Lab Manual

Advance Java Programming

I N D E X

Experiment Set-1 (Java Networking)

Program-1

Aim : Write an application which will retrieve IP address for given website..

Code :

```
import java.net.*;
public class InetAddressExample {
        public static void main(String[] args)throws Exception{InetAddress ip =
InetAddress.getByName("WWW.javatpoint.com"); System.out.println("Name of
        host is : "+ip.getHostName());System.out.println("IP of host is :
        "+ip.getHostAddress());
        }
}
```

Output Screenshot :

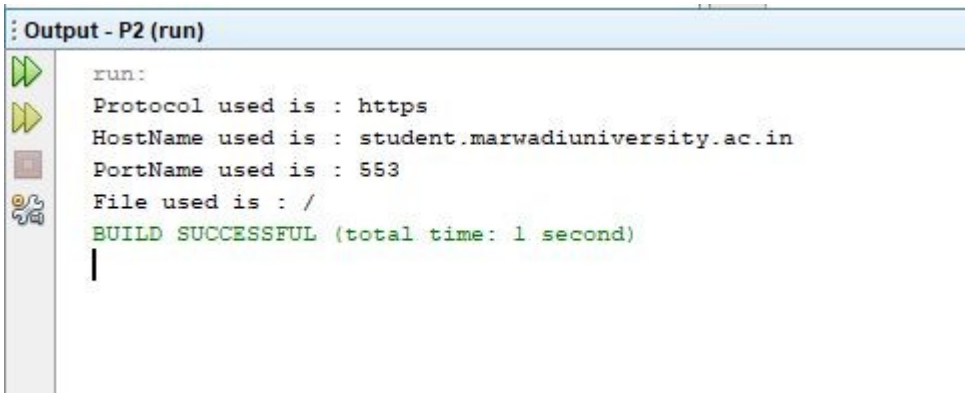
Program-2

Aim : Write an application which will retrieve the content of the given URL with different webpage related information.

Code :

```
 package URL; import java.net.*;
 public class URLDemo {
public static void main(String[] args)

{try

        {
        URL u1 = new
 URL("https://student.marwadiuniversity.ac.in:553/");
        System.out.println("Protocol used is : "+u1.getProtocol());
        System.out.println("HostName used is : "+u1.getHost());
        System.out.println("PortName used is : "+u1.getPort());
        System.out.println("File used is : "+u1.getFile());
        }
        catch(Exception e)
        {
                System.out.println("Exception Occured."+e);
        }
        }
}
```

Output Screenshot :



Program-3

Aim : Write a two – way network based chat application. It will use TCP/IP protocol and it will do communication in serial manner.

Code :

ClientSide:

```
import java.net.*;import
java.io.*;

public class MyClient {
        public static void main(String[] args) throws Exception{Socket s = new
        Socket("localhost",3333); DataInputStream din = new
DataInputStream(s.getInputStream());
        DataOutputStream dout = new
DataOutputStream(s.getOutputStream());
BufferedReader br = new BufferedReader(newInputStreamReader(System.in));

        String str=" ",str2=" ";
        while(!str.equals("Stop")){
        str=br.readLine(); dout.writeUTF(str);
        dout.flush(); str2=din.readUTF();
        System.out.println("Server Says:"+str2);
        }
        dout.close();
        s.close();
        }
}
```

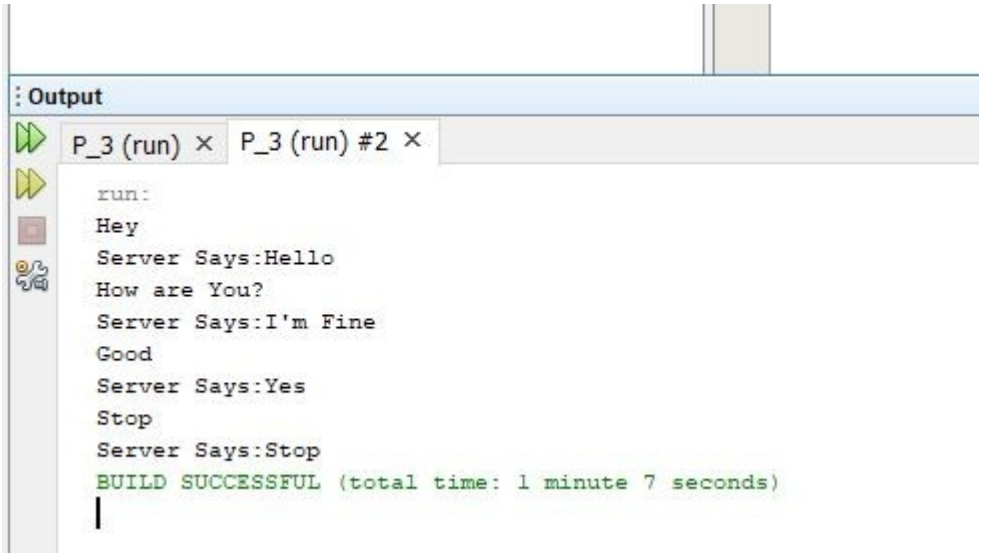
ServerSide:

```
import java.net.*;import
java.io.*;

public class MyServer {
        public static void main(String[] args) throws Exception{ServerSocket ss =
        new ServerSocket(3333);
        Socket s = ss.accept(); DataInputStream din
        = new
DataInputStream(s.getInputStream());
        DataOutputStream dout = new
```

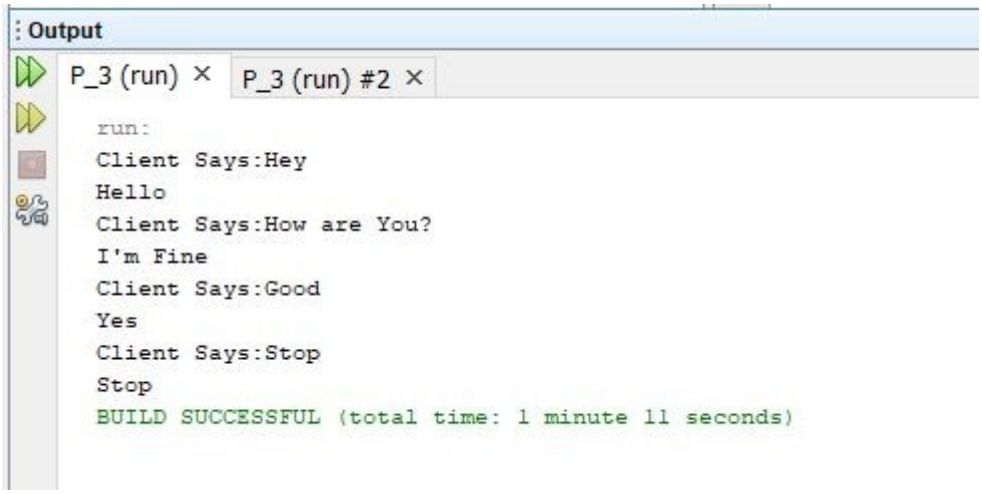
```
DataOutputStream(s.getOutputStream());


        BufferedReader br = new BufferedReader(new
InputStreamReader(System.in));

        String str=" ",str2=" "; while(!str.equals("Stop")){
        str=din.readUTF(); System.out.println("Client
        Says:"+str);str2=br.readLine(); dout.writeUTF(str2);
        dout.flush();
        }
        din.close();
        s.close();
        ss.close();
        }
}
```

Output Screenshot :

ClientSide:



ServerSide:


Output
P_3 (run)
P_3 (run) #2
run:
Client Says:Hey
Hello
Client Says:How are You?
I'm Fine
Client Says:Good
Yes
Client Says:Stop
Stop
BUILD SUCCESSFUL (total time: 1 minute 11 seconds)

Program-4

Aim : Write an application which will retrieve file from server machine and save that file on client machine. File name will be provided by client.

Code :

Client:

```
import java.io.*; import
java.net.*;class FileClient
{

   public static void main(String args[ ]) throws Exception
   {
         Socket s = new Socket("localhost", 8888);

         BufferedReader kb = new BufferedReader(new
          InputStreamReader(System.in));

         System.out.print("Enter filename: ");String fname =
         kb.readLine();

         DataOutputStream out = new
DataOutputStream(s.getOutputStream());
         out.writeBytes(fname+"\n");

         BufferedReader in = new BufferedReader(new
          InputStreamReader(s.getInputStream()));

         String str;
         str = in.readLine();

         if(str.equals("Yes"))
         {
               while((str = in.readLine()) != null)
               System.out.println(str);

               kb.close();
               out.close();
               in.close();
               s.close();
         }
         else System.out.println("File not found");
   }
```

```
}
```

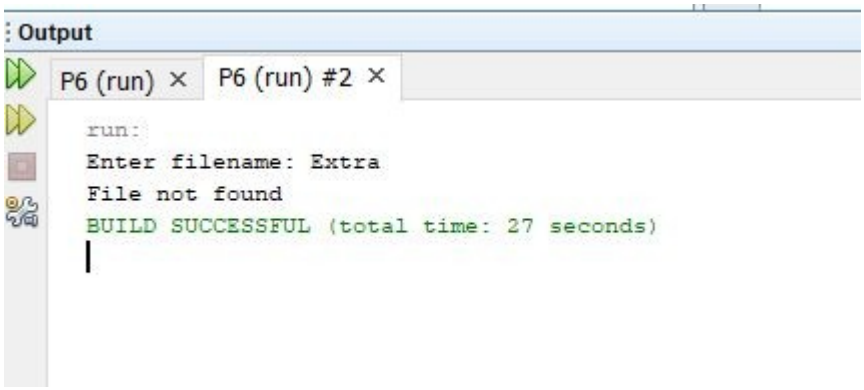
Server:

```
import java.io.*; import
java.net.*;class FileServer
{
   public static void main(String args[ ]) throws Exception
   {
ServerSocket ss = new ServerSocket(8888);

        Socket s = ss.accept(); System.out.println("Connection
        established");

        BufferedReader in = new BufferedReader(new
         InputStreamReader(s.getInputStream()));

        DataOutputStream out = new
DataOutputStream(s.getOutputStream());


        String fname = in.readLine();FileReader fr =
        null;
        BufferedReader file = null;boolean flag;

        File f = new File(fname);

        if(f.exists()) flag = true;else flag = false;

        if(flag == true) out.writeBytes("Yes"+"\n");else
        out.writeBytes("No"+"\n");
        if(flag == true)
        {
                fr = new FileReader(fname);
                file = new BufferedReader(fr);

                String str;
                while((str = file.readLine()) != null)
                {
                        out.writeBytes(str+"\n");
                }
                file.close();
                out.close();
                in.close();
                fr.close();
                s.close();
                ss.close();
        }
```

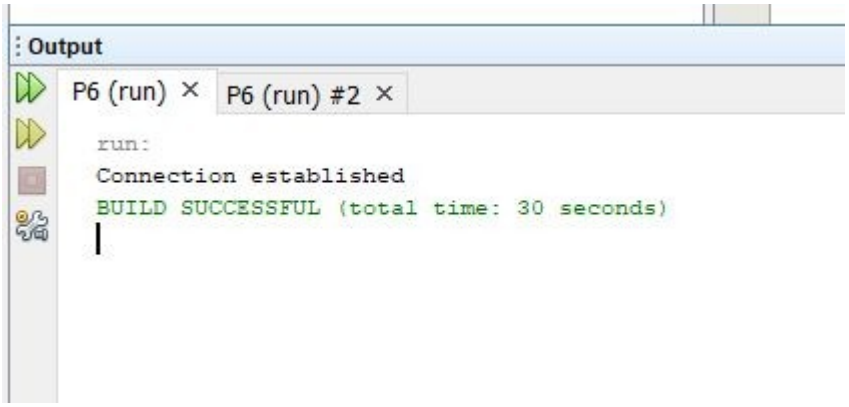
```
    }
}
```

Output Screenshot :

Client:



Server:



Program-5

Aim : Write a client program to send any string from its standard input to the

server program. The server program reads the string, finds number of characters and digits and sends it back to client program. Use connection-oriented communication.

Code :

Client:

```
import java.io.*; import
java.net.*;class client
{
   public static void main(String args[]) throws Exception
   {
Socket s = new Socket("localhost", 3333);int stop = 1;

        DataOutputStream dout = new
DataOutputStream(s.getOutputStream());
        BufferedReader br = new BufferedReader(new
InputStreamReader(s.getInputStream()));
        BufferedReader kb = new BufferedReader(new
InputStreamReader(System.in));
        String str="",str1="";do
        {
                System.out.print("Enter String: ");str =
                kb.readLine(); dout.writeBytes(str+"\n");
                str1 = br.readLine();
                System.out.println("\n");
                System.out.println(str1);
        }while(stop != 1);
        dout.close();
        br.close();
        kb.close();
        s.close();
   }
}
```

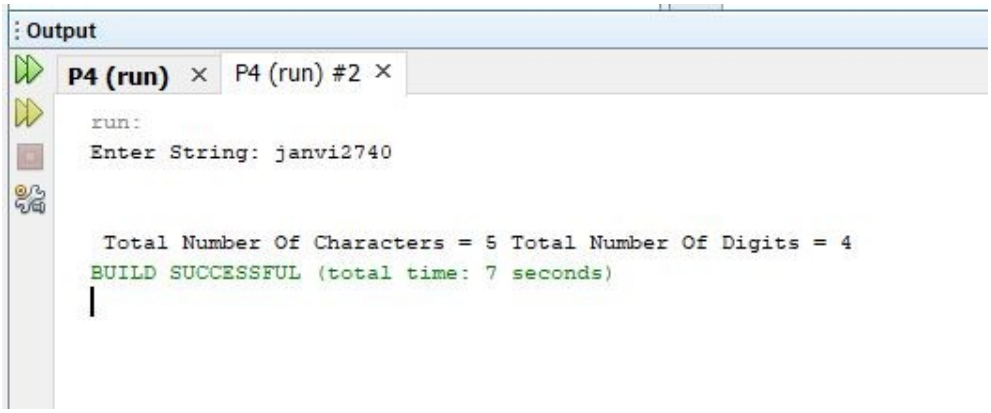
Server:

```
import java.io.*; import
java.net.*;class server
{
   public static void main(String args[])       throws Exception
   {
        ServerSocket ss = new ServerSocket(3333); Socket s =
        ss.accept(); System.out.println("Connection established");
        PrintStream p = new PrintStream(s.getOutputStream());BufferedReader br
        = new BufferedReader(new
```

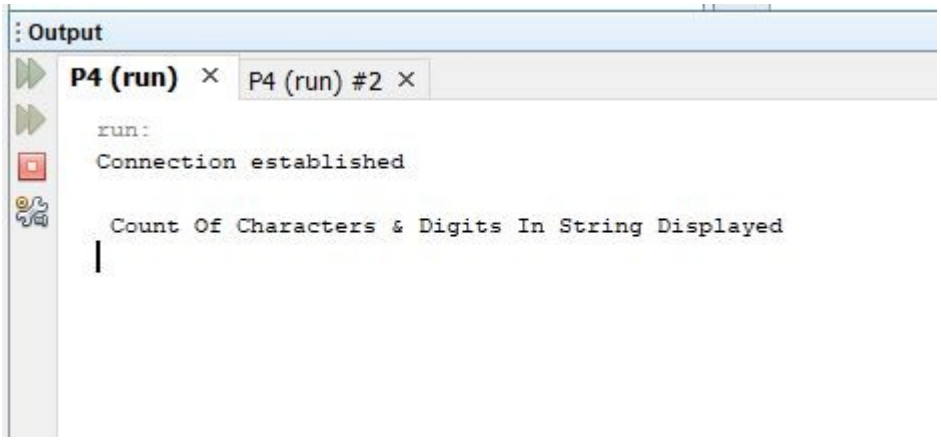
```
 InputStreamReader(s.getInputStream()));
        BufferedReader kb = new BufferedReader(new
 InputStreamReader(System.in));
        while(true)
        {
                String str,str1;
while((str = br.readLine()) != null)

                {
                        System.out.println("\n Count Of Characters &Digits In String
 Displayed ");
                        int countCh = 0,countNum = 0;for(int
                        i=0;i<str.length();i++)
                        {
                                if( (str.charAt(i) >= 'a' && str.charAt(i) <='z') ||
 (str.charAt(i) >= 'A' && str.charAt(i) <= 'Z'))
                                        countCh++;
                                else if(str.charAt(i) >= '0' && str.charAt(i)
 <= '9')
                                        countNum++;
                        }
                        str1 = " Total Number Of Characters = " + countCh;str1 += " Total
                Number Of Digits = " + countNum;
                        p.println(str1);
                }
                ss.close();
                s.close();
        }
    }
}
```

Output Screenshot :

Client:



Server:



Program-6

Aim : Write a client program to send any string from its standard input to the

server program. The server program reads the string, finds number of characters and digits and sends it back to client program. Use connection-less communication.

