DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
V.R.SIDDHARTHA ENGINEERING COLLEGE
KANURU

HOME ASSIGNMENT

Course Name	ADVANCED JAVA PROGRAMMING
Course Code	17CS2504A
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Roll No.	198W1A05E0
Section.	CSE-3
Group No.	2
Programme	B.TECH III YEAR V SEMESTER
Type of the Course	PROGRAMME CORE
Course Instructor	A.RAGHUVIRA PRATAP
Academic Year	2021-2022

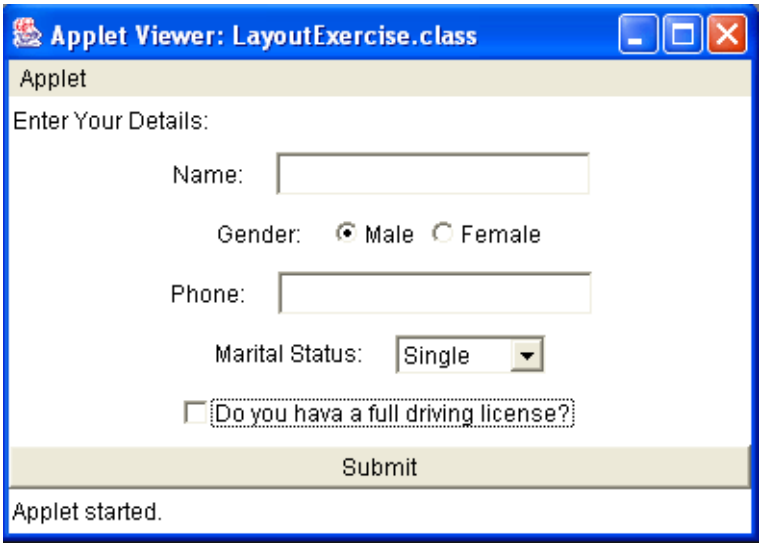
Student Signature with Date (Submission date) :	Assessment Marks:	Assessed by:

S.No	Group No.	Roll No.'s
2	No. 2	**198W1A05D8-E4**

CASE STUDY 1:

Course Outcome 1: Develop Graphical user interface application Cognitive Level : K3

Design and develop a GUI application using various built in classes of Java Swing APIfor the following.



LayoutExercise.java:

