

KADI SARVA VISHWAVIDYALAYA
LDRP INSTITUTE OF TECHNOLOGY AND RESEARCH
GANDHINAGAR



Department of
Information Technology
Subject : Advanced Java Programming(CT506A-N)

Laboratory Manual

Prepared By:

19BECE30543

Jogiya Kishan

CE shift -2

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PRACTICAL – 1

AIM :- Create a simple calculator application using Swing in java

```
Code : package com.calculator;
import java.awt.EventQueue;
import javax.swing.JFrame; import
javax.swing.JButton; import java.awt.Color;
import java.awt.Font; import
java.awt.event.ActionEvent; import
java.awt.event.ActionListener; import
javax.swing.JTextField;

public class CalculatorDemo { private
    JFrame frame; int a,b,result,op;
    String ans; private JTextField
    txt_view;
    /**
     * Launch the application.
     */
    public static void main(String[] args) {
        EventQueue.invokeLater(new Runnable() { public
            void run() { try {
                CalculatorDemo window = new
CalculatorDemo(); window.frame.setVisible(true);
                } catch (Exception e) {
                    e.printStackTrace();
                }
            }
        });
    }

    /**
     * Create the application.
     */
    public CalculatorDemo() {
        initialize();
    }

    /**
     * Initialize the contents of the frame.
     */
```

```
private void initialize() { frame = new JFrame();
    frame.setBounds(100, 100, 450, 300);
    frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
    frame.getContentPane().setLayout(null);

    JButton btn_1 = new JButton("1");
    btn_1.addActionListener(new ActionListener() { public void
    actionPerformed(ActionEvent e) {
    txt_view.setText(txt_view.getText()+"1"); }
    });
    btn_1.setBounds(12, 94, 76, 25);
    frame.getContentPane().add(btn_1);

    JButton btn_2 = new JButton("2");
    btn_2.addActionListener(new ActionListener() { public void
    actionPerformed(ActionEvent e) {
    txt_view.setText(txt_view.getText()+"2");
    }
    });
    btn_2.setBounds(100, 94, 76, 25);
    frame.getContentPane().add(btn_2);

    JButton btn_3 = new JButton("3");
    btn_3.addActionListener(new ActionListener() { public void
    actionPerformed(ActionEvent e) {
    txt_view.setText(txt_view.getText()+"3");
    }
    });
    btn_3.setBounds(188, 94, 76, 25);
    frame.getContentPane().add(btn_3);

    JButton btn_4 = new JButton("4");
    btn_4.addActionListener(new ActionListener() { public void
    actionPerformed(ActionEvent e) {
    txt_view.setText(txt_view.getText()+"4");
    }
    });
    btn_4.setBounds(276, 94, 76, 25);
    frame.getContentPane().add(btn_4);
}
```

```
btn_4.setBounds(12, 131, 76, 25);
frame.getContentPane().add(btn_4);

JButton btn_5 = new JButton("5");
btn_5.addActionListener(new ActionListener() { public void
actionPerformed(ActionEvent e) {
txt_view.setText(txt_view.getText()+"5");
    }
}

    );
btn_5.setBounds(100, 131, 76, 25);
frame.getContentPane().add(btn_5);

JButton btn_6 = new JButton("6");
btn_6.addActionListener(new ActionListener() { public void
actionPerformed(ActionEvent e) {
txt_view.setText(txt_view.getText()+"6");
    }
}

    );
btn_6.setBounds(188, 131, 76, 25);
frame.getContentPane().add(btn_6);

JButton btn_7 = new JButton("7");
btn_7.addActionListener(new ActionListener() { public void
actionPerformed(ActionEvent e) {
txt_view.setText(txt_view.getText()+"7");
    }
}

    );
btn_7.setBounds(12, 168, 76, 25);
frame.getContentPane().add(btn_7);

JButton btn_8 = new JButton("8");
btn_8.addActionListener(new ActionListener() { public void
actionPerformed(ActionEvent e) {
txt_view.setText(txt_view.getText()+"8");
    }
}

    );
```

```
btn_8.setBounds(100, 168, 76, 25);
frame.getContentPane().add(btn_8);

JButton btn_9 = new JButton("9");
btn_9.addActionListener(new ActionListener() { public void
actionPerformed(ActionEvent e) {
txt_view.setText(txt_view.getText()+"9");
    }
}

    );
btn_9.setBounds(188, 168, 76, 25);
frame.getContentPane().add(btn_9); JButton btn_dot = new
JButton("."); btn_dot.addActionListener(new ActionListener() {
public void actionPerformed(ActionEvent e) {
txt_view.setText(txt_view.getText()+".");
    }
}

    ); btn_dot.setBounds(12, 207,
76, 25);
frame.getContentPane().add(btn_dot);

JButton btn_0 = new JButton("0");
btn_0.addActionListener(new ActionListener() { public void
actionPerformed(ActionEvent e) {
txt_view.setText(txt_view.getText()+"0");
    }
}

    ); btn_0.setBounds(100, 205,
76, 25);
frame.getContentPane().add(btn_0);

JButton btn_clear = new JButton("Clear");
btn_clear.addActionListener(new ActionListener() { public void
actionPerformed(ActionEvent e) { txt_view.setText("");
    }
}

    ); btn_clear.setBounds(188, 205,
76, 25);
frame.getContentPane().add(btn_clear);
```

```
JButton btn_add = new JButton("+"); btn_add.addActionListener(new
ActionListener() { public void actionPerformed(ActionEvent e) {
a=Integer.parseInt(txt_view.getText()); txt_view.setText("");
                op=1;
            }
        });
btn_add.setBounds(299, 37, 117, 25);
frame.getContentPane().add(btn_add);
```

```
JButton btn_sub = new JButton("-");
btn_sub.addActionListener(new ActionListener() { public void
actionPerformed(ActionEvent e) {
a=Integer.parseInt(txt_view.getText()); txt_view.setText("");
op=2;
        }
    });
btn_sub.setBounds(299, 80, 117, 25);
frame.getContentPane().add(btn_sub);
```

```
JButton btn_mul = new JButton("*");
btn_mul.addActionListener(new ActionListener() { public void
actionPerformed(ActionEvent e) {
a=Integer.parseInt(txt_view.getText()); txt_view.setText("");
op=3;
        }
    });
btn_mul.setBounds(299, 117, 117, 25);
frame.getContentPane().add(btn_mul);
```

```
JButton btn_div = new JButton("/");
btn_div.addActionListener(new ActionListener() { public void
actionPerformed(ActionEvent e) {
a=Integer.parseInt(txt_view.getText()); txt_view.setText("");
op=4;
        }
    });
```

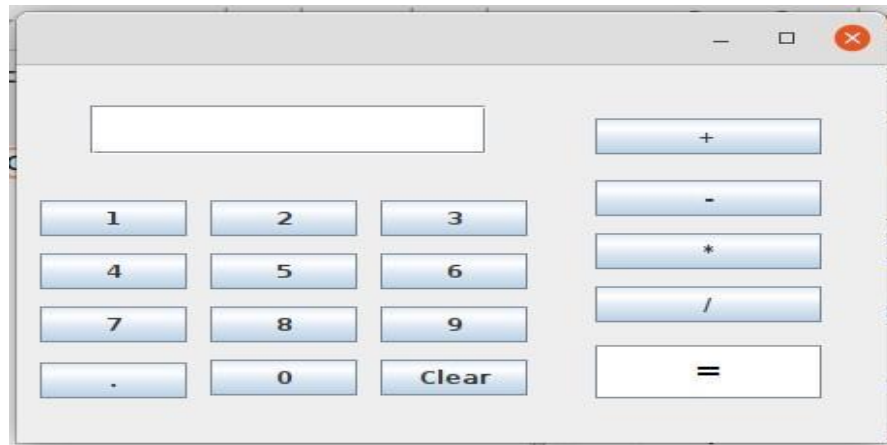
```
btn_div.setBounds(299, 154, 117, 25);
frame.getContentPane().add(btn_div);

JButton btn_equal = new JButton("=");
btn_equal.addActionListener(new ActionListener() { public
void actionPerformed(ActionEvent e) {
b=Integer.parseInt(txt_view.getText()); if(op==1) { result =
a+b;

                ans = String.format("%d",result);
                txt_view.setText(ans);
            } else if(op==2) {
result = a-b;
                ans = String.format("%d",result);
                txt_view.setText(ans);
            } else if(op==3) {
result = a*b;
                ans = String.format("%d",result);
                txt_view.setText(ans);
            } else if(op==4) {
result = a/b;
                ans = String.format("%d",result);
                txt_view.setText(ans);
            }
        }
    }

});
btn_equal.setFont(new Font("Dialog", Font.BOLD, 18));
btn_equal.setForeground(Color.BLACK);
btn_equal.setBackground(Color.WHITE); btn_equal.setBounds(299,
195, 117, 37); frame.getContentPane().add(btn_equal);
txt_view = new JTextField(); txt_view.setBounds(38, 28, 205,
34); frame.getContentPane().add(txt_view);
txt_view.setColumns(10);
}
}
```

Output :-



Practical 2:

Aim: Implement Student information system using JDBC.**Code:**

```
Package jdbc ;
import javax.swing.*;
import java.awt.event.*;
import java.sql.*;
import java.awt.*;
import java.sql.Connection;
import java.sql.DriverManager;
import java.sql.ResultSet;
import java.sql.Statement;
public class StudInformation extends JFrame implements ActionListener
{
    JTextField txt_id,txt_name,txt_age,txt_course,txt_semester,txt_tutor;
    JLabel lbl_title,lbl_id,lbl_name,lbl_age,lbl_course,lbl_semester,lbl_tutor;
    JButton btn_insert,btn_delete,btn_update,btn_clear,btn_search;
    Connection c;
    public StudInformation()
    {
        lbl_title=new JLabel("Student Information");
        lbl_id=new JLabel("Id");
        lbl_name=new JLabel("Name");
        lbl_age=new JLabel("Age");
        lbl_course=new JLabel("Course");
        lbl_semester=new JLabel("Semester");
        lbl_tutor=new JLabel("Tutor");
        txt_id=new JTextField(20);
        txt_name=new JTextField(20);
        txt_age=new JTextField(20);
        txt_course=new JTextField(20);
        txt_semester=new JTextField(20);
        txt_tutor=new JTextField(20);
        btn_insert=new JButton("Insert");
        btn_delete=new JButton("Delete");
        btn_update=new JButton("Update");
        btn_clear=new JButton("Clear");
        btn_search=new JButton("Search");
        btn_insert.addActionListener(this);
        btn_delete.addActionListener(this);
```

```
btn_update.addActionListener(this);
btn_clear.addActionListener(this);
btn_search.addActionListener(this);
JPanel p1,p2,p3;
p1=new JPanel();
p1.setLayout(new FlowLayout());
p1.add(lbl_title);
p2=new JPanel();
p2.setLayout(new GridLayout(6,2));
p2.add(lbl_id);
p2.add(txt_id);
p2.add(lbl_name);
p2.add(txt_name);
p2.add(lbl_age);
p2.add(txt_age);
p2.add(lbl_course);
p2.add(txt_course);
p2.add(lbl_semester);
p2.add(txt_semester);
p2.add(lbl_tutor);
p2.add(txt_tutor);
p3=new JPanel();
p3.setLayout(new FlowLayout());
p3.add(btn_insert);
p3.add(btn_delete);
p3.add(btn_update);
p3.add(btn_clear);
p3.add(btn_search);
Container c=getContentPane();
c.setLayout(null);
p1.setBounds(20,20,300,40);
p2.setBounds(10,80,200,320);
p3.setBounds(10,400,300,80);
c.add(p1);
c.add(p2);
c.add(p3);
}
public void actionPerformed(ActionEvent ae)
{
try{
```

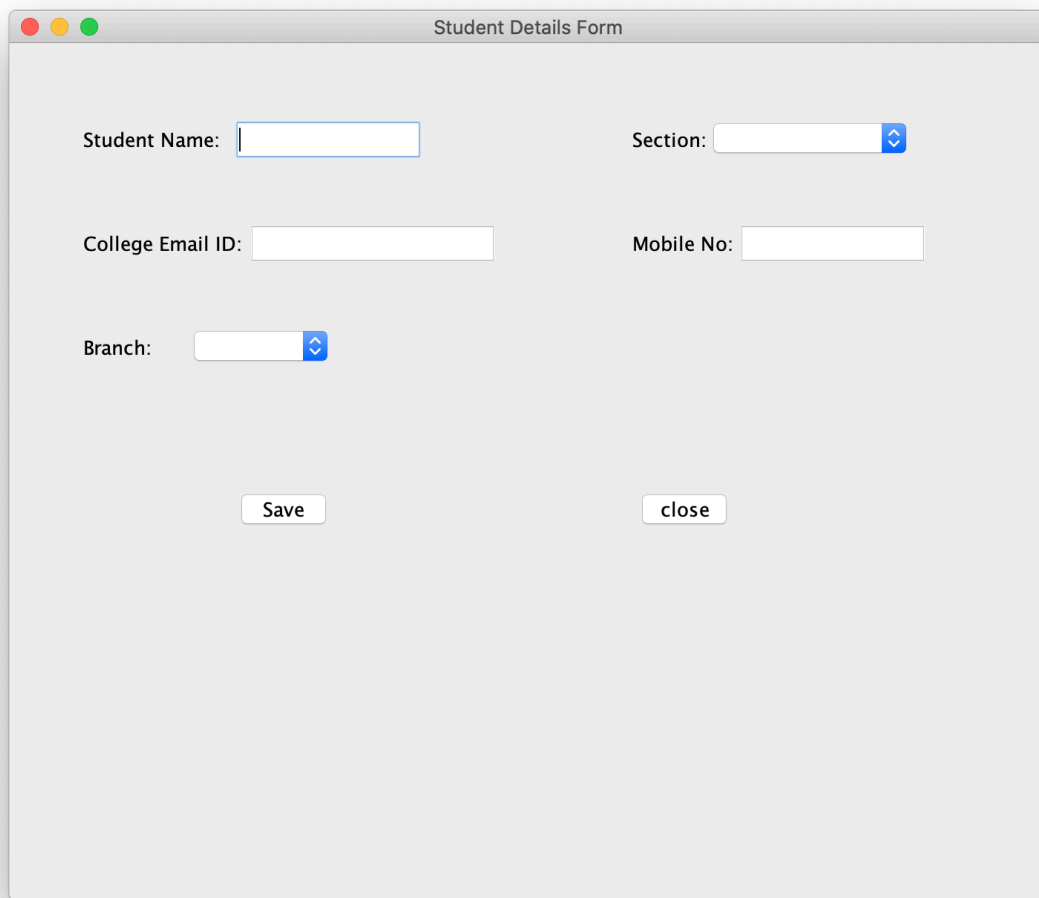
```
Class.forName("org.apache.derby.jdbc.ClientDriver");
Connection
c=DriverManager.getConnection("jdbc:derby://localhost:1527/Student Data", "s",
"sakshi");
}
catch(Exception ex)
{
}
String btn=ae.getActionCommand(); if(btn.equals("Clear"))
{
txt_id.setText("");
txt_name.setText("");
txt_age.setText("");
txt_course.setText("");
txt_semester.setText("");
txt_tutor.setText("");
}
if(btn.equals("Search"))
{
String id=txt_id.getText();
try{
String query1="Select *from stud where id='"+id+"'";
Statement st=c.createStatement();
ResultSet rs=st.executeQuery(query1);
while(rs.next())
{
txt_id.setText(rs.getString("id"));
txt_name.setText(rs.getString("name"));
txt_age.setText(rs.getString("age"));
txt_course.setText(rs.getString("course"));
txt_semester.setText(rs.getString("semester"));
txt_tutor.setText(rs.getString("tutor"));
}
}
catch(Exception ex)
{
}
}
if(btn.equals("Update"))
{
```

```
String s1=txt_id.getText();
String s2=txt_name.getText();
String s3=txt_age.getText();
String s4=txt_course.getText();
String s5=txt_semester.getText();
String s6=txt_tutor.getText();
try{
PreparedStatement ps=c.prepareStatement("Update stud
set id=?,name=?,age=?,course=?,semester=?,tutor=? where id=?");
ps.setString(1,s1);
ps.setString(2,s2);
ps.setString(3,s3);
ps.setString(4,s4);
ps.setString(5,s5);
ps.setString(6,s6);
ps.setString(7,s1);
ps.executeUpdate();
txt_id.setText("");
txt_name.setText("");
txt_age.setText("");
txt_course.setText("");
txt_semester.setText("");
txt_tutor.setText("");
}
catch(Exception ex)
{
}
}
if(btn.equals("Delete"))
{
String s1=txt_id.getText();
try{
PreparedStatement ps=c.prepareStatement("Delete *from
stud where id=?");
ps.setString(1,s1);
ps.executeUpdate();
txt_id.setText("");
txt_name.setText("");
txt_age.setText("");
txt_course.setText("");
```

```
txt_semester.setText("");
txt_tutor.setText("");
}
catch(Exception ex)
{
}
}
if(btn.equals("Insert"))
{
String s1=txt_id.getText();
String s2=txt_name.getText();
String s3=txt_age.getText();
String s4=txt_course.getText();
String s5=txt_semester.getText();
String s6=txt_tutor.getText();
try{
PreparedStatement ps=c.prepareStatement("insert into
studvalues(?,?,?,?,?,?)");
ps.setString(1,s1);
ps.setString(2,s2);
ps.setString(3,s3);
ps.setString(4,s4);
ps.setString(5,s5);
ps.setString(6,s6);
ps.executeUpdate();
txt_id.setText("");
txt_name.setText("");
txt_age.setText("");
txt_course.setText("");
txt_semester.setText("");
txt_tutor.setText("");
}
catch(Exception ex) {}
}
}
public static void main(String args[])
{
StudInformation stud=new StudInformation();
stud.setVisible(true);
stud.addWindowListener(new WindowAdapter()
```

```
{  
public void windowClosing(WindowEvent e)  
{  
System.exit(0);  
}  
};  
stud.setSize(new Dimension(400,520));  
}  
}
```

OUTPUT:



Student Details Form

Student Name:

Section:

College Email ID:

Mobile No:

Branch:

Practical – 3

Aim : Create an application using TCP protocol.

Program :-

Server :-

```
import java.io.BufferedReader; import java.io.IOException; import
java.io.InputStreamReader; import java.net.ServerSocket; import java.net.Socket;

public class Server { private static ServerSocket ss;
    public static void main(String[] args) throws IOException {

        System.out.println("Server Started !!");

        ss = new ServerSocket (9010); Socket s1 = ss.accept();

        System.out.println("Client connect ");
        BufferedReader br= new BufferedReader(new
        InputStreamReader (s1.getInputStream()));
        String str = br.readLine();

        System.out.println("Client data : "+str);

    }
}
```

Client :-

```
import java.io.BufferedReader; import java.io.IOException;
import java.io.InputStreamReader;
import java.io.OutputStreamWriter; import
java.io.PrintWriter; import java.net.DatagramPacket; import
java.net.DatagramSocket; import java.net.InetAddress; import
java.net.Socket; public class Client {

    private static Socket s;

                                public static void main(String args[]) throws
IOException{ s = new Socket("localhost",9010); String str = "hello";
        OutputStreamWriter os = new
        OutputStreamWriter(s.getOutputStream()); PrintWriter p = new
        PrintWriter(os); os.write(str); os.flush(); os.close();
    }
}
```

Output :-

```
<terminated> Server [Java Application] /usr/lib/jvm/java-11-openjdk-amd64/bin/java (25-Aug-2021, 11:35:45 pm)
Server Started !!
Client connect
Client data : hello
```

Practical 4:

Aim: Create an application using UDP protocol.

Code:

```
Client.java
package p4;
import java.net.DatagramPacket;
import java.net.DatagramSocket;
import java.net.InetAddress;
import java.util.Scanner;
```

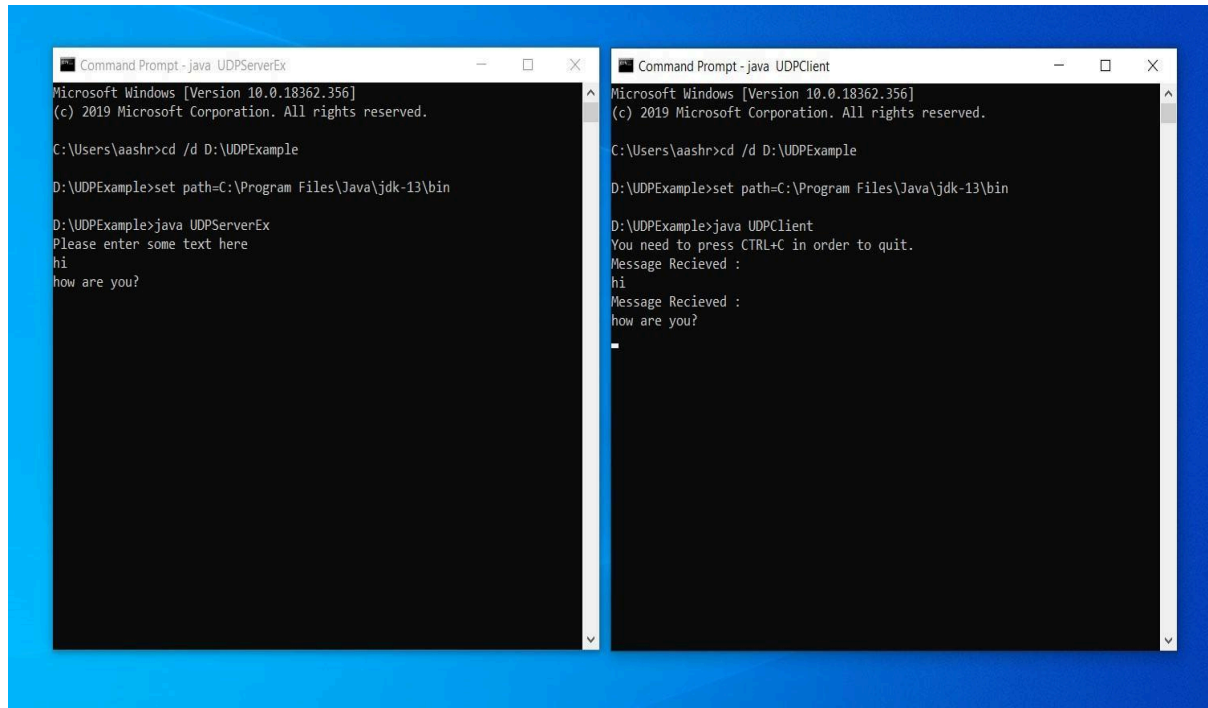
```
public class Client
{
    public static void main(String[] args) throws Exception
    {
        Scanner sc =new Scanner(System.in);
        DatagramSocket ds = new DatagramSocket();
        String str1="", str2="";
        InetAddress ip = InetAddress.getByName("192.168.56.1");
        while(!str1.equals("stop"))
        {
            System.out.println("Enter message:");
            str1 = sc.nextLine();
            DatagramPacket dp = new
            DatagramPacket(str1.getBytes(),str1.length(),ip,1);
            ds.send(dp);
        }
        ds.close();
    }
}
```

Server.java

```
package p4;
import java.net.DatagramPacket;
import java.net.DatagramSocket;
import java.net.InetAddress;
import java.util.Scanner;
public class Server
{
    public static void main(String[] args) throws Exception
    {
        Scanner sc =new Scanner(System.in);
        DatagramSocket ds = new DatagramSocket(1);
        byte[] buf = new byte[1024];
        DatagramPacket dp = new DatagramPacket(buf,1024);
        String str1="";
        InetAddress ip = InetAddress.getByName("192.168.56.1");
        while(!str1.equals("stop"))
        {
            ds.receive(dp);
            str1 = new String(dp.getData(),0,dp.getLength());
            System.out.println(str1);
        }
    }
}
```

```
}  
ds.close();  
}  
}
```

Output:



The screenshot displays two side-by-side Windows Command Prompt windows. The left window, titled 'Command Prompt - java UDPServerEx', shows the user navigating to 'D:\UDPEXample', setting the Java path to 'C:\Program Files\Java\jdk-13\bin', and running 'java UDPServerEx'. The server prompts for text, receiving 'hi' and 'how are you?'. The right window, titled 'Command Prompt - java UDPClient', shows the user navigating to the same directory, setting the Java path, and running 'java UDPClient'. The client prompts for input, then displays 'Message Recieved : hi' and 'Message Recieved : how are you?'.

```
Command Prompt - java UDPServerEx  
Microsoft Windows [Version 10.0.18362.356]  
(c) 2019 Microsoft Corporation. All rights reserved.  
  
C:\Users\aaashr>cd /d D:\UDPEXample  
  
D:\UDPEXample>set path=C:\Program Files\Java\jdk-13\bin  
  
D:\UDPEXample>java UDPServerEx  
Please enter some text here  
hi  
how are you?  
  
Command Prompt - java UDPClient  
Microsoft Windows [Version 10.0.18362.356]  
(c) 2019 Microsoft Corporation. All rights reserved.  
  
C:\Users\aaashr>cd /d D:\UDPEXample  
  
D:\UDPEXample>set path=C:\Program Files\Java\jdk-13\bin  
  
D:\UDPEXample>java UDPClient  
You need to press CTRL+C in order to quit.  
Message Recieved :  
hi  
Message Recieved :  
how are you?  
-
```

Practical – 05

Aim: Develop an EJB application to store and retrieve the student record.

Code: Student.java

```
package com.student;  
  
import java.io.Serializable; import  
javax.persistence.Basic; import  
javax.persistence.Column; import  
javax.persistence.Entity; import  
javax.persistence.Id; import  
javax.persistence.NamedQueries; import  
javax.persistence.NamedQuery; import  
javax.persistence.Table; import  
javax.validation.constraints.NotNull;
```

```
import javax.validation.constraints.Size;
import
javax.xml.bind.annotation.XmlRootElement;
```

```
@Entity
```

```
@Table(name = "STUDENT") @XmlRootElement @NamedQueries({
```

```
@NamedQuery(name = "Student.findAll", query = "SELECT s FROM Student s"),
```

```
@NamedQuery(name = "Student.findByEnrollment", query = "SELECT s FROM
Student s WHERE s.enrollment = :enrollment"),
```

```
@NamedQuery(name = "Student.findByName", query = "SELECT s FROM Student s
WHERE s.name = :name"),
```

```
@NamedQuery(name = "Student.findByCity", query = "SELECT s FROM Student s
WHERE s.city = :city"))}) public class Student implements Serializable {
```

```
private static final long serialVersionUID = 1L;
```

```
@Id
```

```
@Basic(optional = false) @NotNull
```

```
@Size(min = 1, max = 25) @Column(name = "ENROLLMENT") private String
enrollment;
```

```
@Size(max = 25) @Column(name = "NAME") private String name; @Size(max = 25)
```

```
@Column(name = "CITY") private String city;
```

```
public Student() {
```

```
public Student(String enrollment) { this.enrollment =
enrollment;
```

```
}
```

```
public String getEnrollment() { return enrollment;
```

```
}
```

```
public void setEnrollment(String enrollment) { this.enrollment =
enrollment;
```

```
}
```

```
public String getName() { return  
    name;  
}
```

```
public void setName(String name) { this.name =  
    name;  
}
```

```
public String getCity() { return  
    city;
```

```
public void setCity(String city) { this.city =  
    city;  
}
```

```
@Override
```

```
public int hashCode() { int hash = 0;  
    hash += (enrollment != null ? enrollment.hashCode() : 0); return hash;  
}
```

```
@Override public boolean  
equals(Object object) {
```

```
    if (!(object instanceof Student)) { return  
        false;  
    }
```

```
    Student other = (Student) object;
```

```
    if ((this.enrollment == null && other.enrollment != null) || (this.enrollment != null  
        &&
```

```
        !this.enrollment.equals(other.enrollment))) {  
        return false;  
    }
```

```
    return true;
```

```
@Override
```

```
    public String toString() { return "com.student.Student[
enrollment=" + enrollment + " ]";
}

}
AbstractFacade.java
package com.student;

import java.util.List; import
javax.persistence.EntityManager;

public abstract class
AbstractFacade<T> {

private Class<T>
entityClass;

public AbstractFacade(Class<T> entityClass) { this.entityClass =
entityClass;
}

protected abstract EntityManager
getEntityManager();

public void create(T entity) {
getEntityManager().persist(entity);
}

public void edit(T entity) {
getEntityManager().merge(entity);
}

public void remove(T entity) {
getEntityManager().remove(getEntityManager().merge(entity));
}

public T find(Object id)
{
return getEntityManager().find(entityClass, id);
}
```

```
public List<T> findAll() {  
    javax.persistence.criteria.CriteriaQuery cq =  
    getEntityManager().getCriteriaBuilder().createQuery();  
    cq.select(cq.from(entityClass)); return  
    getEntityManager().createQuery(cq).getResultList();  
  
}
```

```
public List<T> findRange(int[]  
    range) {
```

```
    javax.persistence.criteria.CriteriaQuery cq =  
    getEntityManager().getCriteriaBuilder().createQ  
    uery(); cq.select(cq.from(entityClass));  
    javax.persistence.Query q = getEntityManager().createQuery(cq);  
    q.setMaxResults(range[1] - range[0] + 1); q.setFirstResult(range[0]); return  
    q.getResultList(); }  
    public int count() {  
        javax.persistence.criteria.CriteriaQuery cq =  
        getEntityManager().getCriteriaBuilder().createQuery();  
        javax.persistence.criteria.Root<T> rt = cq.from(entityClass);  
        cq.select(getEntityManager().getCriteriaBuilder().count(rt));  
        javax.persistence.Query q = getEntityManager().createQuery(cq); return ((Long)  
        q.getSingleResult()).intValue();  
    }
```

```
}
```

```
StudentFacade.java
```

```
package com.student;
```

```
import javax.ejb.Stateless; import javax.persistence.EntityManager; import  
javax.persistence.PersistenceContext;
```

```
@Stateless
```

```
public class StudentFacade extends AbstractFacade<Student> implements  
StudentFacadeLocal {
```



```
@PersistenceContext(unitName = "AJP_Practical_05-ejbPU") private  
EntityManager em;
```

```
@Override  
protected EntityManager getEntityManager() { return em;  
}
```

```
public StudentFacade() {  
    super(Student.class);  
}
```

```
public String insert(String enroll,String  
    name,String city)  
{  
try {  
    Student obj = new Student(); obj.setEnrollment(enroll); obj.setName(name);  
    obj.setCity(city);  
  
em.persist(obj);  
    return "Record inserted<br/>";  
}  
catch(Exception e)  
{  
    return "Record not  
    inserted<br/>";  
}  
}  
  
}
```

```
StudentFacadeLocal.java  
package com.student;  
import java.util.List; import javax.ejb.Local;
```

```
@Local  
public interface StudentFacadeLocal {  
    void create(Student student);
```

```
void edit(Student  
    student);
```

```
void remove(Student  
student);
```

```
Student find(Object id);
```

```
List<Student> findAll();
```

```
List<Student> findRange(int[] range);
```

```
int count();
```

```
public String insert(String enroll, String name,  
String city);
```

```
}
```

```
index.html
```

```
<html>
```

```
<head>
```

```
<title>Student</title>
```

```
<meta charset="UTF-8">
```

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

```
</head>
```

```
<body>
```

```
<form action="Servlet">
```

```
<input type="text" name="enroll"/><br/>
```

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

```
<input type="text" name="city"/><br/>
```

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

```
</form>
```

```
</body>
```

```
</html>
```

```
Servlet.java package  
com.student;
```

```
import java.io.IOException; import java.io.PrintWriter; import  
java.util.List; import javax.ejb.EJB;
```

```
import javax.servlet.ServletException; import javax.servlet.http.HttpServlet;  
import javax.servlet.http.HttpServletRequest; import
```

```
javax.servlet.http.HttpServletResponse; public class Servlet extends HttpServlet {
```

```
@EJB
```

```
private StudentFacadeLocal studentFacade;
```

```
protected void processRequest(HttpServletRequest request, HttpServletResponse  
response) throws ServletException, IOException {  
response.setContentType("text/html;charset=UTF-8");
```

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

```
String enroll,name,city;  
enroll = request.getParameter("enroll"); name =  
request.getParameter("name"); city = request.getParameter("city");  
out.println(studentFacade.insert(enroll, name, city));
```

```
List<Student> res = studentFacade.findAll(); for(Student i:res)  
{  
out.println("<br/>Enrollment no is "+i.getEnrollment()); out.println("<br/>Name is  
"+i.getName()); out.println("<br/>City is "+i.getCity()); out.println("<br/>");  
}  
}  
}
```

```
@Override
```

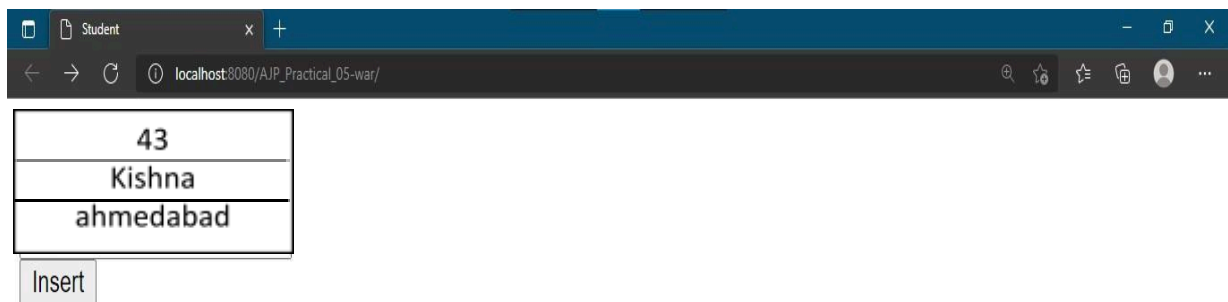
```
protected void doGet(HttpServletRequest request, HttpServletResponse  
response) throws ServletException, IOException { processRequest(request,  
response);  
}
```

```
@Override protected void doPost(HttpServletRequest request,
    HttpServletResponse response) throws ServletException, IOException {
    processRequest(request, response);
}
```

```
@Override
public String getServletInfo() { return "Short description";
}

}
```

Output:



Practical: 06

Aim: Create a Servlet that implements ServletContextAttributeListener interface such that a message dialog is displayed whenever an attribute is added or removed or replaced.

Code:

```
Servlet.java
import java.io.IOException;
import java.io.PrintWriter;
import javax.servlet.ServletContext;
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(urlPatterns = {"/Servlet"})
public class Servlet extends HttpServlet
{
    protected void processRequest(HttpServletRequest request, HttpServletResponse
    response)throws ServletException, IOException
    {
        response.setContentType("text/html;charset=UTF-8");
        try (PrintWriter out = response.getWriter())
        {
            ServletContext ob= getServletContext();
            ob.setAttribute("name", "Sakshi chaturvedi");
            ob.setAttribute("name", "Sakshi s.");
            ob.removeAttribute("name");
            ob.setAttribute("name", "xyz");
            ob.setAttribute("name", "pqrs");
            ob.removeAttribute("name");
        }
    }
    protected void doGet(HttpServletRequest request, HttpServletResponse
    response)throws ServletException, IOException
    {
        processRequest(request, response);
    }
    protected void doPost(HttpServletRequest request, HttpServletResponse
    response)throws ServletException, IOException
    {
        processRequest(request, response);
    }
    public String getServletInfo()
    {
        return "Short description";
    }
}

ContextAttributeListener.java
import javax.servlet.ServletContextAttributeEvent;
import javax.servlet.ServletContextAttributeListener;
import javax.servlet.ServletContextEvent;
import javax.servlet.ServletContextListener;
```

```
public class ContextAttributeListener implements ServletContextListener,
ServletContextAttributeListener
{
public void contextInitialized(ServletContextEvent sce)
{
System.out.println("Context Initialized");
}
public void contextDestroyed(ServletContextEvent sce)
{
System.out.println("Context Destroyed");
}
public void attributeAdded(ServletContextAttributeEvent event)
{
System.out.println("Attribute Added");
}
public void attributeRemoved(ServletContextAttributeEvent event)
{
System.out.println("Attribute Removed");
}
public void attributeReplaced(ServletContextAttributeEvent arg0)
{
System.out.println("Attribute Replaced");
}
}
```

OUTPUT:

```
Info: Attribute Removed
Info: Attribute Removed
Info: visiting unvisited references
Info: visiting unvisited references
Info: visiting unvisited references
Info: Attribute Added
Info: Attribute Added
Info: Attribute Added
Info: Attribute Added
Info: Attribute Added
Info: Attribute Added
Info: Attribute Added
Info: Attribute Added
Info: Attribute Added
Info: Attribute Added
Info: Attribute Added
Info: Context Initialized
Info: Attribute Removed
Info: Attribute Removed
Info: Attribute Removed
Info: Attribute Added
Info: Attribute Added
```

```
Info: Attribute Removed
Info: Attribute Added
Info: Attribute Added
Info: Loading application Servlet
Info: Servlet was successfully deployed
Info: Server shutdown initiated
Info: Unregistered com.sun.enterprise.glassfish.bootstrap.osgi.EmbeddedOSGiGlassFishImpl@6d171ce0 from service registry.
Info: FileMonitoring shutdown
Info: JMXStartupService: Stopped JMXConnectorServer: null
Info: JMXStartupService and JMXConnectors have been shut down.
Info: Context Destroyed
Info: Attribute Removed
Info: Attribute Removed
Info: Attribute Removed
Info: Attribute Removed
Info: Attribute Removed
Info: Attribute Removed
Info: Attribute Removed
Info: Attribute Removed
Info: Attribute Removed
Info: Attribute Removed
Info: Attribute Removed
Info: Attribute Removed
Info: Attribute Removed
Info: JdbcRuntimeExtension, getAllSystemRAResourcesAndPools = [GlassFishConfigBean.org.glassfish.jdbc.config.JdbcResource
Completed shutdown of Log manager service
Info: Shutdown procedure finished
```

PRACTICAL – 7

Aim: Write A Servlet That Counts The Number Of Times That A Web Page Is Visited And Displays The Same Information On That Page Using Cookie In Java.

Program:

Web.xml:

```
<?xml version="1.0" encoding="UTF-8"?>
<web-app
xmlns:xsi=http://www.w3.org/2001/XMLSchema-instance
e xmlns=http://xmlns.jcp.org/xml/ns/javaee
Xsi:schemaLocation="http://xmlns.jcp.org/xml
l/ns/javaee
http://xmlns.jcp.org/xml/ns/javaee/web-
App_4_0.xsd"
id="WebApp_ID" version="4.0">
<servlet>
```



```
<servlet-name>Cookies_Program</servlet-name>
<servlet-class>EE_COOKIES.EE_Example_1_Cookies_Program</servlet-class>
</servlet>
<servlet-mapping>
<servlet-name>Cookies_Program</servlet-name>
  <url-pattern>/login</url-pattern>
</servlet-mapping>
</web-app>
```

```
Package
EE_COOKIES;

Import java.io.*;

Import
javax.servlet.http.*;

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("/EE_Example_1_Cookies_P
```

rogram”)

Public class EE_Example_1_Cookies_Program extends

HttpServlet { Private static final long serialVersionUID =

1L;

Static int i=1;

//String cssTag = “<link rel='stylesheet' type='text/css' href='/css/styles.css'>”;

Protected void doGet(HttpServletRequest request, HttpServletResponse

response) throws ServletException, IOException {

Response.setContentType(“text/ht

ml”); PrintWriter

out=response.getWriter(); String

k=String.valueOf(i);

Cookie c=new Cookie(“visit”,k);

Response.addCookie©;

String username = request.getParameter(“username”);

//String userpassword = request.getParameter(“userpassword”);

Int

j=Integer.parseInt(c.getValu

e()); If(j==1)

{

Out.println(“Welcome”);

}

Else

{

Out.println(“You Visited “ + I + “ Times”);

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}

|

+

+

;

}

}

Servlet_Cookies.html:

```
<!DOCTYPE html>
<html lang="en" dir="ltr">
<head>
<meta charset="ISO-8859-1">
<title>Cookies_Program</title>
  <link
Href="https://fonts.googleapis.com/css2?family=Josefin+Sans:wght@300&family=Josefin+Slab
&disp
Lay=swap" rel="stylesheet">
  <link
href=https://fonts.googleapis.com/css2?family=Quicksand:wght@700&display=
swap
Rel="stylesheet">
<style>

  Body {

Color: #ffffff;

  Background-color:

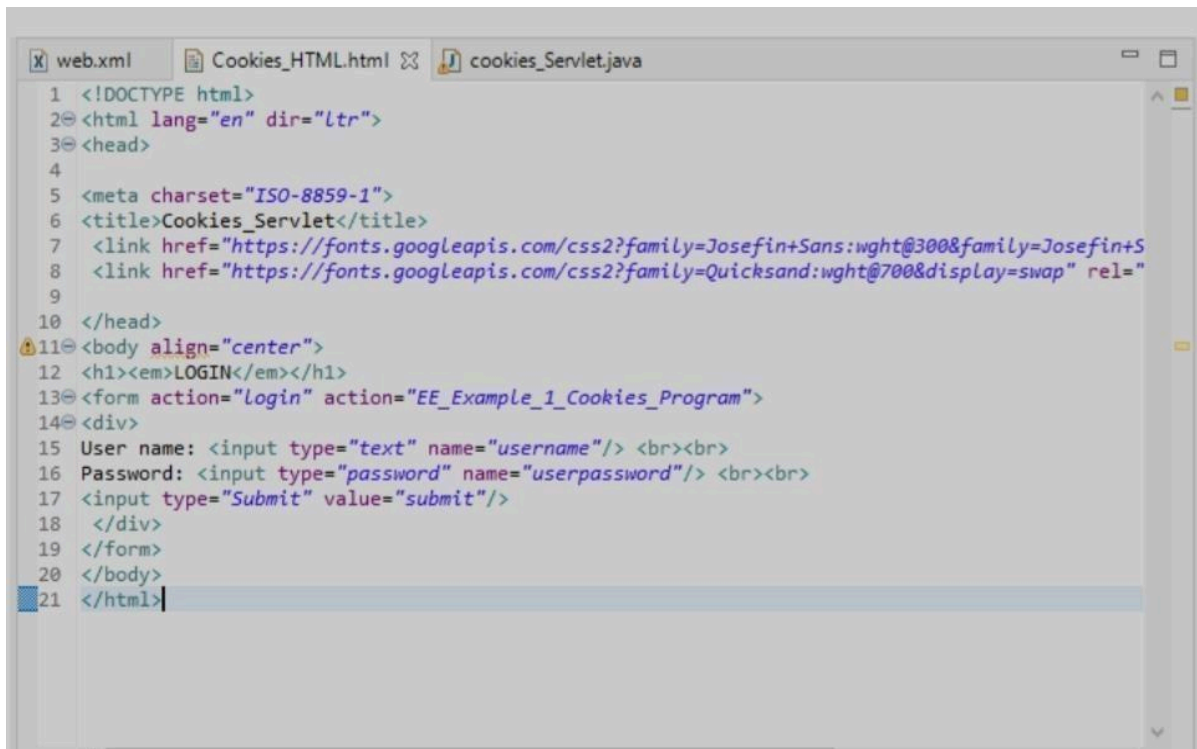
  #91d18b;

  Font-weight:

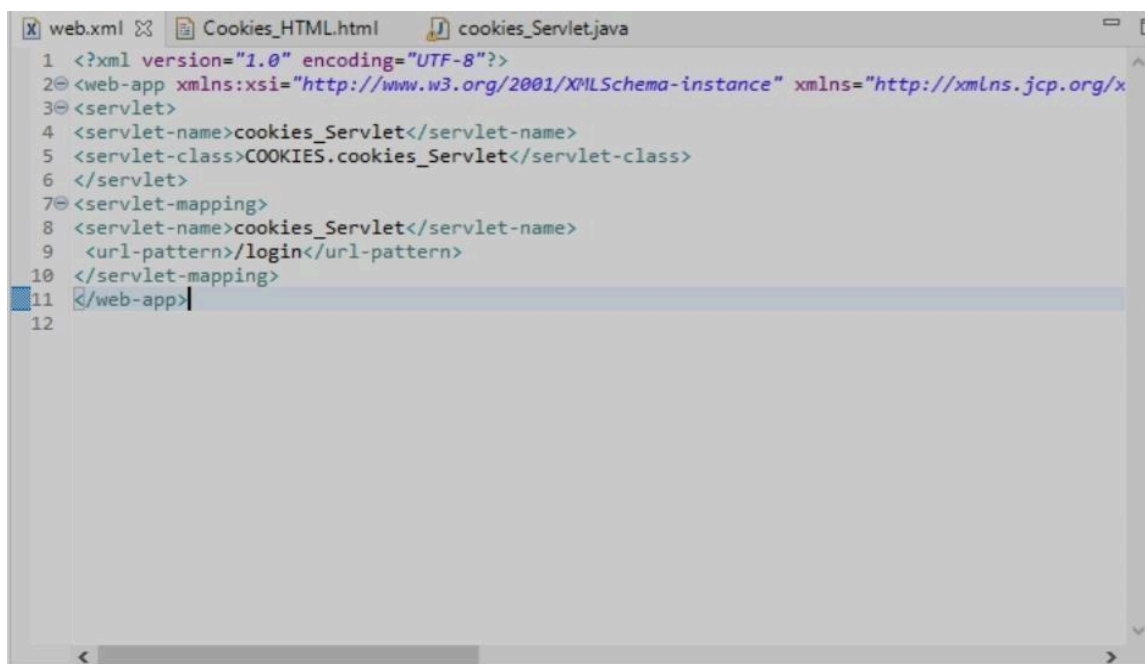
  bolder;

  Font-family: 'Josefin Sans', sans-serif;
```

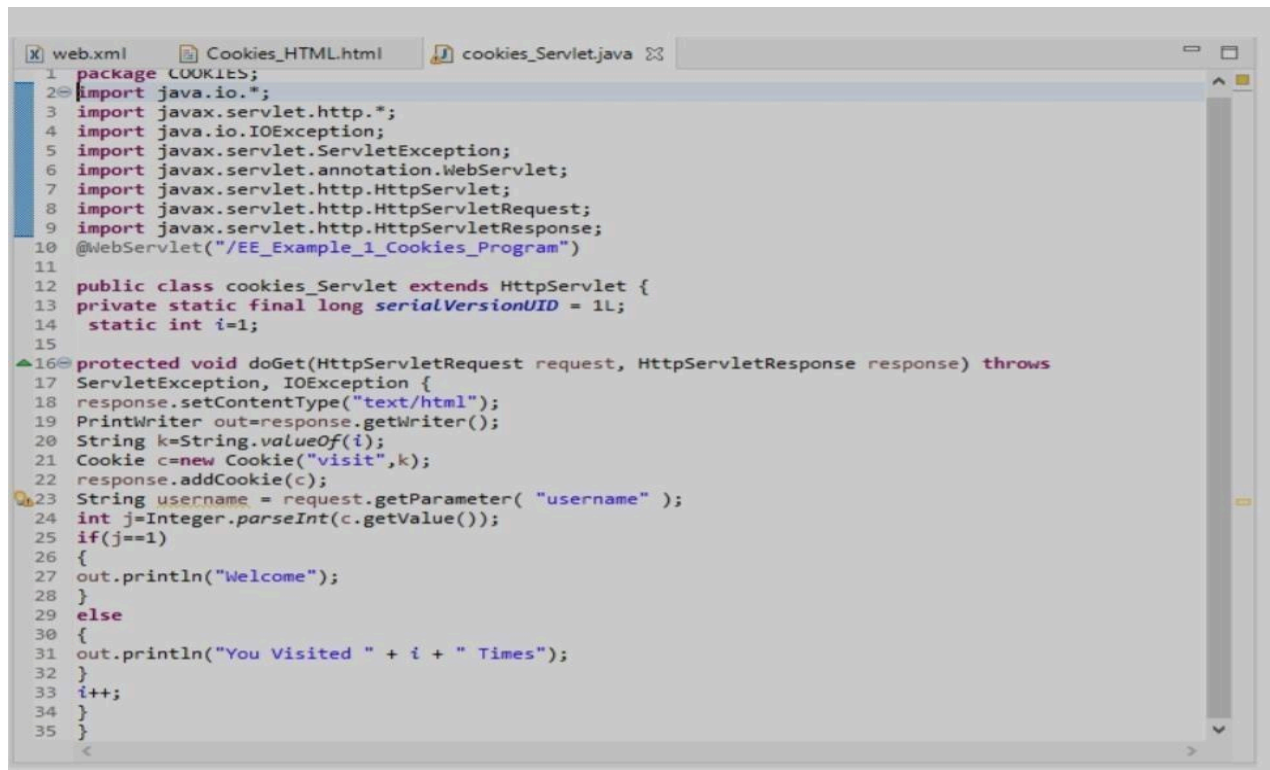
```
}  
H1 {  
Font-size: 2rem;  
  Font-family: 'Quicksand', sans-serif;  
}  
</style>  
</head>  
<body align="center">  
<h1><u><em>STUDENT LOGIN FORM</em></u></h1>  
<form action="login" action="EE_Example_1_Cookies_Program">  
<div>  
User name: <input type="text" name="username"/>  
<br><br> Password: <input type="password"  
name="userpassword"/> <br><br>  
<input type="Submit" value="submit"/>  
</div>  
</form>  
</body>  
</html>
```

Output :-

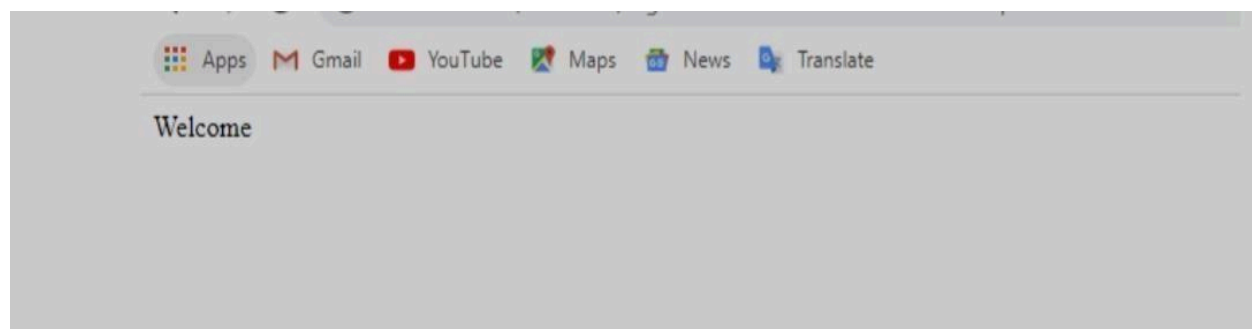
```
1 <!DOCTYPE html>
2 <html lang="en" dir="ltr">
3 <head>
4
5 <meta charset="ISO-8859-1">
6 <title>Cookies_Servlet</title>
7 <link href="https://fonts.googleapis.com/css2?family=Josefin+Sans:wght@300&family=Josefin+S
8 <link href="https://fonts.googleapis.com/css2?family=Quicksand:wght@700&display=swap" rel="
9
10 </head>
11 <body align="center">
12 <h1><em>LOGIN</em></h1>
13 <form action="login" action="EE_Example_1_Cookies_Program">
14 <div>
15 User name: <input type="text" name="username"/> <br><br>
16 Password: <input type="password" name="userpassword"/> <br><br>
17 <input type="Submit" value="submit"/>
18 </div>
19 </form>
20 </body>
21 </html>
```

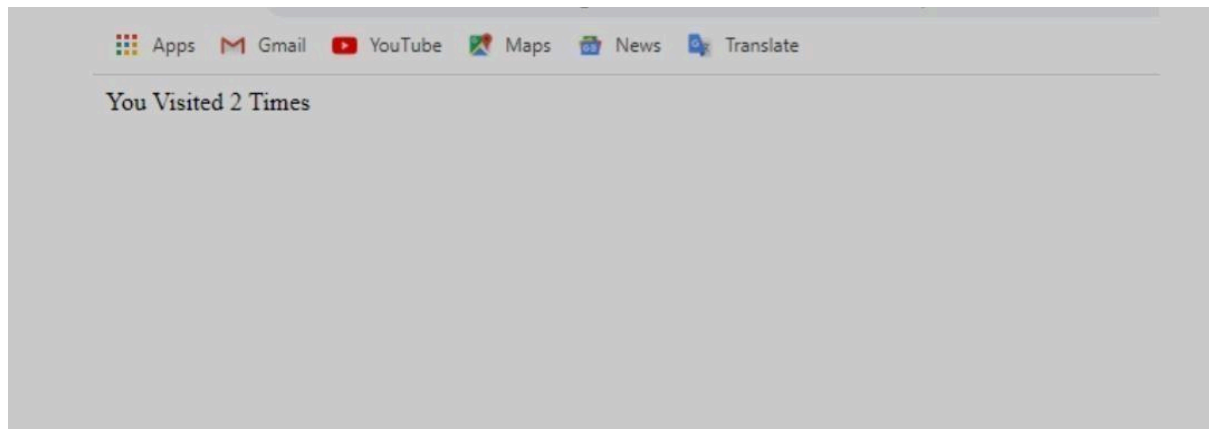


```
1 <?xml version="1.0" encoding="UTF-8"?>
2 <web-app xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns="http://xmlns.jcp.org/x
3 <servlet>
4 <servlet-name>cookies_Servlet</servlet-name>
5 <servlet-class>COOKIES.cookies_Servlet</servlet-class>
6 </servlet>
7 <servlet-mapping>
8 <servlet-name>cookies_Servlet</servlet-name>
9 <url-pattern>/login</url-pattern>
10 </servlet-mapping>
11 </web-app>
12
```



```
1 package COOKItS;  
2 import java.io.*;  
3 import javax.servlet.http.*;  
4 import java.io.IOException;  
5 import javax.servlet.ServletException;  
6 import javax.servlet.annotation.WebServlet;  
7 import javax.servlet.http.HttpServlet;  
8 import javax.servlet.http.HttpServletRequest;  
9 import javax.servlet.http.HttpServletResponse;  
10 @WebServlet("/EE_Example_1_Cookies_Program")  
11  
12 public class cookies_Servlet extends HttpServlet {  
13     private static final long serialVersionUID = 1L;  
14     static int i=1;  
15  
16     protected void doGet(HttpServletRequest request, HttpServletResponse response) throws  
17         ServletException, IOException {  
18         response.setContentType("text/html");  
19         PrintWriter out=response.getWriter();  
20         String k=String.valueOf(i);  
21         Cookie c=new Cookie("visit",k);  
22         response.addCookie(c);  
23         String username = request.getParameter( "username" );  
24         int j=Integer.parseInt(c.getValue());  
25         if(j==1)  
26         {  
27             out.println("Welcome");  
28         }  
29         else  
30         {  
31             out.println("You Visited " + i + " Times");  
32         }  
33         i++;  
34     }  
35 }
```





PRACTICAL – 8

Aim: Develop A Servlet Application Which Takes The Employee Id Of An Employee As A Request Parameter And Displays The Employee Information

Program:

1) index.jsp

```
<%@page import="practical8.Emp"%>
<%@ page language="java" contentType="text/html; charset=ISO-8859-1"
pageEncoding="ISO- 8859-1"%>
<!DOCTYPE html>

<html>
<head>
<meta charset="ISO-8859-1">
    <title>Employee Form</title>
</head>
<body>

    <form name="emp" method="post"
        action="EmpController"> Enter Emp No:<input
        type="text" name="eid">
        <input type="submit" name="action" value="Fetch Data">
    </form>

<%
```

```
try{
    if(request.getAttribute("msg")!=null)
    {
        out.println(request.getAttribute("msg"));
    }
    Emp e=null;
    if(request.getAttribute("e")!=
    null)
    {
        e=(Emp)request.getAttribute("e");
    }
    %>
    <br><br><br>
    <table border="1" width="100%" cellspacing="10px" cellpadding="10px">

        <tr>
            <th>EID</th>
            <th>ENAME</th>
            <th>AGE</th>
            <th>SALARY</th>
        </tr>

        <tr>
            <td><%=e.getId() %></td>
            <td><%=e.getName() %></td>
            <td><%=e.getAge() %></td>
            <td><%=e.getSalary() %></td>
        </tr>

    </table>
    <%
        }

    } catch(Exception e) {
```

```
        out.println("Please Enter Valid Employee id");
    }
%>
</body>
</html>
```

2) Emp.java

```
package practical8;
public class Emp {

    private int
    eid,age; private
    String ename;
    private double
    salary;
    public int getId() {
        return eid;
    }
    public int getAge() {
        return age;
    }
    public String
    getEname() { return
        name;
    }
    public double
    getSalary() {
        return salary;
    }
    public void setId(int eid) {
        this.eid = eid;
    }
    public void setAge(int age) {
```

```
        this.age = age;
    }
    public void setName(String ename) {
        this.ename = ename;
    }

    public void setSalary(double salary) {
        this.salary = salary;
    }
}
```

3) EmpController.java

```
package practical8;

import java.io.IOException;

import
    javax.servlet.ServletException;

import
    javax.servlet.annotation.WebServlet;

import
    javax.servlet.http.HttpServlet;
```

```
javax.servlet.http.HttpServletRequest;
```

```
import
```

```
javax.servlet.http.HttpServletResponse;
```

```
import practical8.Emp;
```

```
import
```

```
practical8.EmpDao;
```

```
@WebServlet("/EmpController")
```

```
public class EmpController extends
```

```
    HttpServlet { private static final long
```

```
        serialVersionUID = 1L;
```

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

```
    }
```

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

```
            String action=request.getParameter("action");
```

```
            if(action.equalsIgnoreCase("fetch data"))
```

```
            {
```

```
        int  
  
        eid=Integer.parseInt(request.getParameter("eid  
  
        ")); Emp  
  
        e=EmpDao.getEmpByEid(eid);  
  
        if(e!=null)  
  
        {  
  
            request.setAttribute("e", e);  
  
        } else {  
  
            request.setAttribute("msg", "No Id Found");  
  
        }  
  
        request.getRequestDispatcher("index.jsp").forward(request,response);  
  
    }  
  
}  
  
}
```

4) EmpDao.java

```
package practical8;
```

```
import java.sql.Connection;

import

java.sql.PreparedStatement;

import java.sql.ResultSet;

import practical8.Emp;

import

practical8.EmpUtil;

public class EmpDao {

    public static Emp getEmpByEid(int eid)

    {

        Emp

        e=null; try {

            Connection conn=EmpUtil.createConnection();

            String sql="select * from emp where eid=?";

            PreparedStatement

            pst=conn.prepareStatement(sql); pst.setInt(1,

            eid);

            ResultSet rs=pst.executeQuery();

            if(rs.next())
```

```
        {  
  
            e=new Emp();  
  
            e.setEid(rs.getInt("eid"));  
  
            e.setEname(rs.getString("ename"));  
  
            e.setAge(rs.getInt("age"));  
  
            e.setSalary(rs.getDouble("salary"));  
  
        }  
  
    } catch (Exception ex) {  
  
        ex.printStackTrace();  
  
    }  
  
    return e;  
  
}  
  
}
```

5) EmpUtil.java

```
package practical8;  
  
import
```



```
java.sql.Connection;

import

java.sql.DriverManager;

public class EmpUtil
{
    public static Connection createConnection()
    {
        Connection
        conn=null; try {
            Class.forName("com.mysql.jdbc.Driver");

            conn=DriverManager.getConnection("jdbc:mysql://localhost:3306/ldrp","root","");

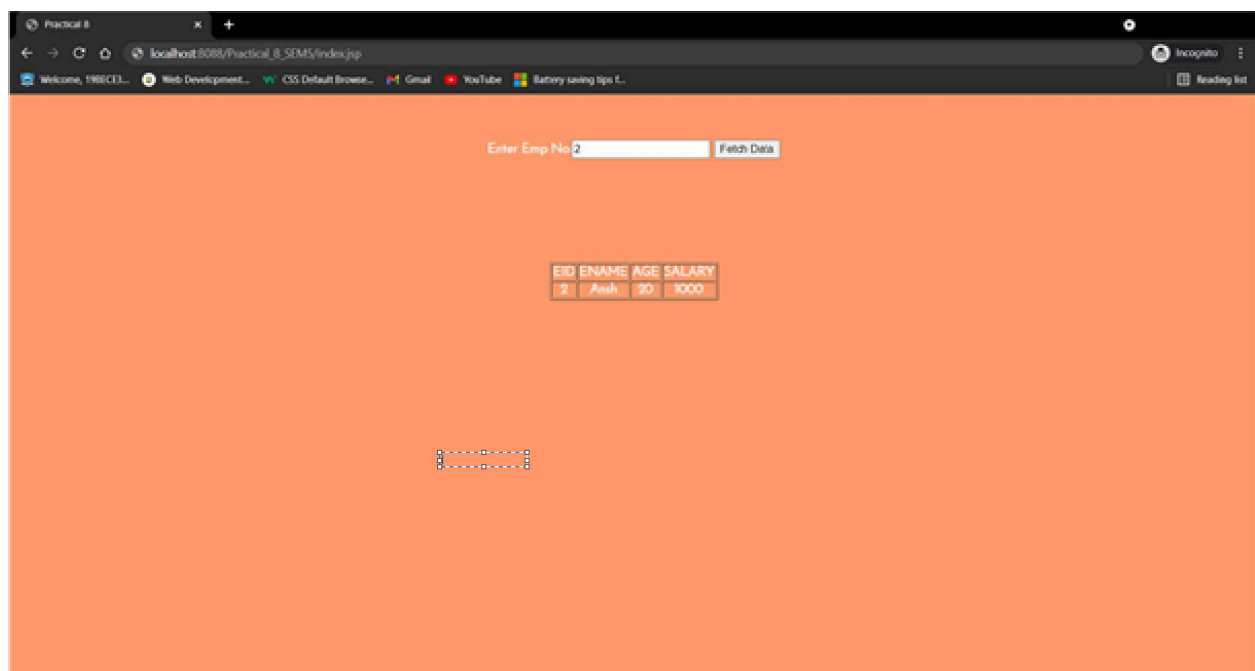
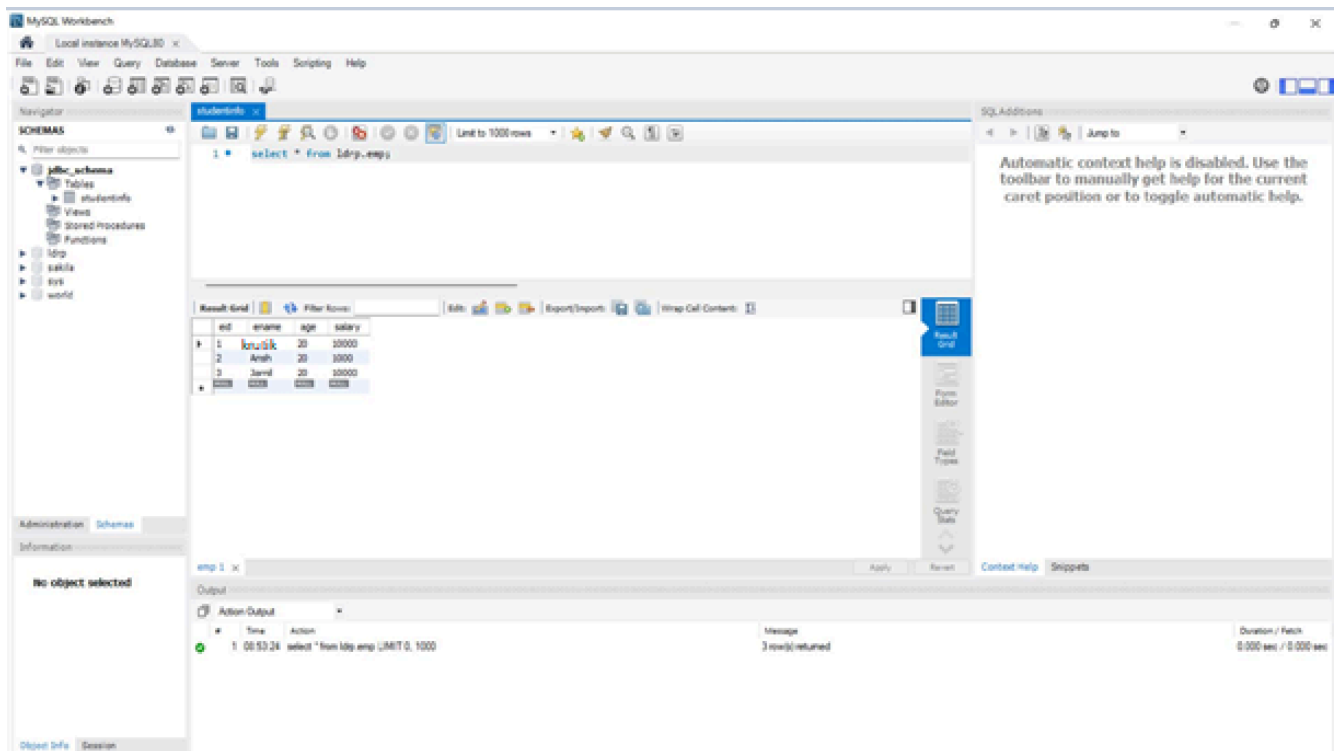
        } catch (Exception e) {
            e.printStackTrace();
        }
        return conn;
    }
}
```

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Output:

Database:



PRACTICAL – 9

Aim: Create A Login Application Using Servlet And Jsp.

Program:

1) LoginForm.jsp

```
<%@ page language="java" contentType="text/html;
    charset=ISO-8859-1" pageEncoding="ISO-8859-1"%>

<!DOCTYPE html>

<html>

<head>

<meta charset="ISO-8859-1">

<title>Login Form</title>

</head>

<body>

    <form action="LoginControl" method="post">

        Enter Username: <input type="text"
            name="username"><br> Enter Password: <input
            type="password" name="password"><br>

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

    </form>
```

```
</body>
```

```
</html>
```

2) Success.jsp

```
<%@ page language="java" contentType="text/html;  
    charset=ISO-8859-1" pageEncoding="ISO-8859-1"%>
```

```
<!DOCTYPE html>
```

```
<html>
```

```
<head>
```

```
<meta charset="ISO-8859-1">
```

```
<title> Home Page</title>
```

```
</head>
```

```
<body>
```

```
    <h1>This is home page. </h1>
```

```
    <h2>Welcome</h2>
```

```
</body>
```

```
</html>
```

3) Fail.jsp

```
<%@ page language="java" contentType="text/html;  
    charset=ISO-8859-1" pageEncoding="ISO-8859-1"%>
```

```
<!DOCTYPE html>

<html>

<head>

<meta charset="ISO-8859-1">

<title> Error</title>

</head>

<body>

    <h1>Fail to Login.</h1>

    <h1>Please Enter Username and Password Correctly</h1>

</body>

</html>
```

4) LoginControl.java

```
package practical10;

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("/LoginControl")
```

```
public class LoginControl extends
```

```
    HttpServlet{ private static final long
```

```
        serialVersionUID = 1L;
```

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

```
        String
```

```
        un=request.getParameter("username"
```

```
        );                                String
```

```
        pw=request.getParameter("password"
```

```
        );    if(un.equals("admin")    &&
```

```
        pw.equals("admin"))
```

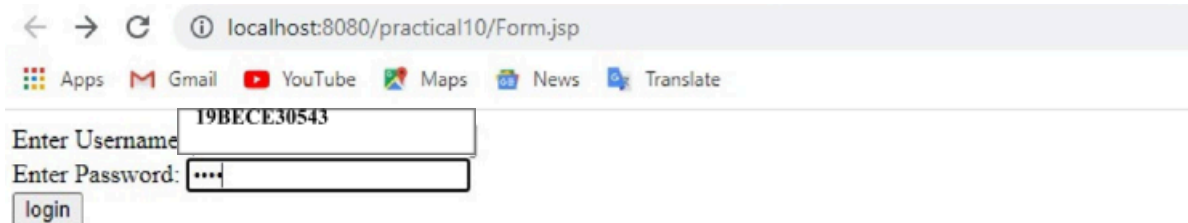
```
        {
```

```
            response.sendRedirect("success.j
```

```
sp"); return;
```

```
    }  
  
    else  
  
    {  
        response.sendRedirect("Fail.jsp")  
  
        ; return;  
  
    }  
  
}
```

Output:



← → ↻ ⓘ localhost:8080/practical10/Form.jsp

Apps Gmail YouTube Maps News Translate

Enter Username

Enter Password:



← → ↻ ⓘ localhost:8080/practical10/Success.jsp

Apps Gmail YouTube Maps News Translate

This is home page.

Welcome

Practical – 11(A)

Aim: Create A Custom Jsp Tag That Prints Current Date And Time. Use This Tag Into Jsp Page.

