

Practical No 1

1. Implement the following Simple Servlet Applications.

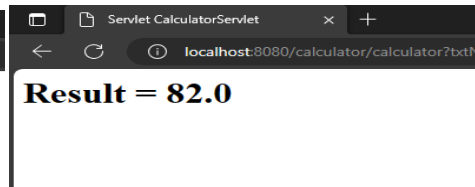
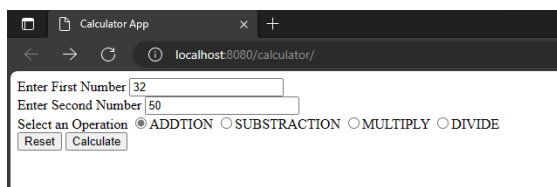
1a. Create a simple calculator application using servlet.

index.html

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

CalculatorServlet.java

```
package mypack;
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 CalculatorServlet extends HttpServlet {
    public void doGet(HttpServletRequest request, HttpServletResponse response)
        throws ServletException, IOException {
        response.setContentType("text/html;charset=UTF-8");
        PrintWriter out = response.getWriter();
        out.println("<html><head><title>Servlet CalculatorServlet</title></head><body>");
        double n1 = Double.parseDouble(request.getParameter("txtN1"));
        double n2 = Double.parseDouble(request.getParameter("txtN2"));
        double result =0;
        String opr=request.getParameter("opr");
        if(opr.equals("+")) result=n1+n2;
        if(opr.equals("-")) result=n1-n2;
        if(opr.equals("*")) result=n1*n2;
        if(opr.equals("/")) result=n1/n2;
        out.println("<h1> Result = "+result);
        out.println("</body></html>");} }
```



1b. Create a servlet for a login page. If the username and password are correct then it says message “Hello <username>” else a message “login failed”

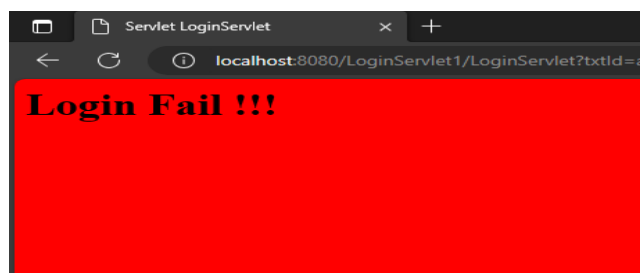
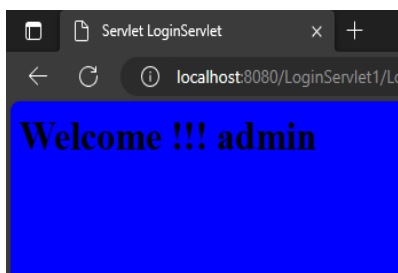
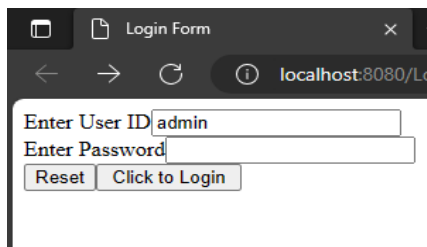
index.html

```
<html><head><title>Login Form</title></head>
<form action="LoginServlet" >
    Enter User ID<input type="text" name="txtId"><br>
    Enter Password<input type="password" name="txtPass"><br>
<input type="reset"><input type="submit" value=" Click to Login " ></form></html>
```

LoginServlet.java

```
package mypack;
import java.io.*;
import javax.servlet.ServletException;
import javax.servlet.http.*;

public class LoginServlet extends HttpServlet {
    public void doGet(HttpServletRequest request, HttpServletResponse response)
        throws ServletException, IOException {
        response.setContentType("text/html;charset=UTF-8");
        PrintWriter out = response.getWriter();
        out.println("<html><head><title>Servlet LoginServlet</title></head>");
        String uname = request.getParameter("txtId");
        String upass = request.getParameter("txtPass");
        if(uname.equals("admin") && upass.equals("12345")){
            out.println("<body bgcolor=blue >");
            out.println("<h1> Welcome !!! "+uname+"</h1>");
        }
        else{
            out.println("<body bgcolor=red >");out.println("<h1> Login Fail !!! </h1>");
        }
        out.println("</body></html>");}}}
```



2. Create a registration servlet in Java using JDBC. Accept the details such as Username, Password, Email, and Country from the user using HTML Form and store the registration details in the database.