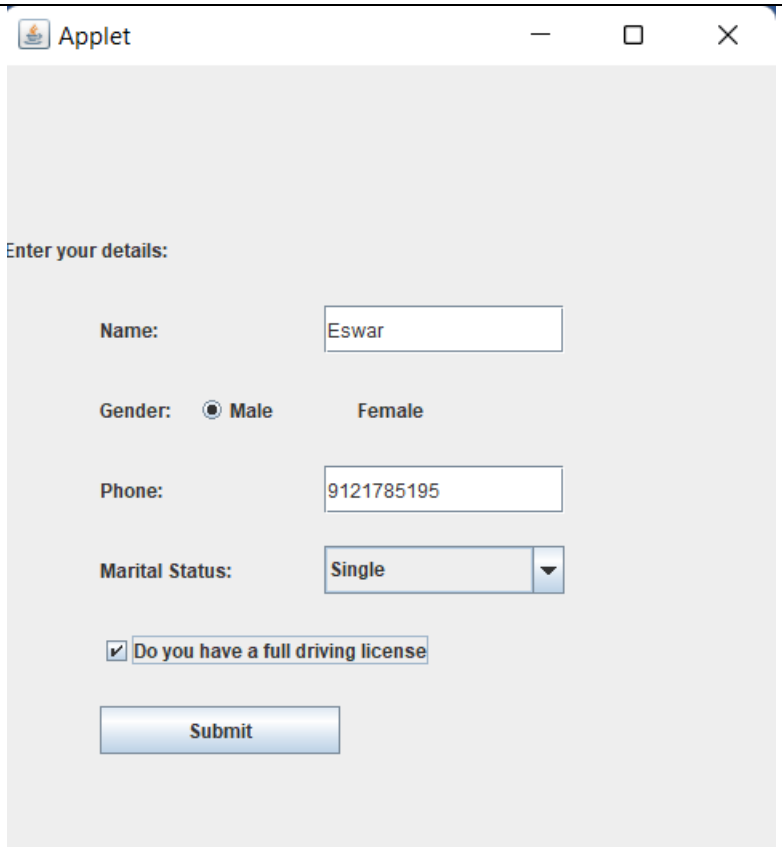
```
import javax.swing.*;
import java.util.*;
import java.awt.*;


public class LayoutExercise extends JFrame{
        JPanel p;
        JButton b;
        JLabel l1;
        JLabel l2;
        JLabel l3;
        JLabel l4;
        JLabel l5;
        JTextField jtf1;
        JTextField jtf2;
        JCheckBox jc;
        JRadioButton jrb1,jrb2;
        JComboBox jcb;
        ButtonGroup group;

        public LayoutExercise(){
                //create it

                p = new JPanel();
```

```
b = new JButton("Submit");
l1 = new JLabel("Enter your details:");
l2 = new JLabel("Name:");
l3 = new JLabel("Gender:");
l4 = new JLabel("Phone:");
l5 = new JLabel("Marital Status:");
group = new ButtonGroup();
jtf1 = new JTextField();
jtf2 = new JTextField();
jrb1 = new JRadioButton("Male");
jrb2 = new JRadioButton("Female");
String values[] = {"Single","Double","Other"};
jcb = new JComboBox(values);
jc = new JCheckBox("Do you have a full driving license");

//configure it
p.setBounds(0,0,500,300);
p.setLayout(null);

l1.setBounds(0,100,200,30);

l2.setBounds(60,150,100,30);
jtf1.setBounds(200,150,150,30);

l3.setBounds(60,200,100,30);
jrb1.setBounds(120,200,100,30);
jrb2.setBounds(200,200,100,30);


l4.setBounds(60,250,100,30);
jtf2.setBounds(200,250,150,30);

l5.setBounds(60,300,100,30);
jcb.setBounds(200,300,150,30);

jc.setBounds(60,350,400,30);



b.setBounds(60,400,150,30);



//add it
group.add(jrb1);
group.add(jrb2);
p.add(l1);
p.add(l2);
```

```
            p.add(jtf1);
            p.add(l3);
            p.add(jrb1);
            p.add(jrb2);
            p.add(l4);
            p.add(jtf2);
            p.add(l5);
            p.add(jcb);
            p.add(jc);
            p.add(b);
            add(p);



            //Frame settings
            setSize(500,300);
            setVisible(true);
            setDefaultCloseOperation(EXIT_ON_CLOSE);
        }

        public static void main(String args[]){
            LayoutExercise g = new LayoutExercise();
            g.setTitle("Applet");

        }

}
```

Output:

```
C:\Users\DELL\OneDrive\Desktop>cd AJ5E0

C:\Users\DELL\OneDrive\Desktop\AJ5E0>javac LayoutExercise.java
Note: LayoutExercise.java uses unchecked or unsafe operations.
Note: Recompile with -Xlint:unchecked for details.

C:\Users\DELL\OneDrive\Desktop\AJ5E0>java LayoutExercise
```



CASE STUDY 02: [K3 , CO2]

Implement TCP Server programming in which client can connect and communicate withServer for sending the no and server returns nth Fibonacci number to client.

Course Outcome: CO2: Develop distributed application.

Topic: Java Networking

```
Enter the number to display fibonicci series:  10
0
1
1
2
3
5
8
13
21
34
```

Fib.java

```
import java.io.*;
import java.net.*;
import java.util.*;
public class Fib{
	public static void main(String args[]){
		try{
			Socket s=new Socket("localhost",5555);
			DataOutputStream dout=new DataOutputStream(s.getOutputStream());
			Scanner sc=new Scanner(System.in);
			System.out.println("Enter the number of terms to be printed:");
			String msg =sc.nextLine();
			dout.writeUTF(msg);
			dout.flush();
			dout.close();
			s.close();
		}
		catch(Exception e){
			System.out.println(e);

		}



	}
}
```

Fibo.java

```
import java.io.*;
import java.net.*;
public class Fibo
{
	public static void main(String args[])
	{
		try
		{
			ServerSocket ss=new ServerSocket(5555);
			Socket s =ss.accept(); //establish connection
			DataInputStream dis=new DataInputStream(s.getInputStream());
			String str=(String)dis.readUTF();
			int n=Integer.parseInt(str);
			int firstTerm = 0, secondTerm = 1;
		   System.out.println("Fibonacci Series till " + n + " terms:");

		   for (int i = 1; i <= n; ++i) {
```

```
                    System.out.print(firstTerm + "\n");

                    // compute the next term
                    int nextTerm = firstTerm + secondTerm;
                    firstTerm = secondTerm;
                    secondTerm = nextTerm;

                  }
                  ss.close();
                }

                catch(Exception e)
                {
                        System.out.println(e);
                }

        }
}
```

Output:

```
C:\Users\DELL\OneDrive\Desktop\AJ5E0>javac Fib.java

C:\Users\DELL\OneDrive\Desktop\AJ5E0>java Fib
Enter the number of terms to be printed:
10
```

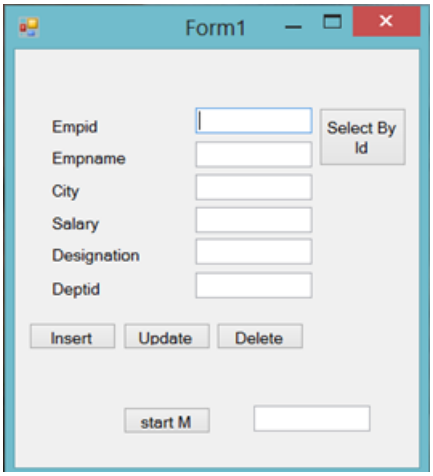
```
C:\Users\DELL\OneDrive\Desktop\AJ5E0>javac Fibo.java

C:\Users\DELL\OneDrive\Desktop\AJ5E0>java Fibo
Fibonacci Series till 10 terms:
0
1
1
2
3
5
8
13
21
34
```

CASE STUDY 03: [K3 , CO2]

Write a program to perform following functions: 1. Connect 2. Create Database 3. CreateTable 4. Insert Records into respective table 5. Select records of particular table of database 6.Delete Records from table.

Course Outcome: CO2: Develop distributed application.

Topic:JDBC



Database.java:

```
import javax.swing.*;
import java.util.*;
import java.awt.*;
import java.awt.event.ActionEvent;
import java.awt.event.ActionListener;


public class Database extends JFrame implements ActionListener{
    JPanel p;
    Button b1;
    JButton b2;
    JButton b3;
    JButton b4;
    JLabel l1;
    JLabel l2;
    JLabel l3;
    JLabel l4;
    JLabel l5;
    JLabel l6;
    JTextField jtf1;
    JTextField jtf2;
    JTextField jtf3;
    JTextField jtf4;
```

```
JTextField jtf5;
JTextField jtf6;


 public Database(){
                //create it

                p = new JPanel();
                b1 = new JButton("Insert");
                b2 = new JButton("Update");
                b3 = new JButton("Delete");
                b4 = new JButton("Select by ID");
                l1 = new JLabel("Empid:");
                l2 = new JLabel("Empname:");
                l3 = new JLabel("City:");
                l4 = new JLabel("Salary:");
                l5 = new JLabel("Designation:");
                l6 = new JLabel("Deptid:");
                jtf1 = new JTextField();
                jtf2 = new JTextField();
                jtf3 = new JTextField();
                jtf4 = new JTextField();
                jtf5 = new JTextField();
                jtf6 = new JTextField();



                //configure it
                p.setBounds(0,0,500,300);
                p.setLayout(null);



                l1.setBounds(60,150,100,30);
                jtf1.setBounds(200,150,150,30);



                l2.setBounds(60,200,100,30);
               jtf2.setBounds(200,200,150,30);


                l3.setBounds(60,250,100,30);
               jtf3.setBounds(200,250,150,30);

                l4.setBounds(60,300,100,30);
                jtf4.setBounds(200,300,150,30);


                l5.setBounds(60,350,100,30);
```

```
        jtf5.setBounds(200,350,150,30);

        l6.setBounds(60,400,100,30);
        jtf6.setBounds(200,400,150,30);



        b1.setBounds(60,450,150,30);
        b2.setBounds(250,450,150,30);
        b3.setBounds(60,500,150,30);
        b4.setBounds(400,150,150,30);

        b1.addActionListener(this);




        //add it
        p.add(l1);
        p.add(l2);
        p.add(l3);
        p.add(l4);
        p.add(l5);
        p.add(l6);
        p.add(jtf1);
        p.add(jtf2);
        p.add(jtf3);
        p.add(jtf4);
        p.add(jtf5);
        p.add(jtf6);
        p.add(b1);
        p.add(b2);
        p.add(b3);
        p.add(b4);
        add(p);



        //Frame settings
        setSize(500,300);
        setVisible(true);
        setDefaultCloseOperation(EXIT_ON_CLOSE);
}

public void actionPerformed(ActionEvent e){

        String empid= jtf1.getText();
        String empname= jtf2.getText();
        String city= jtf3.getText();
        String salary= jtf4.getText();
```

```
                String des= jtf5.getText();
                String depid= jtf6.getText();

                Jdbc j = new Jdbc(empid,empname,city,salary,des,depid);



        }

        public static void main(String args[]){
                Database g = new Database();
                g.setTitle("Form");

        }

}
```

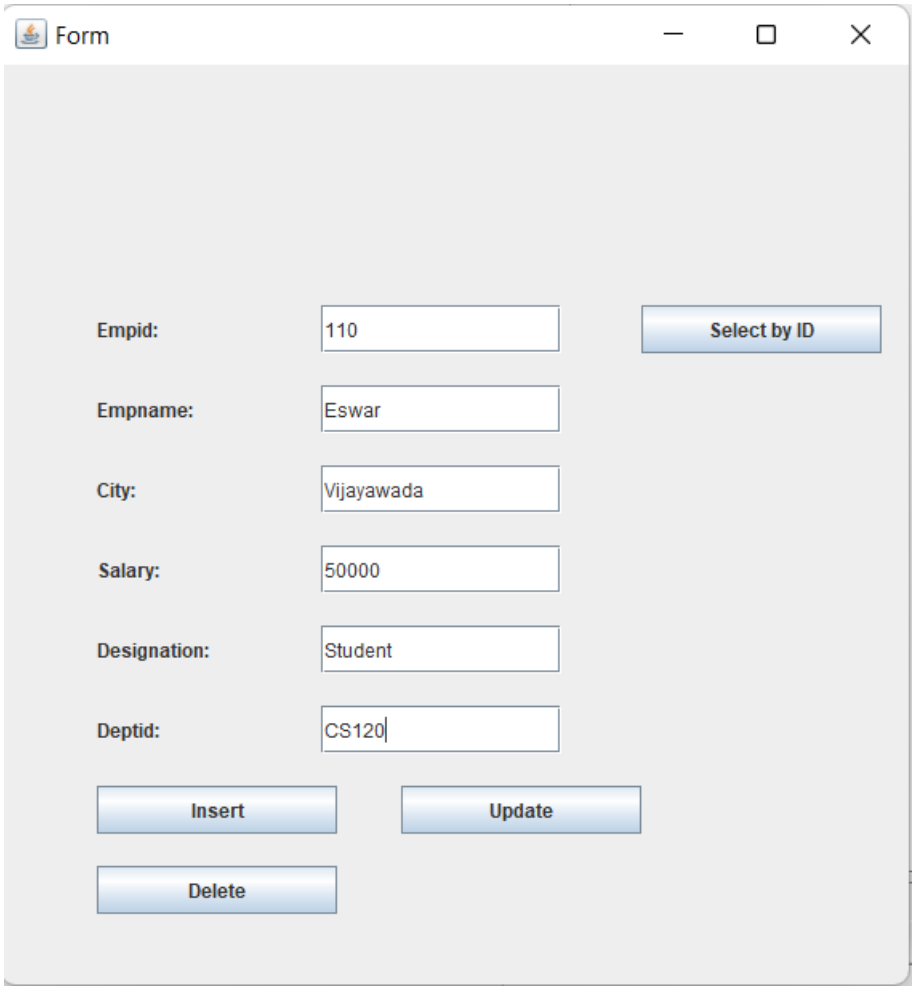
Jdbc.java

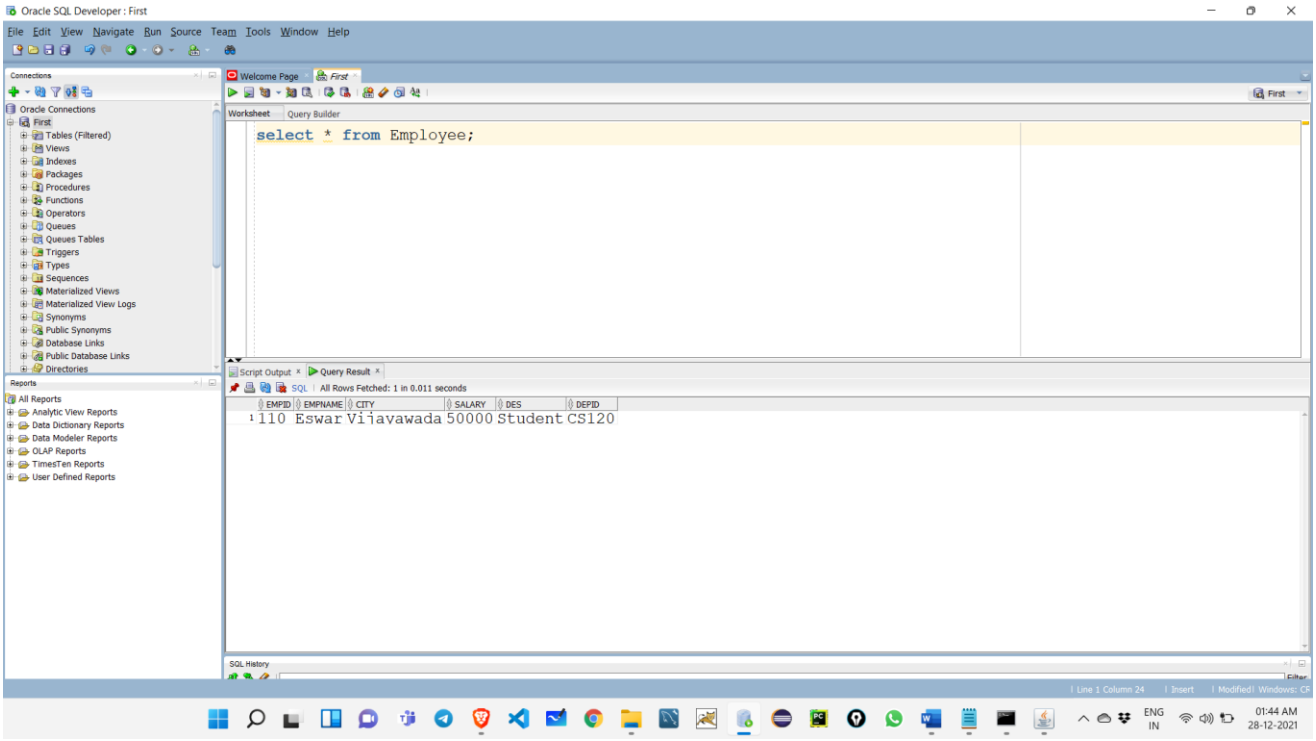
```
// 1. import jdbc package
import java.sql.*;
import oracle.jdbc.driver.*;
//import oracle/sql.*;

// 2. Load and register jdbc diver in driver manager service
public class Jdbc{
   Connection con=null;
        Statement st=null;
        ResultSet rs=null;


   public Jdbc(String empid,String empname,String city,String salary,String des,String depid){
      Connection con=null;
           Statement st=null;
           ResultSet rs=null;

                try{

                        // Load a driver
                        OracleDriver d=new OracleDriver();
                        // Register the driver in DriverManager
                        DriverManager.registerDriver(d);

                // 3. open a connection to a database software
                        String url="jdbc:oracle:thin:@localhost:1521:xe";
                        String username="system";
                        String password="admin";
                        con=DriverManager.getConnection(url,username,password);
                // 4. create a statement object and prepare a sql command
```

```
            PreparedStatement ps = con.prepareStatement("insert into Employee values(?,?,?,?,?,?)");
            ps.setString(1,empid);
            ps.setString(2,empname);
            ps.setString(3,city);
            ps.setString(4,salary);
            ps.setString(5,des);
            ps.setString(6,depid);
            int i = ps.executeUpdate();
            System.out.println(i+" record inserted");
                    }

// 7. Handle the errors
                    catch(Exception e){
                            System.out.println("Connection was unsuccessful");
                              e.printStackTrace();
                    }


// 8. close the resultset and statment objects
                    finally{
                            try{
                                    st.close();
                                    rs.close();
                                    con.close();
                            }
                            catch(Exception ee){

                            }
                    }

// 9. close the connection

    }

}
```

Output:

```
C:\Users\DELL\OneDrive\Desktop\AJ5E0>javac Database.java

C:\Users\DELL\OneDrive\Desktop\AJ5E0>javac Jdbc.java

C:\Users\DELL\OneDrive\Desktop\AJ5E0>java Database
```


Form
Empid:
110
Select by ID
Empname:
Eswar
City:
Vijayawada
Salary:
50000
Designation:
Student
Deptid:
CS120
Insert
Update
Delete



CASE STUDY 04: [K3 , CO3]

Write a servlet which accept two numbers to be generated randomly between 1 and 100. Use POST method in HTML Form and display the maximum of them in servletsource code.

Course Outcome: CO3: Develop web application

Topic: Java Servlets

Random.html

```
<html>
   <head>

      <title>random</title>
      <style>
         .a,.b{
            margin: 10px;

         }
      </style>

   </head>


   <body>
      <form method='POST' action="http://localhost:8080/5E0/random">
         <div class="a">
            Random Number(Between 0-100)1: <input type="text" name="r1">  <button
type="submit">Click to Generate Random Number 1 </button>

         </div>

         <div class="b">
            Random Number(Between 0-100)2: <input type="text" name="r2">  <button
type="submit">Click to Generate Random Number 2</button>
         </div>
         <br><br>

         <div class="c">
            <button type="submit">Find max number</button>
         </div>

      </form>

   </body>
</html>
```

Web.xml

```
<web-app>
        <servlet>
                <servlet-name>FirstServlet</servlet-name>
                <servlet-class>DemoServlet</servlet-class>
        </servlet>

        <servlet>
                <servlet-name>SecondServlet</servlet-name>
```

```
        <servlet-class>ColorServlet</servlet-class>
</servlet>

<servlet>
        <servlet-name>ThirdServlet</servlet-name>
        <servlet-class>LoginServlet</servlet-class>
</servlet>

<servlet>
        <servlet-name>FourthServlet</servlet-name>
        <servlet-class>RandomServlet</servlet-class>
</servlet>

<servlet>
        <servlet-name>FifthServlet</servlet-name>
        <servlet-class>OrderServlet</servlet-class>
</servlet>


<servlet-mapping>
        <servlet-name>FirstServlet</servlet-name>
        <url-pattern>/welcome</url-pattern>
</servlet-mapping>


<servlet-mapping>
        <servlet-name>SecondServlet</servlet-name>
        <url-pattern>/color</url-pattern>
</servlet-mapping>



<servlet-mapping>
        <servlet-name>ThirdServlet</servlet-name>
        <url-pattern>/login</url-pattern>
</servlet-mapping>

<servlet-mapping>
        <servlet-name>FourthServlet</servlet-name>
        <url-pattern>/random</url-pattern>
</servlet-mapping>

<servlet-mapping>
        <servlet-name>FifthServlet</servlet-name>
        <url-pattern>/order</url-pattern>
</servlet-mapping>

<welcome-file-list>
        <welcome-file>random.html</welcome-file>
</welcome-file-list>
```

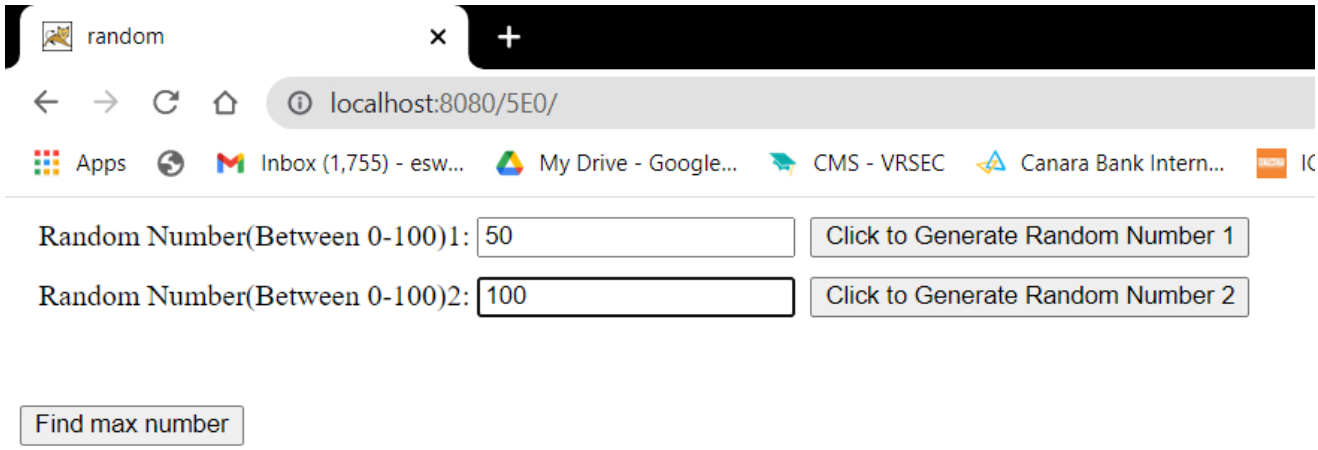
</web-app>

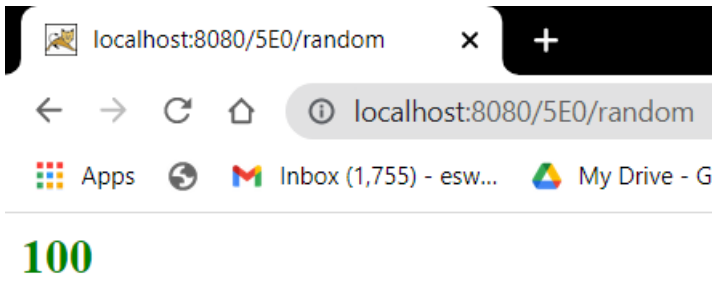
RandomServlet.java

```
import java.io.*;
import javax.servlet.*;
import java.awt.*;
import java.util.Random;
import javax.servlet.http.*;
public class RandomServlet extends HttpServlet{



   public void doPost(HttpServletRequest req, HttpServletResponse res) throws
IOException,ServletException{
      PrintWriter out = res.getWriter();
      try{

      String n1=req.getParameter("r1");
      String n2=req.getParameter("r2");
      int s1 = Integer.parseInt(n1);
      int s2 = Integer.parseInt(n2);
      if(s1>s2){
         out.print("<html>");
         out.print("<body>");
         out.print("<h2><font color=\"green \">Maximum of two numbers is:
+"+s1+"</font></h2>");
         out.print("</body>");
         out.print("</html>");


      }
      else{
         out.print("<html>");
         out.print("<body>");
         out.print("<h2><font color=\"green \">Maximum of two numbers is: "+s2+"</font></h2>");
         out.print("</body>");
         out.print("</html>");
      }



      }
      catch(Exception e){
         out.println(e.getMessage());
         e.printStackTrace();
      }
```

```
    }
}
```

Output:


random
localhost:8080/5E0/
Apps
Inbox (1,755) - esw...
My Drive - Google...
CMS - VRSEC
Canara Bank Intern...
Random Number(Between 0-100)1: 50
Click to Generate Random Number 1
Random Number(Between 0-100)2: 100
Click to Generate Random Number 2
Find max number


localhost:8080/5E0/random
localhost:8080/5E0/random
Apps
Inbox (1,755) - esw...
My Drive - G
100

CASE STUDY 05: [K3 , CO4]

Develop a login.jsp page which takes UserId and password from user using suitable HTML controls and submits the controls' values to CheckLoginServlet. The CheckLoginServlet validates the user. If the user is valid, the servlet forwards request towelcome.jsp page. Otherwise, the login.jsp page (with appropriate "invalid UserId/password" error message) is shown again to recollect the UserId & password.**Course Outcome: CO4:** Develop enterprise application.

Topic: Java Server Pages.

Login.html

```
<html>
<head>
   <title>Login</title>
   <meta charset="UTF-8">
   <meta name="viewport" content="width=device-width, initial-scale=1.0">


</head>
<body>
   <center>
      <h1>Login Page</h1>
      <form method="post" action="login.jsp">
         Username: <input type="text" name="uname"><br><br>
         Password: <input type="password" name="pass"><br><br>
         <input type="submit" name="submit" value="Login">
```

```
        </form>
    </center>
</body>
</html>
```

Login.jsp

```
<%@ page import="java.io.*" %>
<%@ page import="javax.servlet.*" %>
<%@ page import="javax.servlet.http.*" %>
<%@ page import="java.sql.*" %>
<!DOCTYPE html>
<html>
<head>
    <meta charset="utf-8">
    <meta name="viewport" content="width=device-width, initial-scale=1">
    <title>Login</title>
</head>

<%
String username=request.getParameter("uname");
String pass=request.getParameter("pass");
try{
    Class.forName("oracle.jdbc.driver.OracleDriver");
    Connection con =
DriverManager.getConnection("jdbc:oracle:thin:@localhost:1521:XE","system","admin");
    Statement ps = con.createStatement();
    String query = "SELECT * from Registration where uname="'+username+'" and
password="'+pass+"'";
    ResultSet rs = ps.executeQuery(query);

    if(rs.next()){
```

```
        out.println("<body><center>");
        out.println("<h1>Welcome: "+rs.getString(2)+"</h1>");
        out.println("<h3>You are successfully logged in</h3>");
        out.println("</center></body>");
    } else{
        out.println("<br> <center><font color=\"red\">Invalid Credentials</font></center>");
    }
} catch(Exception e){
    out.println(e.getMessage());
    e.printStackTrace();
}
%>
</html>
```