Program:

1) Index . Jsp

```
<%@ page language="java" contentType="text/html;  
charset=ISO-8859-1" pageEncoding="ISO8859-1"%>  
  
<!DOCTYPE html>  
  
<html>  
  
<head>  
  
<meta charset="ISO-8859-1">  
  
<title>Practical_11_JSP</title>  
  
<link
```



```
href="https://fonts.googleapis.com/css2?family=Josefin+Sans:wght@300&family=Josefin+Slab&display=swap" rel="stylesheet">
```

```
<link
```

```
href="https://fonts.googleapis.com/css2?family=Quicksand:wght@700&display=swap" rel="stylesheet">
```

```
<style>
```

```
    body {  
        color:  
        #ffffff;  
        background-color:  
        #125C13; font-weight:  
        bolder;  
        font-family: 'Josefin Sans', sans-serif;  
    }
```

```
</style>
```

```
</head>
```

```
<body>
```

```
<br> <br> <br>
```

```
    <br> <br>
```

```
    <p><center>Printing The Numbers Using JSP</center><br><br>
```

```
<%
```

```
    for(int i=1;i<11;i++)
```

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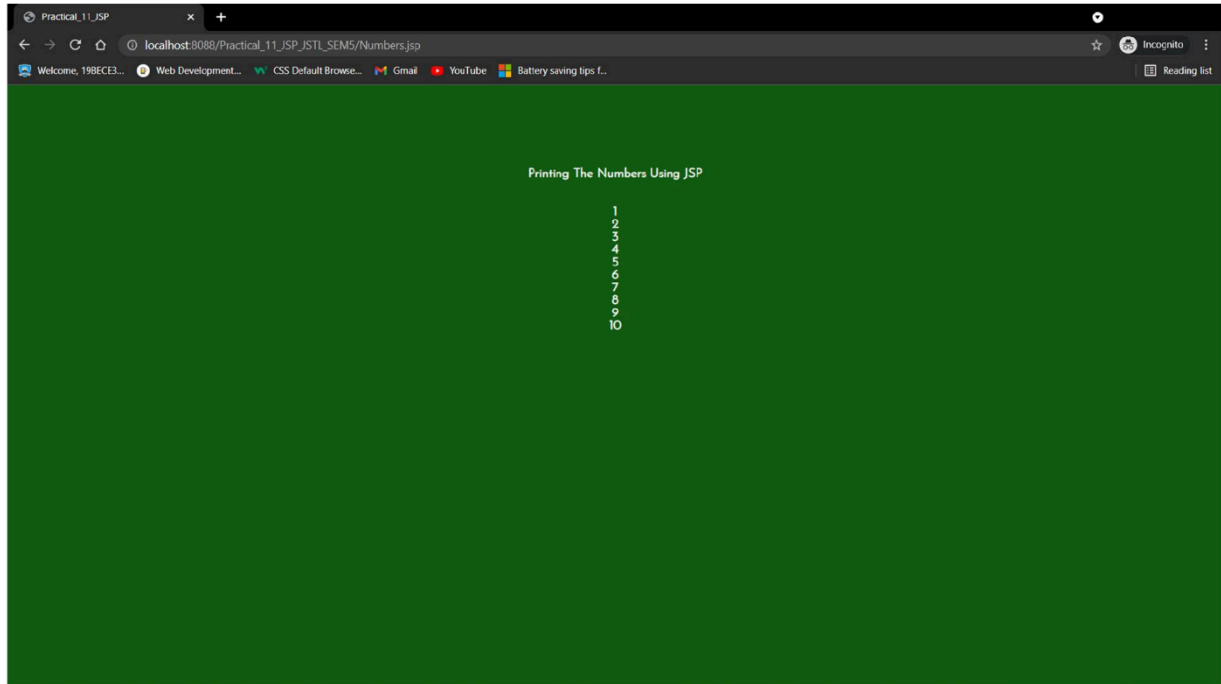
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```
{  
  
>  
  
<center><b><%=i %><br></b></center>  
  
<%  
  
}  
  
>  
  
</body>  
  
</html>
```

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OUTPUT:



Practical – 11(B)**Aim: Create A Web Page That Prints 1 To 10 Using Jstl 8.2****Program:****1)NumbersJSTL.jsp**

```
<%@ page language="java" contentType="text/html;
charset=ISO-8859-1" pageEncoding="ISO8859-1"%>

<%@ taglib uri="http://java.sun.com/jsp/jstl/core" prefix="c" %>

<!DOCTYPE html>

<html>

<head>

<meta charset="ISO-8859-1">

<title>Practical_11_JSTL</title>

<link
href="https://fonts.googleapis.com/css2?family=Josefin+Sans:wght@300&family=Josefin+Slab&display=swap" rel="stylesheet">

<link
href="https://fonts.googleapis.com/css2?family=Quicksand:wght@700&display=swap" rel="stylesheet">

<style>

    body {
    color:
    #ffffff;
    background-color:
    #09009B; font-weight:
    bolder;
    font-family: 'Josefin Sans', sans-serif;

    }
```

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```
</style>
```

```
</head>
```

```
<body>
```

```
    <h1 align="center">printing using jstl</h1>
```

```
<c:forEach var="n" begin="0" end="50" step="5">
    <center>
        <c:out value="{n}"></c:out>
        <br>
    </center>
</c:forEach>
</body>
</html>
```

2)NumbersJSTL2.jsp

```
<%@ page language="java" contentType="text/html;
charset=ISO-8859-1" pageEncoding="ISO8859-1"%>
<%@ taglib uri="http://java.sun.com/jsp/jstl/core" prefix="c" %>
<!DOCTYPE html>
<html>
<head>
<meta charset="ISO-8859-1">
<title>Practical_11_JSTL</title>
<link
href="https://fonts.googleapis.com/css2?family=Josefin+Sans:wght@300&family=Josefin+Slab&display=swap" rel="stylesheet">
<link
href="https://fonts.googleapis.com/css2?family=Quicksand:wght@700&display=swap" rel="stylesheet">
<style>
```

```
body {
color:
#ffffff;
background-color:
#09009B; font-weight:
bolder;

font-family: 'Josefin Sans', sans-serif;
}
</style>
</head>
<body>

<h1 align="center">printing using jstl</h1>

<c:forEach var="n" begin="1" end="10" step="1">

    <center>

        <c:out value="{n}"></c:out>

        <br>

    </center>

</c:forEach>

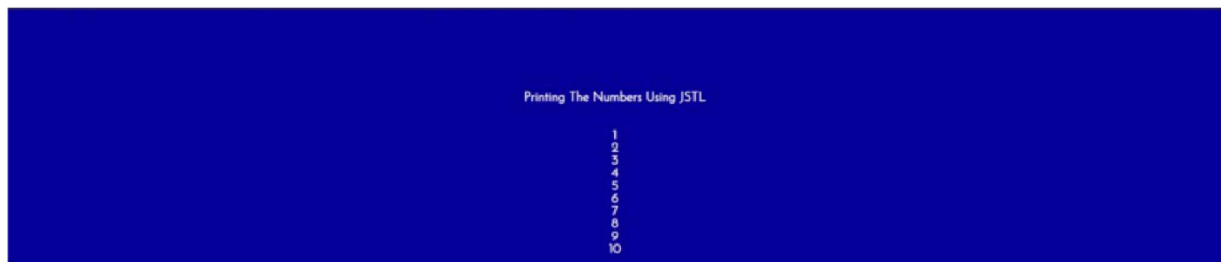
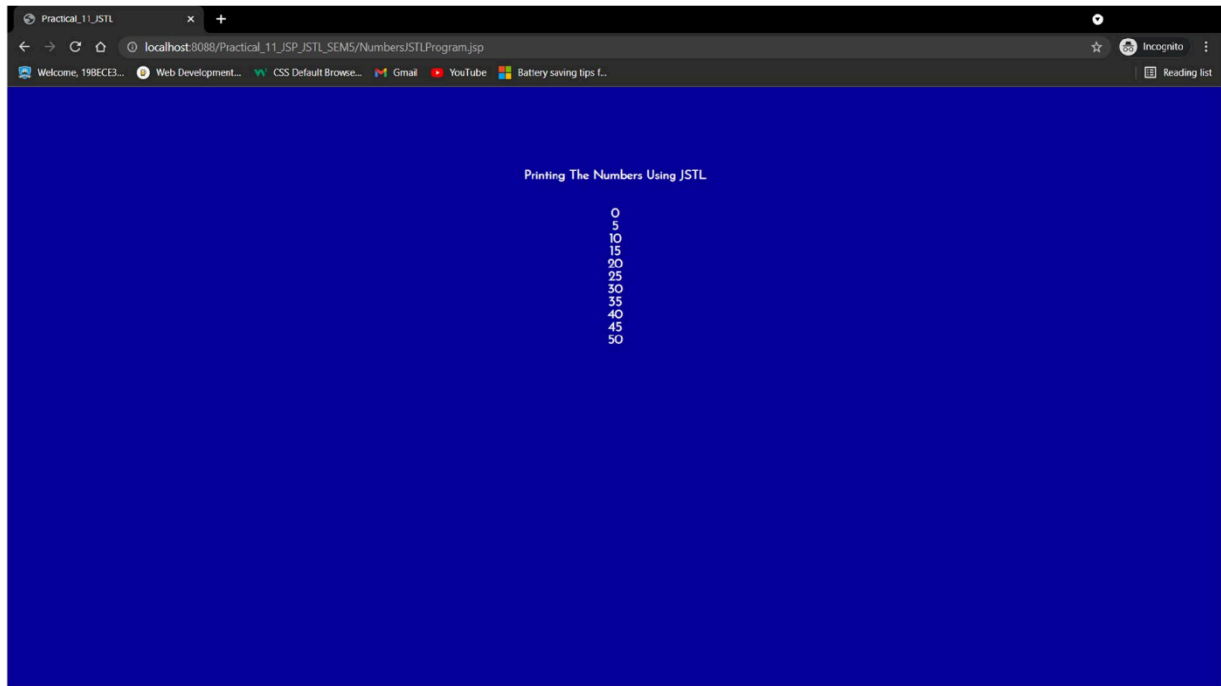
</body>
</html>
```

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Output:

1)NumbersJSTL.jsp



2)NumbersJSTL2.jsp

Practical – 12

Aim: Create A Custom Jsp Tag That Prints Current Date And Time. Use This Tag Into Jsp Page.

Program:

1) index.jsp

```
<%@ taglib uri="WEB-INF/Practical_12.tld" prefix="s"%>

<h1 style="color: blue;">Current Date and Time is: <s:today/></h1>
```

2) Practical_12.tld

```
<?xml version="1.0" encoding="ISO-8859-1" ?>

<!DOCTYPE taglib

PUBLIC "-//Sun Microsystems, Inc.//DTD JSP Tag Library

1.2//EN"

"http://java.sun.com/j2ee/dtd/web-jsptaglibrary\_1\_2.dt

d">

<taglib>
```

```
<tlib-version>1.0</tlib-version>

<jsp-version>1.2</jsp-version>

<short-name>simple</short-name>

<uri>http://tomcat.apache.org/example-taglib</uri>

<tag>
<name>today</name>

    <tag-class>com.tld.Practical_12</tag-class>

</tag>

</taglib>
```

3) Practical_12.java

```
package com.tld;

import java.util.Calendar;

import javax.servlet.jsp.JspException;
import javax.servlet.jsp.JspWriter;
import javax.servlet.jsp.tagext.TagSupport;

public class Practical_12 extends TagSupport{
    private static final long serialVersionUID
    = 1L;
```

```
public int doStartTag() throws JspException {  
    JspWriter out=pageContext.getOut();//returns the instance of  
    JspWriter try  
    {  
  
        out.println(Calendar.getInstance().getTime());  
    } catch(Exception e) {  
        System.out.println(e);  
    }  
  
    return SKIP_BODY;  
}  
}
```

OUTPUT:

Current Date and Time is: Wed Oct 27 11:55:37 IST 2021

Practical – 13

Aim: Create A Hibernate Application For Employe Payroll System.

Program:

1) Hibernate.pom.jsp

```
<project xmlns="http://maven.apache.org/POM/4.0.0"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://maven.apache.org/POM/4.0.0
http://maven.apache.org/xsd/maven4.0.0.xsd">

    <modelVersion>4.0.0</modelVersion>

    <groupId>HiberanateDemo</groupId>

    <artifactId>Hibernate</artifactId>

    <version>0.0.1-SNAPSHOT</version>

    <packaging>jar</packaging>

    <name>Hibernate</name>

    <url>http://maven.apache.org</url>

    <properties>

        <project.build.sourceEncoding>UTF-8</project.build.sourceEncodin
        g>

    </properties>

    <dependencies>
```

```
<dependency>
```

```
    <groupId>junit</groupId>
```

```
    <artifactId>junit</artifactId>
```

```
    <version>3.8.1</version>
```

```
    <scope>test</scope>
```

```
</dependency>
```

```
<!--
```

```
https://mvnrepository.com/artifact/org.hibernate/hibernate-search-orm -->
```

```
<dependency>
```

```
    <groupId>org.hibernate</groupId>
```

```
    <artifactId>hibernate-search-orm</artifactId>
```

```
    <version>4.0.0.Final</version>
```

```
</dependency>
```

```
<!--
```

```
https://mvnrepository.com/artifact/org.hibernate/hibernate-search-orm -->
```

```
<dependency>
```

```
    <groupId>mysql</groupId>
```

```
    <artifactId>mysql-connector-java</artifactId>
```

```
    <version>5.1.49</version>
```

```
</dependency>
```

```
</dependencies>
```

```
</project>
```

2) Hibernate.cfg.xml

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

<!DOCTYPE hibernate-configuration PUBLIC
"-//Hibernate/Hibernate Configuration DTD 3.0//EN"
"http://www.hibernate.org/dtd/hibernate-configuration-3.0.dtd">
<hibernate-configuration>

    <session-factory name="sf">

        <property
            name="hibernate.connection.driver_class">com.mysql.jdbc.Driver</property>
        <property name="hibernate.connection.password"></property>
        <property
            name="hibernate.connection.url">jdbc:mysql://localhost:3306/ldrp</property>
        <property
            name="hibernate.connection.username">root</property>
        <property name="hibernate.connection.password">Ansh2001@</property>
        <property
            name="hibernate.dialect">org.hibernate.dialect.MySQLDialect</property>
        <property name="hibernate.hbm2ddl.auto">update</property>
        <property name="hibernate.show_sql">true</property>
        <property name="hibernate.format_sql">true</property>
    </session-factory>
```

</hibernate-configuration>

3) App.java

```
package practical13;

import org.hibernate.Session;
import
org.hibernate.SessionFactory;
import
org.hibernate.Transaction;
import
org.hibernate.cfg.Configuratio
n; public class App {
    public static void main( String[] args
        ) { System.out.println( "Hello
        World!" ); Employee e1=new
        Employee();
        e1.setFname("Ansh");
        e1.setLname("Parikh");
        e1.setSal(10000);
        Configuration conn=new
```

```
Configuration().configure().addAnnotatedClass(Employee.class);
Configuration().addAnnotatedClass(Employee.class).configure(); SessionFactory
sf=conn.buildSessionFactory();
    Session session=sf.openSession();

    Transaction

    tr=session.beginTransaction();

    session.save(e1);

    tr.commit();

    session.close();

}

}
```

4) Employee.java

```
package practical13;

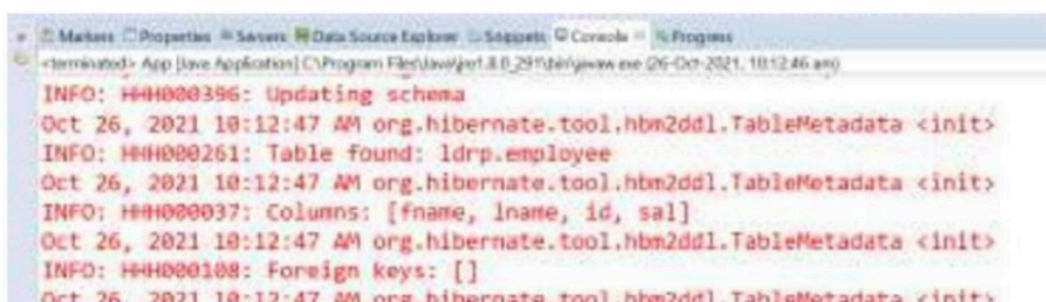
import javax.persistence.Entity;
import
javax.persistence.GeneratedValue;
import javax.persistence.Id;
import javax.persistence.Table;
import
org.hibernate.annotations.GenericGenerator;
@Entity
@Table(name="Employee") public class Employee
```



```
{  
    private int id,sal;  
    private String  
    fname,lname; @Id  
    @GenericGenerator(name = "inc",strategy = "increment")  
    @GeneratedValue(generator = "inc")  
  
    public int getId() {  
        return id;  
    }  
  
    public void  
        setId(int id) {  
            this.id = id;  
        }  
  
    public int getSal() {  
        return sal;  
    }  
  
    public void setSal(int sal)  
        { this.sal = sal;  
    }  
}
```

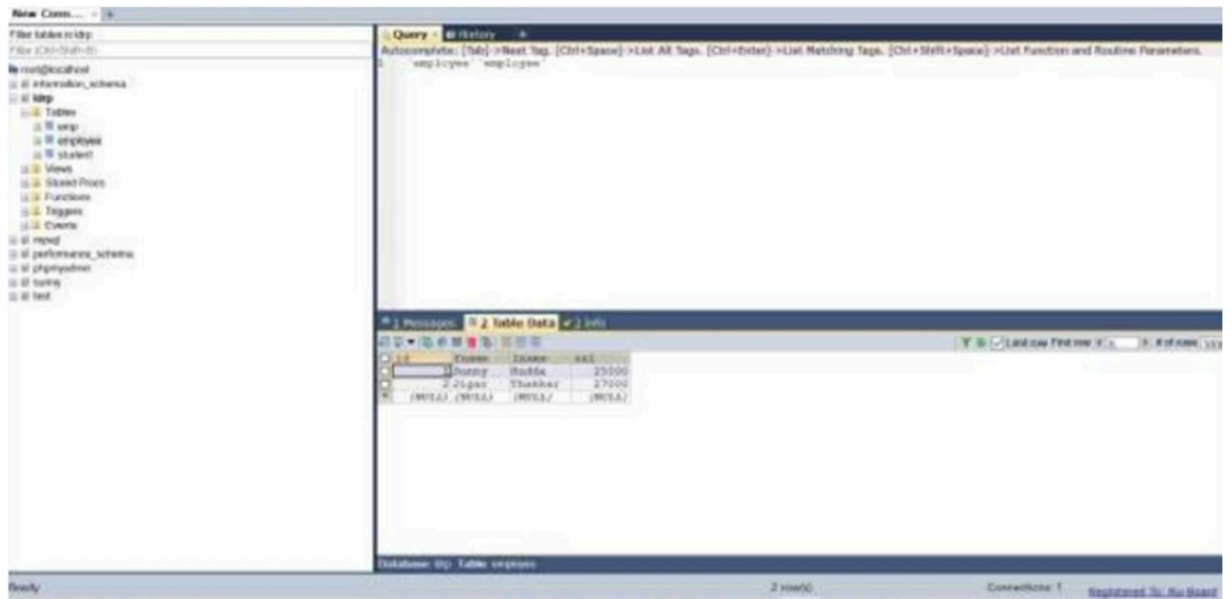
```
public String  
    getFname() {  
        return fname;  
    }  
  
public void setFname(String fname)  
    { this.fname = fname;  
    }  
  
public String  
    getLname() {  
        return  
        lname;  
    }  
  
public void setLname(String lname) {  
        this.lname = lname;  
    }  
}
```

Output:



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Practical – 14

Aim: Create A “Hello World” Application Using Spring Mvc Framework.

Program:

1) Hibernate.pom.jsp

```
<project
xmlns="http://maven.apache.org/POM/4.0.0"
xmlns:xsi="http://www.w3.org/2001/XMLSchema
-instance"
xsi:schemaLocation="http://maven.apache.org/POM/4.0.0
http://maven.apache.org/xsd/maven4.0.0.xsd">

    <modelVersion>4.0.0</modelVersion>
    <groupId>com.spring</groupId>
    <artifactId>helloworldspring</artifactId>
    <version>0.0.1-SNAPSHOT</version>
    <packaging>jar</packaging>
    <name>helloworldspring</name>
    <url>http://maven.apache.org</url>
    <properties>
    <project.build.sourceEncoding>UTF-8</project.build.sourceEncoding>
    </properties>
    <dependencies>
        <dependency>
```

```
<groupId>junit</groupId>
<artifactId>junit</artifactId>
<version>3.8.1</version>
<scope>test</scope>
</dependency>

<!--
https://mvnrepository.com/artifact/org.springframework/spring-co
ntext -->
<dependency>
    <groupId>org.springframework</groupId>
    <artifactId>spring-context</artifactId>
    <version>4.3.24.RELEASE</version>
</dependency>
</dependencies>
</project>
```

2) Beans.xml

```
<?xml version="1.0" encoding="UTF-8"?>
<beans
xmlns="http://www.springframework.org/schema/beans"
xmlns:context="http://www.springframework.org/schema/co
ncontext"
xmlns:mvc="http://www.springframework.org/schema/mvc"
```

```
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="
http://www.springframework.org/schema/beans
http://www.springframework.org/schema/beans/spring-bean
s-3.0.xsd http://www.springframework.org/schema/context
http://www.springframework.org/schema/context/spring-con
text-3.0.xsd http://www.springframework.org/schema/mvc
http://www.springframework.org/schema/mvc/spring-mvc-3.
0.xsd">
    <bean id="helloworld" class="practical14.HelloWorld">
        <property name="message" value="Hello World !!"></property>
    </bean>
</beans>
```

App.java

```
package practical14;

import org.springframework.context.ApplicationContext;
import org.springframework.context.support.ClassPathXmlApplicationContext;

public class App {
    public static void main(String[] args) {

        ApplicationContext context = new
```

```
ClassPathXmlApplicationContext("Beans.xml");  
    HelloWorld obj = (HelloWorld) context.getBean("helloworld");  
    obj.getMessage();  
    }  
}
```

3) Helloworldjava

```
package practiccal14;  
  
public class HelloWorld {  
    private String message;  
    public void setMessage(String  
        message) { this.message =  
        message;  
    }  
  
    public void getMessage() {  
        System.out.println("Your Message:" +  
            message);  
    }  
}
```

OUTPUT:

```
<terminated> App (4) [Java Application] C:\Program Files\Java\jdk-13.0.1\bin\javaw.exe (08-Nov-2020, 11:05:15 am - 11:05:16 am)
Nov 08, 2020 11:05:15 AM org.springframework.context.support.ClassPathXmlApplicationContext prepareRefresh
INFO: Refreshing org.springframework.context.support.ClassPathXmlApplicationContext@6ae40994: startup date [Sun Nov 08 11:05:15 IST 2020]; root of context hierarchy
Nov 08, 2020 11:05:16 AM org.springframework.beans.factory.xml.XmlBeanDefinitionReader loadBeanDefinitions
INFO: Loading XML bean definitions from class path resource [Beans.xml]
Your Message:Hello World !!
```

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