application using servlet

DIVISION:_____ BRANCH: _____

BATCH:_____ ROLL NO.: _____

PERFORMED ON DATE: _____

SIGNATURE OF TEACHING STAFF:

EXPERIMENT NO. 9

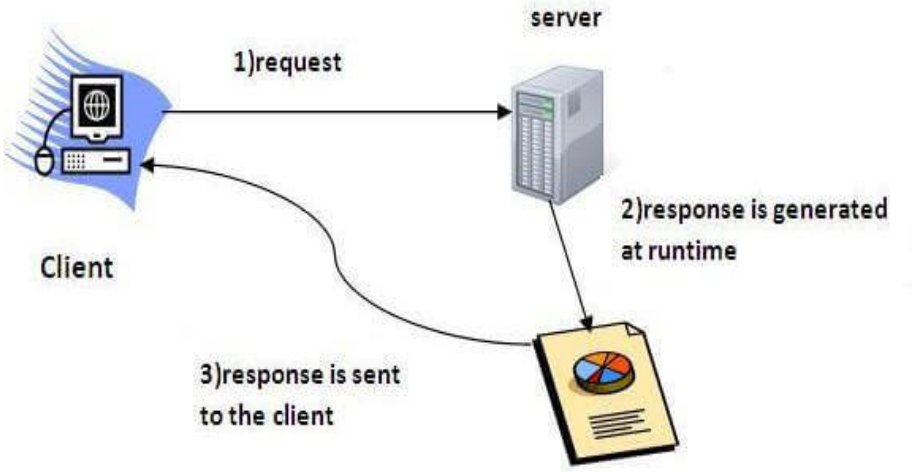
Aim: Create a simple calculator application using servlet

Software:

1.	Command prompt
2.	JDK 8
3.	Eclipse neon3
4.	Internet

Theory:

- **Servlet** is a technology which is used to create a web application.
- Servlet is an API that provides many interfaces and classes including documentation.
- Servlet is an interface that must be implemented for creating any Servlet.
- Servlet is a class that extends the capabilities of the servers and responds to the incoming requests. It can respond to any requests.
- Servlet is a web component that is deployed on the server to create a dynamic web page.



Advantages of Servlet:

- There are many advantages of Servlet over CGI. The web container creates threads for handling the multiple requests to the Servlet. Threads have many benefits over the Processes such as they share a common memory area, lightweight, cost of communication between the threads are low. The advantages of Servlet are as follows:
- **Better performance:** because it creates a thread for each request, not process.
- **Portability:** because it uses Java language.
- **Robust:** JVM manages Servlets, so we don't need to worry about the memory leak, garbage collection, etc.
- **Secure:** because it uses java language.

Steps to be followed:-

1. Open NetBeans IDE

2. Go to File->New Project

3. Select Java Web->Web Application

4. Provide Project Name

5. Select Server(If server is not added Click on Add->Browse location for

Server). Here we are using Glassfish Server.

6. Select Java Version EE 7

7. No need of selecting Framework.

8. Finish the Creation of Project

9. Go to Web Pages->Open index.html

10.Right Click on Source Packages->New->Servlet (CalculatorServlet.java)

11.Give name to your Servlet File.

12.Provide package name if you want to create.

13.Click Next->Check Add Deployment Descriptor->Click Finish

14.Go to Services->Servers->Start Glassfish Server.

15.If Server is not added then Right Click on Server->Add Server->Select

Glassfish->Browse for location where Glassfish Server is placed->Finish

index.html

```
<html><head>
<title>Calculator App</title></head><body>
<form action="CalculatorServlet" >
Enter First Number <input type="text" name="txtN1"><br>
Enter Second Number <input type="text" name="txtN2" ><br>
Select an Operation<input type="radio" name="opr" value="+">
ADDTION <input type="radio" name="opr" value="-">
SUBSTRACTION <input type="radio" name="opr" value="*">
MULTIPLY <input type="radio" name="opr" value="/">
DIVIDE <br><input type="reset">
<input type="submit" value="Calculate" >
</form></body></html>
```

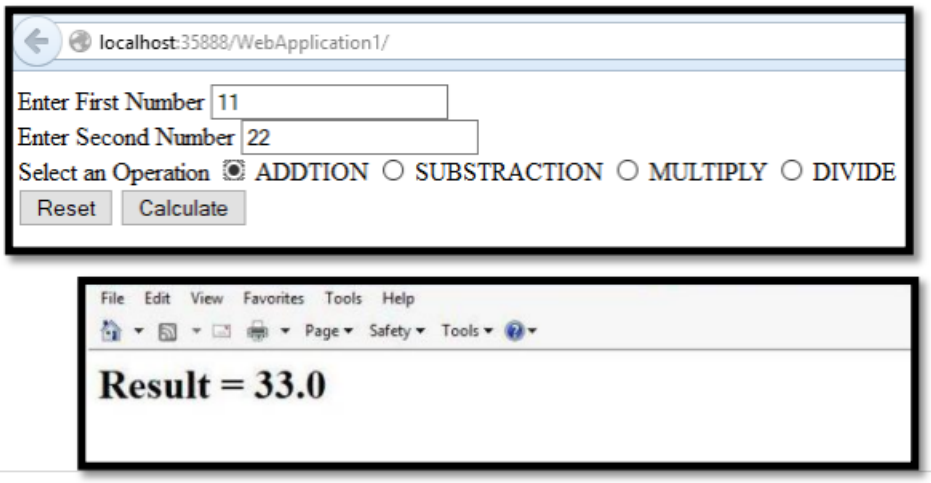
CalculatorServlet.java

Program:

```
packagemypack;
import java.io.*;
importjavax.servlet.*;
importjavax.servlet.http.*;
public class CalculatorServlet extends HttpServlet
{
public void doGet(HttpServletRequest request, HttpServletResponse response)
throwsServletException, IOException {
response.setContentType("text/html;charset=UTF-8");
PrintWriter out = response.getWriter();
out.println("<html><head><title>Servlet
CalculatorServlet</title></head><body>");
double n1 = Double.parseDouble(request.getParameter("txtN1"));
double n2 = Double.parseDouble(request.getParameter("txtN2"));
```

```
double result =0;
String opr=request.getParameter("opr");
if(opr.equals("+"))
result=n1+n2;
if(opr.equals("*"))
result=n1*n2;
out.println("<h1> Result = "+result);
if(opr.equals("-"))
result=n1-n2;
if(opr.equals("/"))
result=n1/n2;
out.println("</body></html>");
} }
```

Output:



Conclusion: