SRINIVAS UNIVERSITY
MANGALORE
INSTITUTE OF COMPUTER SCIENCE AND INFORMATION SCIENCE
Course Name: MCA I Year: Semester Name: II Semester: Subject Name: Advanced Java - Lab

1

AIM:

Create a Java JDBC program to access the Mysql database

Procedure:

Step 1: Start the Netbeans IDE
Step 2: File ->New project->java-> application->Project Name->Next
Step 3: Project name ->right click ->java ->java class->Finish
Step 4: Create a appropriate JDBC java code to connection with Mysql
Step 5: Create a database and table for student of the S_id, Sname, DOB, Address and Email_id in Mysql
Step 6: Execute the Mysql database in JDBC java program.
Step 7: Stop

Mysql database:

```
mysql> use college
Database changed
mysql> desc mca;
Mysql>create table mca(S_id int(5)primary key,Sname varchar(20),DOB date,Address
varchar(20),Email_id varchar(20));

Mysql>insert into mca values(1001,"Raja",'2023-07-09',"Chennai","ss@gmail.com");
Mysql>insert into mca values(1001,"John",'2023-07-10',"Mangalore","vv@gmail.com");

mysql> select * from mca;
+------+-------+------------+-----------+--------------+
| S_id | Sname | DOB        | Address   | Email_id     |
+------+-------+------------+-----------+--------------+
| 1001 | Raja  | 2023-07-09 | Chennai   | ss@gmail.com |
| 1002 | John  | 2023-07-10 | Mangalore | vv@yahoo.com |
+------+-------+------------+-----------+--------------+
2 rows in set (0.00 sec)
```

Mysql JDBC program

```
import java.sql.Connection;
import java.sql.DriverManager;
import java.sql.ResultSet;
import java.sql.SQLException;
import java.sql.Statement;

public class domo {

   public static void main(String args[]) {
      try {
         Connection con = (Connection)
DriverManager.getConnection("jdbc:mysql://localhost:3306/college", "root", "root");
         Statement stnt = con.createStatement();
         String query = "select*from mca";
         ResultSet rs = stnt.executeQuery(query);
         while (rs.next()) {
            for (int i=1;i<=5;i++){

               System.out.print(rs.getString(i));
               System.out.println("|");
            }
            System.out.println();

         }
      }
      catch (SQLException ex) {
         System.out.println(ex.getMessage());
      }
   }
}
```

Output:

```
run:
1001|
Raja|
2023-07-09|
Chennai|
ss@gmail.com|
1002|
John|
2023-07-10|
Mangalore|
vv@yahoo.com|

BUILD SUCCESSFUL (total time: 0 seconds)
```

Result:

Thus program has been successfully executed.

2.

Aim

Create a Servlet program to link with HTML program

Procedure:

Step 1: Start the Netbeans IDE
Step 2: New Project->Java Web->Web Application ->Next
Step 3: Project Name<>->Next ->Server Setting->Finish->Next
Step 4: Create a servlet->Source package-> defult package->New->Servlet->Next
Step 5: Servlet class name<>-> Next->Servlet name<> and URL Pattern name<>->Next->Tick mark Add information in web.xml->Finish.
Step 6: Create a HTML file and xml file ->right click on web Pages->new HTML and XML
Step 7: Execute the Servlet java program with HTML program.
Step 8: Stop

Servlet java program

```
package ss;
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 Myservlet extends HttpServlet {
protected void processRequest(HttpServletRequest request, HttpServletResponse response)
        throws ServletException, IOException {
      response.setContentType("text/html;charset=UTF-8");
      try (PrintWriter out = response.getWriter()) {
        out.println("<h1>This Servlet program link with HTML program</h1>");

      }
  }
}
```

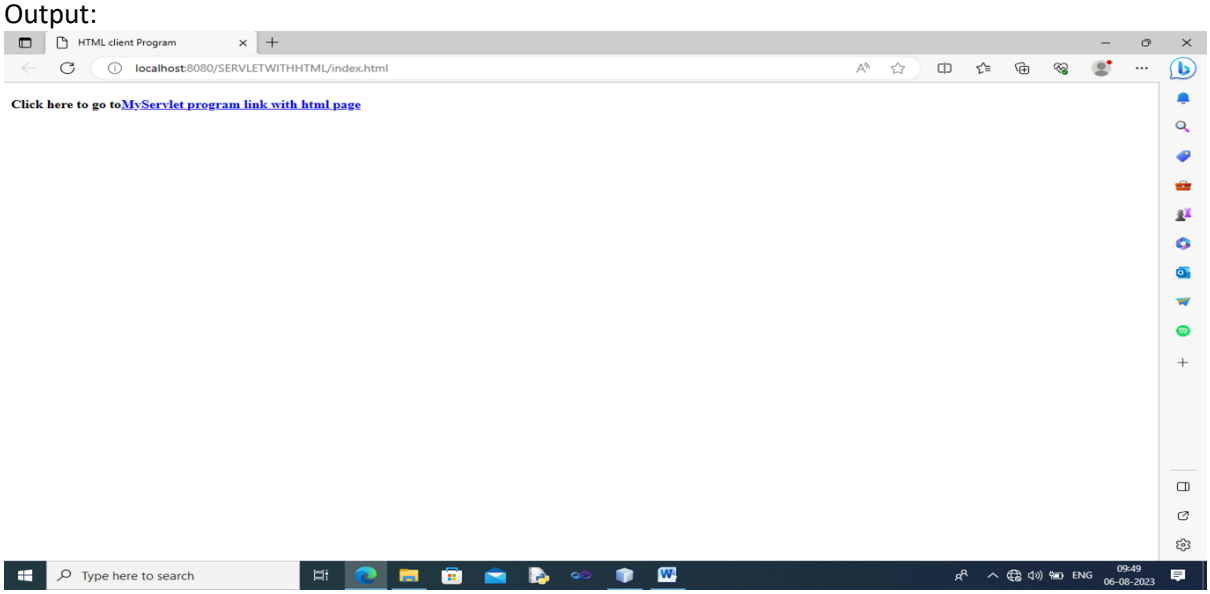
Client HTML program

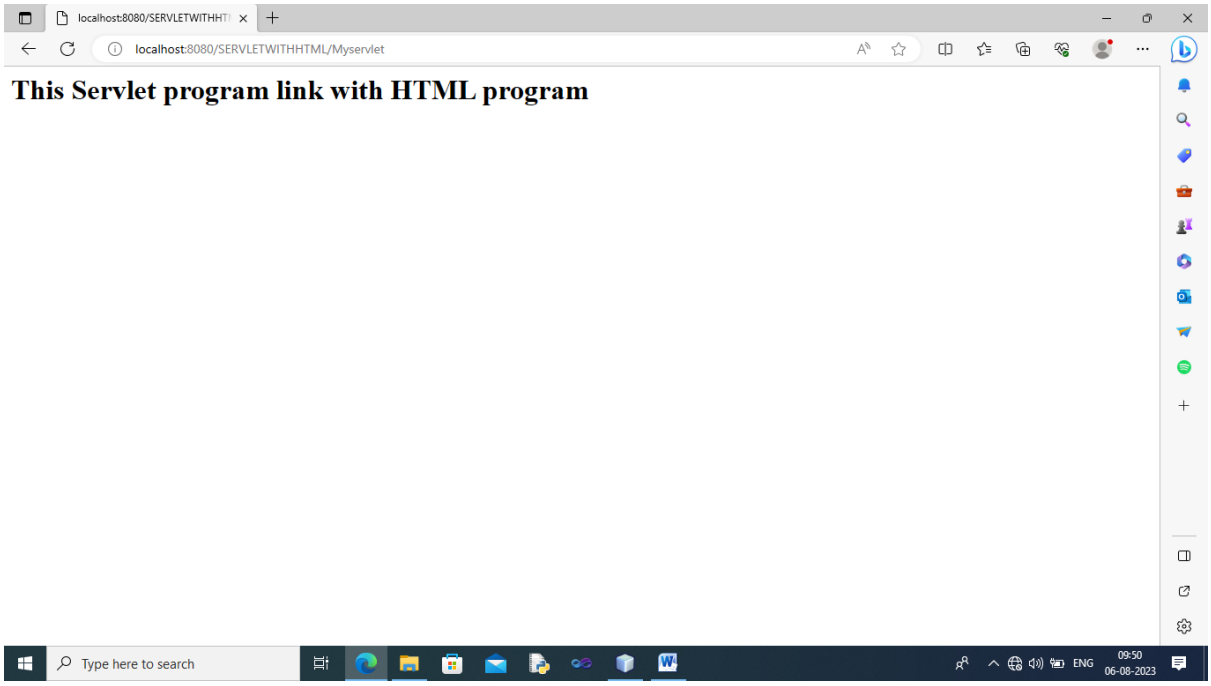
```
<html>
  <head>
    <title>HTML client Program</title>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
  </head>
  <body>
    <h4>Click here to go to<a href="Myservlet">MyServlet program link with html page</a></h4>
    </body>
</html>
```

Web: xml program (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>Myservlet</servlet-name>
    <servlet-class>ss.Myservlet</servlet-class>
  </servlet>
  <servlet-mapping>
    <servlet-name>Myservlet</servlet-name>
    <url-pattern>/Myservlet</url-pattern>
  </servlet-mapping>
  <session-config>
    <session-timeout>
      30
    </session-timeout>
  </session-config>
</web-app>
```

Output:





Result:

Thus program has been successfully executed

3

Aim :

Create a Servlet program to display (a).Port number (b). Host name (c). Browser visits

Procedure:

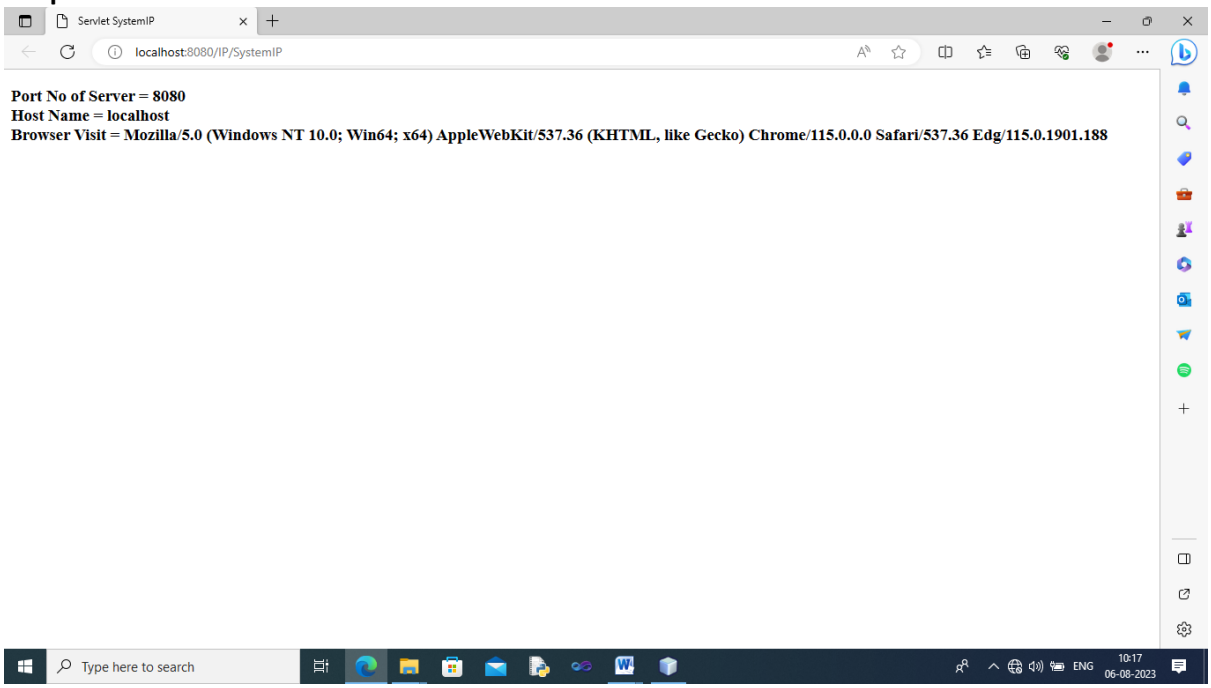
Step 1: Start the Netbeans IDE
Step 2: New Project->Java Web->Web Application ->Next
Step 3: Project Name<>->Next ->Server Setting->Finish->Next
Step 4: Create a servlet->Source package-> defult package->New->Servlet->Next
Step 5: Servlet class name<>-> Next->Servlet name<> and URL Pattern name<>->Next
Step 6: Create a java servlet code for display the system Port number, Host name and Browser visits
Step 7: Execute the Servlet java program to display the system Port number, Host name and Browser visits
Step 8: Stop

Servlet java program

```
package ss;
import java.io.IOException;
import java.io.PrintWriter;
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(name = "SystemIP", urlPatterns = {"/SystemIP"})
public class SystemIP extends HttpServlet {
protected void processRequest(HttpServletRequest request, HttpServletResponse response)
        throws ServletException, IOException {
    response.setContentType("text/html;charset=UTF-8");
    try (PrintWriter out = response.getWriter()) {

        out.println("<!DOCTYPE html>");
        out.println("<html>");
        out.println("<head>");
        out.println("<title>Servlet SystemIP</title>");
        out.println("</head>");
        out.println("<body>");
        out.println("<h3>");
        out.println("Port No of Server =");
        out.println(request.getServerPort()+"<br>");
        out.println("Host Name =");
        out.println(request.getServerName()+"<br>");
        out.println("Browser Visit =");
        out.println(request.getHeader("User-Agent")+"<br>");
        out.println("</h3>");
        out.println("</body>");
```

```
        out.println("</html>");
      }
   }
}
```

Output:



Result:

Thus program has been successfully executed

4.

Aim :

Create a Servlet program that gets the date and time of the system

Procedure:

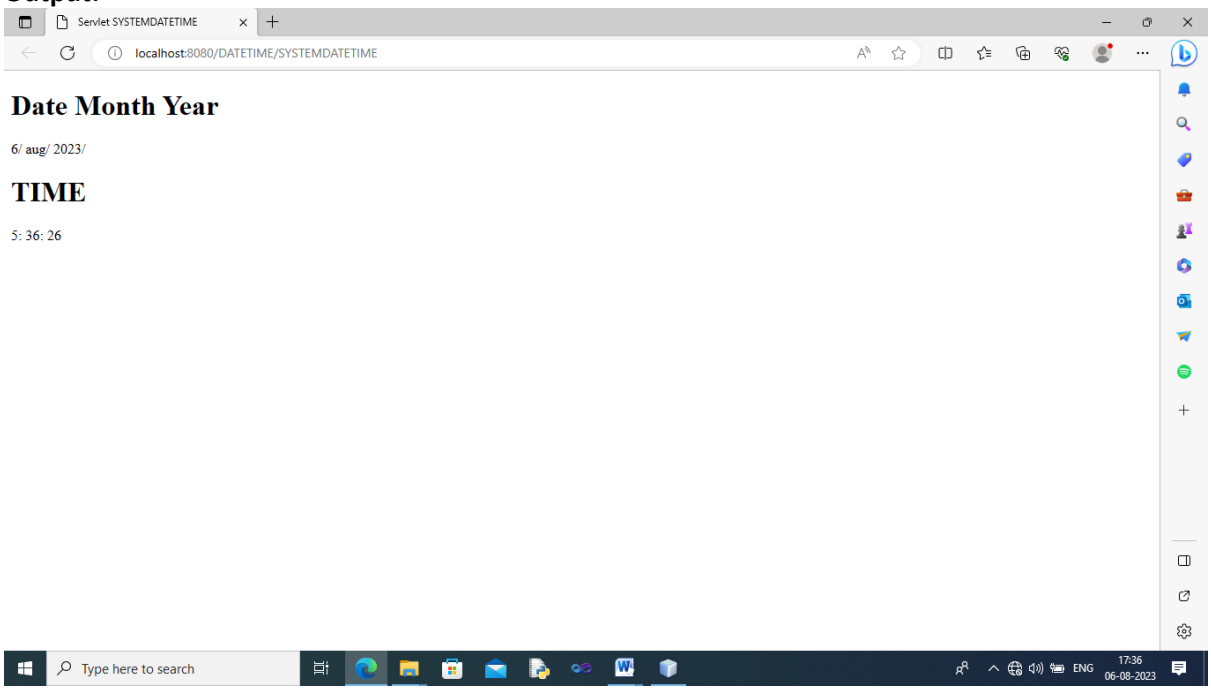
Step 1: Start the Netbeans IDE
Step 2: New Project->Java Web->Web Application ->Next
Step 3: Project Name<>->Next ->Server Setting->Finish->Next
Step 4: Create a servlet->Source package-> defult package->New->Servlet->Next
Step 5: Servlet class name<>-> Next->Servlet name<> and URL Pattern name<>->Next
Step 6: Create a java servlet code for display the system date and time
Step 7: Execute the Servlet java program to display the system date and time.
Step 8: Stop.

Servlet java program

```
package SS;
import java.io.IOException;
import java.io.PrintWriter;
import java.util.Calendar;
import java.util.GregorianCalendar;
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(name = "SYSTEMDATETIME", urlPatterns = {"/SYSTEMDATETIME"})
public class SYSTEMDATETIME extends HttpServlet {



protected void processRequest(HttpServletRequest request, HttpServletResponse response)
        throws ServletException, IOException {
    response.setContentType("text/html;charset=UTF-8");
    GregorianCalendar gc = new GregorianCalendar();
    String S[]={"jan","feb","mar","apr","may","jun","july","aug","sep","oct","nov","dec"};

    try (PrintWriter out = response.getWriter()) {
      out.println("<!DOCTYPE html>");
      out.println("<html>");
      out.println("<head>");
      out.println("<title>Servlet SYSTEMDATETIME</title>");
      out.println("</head>");
      out.println("<body>");
      out.println("<h1>Date Month Year</h1>");
```

```
        out.println(gc.get(Calendar.DATE) + "/");
        out.println(S[gc.get(Calendar.MONTH)]+"/");
        out.println(gc.get(Calendar.YEAR) + "/");
        out.println("<h1>TIME</h1>");
        out.println(gc.get(Calendar.HOUR)+":");
        out.println(gc.get(Calendar.MINUTE) + ":");
        out.println(gc.get(Calendar.SECOND));
        out.println("</body>");
        out.println("</html>");
}
}
}
```

Output:



Result:

Thus program has been successfully executed.

5

Aim :

Create a Servlet program to calculate the arithmetic operation using with HTML

Procedure:

Step 1: Start the Netbeans IDE
Step 2: New Project->Java Web->Web Application ->Next
Step 3: Project Name<>->Next ->Server Setting->Finish->Next
Step 4: Create a servlet->Source package-> defult package->New->Servlet->Next
Step 5: Servlet class name<>-> Next->Servlet name<> and URL Pattern name<>->Next
Step 6: Create a java servlet code and html code link for display the arithmetic operation
Step 7: Execute the HTML code of input values to connect with the servlet program
Step 8: Stop.

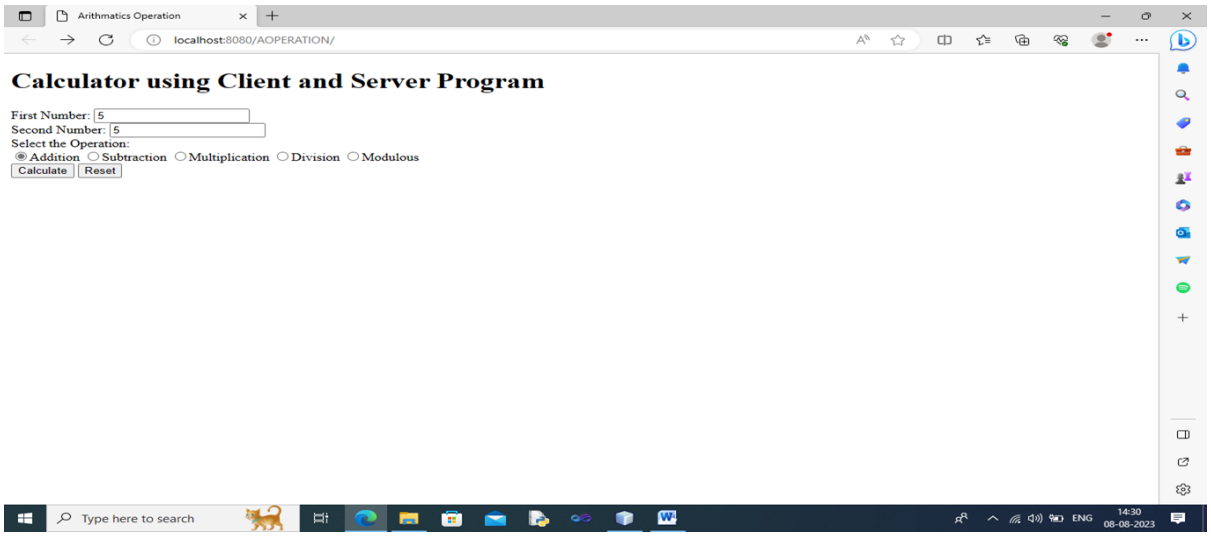
HTML client program

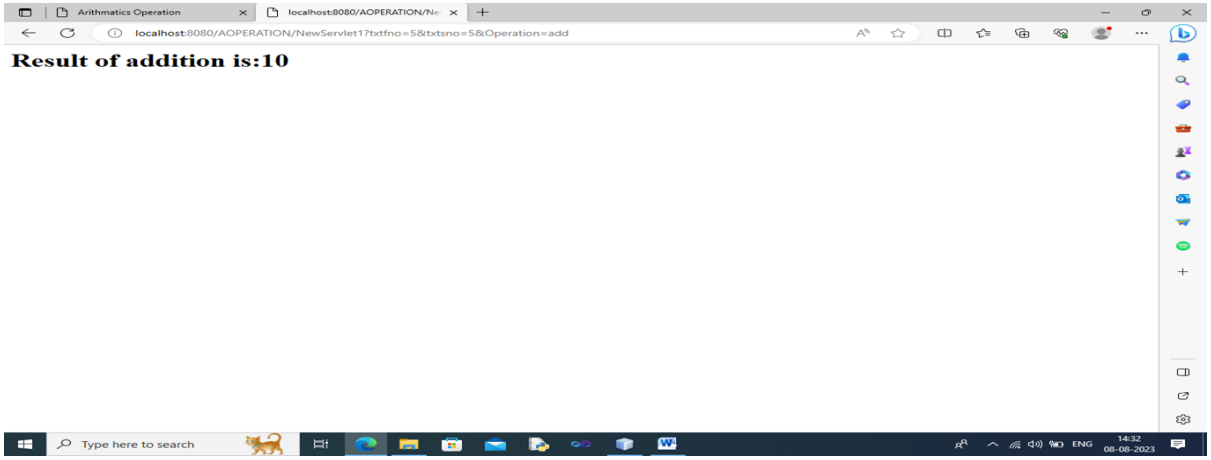
```
<html>
  <head>
    <title>Arithmatic Operation using Servlet Program</title>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
  </head>

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

      <h1>Calculator using Client and Server Program</h1>
      First Number:
      <input type="txt" name="txtfno"/><br/>
      Second Number:
      <input type="txt" name="txtsno"/><br/>
      Select the Operation:<br/>
      <input type="radio" name="Operation" value="add">Addition
      <input type="radio" name="Operation" value="sub">Subtraction
      <input type="radio" name="Operation" value="mul">Multiplication
      <input type="radio" name="Operation" value="div">Division
      <input type="radio" name="Operation" value="mod">Modulous<br/>
      <input type="Submit" value="Calculate"/>
      <input type="Reset" value="Reset"/>
    </form>

</html>
```

Servlet Java Program

```
package dd;
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 NewServlet1 extends HttpServlet {

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

@Override
   protected void doGet(HttpServletRequest request, HttpServletResponse response)
         throws ServletException, IOException
   {
     // processRequest(request, response);

      response.setContentType("text/html;charset=UTF-8");
      PrintWriter out = response.getWriter();
         int x,y;
         String str="";
         x=Integer.parseInt(request.getParameter("txtfno"));
         y=Integer.parseInt(request.getParameter("txtsno"));
         str=request.getParameter("Operation");
         if(str.equals("add"))
         out.println("<h1> Result of addition is:"+(x+y)+"</h1>");
         else if(str.equals("sub"))
          out.println("<h1> Result of Subtraction is:"+(x-y)+"</h1>");
          else if(str.equals("mul"))
          out.println("<h1> Result of Multiplication is:"+(x*y)+"</h1>");
          else if(str.equals("div"))
          out.println("<h1> Result of Divison is:"+(x/y)+"</h1>");
          else if(str.equals("mod"))
          out.println("<h1> Result of Divison is:"+(x%y)+"</h1>");

   }


}
```

Output:





Result:

Thus program has been successfully executed

6.

Aim :

Create a Servlet program to display the user name and password using with HTML

Procedure:

Step 1: Start the Netbeans IDE
Step 2: New Project->Java Web->Web Application ->Next
Step 3: Project Name<>->Next ->Server Setting->Finish->Next
Step 4: Create a servlet->Source package-> defult package->New->Servlet->Next
Step 5: Servlet class name<>-> Next->Servlet name<> and URL Pattern name<>->Next
Step 6: Create a java servlet code to display the user name and password using with HTML
Step 7: Execute the HTML code of input values to connect with the servlet program
Step 8: Stop.

HTML client program

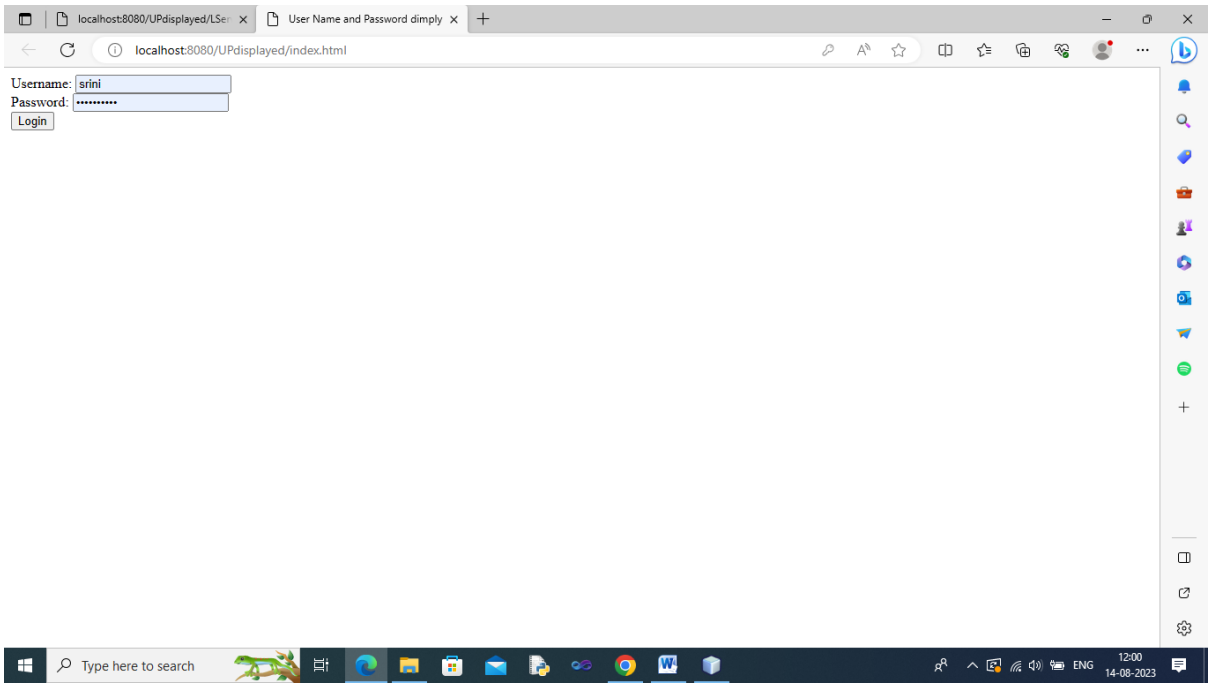
```
<head>
   <title>User Name and Password dimply </title>
   <meta charset="UTF-8">
   <meta name="viewport" content="width=device-width, initial-scale=1.0">
</head>

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

   Username: <input type="text" name="username"/> <br/>
   Password: <input type="password" name="password"/> <br/>
   <input type="submit" value="Login" />
</form>
```

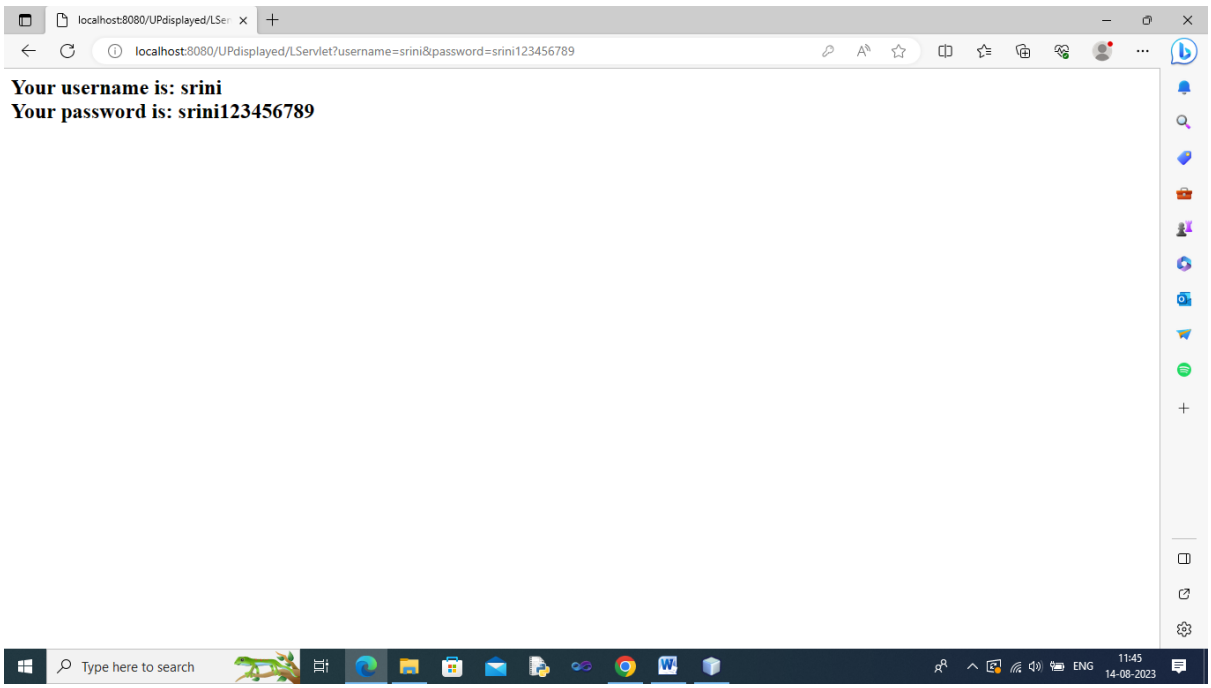
Servlet Java Program

```
package tt;

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 LServlet extends HttpServlet {


@Override
   protected void doGet(HttpServletRequest request, HttpServletResponse response)
         throws ServletException, IOException {
      // read form fields
      String username = request.getParameter("username");
      String password = request.getParameter("password");

      System.out.println("username: " + username);
      System.out.println("password: " + password);

      // do some processing here...
      // get response writer
      PrintWriter writer = response.getWriter();

      // build HTML code
      String htmlRespone = "<html>";
      htmlRespone += "<h2>Your username is: " + username + "<br/>";
      htmlRespone += "Your password is: " + password + "</h2>";
      htmlRespone += "</html>";
```

```
        // return response
        writer.println(htmlRespone);
    }
```

Output:





Result:

Thus program has been successfully executed.

7.

Aim :

Create a Servlet program to display the how many times visited the website counting using with Cookies.

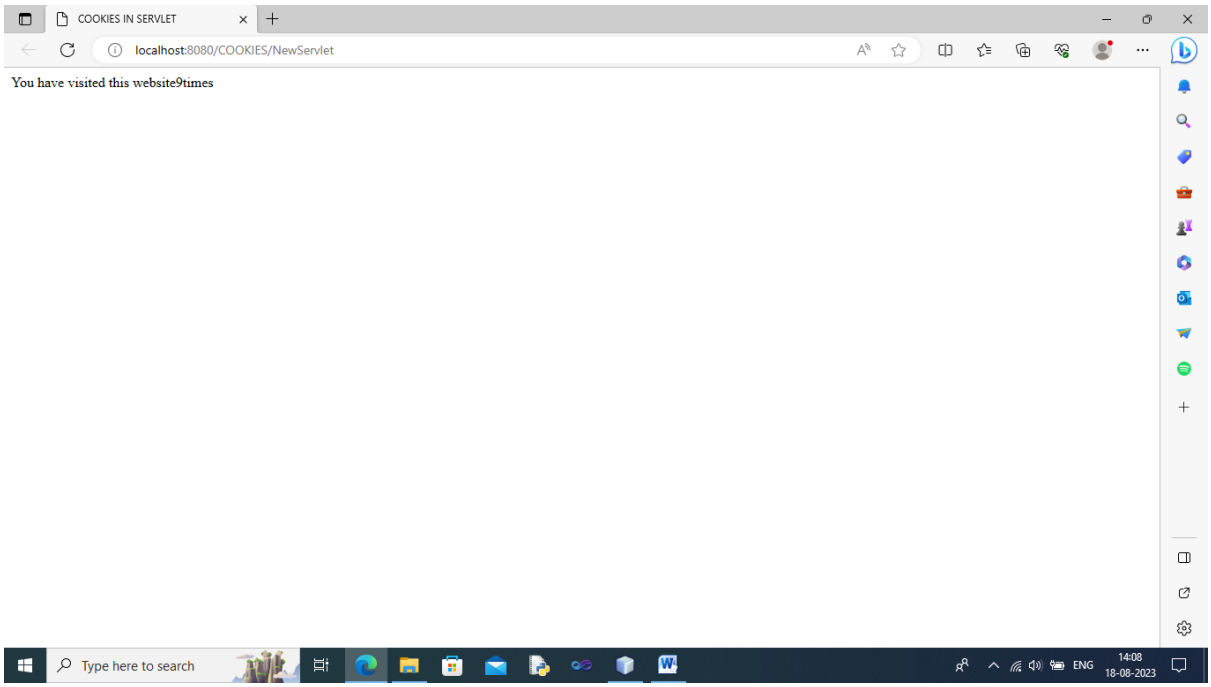
Procedure:

Step 1: Start the Netbeans IDE
Step 2: New Project->Java Web->Web Application ->Next
Step 3: Project Name<>->Next ->Server Setting->Finish->Next
Step 4: Create a servlet->Source package-> defult package->New->Servlet->Next
Step 5: Servlet class name<>-> Next->Servlet name<> and URL Pattern name<>->Next
Step 6: Create a java servlet code to display the counting visited the website using with Cookies.
Step 7: Execute the Servlet program to display the how many time visited the website.
Step 8: Stop.

Servlet program for Cookies:

```
package CK;

import java.io.IOException;
import java.io.PrintWriter;
import javax.servlet.ServletException;
import javax.servlet.http.Cookie;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;

public class NewServlet extends HttpServlet {

   static int i = 1;

   protected void processRequest(HttpServletRequest request, HttpServletResponse response)
         throws ServletException, IOException {
      response.setContentType("text/html;charset=UTF-8");
      try (PrintWriter out = response.getWriter()) {
         out.println("<!DOCTYPE html>");
         out.println("<html>");
         out.println("<head>");
         out.println("<title>COOKIES IN SERVLET</title>");
         out.println("</head>");
         out.println("<body>");
         Cookie c = new Cookie("Visit", String.valueOf(i));
         response.addCookie(c);
         int j = Integer.parseInt(c.getValue());
         if (j == 1) {
            out.println("Welcome User ");
         } else {
            out.println(" You have visited  this website" + j + "times");
         }
         i++;
         out.println("</body>");
         out.println("</html>");
      }
   }
```

Output:



Result:

Thus program has been successfully executed.

8

AIM

Create a JFrame form design using label , text field with buttons to display Area of a rectangle

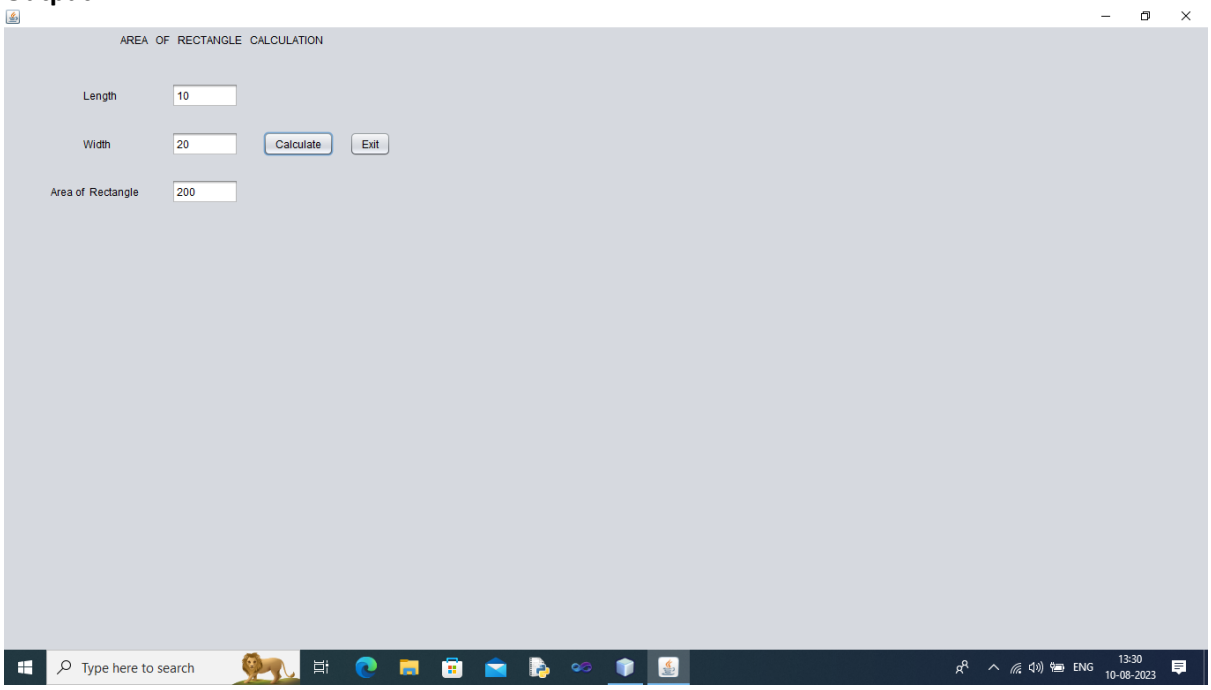
Procedure

Step 1: Start the Netbeans IDE
Step 2: File ->New project->java->java application->Project Name->Finish->Next
Step 3: Choose the Project Name->right click->New->java package->Next
Step 4: package Name->Mypackage->Finish-Next
Step 5: Choose the Mypackage->right click->New->JFrame form->Next-> create class Name->Finish
Step 6: Execute the JFrame form design program to display the Area of Rectangle Calculation
Step 7: Stop.

Java JFrame using for Area of Rectangle Calculation

```
package newpackage;
public class AreaRectAngle extends javax.swing.JFrame {
public AreaRectAngle() {
      initComponents();
   }
@SuppressWarnings("unchecked")
private void jButton1ActionPerformed(java.awt.event.ActionEvent evt) {
int l = Integer.parseInt(jTextField1.getText());
int b = Integer.parseInt(jTextField2.getText());
 int a = l * b;
 jTextField3.setText(String.valueOf(a));
   }
private void jButton2ActionPerformed(java.awt.event.ActionEvent evt) {
      // TODO add your handling code here:
      System.exit(0);
   }
public static void main(String args[]) {
java.awt.EventQueue.invokeLater(new Runnable() {
         public void run() {
            new AreaRectAngle().setVisible(true);
         }
      });
   }
   private javax.swing.JButton jButton1;
   private javax.swing.JButton jButton2;
   private javax.swing.JLabel jLabel1;
   private javax.swing.JLabel jLabel2;
   private javax.swing.JLabel jLabel3;
   private javax.swing.JLabel jLabel4;
   private javax.swing.JTextField jTextField1;
   private javax.swing.JTextField jTextField2;
   private javax.swing.JTextField jTextField3;
   // End of variables declaration
}
```

Output:



Result:

Thus program has been successfully executed

9.

AIM

Create a JFrame form design contain a checkbox, radio button, label and text field with buttons for Restaurant bill preparation

Procedure

Step 1: Start the Netbeans IDE
Step 2: File ->New project->java->java application->Project Name->Finish->Next
Step 3: Choose the Project Name->right click->New->java package->Next
Step 4: package Name->Mypackage->Finish-Next
Step 5: Choose the Mypackage->right click->New->JFrame form->Next-> create class Name->Finish
Step 6: Execute the JFrame form design program to display the Restaurants bill preparation
Step 7: Stop

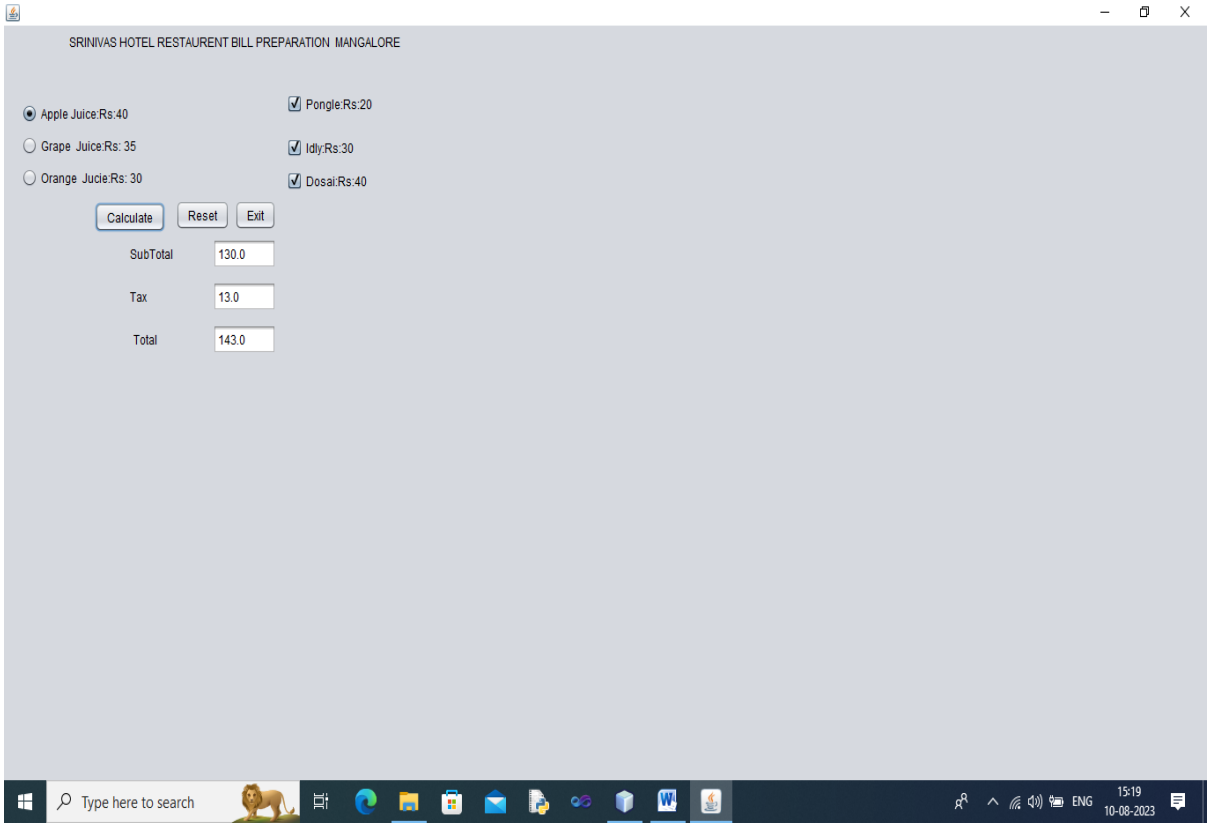
Java JFrame using for Restaurants bill preparation

```
package newpackage;

public class NewJFrameR extends javax.swing.JFrame {

public NewJFrameR() {
      initComponents();
   }

@SuppressWarnings("unchecked")

private void jButton3ActionPerformed(java.awt.event.ActionEvent evt) {
      System.exit(0);
   }

private void appleRadActionPerformed(java.awt.event.ActionEvent evt) {
      if (appleRad.isSelected()) {
         grapeRad.setSelected(false);
         orangeRad.setSelected(false);
      }
}


private void grapeRadActionPerformed(java.awt.event.ActionEvent evt) {
      if (grapeRad.isSelected()) {
         appleRad.setSelected(false);
         orangeRad.setSelected(false);
      }

   }

private void orangeRadActionPerformed(java.awt.event.ActionEvent evt) {
      if (orangeRad.isSelected()) {
         appleRad.setSelected(false);
         grapeRad.setSelected(false);
      }
       }

private void jButton1ActionPerformed(java.awt.event.ActionEvent evt) {
      double total;
      double subtotal = 0;
      final double TAXRATE = .10;
      double tax;
      if (appleRad.isSelected()) {
         subtotal = subtotal + 40;
      } else if (grapeRad.isSelected()) {
         subtotal = subtotal + 35;
      } else if (orangeRad.isSelected()) {
         subtotal = subtotal + 30;
      }
```

```
if (pongalcheck.isSelected()) {
        subtotal = subtotal + 20;
      }

      if (idlycheck.isSelected()) {
        subtotal = subtotal + 30;
      }

if (dosaicheck.isSelected()) {
        subtotal = subtotal + 40;
        subtotalTF.setText(Double.toString(subtotal));
        subtotal = Double.parseDouble(subtotalTF.getText());
        tax = subtotal * TAXRATE;
        total = tax + subtotal;
        taxTF.setText(Double.toString(tax));
        totalTF.setText(Double.toString(total));

      }
   }
private void jButton2ActionPerformed(java.awt.event.ActionEvent evt) {
      appleRad.setSelected(false);
      grapeRad.setSelected(false);
      orangeRad.setSelected(false);
      pongalcheck.setSelected(false);
      idlycheck.setSelected(false);
      dosaicheck.setSelected(false);
      subtotalTF.setText(" ");
      taxTF.setText("  ");
      totalTF.setText("  ");

   }
public static void main(String args[]) {
java.awt.EventQueue.invokeLater(new Runnable() {
        @Override
        public void run() {
          new NewJFrameR().setVisible(true);
        }
      });
   }

private javax.swing.JRadioButton appleRad;
   private javax.swing.JCheckBox dosaicheck;
   private javax.swing.JRadioButton grapeRad;
   private javax.swing.JCheckBox idlycheck;
   private javax.swing.JButton jButton1;
   private javax.swing.JButton jButton2;
   private javax.swing.JButton jButton3;
   private javax.swing.JLabel jLabel1;
   private javax.swing.JLabel jLabel2;
   private javax.swing.JLabel jLabel3;
   private javax.swing.JLabel jLabel4;
```

```
    private javax.swing.JPanel jPanel1;
    private javax.swing.JPanel jPanel2;
    private javax.swing.JRadioButton orangeRad;
    private javax.swing.JCheckBox pongalcheck;
    private javax.swing.JTextField subtotalTF;
    private javax.swing.JTextField taxTF;
    private javax.swing.JTextField totalTF;
    // End of variables declaration
}
```

Out put:



Result:

Thus program has been successfully executed

10

AIM

Create a Remote Method Innovation RMI program to calculate the addition of two number using connection Remote method in Interface program, Server program and Client program

Procedure:

Step 1: Start the Netbeans IDE
Step 2: File ->New project->java->web application-> Finish
Step 3: Project Name->New ->Java Interface ->Default code display.
Step 4: Create a appropriate Java code to display the addition of two numbers
In RMI method connected from Server to Client.
Step 5: Execute the Interface program, Server program and Client program to display the
Add number of total.

Step 6: Stop.

RMI interface java program:

```
package ss;

import java.rmi.*;
public interface Adder extends Remote {
   public int add(int a, int b) throws RemoteException;
}
```

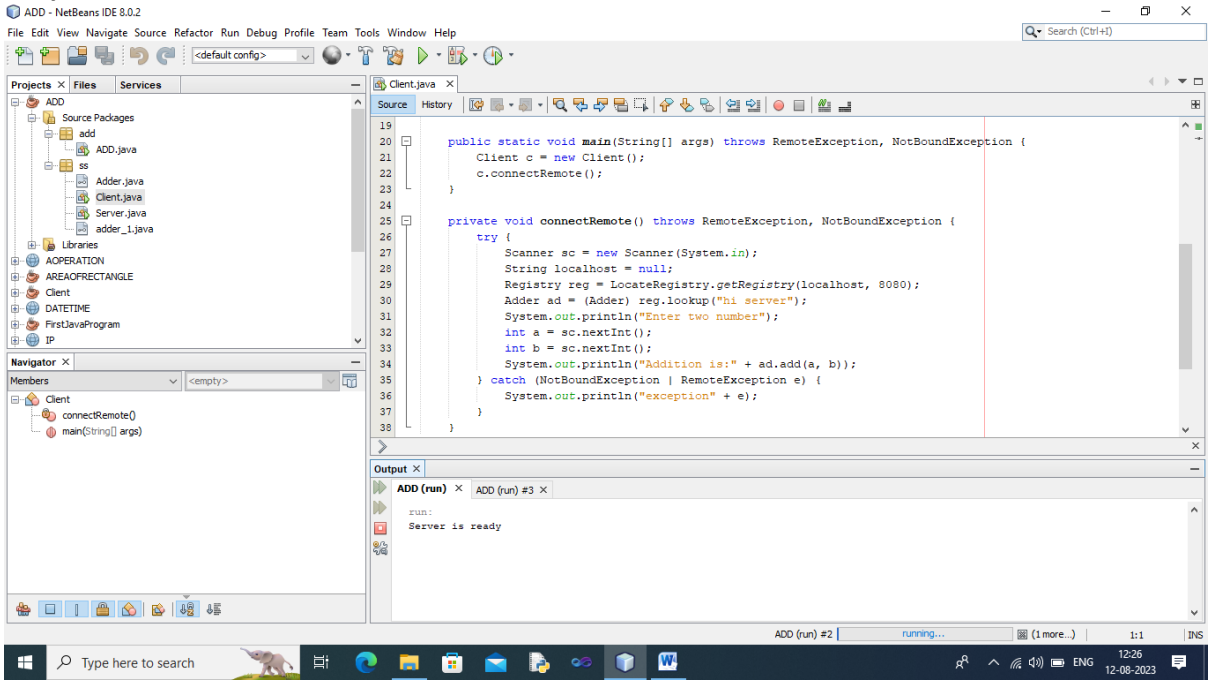
RMI Server program:

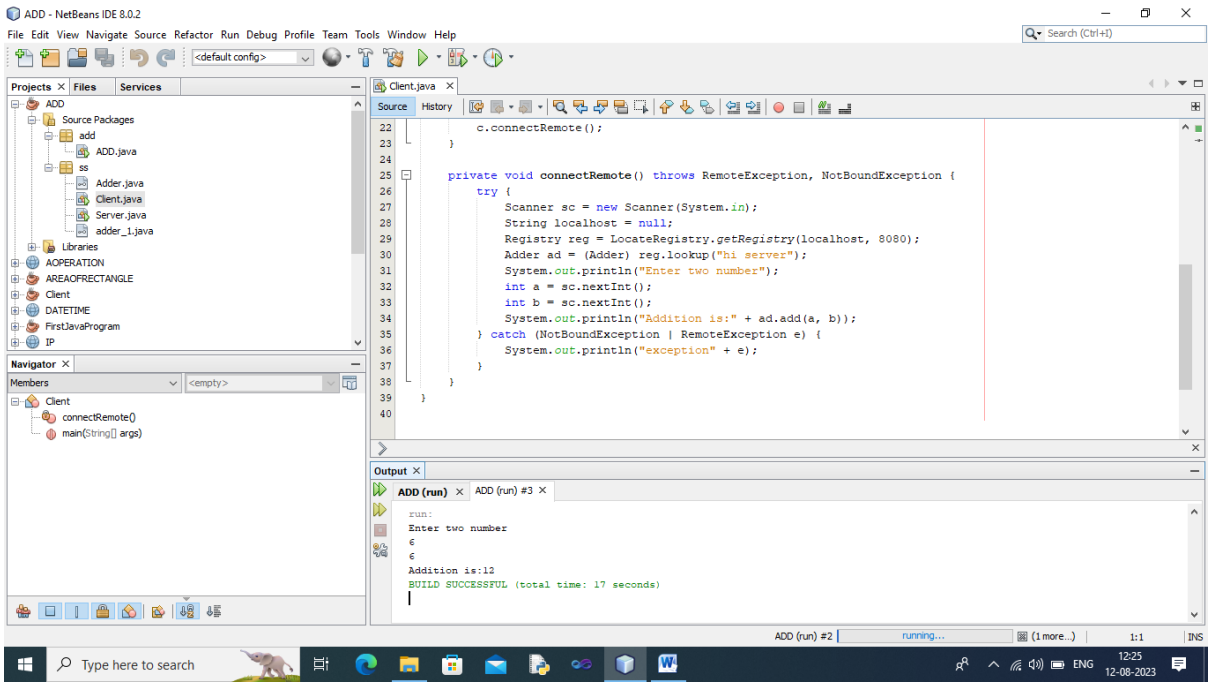
```
package ss;

import java.rmi.RemoteException;
import java.rmi.registry.LocateRegistry;
import java.rmi.registry.Registry;
import java.rmi.server.UnicastRemoteObject;
public class Server extends UnicastRemoteObject implements Adder
{
   public Server() throws RemoteException {
super();
   }
@Override
   public int add(int n1, int n2) throws RemoteException {
      return n1 + n2;
   }
public static void main(String[] args) throws RemoteException {
      try {
         Registry reg = LocateRegistry.createRegistry(8080);
         reg.rebind("hi server", new Server());
         System.out.println("Server is ready");
      } catch(RemoteException e) {
         System.out.println("exception" + e);
      }

   }
}
```

RMI Client program:

```
package ss;
import java.rmi.NotBoundException;
import java.rmi.RemoteException;
import java.rmi.registry.LocateRegistry;
import java.rmi.registry.Registry;
import java.util.Scanner;

public class Client {

   public static void main(String[] args) throws RemoteException, NotBoundException {
      Client c = new Client();
      c.connectRemote();
   }

private void connectRemote() throws RemoteException, NotBoundException {
      try {
         Scanner sc = new Scanner(System.in);
         String localhost = null;
         Registry reg = LocateRegistry.getRegistry(localhost, 8080);
         Adder ad = (Adder) reg.lookup("hi server");
         System.out.println("Enter two number");
         int a = sc.nextInt();
         int b = sc.nextInt();
         System.out.println("Addition is:" + ad.add(a, b));
      } catch (NotBoundException | RemoteException e) {
         System.out.println("exception" + e);
      }
   }
}
```

Output:





Result:

Thus program has been successfully executed

Thank you…

Regards

V.SRINIVASAN

ICIS