Code :

Client:

```
import java.net.*;import
java.io.*;
import java.util.Scanner;

public class Client
{
        public static void main(String[] args) throws Exception
        {

        DatagramSocket ds = new DatagramSocket();

        Scanner s = new Scanner(System.in);
        System.out.println("Enter any string :");String str =
        s.nextLine();

        InetAddress ip = InetAddress.getByName("localhost"); DatagramPacket dp1 =

        new DatagramPacket(str.getBytes(),
str.length(), ip, 3000);
        ds.send(dp1);

ds.close();

        }
}
```

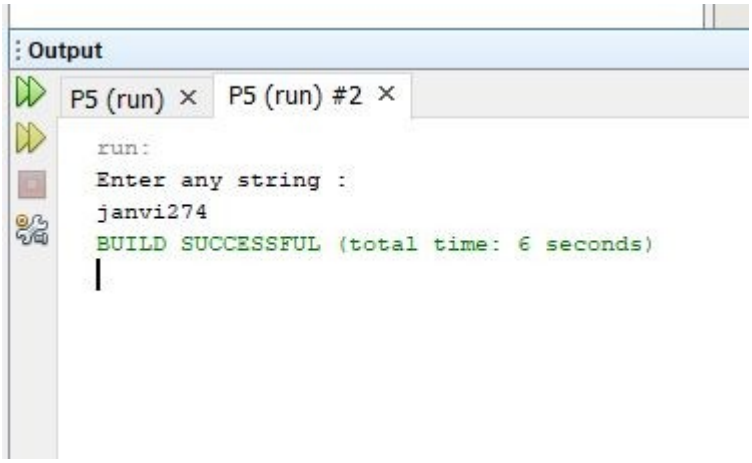
Server:

```
import      java.net.DatagramPacket;      import
java.net.DatagramSocket;                  import
java.net.InetAddress;

public class Server
{
        public static void main(String[] args)
  {
        try {
        DatagramSocket ds = new DatagramSocket(3000);byte [] buf = new
        byte[100];
```

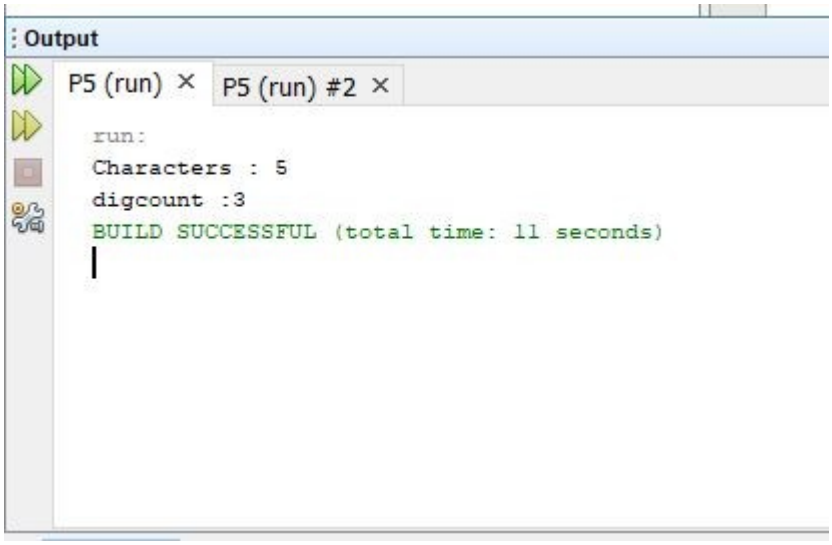
```
DatagramPacket dp = new DatagramPacket(buf, 100);ds.receive(dp);

String str = new String(dp.getData(), 0, dp.getLength());int carcount

=0,digcount = 0;

for(int i =0;i<str.length();i++)
{
if(str.charAt(i)>='a'&&str.charAt(i)<='z')carcount++;
if(str.charAt(i)>='0'&&str.charAt(i)<='9')digcount++;
}

System.out.println("Characters : "+carcount);
System.out.println("digcount :"+digcount);

ds.close();

} catch (Exception e) {
}
}
}
```

Output Screenshot :

Client:



Server:



Experiment Set – 2 (Java Database Connectivity)

Program-1

Aim : Write down Five Basic steps to establish JDBC connection from Java Application. Also mention sample code for each step.

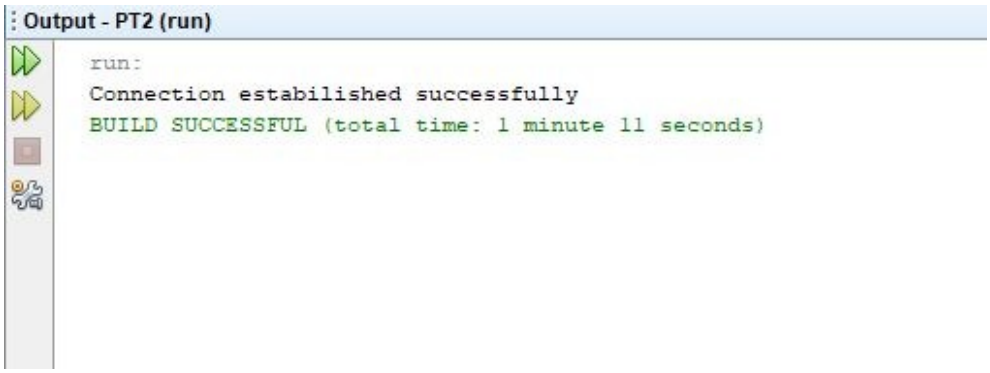
java.sql.*	Package which consists of all apis neededto connect to the database with java.
Class.forName();	The forName() method of Class class isused to register the driver class.
Connection con = DriverManger.getConnection();	The getConnection() method of DriverManager class is used to establish connection with the database.
Statement st = con.createStatement();	The createStatement() method of Connection interface is used to create statement. The object of statement is responsible to execute queries with the database.
st.executeUpdate();	The executeUpdate() method of Statement interface is used to executequeries to the database.

Code :

```
 import java.sql.*;

public class Connection {
public static void main(String[] args)
{
try{
//Registering the driver with java
Class.forName("com.mysql.jdbc.Driver");
//Load the driver and obtain the link to the mysql DB

        java.sql.Connection con =
DriverManager.getConnection("jdbc:mysql://localhost:3306/Aziz_DB","root","");
System.out.println("Connection estabilished successfully");
}
catch(Exception e)
{
System.out.println("Exeption occured" +e);
}
```

```
  }
}
```

Output Screenshot :



Program-2

Aim : Program Definition

Write a JDBC application which will interact with Database and perform the following task.
1) Create Student Table with RollNo, Name, and Address field and insert few records.
2) Using Statement Object display the content of Record.
3) Using Statement Object Insert Two Record.
4) Using Statement Object Update One Record.
5) Using Statement Object Delete One Record.
Using Statement Object display the content of Record.

Code :

MyConnection:

```
import java.sql.*;

public class MyConnection {
public static void main(String[] args)
{
try{
//Registering the driver with java Class.forName("com.mysql.jdbc.Driver");

//Load the driver and obtain the link to the mysql DBConnection con =
DriverManager.getConnection("jdbc:mysql://localhost:3306/Aziz_DB","root","");
System.out.println("Connection estabilished successfully");
}
catch(Exception e)
{
System.out.println("Exeption occured" +e);
}
}
}
```

CreateTable:

```
import java.sql.*;

public class CreateTable {
public static void main(String[] args)
{
try{
```

```
//Registering the driver with java
Class.forName("com.mysql.jdbc.Driver");
//Load the driver and obtain the link to the mysql DBjava.sql.Connection
con =
DriverManager.getConnection("jdbc:mysql://localhost:3306/AZIZ_DB","root","");
System.out.println("Connection estabilished successfully");

Statement st = con.createStatement(); st.executeUpdate("create table
STUDENT11(id int, Name
Varchar(20),Address varchar(30)"); System.out.println("Table created
successfully.");
}
catch(Exception e)
{
System.out.println("Exeption occured" +e);
}
}
}
```

InsertTable:

```
import java.sql.*;

public class InsertData {
public static void main(String[] args){try{
//2.establish connection by con objectjava.sql.Connection
con =
DriverManager.getConnection("jdbc:mysql://localhost:3306/Aziz_DB","root","");
System.out.println("Connection established");
//3.Create the statement object which isStatement st =
con.createStatement();
//4.Execute query
        int i = st.executeUpdate("insert into STUDENT11
values(1,'Aziz','Morbi')");
        st.executeUpdate("insert into STUDENT11
values(2,'Raj','Morbi')");
        st.executeUpdate("insert into STUDENT11
values(3,'Sid','Morbi')");
if(i>0)
                System.out.println("Total 3 rows inserted in table.");
else
        System.out.println("No rows inserted");con.close();
}
catch(Exception e){
                System.out.println(e);
}
}
}
```

DeleteTable:

```
import java.sql.*;
public class DeleteData{
public static void main(String[] args)
{
try { Class.forName("com.mysql.jdbc.Driver");Connection
con =
DriverManager.getConnection("jdbc:mysql://localhost:3306/Aziz_DB","root","");

System.out.println("Connection established successfully.");

Statement st = con.createStatement();
int i=st.executeUpdate("delete from STUDENT11 where id=2");

if (i==0)
{
System.out.println("No Data Deleted...");
}
else
{
System.out.println("Total "+i+" rows deleted.");
}
}
catch (Exception e)
{
System.out.println("Exception occured "+e);
}
}
}
```

UpdateTable:

```
import java.sql.*;
public class UpdateData {
public static void main(String[] args) {try {
Class.forName("com.mysql.jdbc.Driver");

        Connection con =
DriverManager.getConnection("jdbc:mysql://localhost:3306/Aziz_DB","root","");
System.out.println("Connection established successfully.");

Statement st = con.createStatement();
        int i = st.executeUpdate("update STUDENT11 set Address='Rajkot'where
Name='Aziz');
if (i==0)
{
```

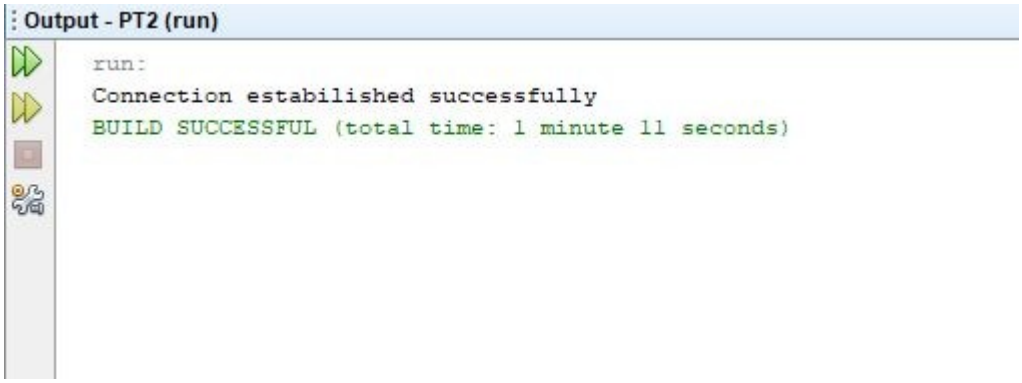
```
System.out.println("No row updated...");
}
else
{

System.out.println("Total "+i+" rows updated...");
}
}
catch (Exception e)
{
System.out.println("Exception occured "+e);
}
}
}
```

SelectTable:

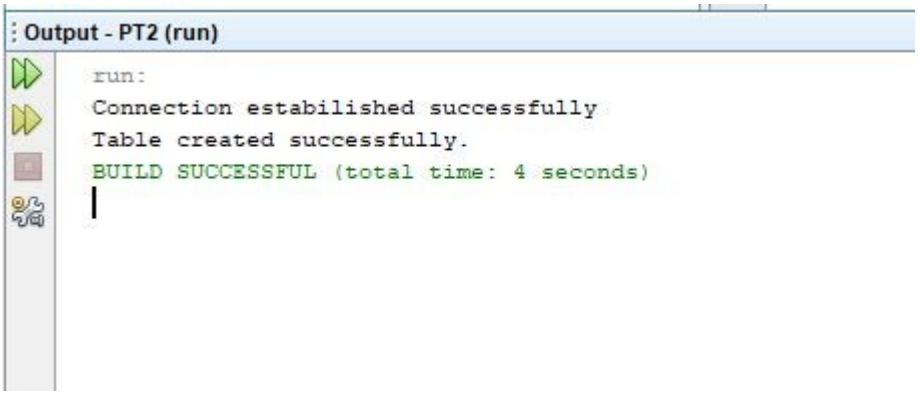
```
import java.sql.*;

public class SelectData {
public static void main(String[] args)
{
try
{
Class.forName("com.mysql.jdbc.Driver");Connection con =
DriverManager.getConnection("jdbc:mysql://localhost:3
306/Aziz_DB","root","");
System.out.println("Connection established successfully.");Statement stmt =
con.createStatement();
ResultSet rs = stmt.executeQuery("select * from STUDENT11");

while (rs.next())
{
        System.out.println(rs.getInt(1)+" "+rs.getString(2)+"
"+rs.getString(3) );
}
System.out.println("Data Fetched.");
}
catch (Exception e)
{
System.out.println("Exception occured "+e);
}
}
}
```

Output Screenshot :

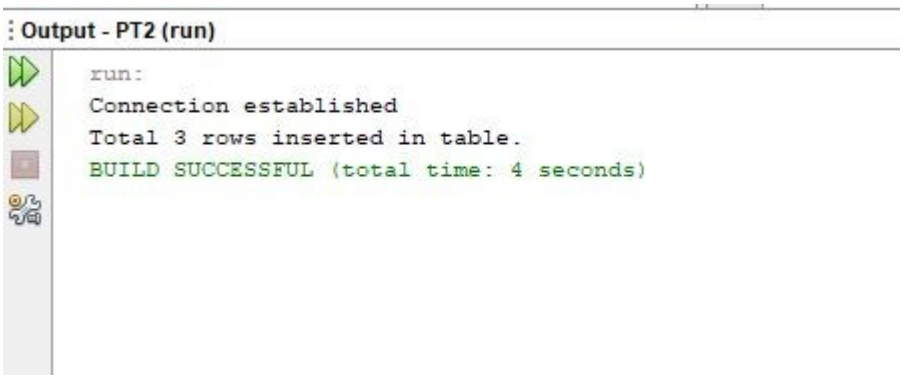
MyConnection:



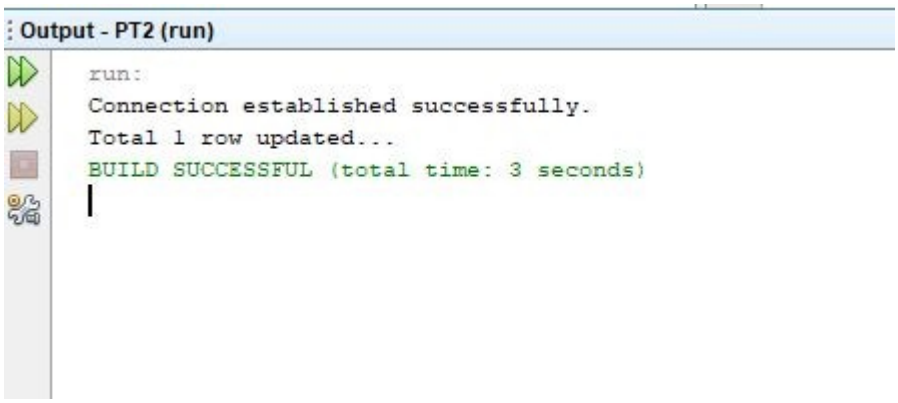
Create Table:



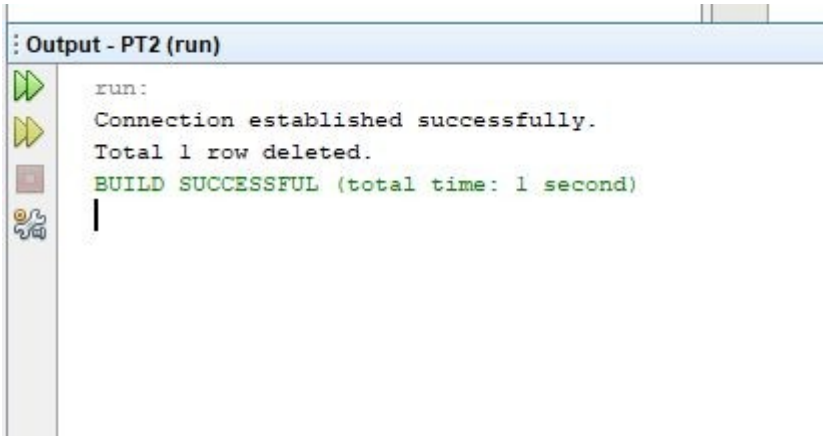
Insert Data:



UpdateData:



DeleteData:



SelectData:

Program-3

Aim : Program Definition

Write a JDBC application which will interact with Database and perform the following task.
1) Create Student Table with RollNo, Name, and Address field and insert few records.
2) Using PreparedStatement Object display the content of Record.
3) Using PreparedStatement Object Insert Two Record.
4) Using PreparedStatement Object Update One Record.
5) Using PreparedStatement Object Delete One Record.

Using PreparedStatement Object display the content of Record.

Code :

MyConnection:

```
import java.sql.*;

public class Myconnection {
public static void main(String[] args)
{
try{
//Registering the driver with java
Class.forName("com.mysql.jdbc.Driver");
//Load the driver and obtain the link to the mysql DBConnection con =
DriverManager.getConnection("jdbc:mysql://localhost:3306/Aziz_DB","root","");
System.out.println("Connection estabilished successfully");
}
catch(Exception e)
{
System.out.println("Exeption occured" +e);
}
}
}
```

CreateTable:

```
import java.sql.*;
public class CreateTable
{
public static void main(String[] args) throws Exception {
Class.forName("com.mysql.jdbc.Driver");
Connection
con=DriverManager.getConnection("jdbc:mysql://localhost:3306/Aziz_DB","root","");
System.out.println("Connection established successfully.     ");

        PreparedStatement pr = con.prepareStatement("create table
student12(rollno int, Name varchar(20), address varchar(20))");
pr.execute(); System.out.println("Creation Successful");
}
}
```

InsertData:

```
import java.sql.*;
public class InsertData {
public static void main(String[] args) throws Exception {
Class.forName("com.mysql.jdbc.Driver");
Connection con
=DriverManager.getConnection("jdbc:mysql://localhost:3306/Aziz_DB","root","");
System.out.println("Connection established successfully.");
```

```
        PreparedStatement pr = con.prepareStatement("insert into student12values(?,?,?)");
pr.setInt(1,4);
pr.setString(2,"ABC");
pr.setString(3,"Rajkot");
pr.executeUpdate(); pr.setInt(1,5);
pr.setString(2,"XYZ"); pr.setString(3,"Surat");
pr.executeUpdate(); System.out.println("Data
updated.");
}
}
```

UpdateData:

```
import java.sql.*;
public class UpdateData {
public static void main(String[] args) throws Exception {
Class.forName("com.mysql.jdbc.Driver");
Connection con
=DriverManager.getConnection("jdbc:mysql://localhost:3306/Aziz_DB","root","");
System.out.println("Connection established successfully.");
        PreparedStatement pr = con.prepareStatement("update student12setAddress=?
where Name=?");
pr.setString(1,"Rajkot"); pr.setString(2,"XYZ"); System.out.println("Update Data.");
pr.executeUpdate();

}
}
```

SelectData:

```
import java.sql.*;
public class SelectData {
public static void main(String[] args) throws Exception {
Class.forName("com.mysql.jdbc.Driver");
Connection con
=DriverManager.getConnection("jdbc:mysql://localhost:3306/Aziz_DB","root","");
System.out.println("Connection established successfully.");
        PreparedStatement pr =con.prepareStatement("select * fromstudent12");
ResultSet rs = pr.executeQuery();while (rs.next()) {
System.out.println(rs.getInt(1)+""+rs.getString(2)+" "+rs.getString(3)
);
}
System.out.println("Data Fetched.");
}
}
```

DeleteData:

```
import  java.sql.*; public class
DeletData {
public static void main(String[] args) throws Exception {
Class.forName("com.mysql.jdbc.Driver");
Connection
con=DriverManager.getConnection("jdbc:mysql://localhost:3306/Aziz_DB","root","");
```

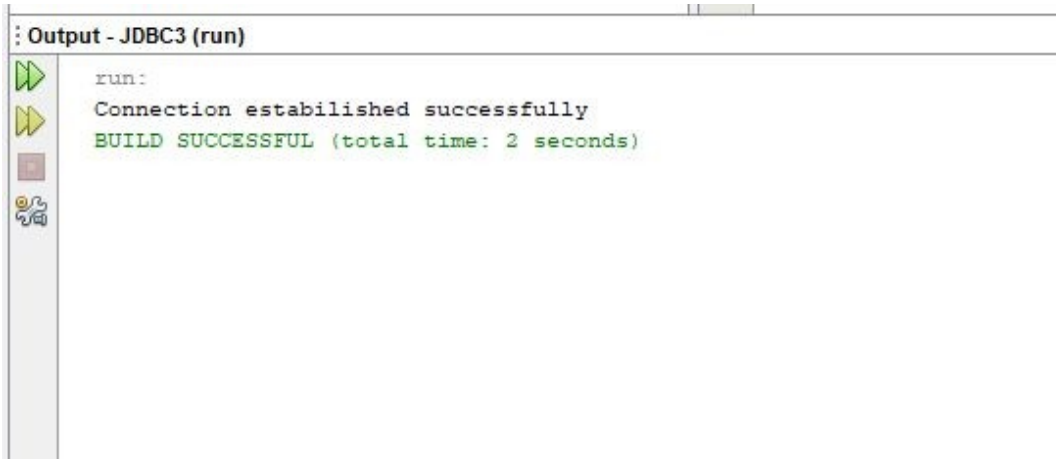
```
System.out.println("Connection established successfully.....");
        PreparedStatement pr=con.prepareStatement("delete from student12
whererollno=?");
pr.setInt(1,5); pr.executeUpdate();
System.out.println("Data Deleted.");
}
}
```

DispalyData:

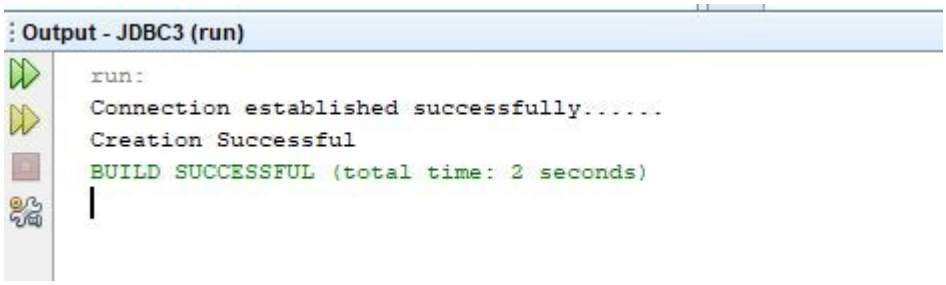
```
import java.sql.*;
public class DisplayData {
public static void main(String[] args) throws Exception {
Class.forName("com.mysql.jdbc.Driver");

Connection con
=DriverManager.getConnection("jdbc:mysql://localhost:3306/Aziz_DB","root","");
System.out.println("Connection established successfully.....");
PreparedStatement pr =con.prepareStatement("select * from student1");ResultSet rs =
pr.executeQuery();
while (rs.next()) {
        System.out.println(rs.getInt(1)+" "+rs.getString(2)+"
"+rs.getString(3));
}
System.out.println("Data Fetched.  ");
}
}
```

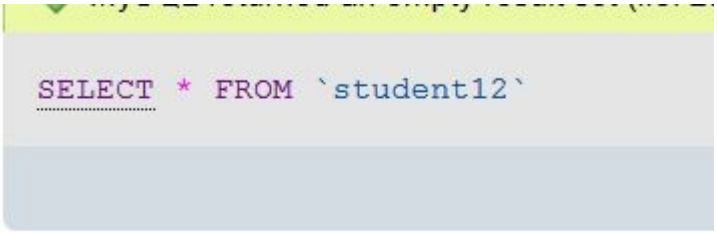
Output Screenshot :

MyConnection:



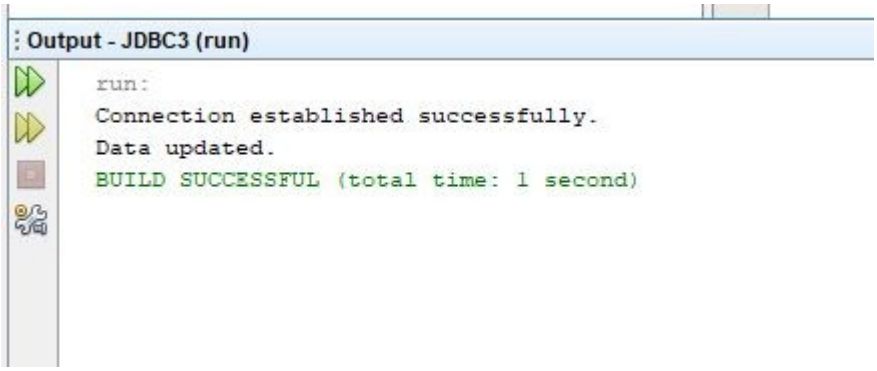
CreateTable:





rollno	Name	address

InsertData:



rollno	Name	address
4	ABC	Rajkot
5	XYZ	Surat

UpdateData:

```
Output - JDBC3 (run)
run:
Connection established successfully.
Update Data.
BUILD SUCCESSFUL (total time: 0 seconds)
```

rollno	Name	address
4	ABC	Rajkot
5	XYZ	Rajkot

SelectData:

```
run:
Connection established successfully.
4ABC Rajkot
5XYZ Surat
Data Fetched.
BUILD SUCCESSFUL (total time: 0 seconds)
```

DeleteData:

```
run:
Connection established successfully......
Data Deleted.
BUILD SUCCESSFUL (total time: 0 seconds)
```

rollno	Name	address
4	ABC	Rajkot

DisplayData:

```
run:
Connection established successfully......
4   ABC    Rajkot
Data Fetched...
BUILD SUCCESSFUL (total time: 0 seconds)
```

Program-4

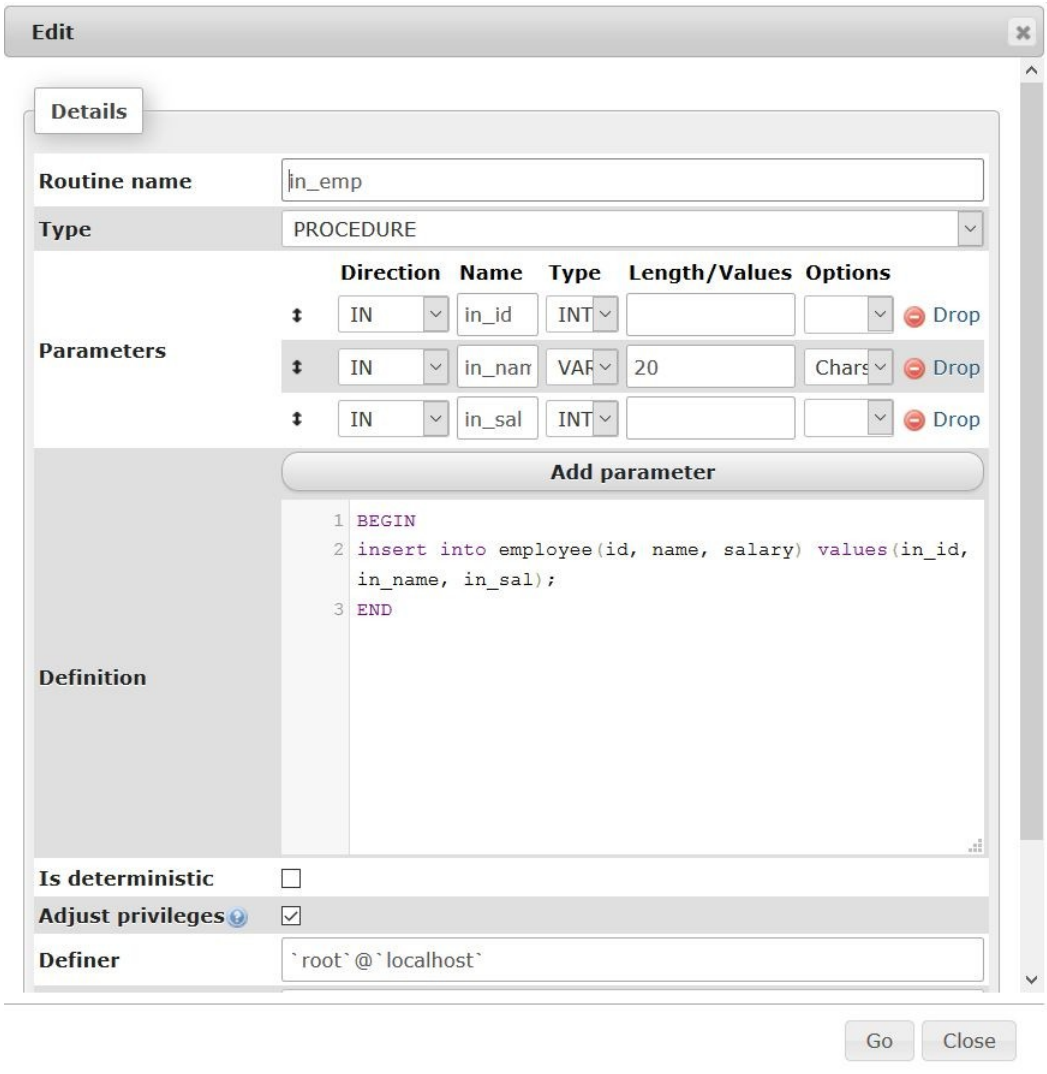
Aim : Program Definition

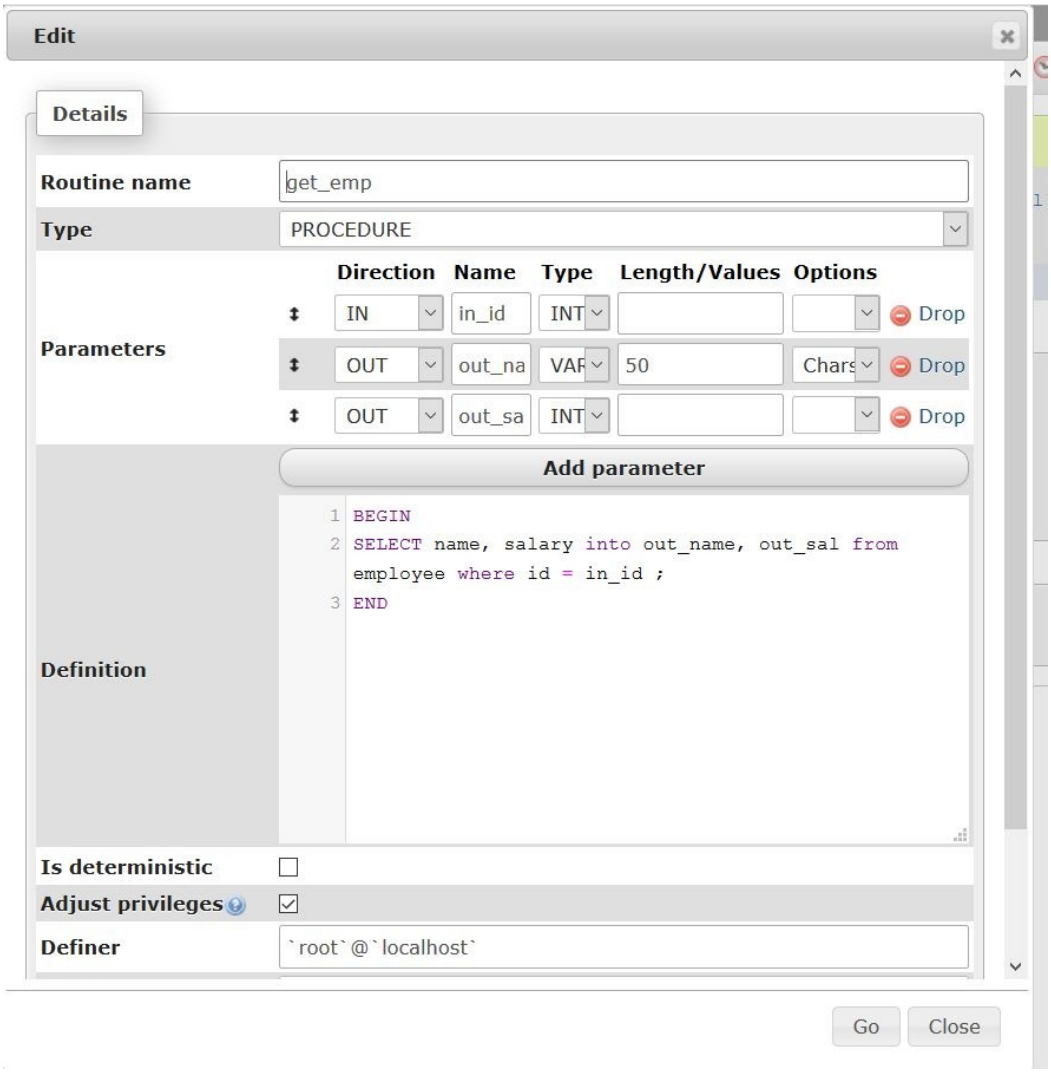
Write a JDBC application which will interact with Database and perform the following task.

1) Create a store procedure which will insert one record into employee table.

2)Create a store procedure which will retrieve salary for given employee id.

3) Write a java application which will call the above procedure and display appropriate information on screen.



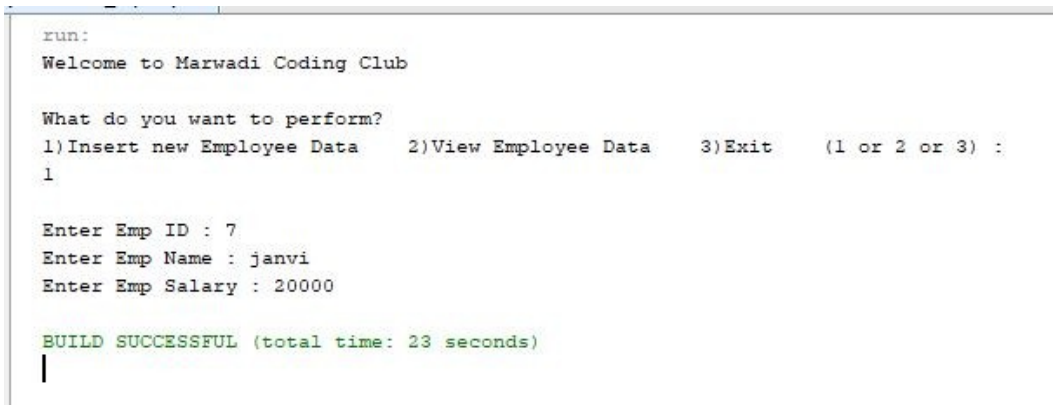


Code :

```
import java.sql.*;import
java.util.*;

public class routines_stored_procedure {
public static void main(String[] args) throws Exception{
Class.forName("com.mysql.jdbc.Driver");
Connection
con=DriverManager.getConnection("jdbc:mysql://localhost:3306/Aziz_DB","root","");
Scanner sc = new Scanner(System.in);int status = 0;
System.out.println("Welcome to Marwadi Coding Club");

try{
while(status != 3)
{
        System.out.print("\nWhat do you want to perform?\n1)Insert newEmployee Data
                2)View Employee Data        3)Exit \t(1 or 2 or 3) : ");
```

```
status = sc.nextInt();if(status == 1) {
                System.out.print("\nEnter Emp ID : "); int id =
                sc.nextInt(); System.out.print("Enter Emp Name :
                ");String name = sc.next(); System.out.print("Enter
                Emp Salary : ");int sal= sc.nextInt();

                CallableStatement cs=con.prepareCall("{call in_emp(?,?,?)}");cs.setInt(1,

                id);
                cs.setString(2, name);
                cs.setInt(3,sal);
                cs.execute();
                System.out.println("Data Inserted Successfully\n");

}
else if(status == 2) {
                System.out.print("Enter Employee ID : ");int disp_id
                = sc.nextInt();
                CallableStatement cs1 = con.prepareCall("{call
get_emp(?,?,?)}");
                cs1.setInt(1,disp_id);
                cs1.registerOutParameter(2,java.sql.Types.VARCHAR);

                cs1.registerOutParameter(3,java.sql.Types.INTEGER);

                cs1.execute();
                System.out.println("Employee ID : " + disp_id + " \t\tName : " +
cs1.getString(2) + " \t\tSalary : " + cs1.getInt(3) + "\nEmployee data displayed
successfully\n");
}
else {
                System.out.println("Thank You for using this Application");

}

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

Output Screenshot :



Program-5

Aim : Design a JDBC application which will demonstrate Scrollable ResultSet functionality.

Code :

```
import java.sql.*;
public class ScrollableResultSet {
public static void main(String[] args) {try {
Class.forName("com.mysql.jdbc.Driver");Connection conn
=DriverManager.getConnection("jdbc:mysql://localhost:3306/AZIZ_DB","root","");
System.out.println("Connection established");
        Statement
stmt=conn.createStatement(ResultSet.TYPE_SCROLL_INSENSITIVE,ResultSet
.CONCUR_UPDATABLE);
ResultSet rs=stmt.executeQuery("select * from student");rs.absolute(1);
System.out.println(rs.getInt(1)+" "+rs.getString(2)+" "+rs.getInt(3));conn.close();
}
catch (Exception e)
{System.out.println("Exception occured " + e);
}
}
}
```

Output Screenshot :

```
run:
Connection established
1 Janvi 87
BUILD SUCCESSFUL (total time: 0 seconds)
```

Program-6

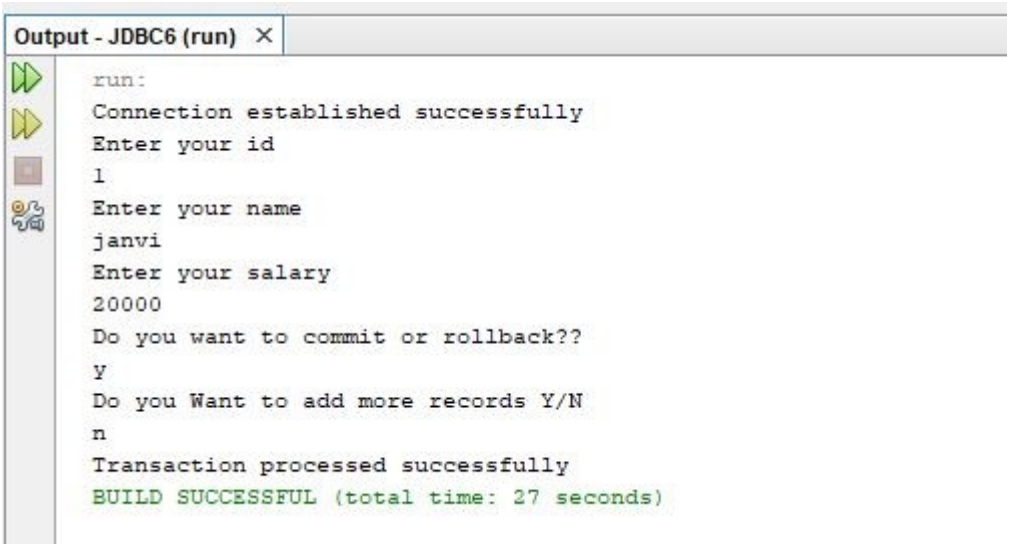
Aim : Design a JDBC application which will demonstrate Transaction management functionality.

Code :

```
import java.sql.*;import
java.io.*; import java.util.*;
public class Transactionmanagement { public static void
main(String args[]){try{
Class.forName("com.mysql.jdbc.Driver");
Connection
conn=DriverManager.getConnection("jdbc:mysql://localhost:3306/AZIZ_DB","root","");
System.out.println("Connection established successfully");
conn.setAutoCommit(false);
Scanner br=new Scanner(System.in);
        PreparedStatement ps=conn.prepareStatement("insert into employeevalues(?,?,?)");
while(true){ System.out.println("Enter your id");int
idno=br.nextInt();
System.out.println("Enter your name"); String
nm=br.next(); System.out.println("Enter your salary");int es
=br.nextInt();
ps.setInt(1,idno); ps.setString(2,nm);
ps.setInt(3,es); ps.executeUpdate();
System.out.println("Do you want to commit or rollback??");String
answer=br.next();
if(answer.equals("commit")){ System.out.println("Congrats Commit is
Successful. ");
conn.commit();
}

else if(answer.equals("rollback"))
{System.out.println("Congrats Rollback is Successful. ");
conn.rollback();
}
System.out.println("Do you Want to add more records Y/N");String
ans=br.next();
if(ans.equals("n"))
{break;}
}
conn.commit();
System.out.println("Transaction processed successfully");conn.close();
}
catch(Exception e)
```

```
 {
 System.out.println(e);
 }
 }
}
```

Output Screenshot :



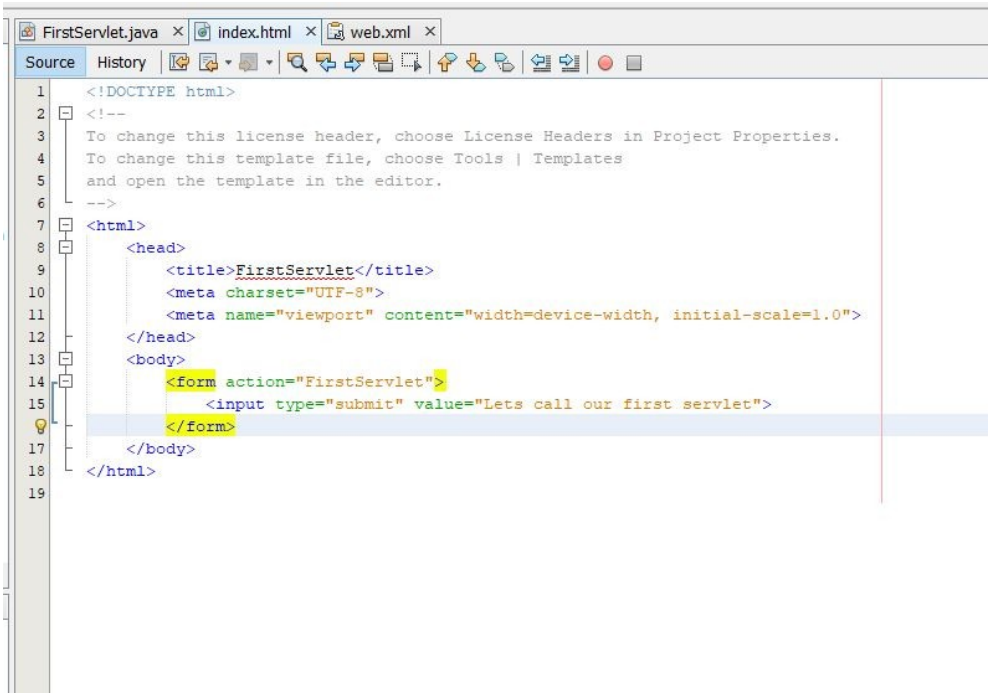
Experiment Set - 3 (Servlet)

Program-1

Aim : Write down the Program for testing the Servlet and study deployment descriptor.

Code :

Index.html



FirstServlet.java

```
import java.io.IOException;import
java.io.PrintWriter;
import javax.servlet.ServletException;import
javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest; import javax.servlet.http.HttpServletResponse;
public class FirstServlet 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 FirstServlet</title>");
out.println("</head>");
out.println("<body>");
out.println("<h1>I am inside my first Servlet</h1>");
out.println("</body>");
out.println("</html>");
}
}
@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";
}
}
```

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>FirstServlet</servlet-name>
        <servlet-class>FirstServlet</servlet-class>
        </servlet>
        <servlet-mapping>
        <servlet-name>FirstServlet</servlet-name>
        <url-pattern>/FirstServlet</url-pattern>
        </servlet-mapping>
        <session-config>
        <session-timeout>30
        </session-timeout>
        </session-config>
</web-app>
```

Output Screenshot :

Program-2&3

Aim :

2) Write down the program for testing the include action for servlet collaboration.

3) Write down the program for testing the forward action for servlet collaboration.

Code :

Start.html

```
<!DOCTYPE html>
<!--
To change this license header, choose License Headers in ProjectProperties.

To change this template file, choose Tools | Templatesand open the
template in the editor.
-->
<html>
        <head>
        <title>Authenticate me..</title>
        <meta charset="UTF-8">
        <meta name="viewport" content="width=device-width,initial-scale=1.0">
        </head>
        <body>
        <form action="Login" method="post">
        Username : <input type ="text" name ="username"> <br><br>Password : <input
        type ="password" name="password">
<br><br>

        <input type ="submit" value="Authenticate me...!!!">

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

Login.java

```
/*
 * To change this license header, choose License Headers in ProjectProperties.
 * To change this template file, choose Tools | Templates
 * and open the template in the editor.
 */
```

```
import java.io.IOException; import
java.io.PrintWriter; import javax.servlet.*;
import javax.servlet.ServletException;import
javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest; import
javax.servlet.http.HttpServletResponse;
public class Login extends HttpServlet {@Override

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

        String pwd = request.getParameter("Password");
        response.setContentType("text/html"); PrintWriter out =
        response.getWriter();

        if(pwd.equals("AZIZ"))
        {
        RequestDispatcher rd =
request.getRequestDispatcher("WelcomeServlet");
        rd.forward(request, response);
        }

        else

        {
        out.print("Sorry..Password is incorrect...Please try again..!!!");
        RequestDispatcher rd =
request.getRequestDispatcher("/Start.html");rd.include(request,
        response);
        }
}
}
```

WelcomeServlet.java

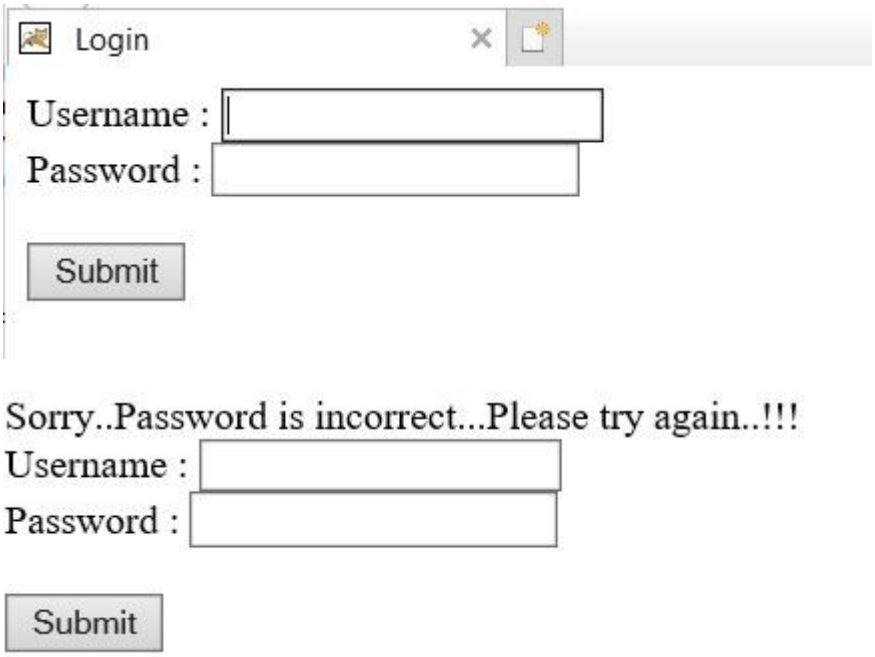
```
/*
 * To change this license header, choose License Headers in ProjectProperties.
 * To change this template file, choose Tools | Templates
 * and open the template in the editor.
 */

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 WelcomeServlet extends HttpServlet {

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

	String uname = request.getParameter("Username");
	response.setContentType("text/html");
	PrintWriter out = response.getWriter();
	out.print("Welcome " + uname);
	}
}
```

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>Login</servlet-name>
	<servlet-class>Login</servlet-class>
	</servlet>
	<servlet>
	<servlet-name>WelcomeServlet</servlet-name>
	<servlet-class>WelcomeServlet</servlet-class>
	</servlet>
	<servlet-mapping>
	<servlet-name>Login</servlet-name>
	<url-pattern>/Login</url-pattern>
	</servlet-mapping>
	<servlet-mapping>
	<servlet-name>WelcomeServlet</servlet-name>
	<url-pattern>/WelcomeServlet</url-pattern>
	</servlet-mapping>
	<welcome-file-list>
	<welcome-file>Start.html</welcome-file>
	</welcome-file-list>
	<session-config>
	<session-timeout>30
	</session-timeout>
</session-config>

</web-app>
```

Output Screenshot :



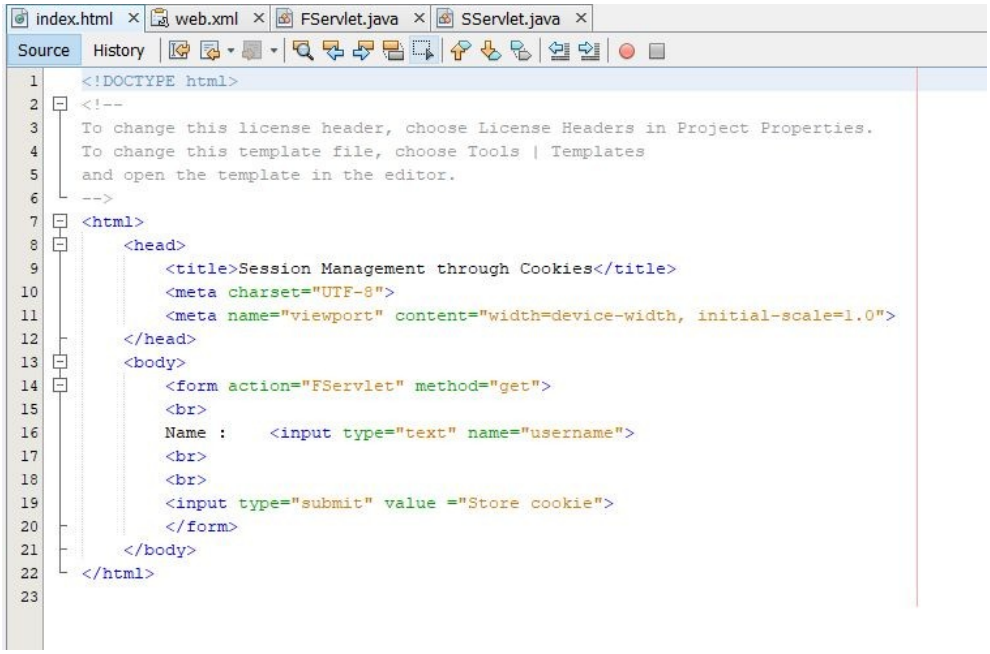
Program-4

Aim : Create login form and perform state management using Cookies, HttpSession and URL Rewriting

Code :

Using Cookies:

Index.html



web.xml

```
<?xml version="1.0" encoding="UTF-8"?>
<web-app version="3.1" xmlns="http://xmlns.jcp.org/xml/ns/javaee"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://xmlns.jcp.org/xml/ns/javaee
http://xmlns.jcp.org/xml/ns/javaee/web-app_3_1.xsd">
        <servlet>
        <servlet-name>FServlet</servlet-name>
        <servlet-class>FServlet</servlet-class>
        </servlet>
        <servlet>
        <servlet-name>SServlet</servlet-name>
        <servlet-class>SServlet</servlet-class>
        </servlet>
        <servlet-mapping>
```

```
        <servlet-name>FServlet</servlet-name>
        <url-pattern>/FServlet</url-pattern>
        </servlet-mapping>
        <servlet-mapping>
        <servlet-name>SServlet</servlet-name>
        <url-pattern>/SServlet</url-pattern>
        </servlet-mapping>
        <session-config>
<session-timeout>

        30
        </session-timeout>
        </session-config>
 </web-app>
```

FServlet.java

```
/*
 * To change this license header, choose License Headers in ProjectProperties.
 * To change this template file, choose Tools | Templates
 * and open the template in the editor.
 */

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;

/**
 *
 * @author Pratiti
 */
public class FServlet extends HttpServlet {


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

        response.setContentType("text/html");PrintWriter out =
        response.getWriter();

        String name = request.getParameter("username");
        out.print("Welcome " + name);
```

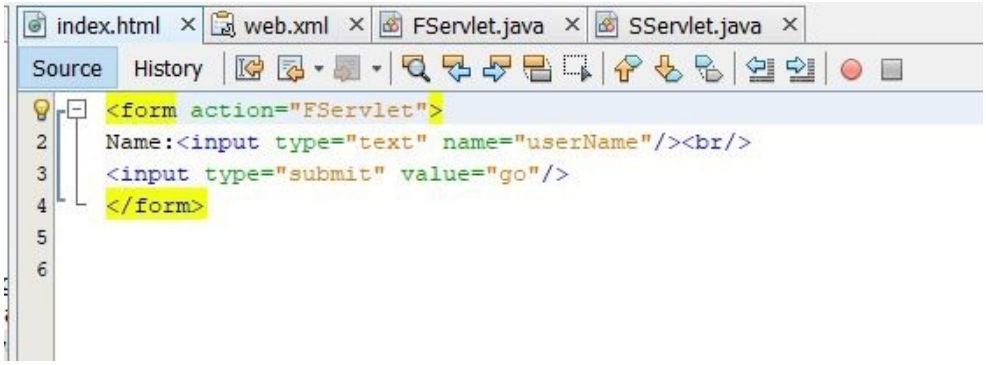
```
Cookie ck = new Cookie("uname",name);response.addCookie(ck);

        out.print("<form action='SServlet'>");
        out.print("<input type='submit' value = 'Click here to see thecookie in next
 request'>");
        out.print("</form>");out.close();

        }

 }
```

SServlet.java

```
 /*
  * To change this license header, choose License Headers in ProjectProperties.
  * To change this template file, choose Tools | Templates
  * and open the template in the editor.
  */

 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 SServlet extends HttpServlet {


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

response.setContentType("text/html");PrintWriter out = response.getWriter();

        Cookie[] ck = request.getCookies();

        out.print("Hello " + ck[0].getValue());out.close();


        }
 }
```

Using HTTP:

Index.html



web.xml

```
<?xml version="1.0" encoding="UTF-8"?>
<web-app version="3.1" xmlns="http://xmlns.jcp.org/xml/ns/javaee"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://xmlns.jcp.org/xml/ns/javaee
http://xmlns.jcp.org/xml/ns/javaee/web-app_3_1.xsd">
        <servlet>
        <servlet-name>FServlet</servlet-name>
        <servlet-class>FServlet</servlet-class>
        </servlet>
        <servlet>
        <servlet-name>SSevlet</servlet-name>
        <servlet-class>SServlet</servlet-class>
        </servlet>
        <servlet-mapping>
<servlet-name>FServlet</servlet-name>

        <url-pattern>/FServlet</url-pattern>
        </servlet-mapping>
        <servlet-mapping>
        <servlet-name>SSevlet</servlet-name>
        <url-pattern>/SSevlet</url-pattern>
        </servlet-mapping>
        <session-config>
        <session-timeout>30
        </session-timeout>
        </session-config>
</web-app>
```

FServlet.java

```
import java.io.*; import
javax.servlet.*;
import javax.servlet.http.*;
```

```
public class FServlet extends HttpServlet {

public void doGet(HttpServletRequest request, HttpServletResponseresponse){
        try{

        response.setContentType("text/html");PrintWriter out =
        response.getWriter();

        String n=request.getParameter("userName");
        out.print("Welcome "+n);

        HttpSession session=request.getSession();

       session.setAttribute("uname",n);

        out.print("<a href='SServlet'> visit </a>");out.close();

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

 }
```

SServlet.java

```
import java.io.*; import
javax.servlet.*;
import javax.servlet.http.*;

public class SServlet extends HttpServlet {

public void doGet(HttpServletRequest request, HttpServletResponseresponse){
        try{

        response.setContentType("text/html");PrintWriter out =
        response.getWriter();

        HttpSession session=request.getSession(false);


       String n=(String)session.getAttribute("uname");out.print("Hello

       "+n);

        out.close();
```

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


}
```

Using URLRewriting:

Index.html

web.xml

```
<web-app>

<servlet>
<servlet-name>s1</servlet-name>
<servlet-class>FirstServlet</servlet-class>
</servlet>

<servlet-mapping>
<servlet-name>s1</servlet-name>
<url-pattern>/servlet1</url-pattern>
</servlet-mapping>

<servlet>
<servlet-name>s2</servlet-name>
<servlet-class>SecondServlet</servlet-class>
</servlet>

<servlet-mapping>
<servlet-name>s2</servlet-name>
<url-pattern>/servlet2</url-pattern>
</servlet-mapping>

</web-app>
```

FirstServlet.java

```
import java.io.*; import
```

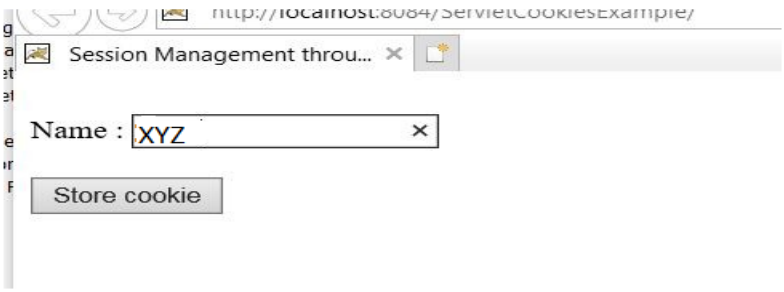
```
 javax.servlet.*;
import javax.servlet.http.*;

 public class FirstServlet extends HttpServlet {

 public void doGet(HttpServletRequest request, HttpServletResponseresponse){
        try{

        response.setContentType("text/html");PrintWriter out =
        response.getWriter();

        String n=request.getParameter("userName");
        out.print("Welcome "+n);

        //appending the username in the query string
        out.print("<br><a href='servlet2?uname="+n+"'>visit nextservlet</a>");

        out.close();

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

 }
```

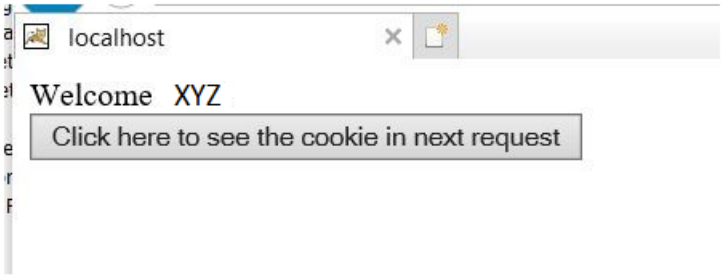
SecondServlet.java

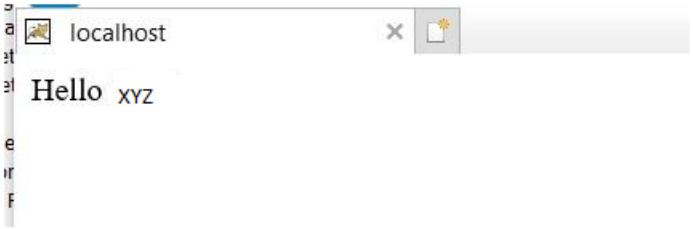
```
 import java.io.*; import
 javax.servlet.*;
 import javax.servlet.http.*;

 public class SecondServlet extends HttpServlet {

 public void doGet(HttpServletRequest request, HttpServletResponseresponse){
        try{

        response.setContentType("text/html");PrintWriter out =
        response.getWriter();

        //getting value from the query string String
        n=request.getParameter("uname");out.print("Hello "+n);

out.close();

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


}
```

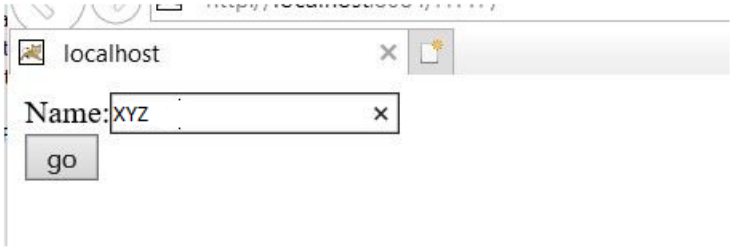
Output Screenshot :

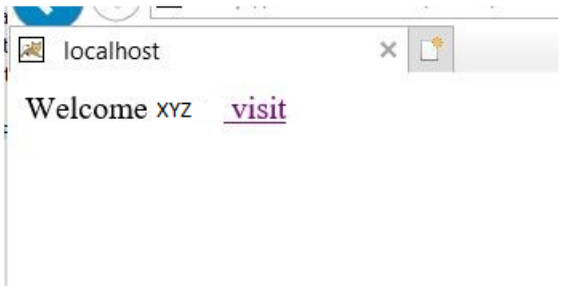
Using Cookies:

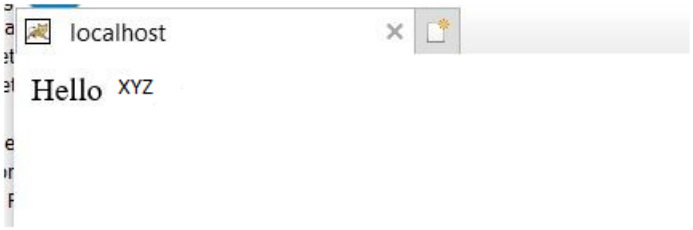


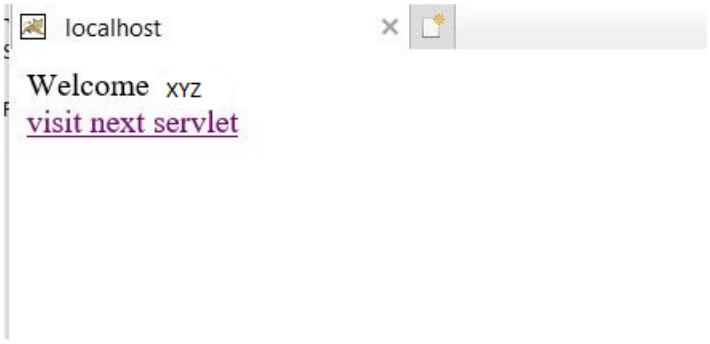


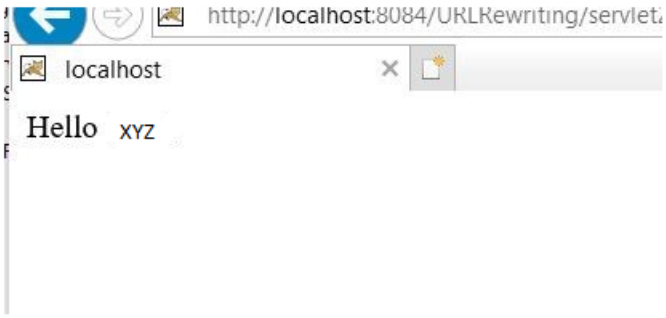


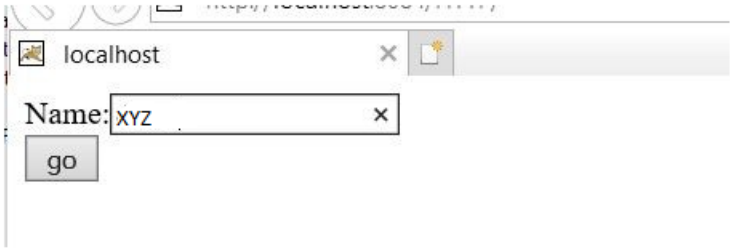

localhost
Name:XYZ
go


localhost
Welcome XYZ visit


localhost
Hello XYZ


localhost
Welcome xyz
visit next servlet


http://localhost:8084/URLRewriting/servlet
localhost
Hello xyz


localhost
Name: xyz
go

Program-5

Aim : Create Servlet file which contains following functions:

1. Connect
2. Create Database
3. Create Tabe
4. Insert Records into respective table
5. Update records of particular table of database
6. Delete Records from table.
7. Delete table and also database.

Code :

Index.html

```
<!DOCTYPE html>
<html>
<head>
<title>Insert Data</title>
</head>
<body>
        <form action="./InsertDataServlet" method="post">
                <p>ID:</p>
                <input type="text" name="id"/>
<br/>

                <p>Name:</p>
                <input type="text" name="name"/>
                <br/>
                <p>City::</p>
                <input type="text" name="city"/>
                <br/><br/><br/>
                <input type="submit" Value="Insert Data"/>
        </form>
</body>
</html>
```

web.xml

```
<?xml version="1.0" encoding="UTF-8"?>
<web-app version="3.1" xmlns="http://xmlns.jcp.org/xml/ns/javaee"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://xmlns.jcp.org/xml/ns/javaee
http://xmlns.jcp.org/xml/ns/javaee/web-app_3_1.xsd">
        <servlet>
        <servlet-name>InsertDataServlet</servlet-name>
```

```
        <servlet-class>InsertDataServlet</servlet-class>
        </servlet>
        <servlet-mapping>
        <servlet-name>InsertDataServlet</servlet-name>
        <url-pattern>/InsertDataServlet</url-pattern>
        </servlet-mapping>
        <session-config>
        <session-timeout>30
        </session-timeout>
        </session-config>
</web-app>
```

InsertDataServlet.java

```
import java.io.IOException; import
java.io.PrintWriter; import
java.sql.Connection;
import java.sql.PreparedStatement;

import javax.servlet.ServletException; import javax.servlet.annotation.WebServlet;import
javax.servlet.http.HttpServlet;

import javax.servlet.http.HttpServletRequest; import
javax.servlet.http.HttpServletResponse;

// Import Database Connection Class fileimport code.*;;


public class InsertDataServlet extends HttpServlet {private static final
   long serialVersionUID = 1L;

   protected void doPost(HttpServletRequest request,
HttpServletResponse response)
         throws ServletException, IOException {try {
                PrintWriter out = response.getWriter();
                 // Initialize the database
                out.println("<html><body><b>Trying to Connect to DB"
+ "</b></body></html>");
                 Connection con =
DataBaseConnection.initializeDatabase();
                out.println("<html><body><b>Successfully Connected toDB" +
"</b></body></html>");
                 // Create a SQL query to insert data into demo table
                 // demo table consists of two columns, so two '?' is usedPreparedStatement
                 st = con .prepareStatement("insert
into Employee2 values(?, ?,?)");

                 // For the first parameter,
```

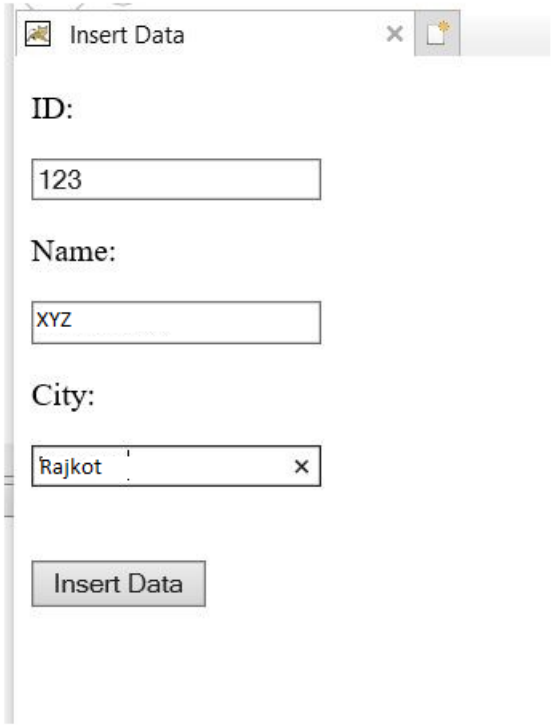
```
                    // get the data using request object
                    // sets the data to st pointerst.setInt(1,
 Integer.valueOf(request.getParameter("id")));

                    // Same for second parameter
                    st.setString(2, request.getParameter("name"));st.setString(3,
                   request.getParameter("city"));
                    // Execute the insert command using executeUpdate()
                    // to make changes in database
                    st.executeUpdate();

                    // Close all the connectionsst.close();
con.close()

                    // Get a writer pointer
                    // to display the successful result

                    out.println("<html><body><b>Successfully Inserted" +
 "</b></body></html>");
            }
            catch (Exception e) {
                    e.printStackTrace();
            }
    }
}
```

DataBaseConnection.java

```
package code;
import java.sql.Connection; import
java.sql.DriverManager;import
java.sql.SQLException;

// This class can be used to initialize the database connectionpublic class
DataBaseConnection {
    public static Connection initializeDatabase()
            throws SQLException, ClassNotFoundException
    {
            // Initialize all the information regarding
            // Database Connection
            String dbDriver = "com.mysql.jdbc.Driver"; String dbURL =
            "jdbc:mysql://localhost:3306/";
            // Database name to access String dbName =
            "XYZ_DB";String dbUsername = "root";
            String dbPassword = "";

            Class.forName(dbDriver);
            Connection con = DriverManager.getConnection(dbURL +
```

```
 dbName,dbUsername,dbPassword);
            //connection con =
 DriverManager.getConnection("com.mysql.jdbc.Driver")
            return con;
    }
}
```

Output Screenshot :

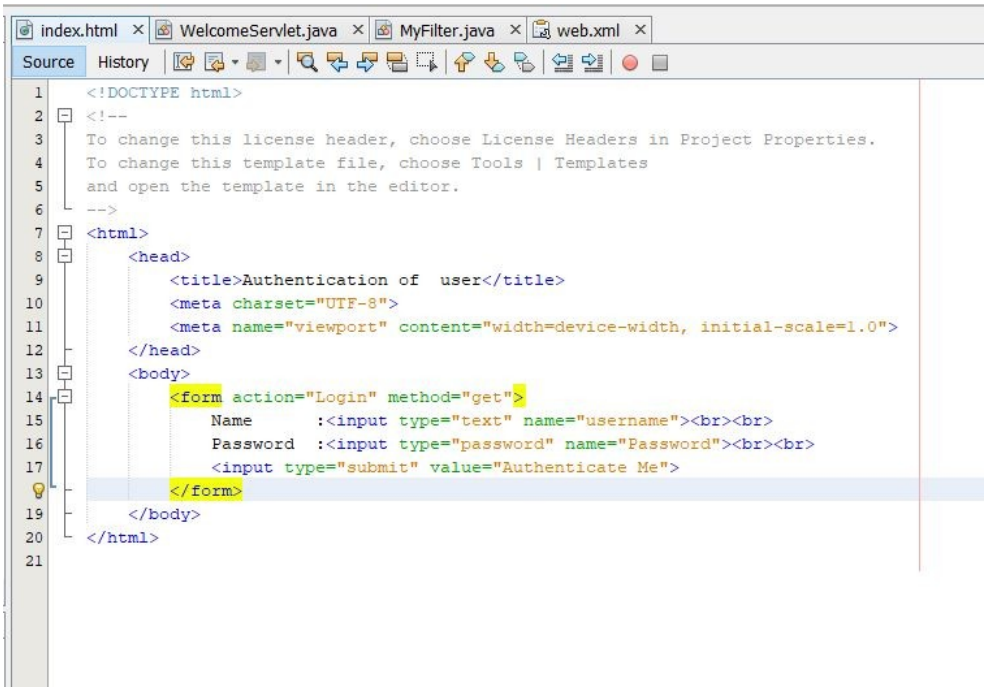


Program-6

Aim : Implement Authentication filter using filter API.

Code :

Index.html



web.xml

```
<?xml version="1.0" encoding="UTF-8"?>
<web-app version="3.1" xmlns="http://xmlns.jcp.org/xml/ns/javaee"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://xmlns.jcp.org/xml/ns/javaee
http://xmlns.jcp.org/xml/ns/javaee/web-app_3_1.xsd">
        <filter>
        <filter-name>MyFilter</filter-name>
        <filter-class>MyFilter</filter-class>
        </filter>
        <filter-mapping>
        <filter-name>MyFilter</filter-name>
        <servlet-name>WelcomeServlet</servlet-name>
        </filter-mapping>
        <servlet>
        <servlet-name>WelcomeServlet</servlet-name>
        <servlet-class>WelcomeServlet</servlet-class>
```

```
        </servlet>
        <servlet-mapping>
        <servlet-name>WelcomeServlet</servlet-name>
        <url-pattern>/WelcomeServlet</url-pattern>
        </servlet-mapping>
<session-config>

        <session-timeout>30
        </session-timeout>
        </session-config>
 </web-app>
```

WelcomeServlet.java

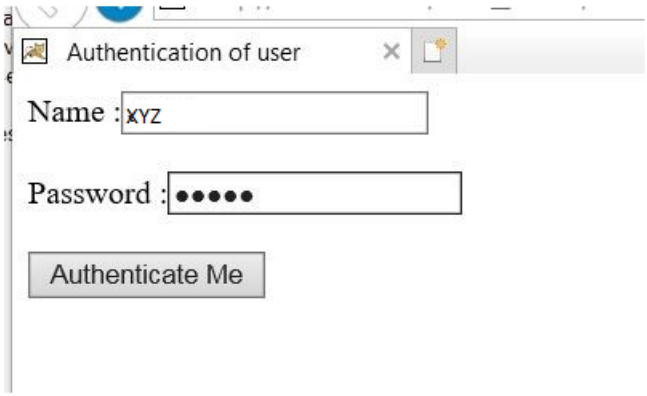
```
import java.io.IOException;import
java.io.PrintWriter;
import javax.servlet.ServletException;import
javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest; import
javax.servlet.http.HttpServletResponse;

public class WelcomeServlet extends HttpServlet {
public void doPost(HttpServletRequest request, HttpServletResponseresponse)

throws ServletException, IOException {
response.setContentType("text/html"); PrintWriter out =
response.getWriter();out.print("welcome User");
out.close();
}
}
```

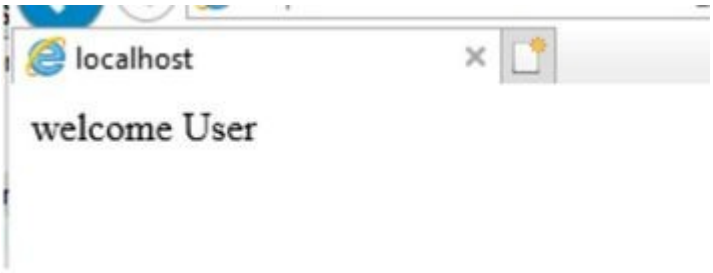
MyFilter.java

```
import java.io.IOException; import
java.io.PrintWriter; import javax.servlet.*;
public class MyFilter implements Filter{
public void init(FilterConfig arg0) throws ServletException {} public void
doFilter(ServletRequest req, ServletResponse resp,

FilterChain chain) throws IOException, ServletException {PrintWriter
out=resp.getWriter();
String password=req.getParameter("password");
if(password.equals("admin")){
chain.doFilter(req, resp);//sends request to next resource
}

else{
```

```
out.print("username or password error!");
RequestDispatcher rd=req.getRequestDispatcher("index.html");rd.include(req,
resp);
}
}
public void destroy() {
}

}
```

Output Screenshot :





Program-7

Aim : Write down the Program for testing the servlet context interface.

Code :

Index.html

```
<a href="Servlet_Context">Click Here to get your Servlet ContextParameter</a>
```

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>Servlet_Context</servlet-name>
        <servlet-class>Servlet_Context</servlet-class>
        </servlet>
        <servlet-mapping>
        <servlet-name>Servlet_Context</servlet-name>
        <url-pattern>/Servlet_Context</url-pattern>
        </servlet-mapping>
        <session-config>
        <session-timeout>30
        </session-timeout>
        </session-config>
</web-app>
```

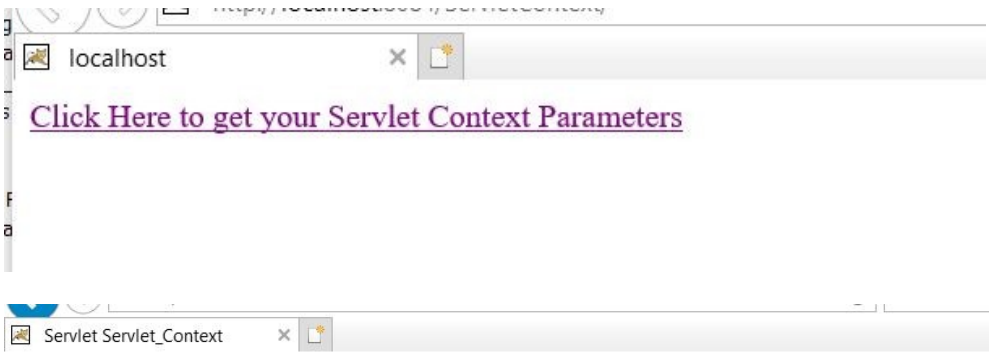
Servlet__Context.java

```
/*
 * To change this license header, choose License Headers in ProjectProperties.
 * To change this template file, choose Tools | Templates
 * and open the template in the editor.
 */

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;
```

```
/**
 *
 * @author Admin
 */
public class Servlet_Context extends HttpServlet {

        /**
        * Processes requests for both HTTP <code>GET</code> and
<code>POST</code>
methods.

        *
        * @param request servlet request
        * @param response servlet response
        * @throws ServletException if a servlet-specific error occurs
        * @throws IOException if an I/O error occurs
        */
        protected void processRequest(HttpServletRequest request,
HttpServletResponse response)
        throws ServletException, IOException {
        response.setContentType("text/html;charset=UTF-8");try (PrintWriter out
        = response.getWriter()) {
        /* TODO output your page here. You may use following samplecode. */
        out.println("<!DOCTYPE html>");
        out.println("<html>");
        out.println("<head>");
        out.println("<title>Servlet Servlet_Context</title>");
        out.println("</head>");
        out.println("<body>");
        out.println("<h1>Servlet Servlet_Context at: " +
request.getContextPath() + "</h1>");
        out.println("</body>");
        out.println("</html>");
        }
        }

        // <editor-fold defaultstate="collapsed" desc="HttpServletmethods. Click on
the + sign on the left to edit the code.">
        /**
        * Handles the HTTP <code>GET</code> method.
        *
        * @param request servlet request
        * @param response servlet response
        * @throws ServletException if a servlet-specific error occurs
        * @throws IOException if an I/O error occurs
        */
        @Override
        protected void doGet(HttpServletRequest request,
```

```
 HttpServletResponse response)
        throws ServletException, IOException {
        processRequest(request, response);
}

        /**
        * Handles the HTTP <code>POST</code> method.
        *
        * @param request servlet request
        * @param response servlet response
        * @throws ServletException if a servlet-specific error occurs
        * @throws IOException if an I/O error occurs
        */
        @Override
        protected void doPost(HttpServletRequest request,
 HttpServletResponse response)
        throws ServletException, IOException {
        processRequest(request, response);
        }

        /**
        * Returns a short description of the servlet.
        *
        * @return a String containing servlet description
        */
        @Override
        public String getServletInfo() {return "Short
        description";
        }// </editor-fold>

}
```

Output Screenshot :



Servlet Servlet_Context at :/ServletContext

Experiment Set-1 (JSP)

Program-1

Aim : Write down the Program which displays the simple JSP file.

Code :

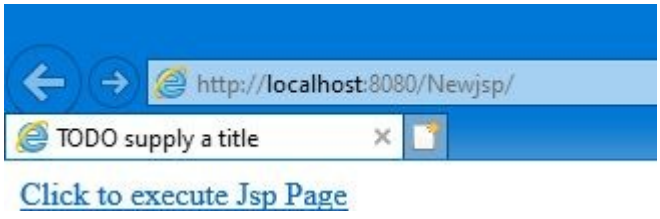
Index.html

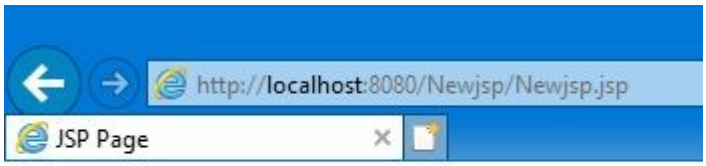
```
<html>
  <head>
    <title>TODO supply a title</title>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
  </head>
  <body>
     <a href="Newjsp.jsp">Click to execute Jsp Page </a>
  </body>
</html>
```

Newjsp.jsp

```
<%@page contentType="text/html" pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
  <head>
    <meta http-equiv="Content-Type" content="text/html;charset=UTF-8">
    <title>JSP Page</title>
  </head>
  <body>
    <h1>you are in jsp page!</h1>
  </body>
</html>
```

Output Screenshot :





you are in jsp page!

Program-2

Aim : Write down the program in which input thetwo numbers in an html file and then display the addition in JSP file

Code :

Index.html

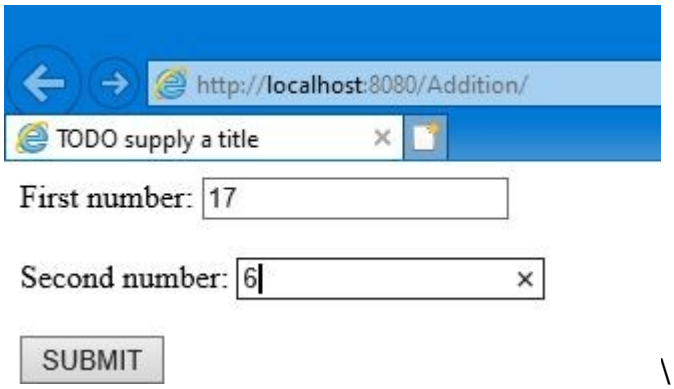
```
<html>
  <head>
    <title>TODO supply a title</title>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-
scale=1.0">
  </head>
  <body>
    <form action="addition.jsp">
      First number: <input type="text" name="n1"/><br><br>Second
      number: <input type="text" name="n2"/><br><br>

<input type="submit" value="SUBMIT" />

</form>

  </body>
</html>
```

addition.jsp

```
<%@page contentType="text/html" pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
  <head>
    <meta http-equiv="Content-Type" content="text/html;
charset=UTF-8">
    <title>JSP Page</title>
  </head>
  <body>
    <%
```

```
        String nu1=request.getParameter("n1"); String
        nu2=request.getParameter("n2"); int f1 =
        Integer.parseInt(nu1);
        int f2 = Integer.parseInt(nu2);%>
        <h1>Addition : <%out.println(f1+f2);%></h1>
    </body>
</html>
```

Output Screenshot :



\

Addition : 23

Program-3

Aim : Write down the program in which display the error by common file for all general pages

Code :

Index.jsp

```
<%@page contentType="text/html" pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
    <head>
      <meta                          http-equiv="Content-Type"
content="text/html; charset=UTF-8">
       <title>JSP Page</title>
    </head>
    <body>
      <a href="PageDirectiveMethod.jsp">Click here to demostrate pagedirective
method</a>
    </body>
</html>
```

PageDirectiveMethod.jsp

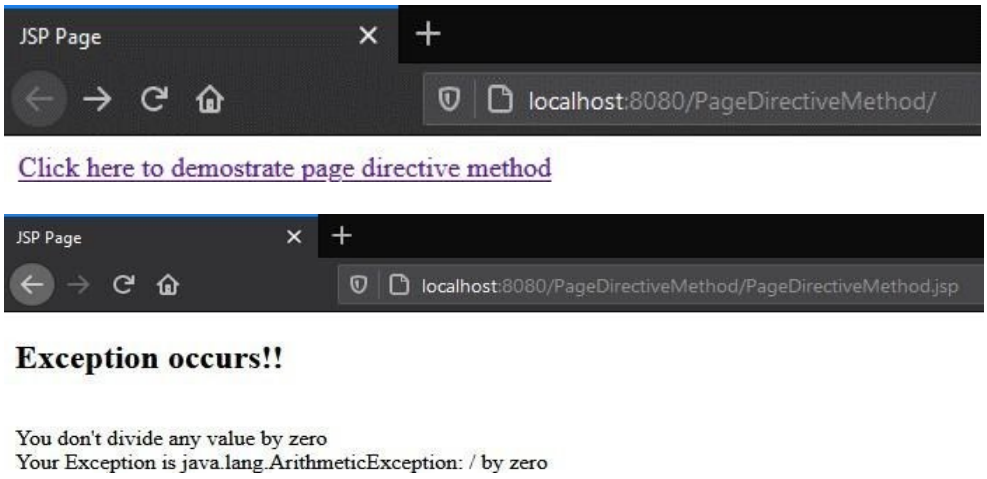
```
<%@page contentType="text/html" pageEncoding="UTF-8"%>
<%@page errorPage="MyErrorPage.jsp"%>
<!DOCTYPE html>

<html>
<head>

      <meta                          http-equiv="Content-Type"
content="text/html; charset=UTF-8">
       <title>JSP Page</title>
    </head>
    <body>
      <%int i = 20/0; %>
    </body>
</html>
```

MyErrorPage.jsp

```
<%@page contentType="text/html" pageEncoding="UTF-8"%>
```

```
<%@page isErrorPage="true"%>
<!DOCTYPE html>
<html>
    <head>
      <meta                          http-equiv="Content-Type"
content="text/html; charset=UTF-8">
      <title>JSP Page</title>
    </head>
    <body>
      <h2>Exception      occures!!</h2><br>You dont divide
      any value by zero<br>
      <%out.println("Your Exception is "+exception);%>
    </body>
</html>
```

Output Screenshot :



Program-4

Aim : Perform Database Access through JSP.

Code :

Index.jsp

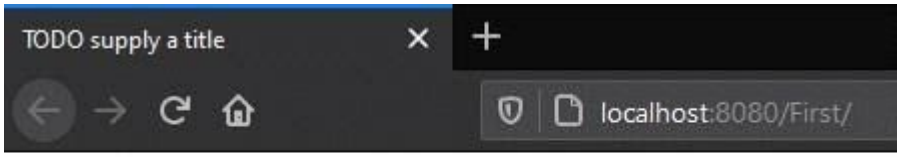
```
<html>
    <head>
        <title>TODO supply a title</title>
        <meta charset="UTF-8">
       <meta name="viewport" content="width=device-width, initial-scale=1.0">
    </head>
    <body>
        <form action ="first.jsp" >
            <input type="submit" value="SUBMIT">
        </form>
    </body>
</html>
```

First.jsp

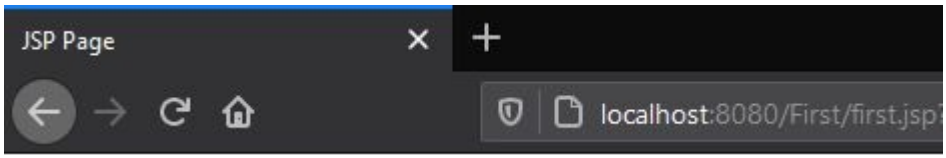
```
<%@page contentType="text/html" pageEncoding="UTF-8"%>
<%@page import="java.sql.*"%>
<!DOCTYPE html>
<html>
    <head>
        <meta                              http-equiv="Content-Type"
content="text/html; charset=UTF-8">
        <title>JSP Page</title>
    </head>
    <body>
        <h2>JDBC Connection</h2>
        <%
            Class.forName("com.mysql.jdbc.Driver");Connection con
            =
 DriverManager.getConnection("jdbc:mysql://localhost:3306/advanced_java","root","");
out.println("connection  Establised");

            Statement st = con.createStatement();
```

```
%>

    </body>
</html>
```

Output Screenshot :



SUBMIT



JDBC Connection

connection Establised

Program-5

Aim : Write down the program For testing the include action tag in jsp

Code :

Index.jsp

```
<html>
 <head>
 <title>TODO supply a title</title>
 <meta charset="UTF-8">
 <meta name="viewport" content="width=device-width,initialscale=1.0">
</head>

<body>

 <a href="first.jsp">Click to visit First JSP page </a>
 </body>
</html>
```

First.jsp

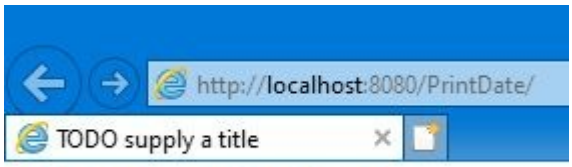
```
<%@page contentType="text/html" pageEncoding="UTF-8"%>
<html>
 <head>
<meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
 <title>JSP Page</title>
 </head>
 <body>
 <h2>firstjsp.jsp code starts here</h2>

 <jsp:include page="printdate.jsp" />
 <h2>end section of firstjsp.jsp page</h2>
 </body>
</html>
```

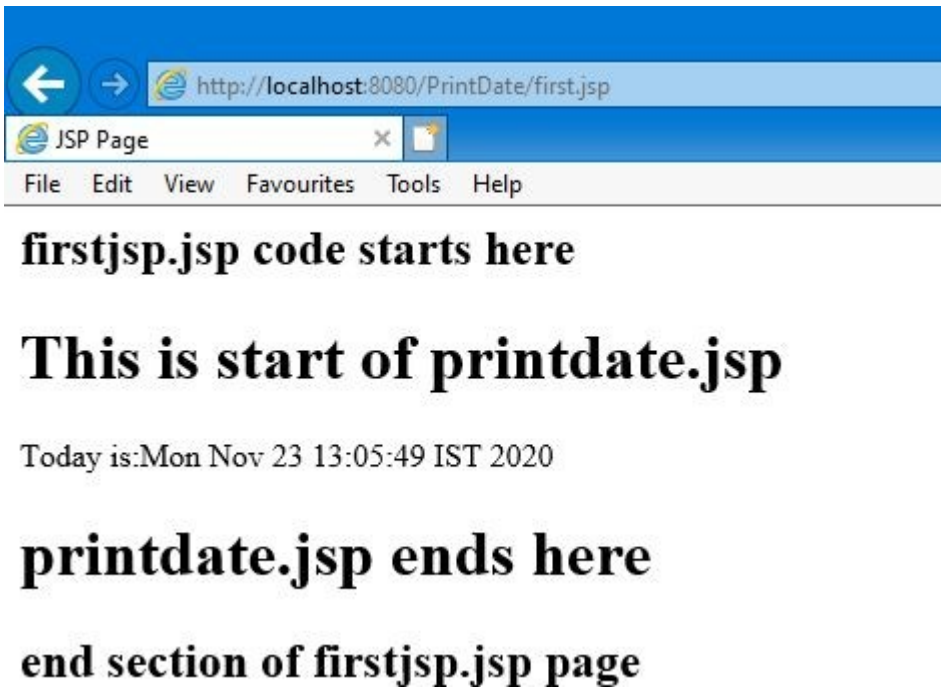
printdate.jsp

```
<%@page contentType="text/html" pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
```

```
<head>
<meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
<title>JSP Page</title>
</head>

<h1>This is start of printdate.jsp</h1>

<% out.print("Today is:"+java.util.Calendar.getInstance().getTime());
%>

<h1>printdate.jsp ends here</h1>

</html>
```

Output Screenshot :





Program-6

Aim : Write down the Program for testing the forward action tag

Code :

Index.jsp

```
<html>
  <head>
<title>TODO supply a title</title>

<meta charset="UTF-8">

 <meta name="viewport" content="width=device-width,initialscale=1.0">
 </head>
 <body>
 <a href="first.jsp">Click to visit First JSP page </a>
 </body>
</html>
```

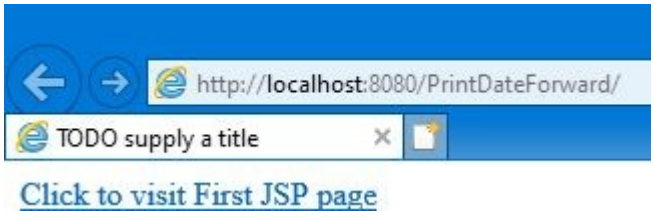
First.jsp

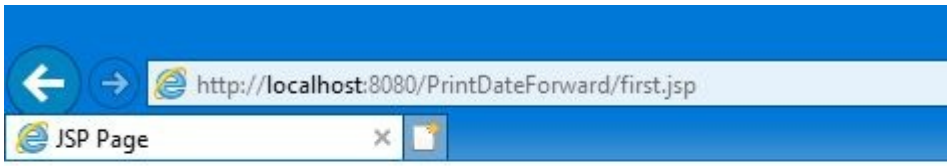
```
<%@page contentType="text/html" pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>

   <head>
     <meta                          http-equiv="Content-Type"
content="text/html; charset=UTF-8">
      <title>JSP Page</title>
   </head>
   <body>
      <h1>This is First.jsp </h1>
      <jsp:forward page="printdateforward.jsp">
         <jsp:param name="uname" value="admin" />
      </jsp:forward>

   </body>
</html>
```

Printdateforward.jsp

```
<%@page contentType="text/html" pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
 <head>
 <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
  <title>JSP Page</title>
  </head>
<body>

<h1> This is printdateforward.jsp </h1>

  <%= "Welcome " + request.getParameter("uname") %>
 <% out.print("Today is:"+java.util.Calendar.getInstance().getTime());
 %>


  </body>
</html>
```

Output Screenshot :





This is printdateforward.jsp

Welcome admin Today is:Mon Nov 23 13:27:30 IST 2020

Program-7

Aim : Write a program which demonstrate the core tag of JSTL.

Code :

Index.jsp

```
<%@taglib prefix="c" uri="http://java.sun.com/jsp/jstl/core" %>
<%@page contentType="text/html" pageEncoding="UTF-8"%>

<!DOCTYPE html>
<html>
    <head>
      <meta                              http-equiv="Content-Type"
content="text/html; charset=UTF-8">
<title>JSP Page</title>

    </head>
    <body>

       <c:set var="marks" value="66"/>
       <c:out value="${marks}"/>
       <c:if test="${marks<85}">first class</c:if>

       <c:choose>
          <c:when test="${marks>=70}">first class</c:when>
          <c:when test="${marks>=60}">second class</c:when>
          <c:otherwise>please try hard...!!</c:otherwise></c:choose>

    </body>
</html>
```

Output Screenshot :

66 first class
second class

Program-8

Aim : Write down a program which demonstrates the Format tag of JSTL.

Code :

Index.jsp

```
<html>
   <head>
      <title>JSTL Format Tag</title>
   </head>
   <body>
      <h4>parseNumber:</h4>
   <c:set var="Amount" value="123.456" />
   <fmt:parseNumber var="j" type="number" value="${Amount}" />
   <p><i>Amount is:</i> <c:out value="${j}" /></p>

 <fmt:parseNumber var="j" integerOnly="true" type="number"
            value="${Amount}" />

<p><i>Amount is:</i> <c:out value="${j}" /></p> <br>

 <a href="timezone.jsp"> Timezone tag</a> <br>
 <h4>Formatting of Number:</h4>
 <c:set var="Amount" value="1234.567" />
 <p> Formatted Number-1:
 <fmt:formatNumber value="${Amount}" type="currency" /></p>
 <p>Formatted Number-2:
 <fmt:formatNumber type="number" groupingUsed="true"
            value="${Amount}" /></p>
 <p>Formatted Number-3:
 <fmt:formatNumber type="number" maxIntegerDigits="3"
            value="${Amount}" /></p>
 <p>Formatted Number-4:
 <fmt:formatNumber type="number" maxFractionDigits="6"
            value="${Amount}" /></p>
 <p>Formatted Number-5:
 <fmt:formatNumber type="percent" maxIntegerDigits="4"
            value="${Amount}" /></p>
```

```
<p>Formatted Number-6:
<fmt:formatNumber type="number" pattern="###.###$"value="${Amount}"
        /></p> <br>
<h4>Parsed Date:</h4>
<c:set var="date" value="14-10-2020" />
<fmt:parseDate value="${date}" var="parsedDate" pattern="dd-MM-yyyy" />
<p><c:out value="${parsedDate}" /></p> <br>
<h4>Bundle: </h4>
<fmt:bundle basename="com.javatpoint.Simple" prefix="colour.">
   <fmt:message key="Violet"/><br/>
   <fmt:message key="Indigo"/><br/>
   <fmt:message key="Blue"/><br/>

</fmt:bundle>
<h4>Set TimeZone:</h4>
<c:set var="date" value="<%=new java.util.Date()%>" />
<p><b>Date and Time in Indian Standard Time(IST) Zone:</b>

<fmt:formatDate value="${date}"
        type="both" timeStyle="long" dateStyle="long" /></p>
<fmt:setTimeZone value="GMT-10" />
 <p><b>Date and Time in GMT-10 time Zone: </b><fmt:formatDatevalue="${date}"
   type="both" timeStyle="long" dateStyle="long" /></p> <br>
<h4>setBundle: </h4>
<fmt:setBundle basename="com.javatpoint.Main" var="lang"/>
<fmt:message key="vegetable.Potato" bundle="${lang}"/><br/>
<fmt:message key="vegetable.Tomato" bundle="${lang}"/><br/>
<fmt:message key="vegetable.Carrot" bundle="${lang}"/><br/>
<h4>Message:</h4>
<fmt:setBundle basename="com.javatpoint.Message" var="lang"/>
<fmt:message key="vegetable.Potato" bundle="${lang}"/><br/>
<fmt:message key="vegetable.Tomato" bundle="${lang}"/><br/>
<fmt:message key="vegetable.Carrot" bundle="${lang}"/><br/>
<h4>Format Date:</h4>

<h5>Different Formats of the Date</h5>
<c:set var="Date" value="<%=new java.util.Date()%>" />
<p>
   Formatted Time :
<fmt:formatDate type="time" value="${Date}" />
</p>

<p>
```

```
    Formatted Date :
 <fmt:formatDate type="date" value="${Date}" />
 </p>
 <p>
    Formatted Date and Time :
 <fmt:formatDate type="both" value="${Date}" />
 </p>
 <p>
    Formatted Date and Time in short style :
<fmt:formatDate        type="both"    dateStyle="short"       timeStyle="short"
value="${Date}" />

 </p>
 <p>
    Formatted Date and Time in medium style :
 <fmt:formatDate type="both" dateStyle="medium"
 timeStyle="medium"
            value="${Date}" />
 </p>
 <p>
    Formatted Date and Time in long style :
  <fmt:formatDate       type="both"       dateStyle="long"      timeStyle="long"
            value="${Date}" />
 </p>
 </body>
</html>
```

Output Screenshot :

parseNumber:

Amount is:

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Amount is:

Timezone tag

Formatting of Number:

Formatted Number-1:

Formatted Number-2:

Formatted Number-3:

Formatted Number-4:

Formatted Number-5:

Formatted Number-6:

Parsed Date:

Formatting of Number:

Formatted Number-1:

Formatted Number-2:

Formatted Number-3:

Formatted Number-4:

Formatted Number-5:

Formatted Number-6:

Parsed Date:

Bundle:

Set TimeZone:

Date and Time in Indian Standard Time(IST) Zone:

Date and Time in GMT-10 time Zone:

setBundle:

Message:

Format Date:

Different Formats of the Date

Formatted Time :

Formatted Date :

Formatted Date and Time :

Formatted Date and Time in short style :

Formatted Date and Time in medium style :

Program-9

Aim : Write down a program which demonstrates the Function tag of JSTL.

Code :

contains

function string is found!!FUNCTION string is

found!!

containsIgnoreCase

function string is found.....

FUNCTION string is found....

endsWith

String ends with JSP programming String ends

with to

escapeXml

With escapeXml() Function: string-1 :

${fn:escapeXml(string1)}

string-2 :

${fn:escapeXml(string2)}
Without escapeXml() Function:string-1 : ${string1}

string-2 : ${string2}

IndexOf

Index-1 : ${fn:indexOf(string1, "first")} Index-2 :

${fn:indexOf(string2,"second")}

Trim

String-1 Length is :

${fn:length(str1)} String-2 Lengthis :

${fn:length(str2)} Final string is

: ${str2}

StartsWith
The string starts with "The": ${fn:startsWith(msg, 'The')}
The string starts with "Example": ${fn:startsWith(msg, 'Example')}
Split

String-3 :

${str3} String-5

: ${str5}

toLowerCase
${fn:toLowerCase("HELLO,")} ${fn:toLowerCase(string)}
toUpperCase
Hi, This is ${fn:toUpperCase(site)} programmed by

${fn:toUpperCase(author)}
substring
${fn:substring(string, 5, 30)}
SubstringAfter
${fn:substringAfter(string, "XYZ")}
SubstringBefore
${fn:substringBefore(string, "ZYX")}

Length
MARWADIUNIVERSITY FACULTY OF TECHNOLOGY
DEPARTMENT OF COMPUTER ENGINEERING 31 Length of the

String-1 is: ${fn:length(str1)}
Length of the String-2 is: ${fn:length(str2)}
Replace ${fn:replace(author, "Mohil", "Hepi")} ${fn:replace(string,"pqr", "Hello")}

Output Screenshot :

Program-10

Aim : Write a program which demonstrates the SQL tag of JSTL.

Code :

Index.html

```
<!DOCTYPE html>
<html>
  <head>
<title>TODO supply a title</title>

<meta charset="UTF-8">

<meta name="viewport" content="width=device-width, initial-scale=1.0">
</head>
<body>
<a href="sql2.jsp">click the sql page</a>
</body>
</html>Sql2.jsp

<%@page contentType="text/html" pageEncoding="UTF-8"%>
<!DOCTYPE html>
<%@taglib uri="http://java.sun.com/jsp/jstl/core" prefix="c" %>
<%@taglib uri="http://java.sun.com/jsp/jstl/sql" prefix="sql" %>
<html>
    <head>
      <meta                              http-equiv="Content-Type"
content="text/html; charset=UTF-8">
       <title>JSP Page</title>
    </head>
    <body>
    <sql:setDataSource          var="db"          driver="com.mysql.jdbc.Driver"
                url="jdbc:mysql://localhost:3308/mu" user="root"
password=""/>
    <sql:query        dataSource="${db}"        var="rs">SELECT *
       from students;
    </sql:query>
    <table border="2" width="50%">
       <tr>
          <th>RollNo</th>
          <th>First Name</th>
```

```
            <th>City</th>
          </tr>
          <c:forEach var="table" items="${rs.rows}">
            <tr>
              <td><c:out value="${table.RollNo}"/></td>
            <td><c:out value="${table.S_name}"/></td>
<td><c:out value="${table.city}"/></td>

            </tr>
          </c:forEach>
      </table>
      <a href="updatesql.jsp">Click to visit update table </a><br>
      <a href="deletesql.jsp">Click to visit delete table </a><br>
 </body>
 </html>
```

Updated.jsp

```
<%@page contentType="text/html" pageEncoding="UTF-8"%>
<!DOCTYPE html>
<%@taglib uri="http://java.sun.com/jsp/jstl/core" prefix="c" %>
<%@taglib uri="http://java.sun.com/jsp/jstl/sql" prefix="sql" %>
<html>
    <head>
      <meta                              http-equiv="Content-Type"
content="text/html; charset=UTF-8">
      <title>JSP Page</title>
    </head>
    <body>
    <sql:setDataSource          var="db"          driver="com.mysql.jdbc.Driver"
                url="jdbc:mysql://localhost:3308/mu" user="root"
password=""/>
    <sql:update dataSource="${db}" var="count">
      INSERT INTO students VALUES (200,'ram', 'ayodhya');
    </sql:update>
    <sql:query        dataSource="${db}"        var="rs">SELECT *
      from students;
    </sql:query>
    <table border="2" width="50%">
      <tr>
        <th>RollNo</th>
        <th>First Name</th>
        <th>City</th>
```

```
        </tr>
<c:forEach var="table" items="${rs.rows}">

          <tr>
            <td><c:out value="${table.RollNo}"/></td>
          <td><c:out value="${table.S_name}"/></td>
          <td><c:out value="${table.city}"/></td>
          </tr>
        </c:forEach>
    </table>
    MARWADIUNIVERSITY FACULTY OF
    TECHNOLOGY
    DEPARTMENT OF COMPUTER ENGINEERING38
 </body>
 </html> Deletedsql.jsp


 <%@page contentType="text/html" pageEncoding="UTF-8"%>
 <!DOCTYPE html>
 <%@taglib uri="http://java.sun.com/jsp/jstl/core" prefix="c" %>
 <%@taglib uri="http://java.sun.com/jsp/jstl/sql" prefix="sql" %>
 <html>
    <head>
      <meta                              http-equiv="Content-Type"
 content="text/html; charset=UTF-8">
      <title>JSP Page</title>
    </head>
    <body>
      <sql:setDataSource        var="db"        driver="com.mysql.jdbc.Driver"
                  url="jdbc:mysql://localhost:3308/mu" user="root"
 password=""/>
      <c:set var="RollNo" value="6"/>
      <sql:update dataSource="${db}" var="count">DELETE FROM
        students WHERE RollNo = ?
        <sql:param value="${RollNo}" />
</sql:update>

      <sql:query      dataSource="${db}"      var="rs">SELECT *
        from students;
      </sql:query>
      <table border="2" width="50%">
        <tr>
```

```
            <th>RollNo</th>
            <th>First Name</th>
            <th>City</th>
          </tr>
          <c:forEach var="table" items="${rs.rows}">
            <tr>
              <td><c:out value="${table.RollNo}"/></td>
              <td><c:out value="${table.S_name}"/></td>
              <td><c:out value="${table.city}"/></td>
            </tr>
          </c:forEach>
        </table>
    </body>
</html>
```

Output Screenshot :

click the sql page

Program-11

Aim : Write down a program which demonstrates the XML tag of JSTL.

Code :

Index.jsp

```
<%@page contentType="text/html" pageEncoding="UTF-8"%>
<%@taglib prefix="x" uri="http://java.sun.com/jsp/jstl/xml" %>
<!DOCTYPE html>
<html>
    <head>
      <meta                              http-equiv="Content-Type"
content="text/html; charset=UTF-8">
<title>JSP Page</title>

    </head>
    <body>
      <h2>vegetable Information</h2>
      <c:set var="vegetable">
      <vegetables>
        <vegetable>
          <name>Onion</name>
          <price>100</price>
        </vegetable>
        <vegetable>
          <name>Potato</name>
          <price>40</price>
        </vegetable>
      </vegetables>
    </c:set>
    <x:parse xml="${vegetable}" var="output"/>
    <b>Name of the vegetable is : </b>
    <x:out select="$output/vegetables/vegetable[1]/name"/><br>
    <b>Price of the potato : </b>
    <x:out select="$output/vegetables/vegetable[2]/price"/><br>
</body>
</html>
```

Output Screenshot :

Vegetable Information:

Name of the vegetable is: onion
Price of the Potato is: 30/kg

Program-12

Aim : Write down a program which demonstrates the Tag Handler with appropriate output

Code :

Index.jsp

```
<%@page contentType="text/html" pageEncoding="UTF-8"%>
<%@taglib uri="/WEB-INF/tlds/mytags.tld" prefix="m"%>
<!DOCTYPE html>
<html>
    <head>
      <meta                              http-equiv="Content-Type"
content="text/html; charset=UTF-8">
       <title>JSP Page</title>
    </head>
    <body>
    <m:simple/>
</body>
</html>
```

MyTagHandler.java

```
package com;
import java.io.IOException;
import javax.servlet.jsp.JspException;
import javax.servlet.jsp.tagext.SimpleTagSupport;

public class MyTagHandler extends SimpleTagSupport {@Override
public void doTag() throws IOException, JspException {
getJspContext().getOut().append("Hello from a simple tag handler!!");
}
```

Output Screenshot :

Hello from a simple tag handler!!