index.html

```
<html><head><title>Registration Page</title></head>
<body>
<form action="RegisterServlet" >
<H1>Welcome to Registration page</H1>
    Enter User Name      <input type="text" name="txtUid"><br>
    Enter Password       <input type="password" name="txtPass"><br>
    Enter Email          <input type="text" name="txtEmail" ><br>
    Enter Country        <input type="text" name="txtCon" ><br>
<input type="reset" ><input type="submit" value="REGISTER" >
</form>
</body>
</html>
```

RegisterServlet.java

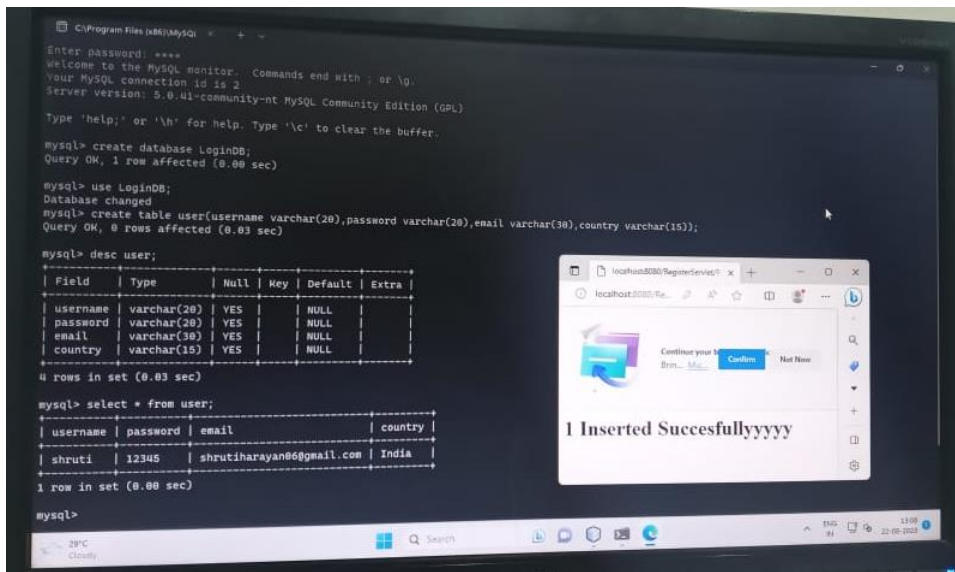
```
package mypack;
import java.io.*;
import java.sql.*;
import javax.servlet.*;
import javax.servlet.http.*;

public class RegisterServlet extends HttpServlet {
    public void doGet(HttpServletRequest request, HttpServletResponse response)
        throws ServletException, IOException {
        response.setContentType("text/html;charset=UTF-8");
        PrintWriter out = response.getWriter();
        String id = request.getParameter("txtUid");
        String ps = request.getParameter("txtPass");
        String em = request.getParameter("txtEmail");
        String co = request.getParameter("txtCon");
        try{
            Class.forName("com.mysql.jdbc.Driver");
            Connection con =DriverManager.getConnection("jdbc:mysql://localhost:3306/logindb");
            PreparedStatement pst = con.prepareStatement("insert into user values(?,?,?,?)");
            pst.setString(1,id);
            pst.setString(2,ps);
            pst.setString(3,em);
            pst.setString(4,co);
            int row = pst.executeUpdate();
            out.println("<h1>" +row+ " Inserted Succesfullyyyyy");
        }
```

```

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

```



Practical No : 3

3a. Using Request Dispatcher Interface create a Servlet which will validate the password entered by the user, if the user has entered "Servlet" as password, then he will be forwarded to Welcome Servlet else the user will stay on the index.html page and an error message will be displayed.

index.html

```
<html><head><title>Login Form</title></head>
<form action="LoginServlet" >
    Enter User ID<input type="text" name="txtId"><br>
    Enter Password<input type="password" name="txtPass"><br>
<input type="reset">
<input type="submit" value=" Click to Login " >
</form>
</html>
```

LoginServlet.java

```
package mypack;
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;
import javax.servlet.RequestDispatcher;
public class LoginServlet extends HttpServlet {
    public void doGet(HttpServletRequest request, HttpServletResponse response)throws
        ServletException, IOException {
        response.setContentType("text/html;charset=UTF-8");
        PrintWriter out = response.getWriter();
        out.println("<html><head>");
        out.println("<title>Servlet LoginServlet</title></head>");
        String uname = request.getParameter("txtId");
        String upass = request.getParameter("txtPass");
        if(uname.equals("admin") && upass.equals("servlet")){
            RequestDispatcher rd = request.getRequestDispatcher("WelcomeServlet");
            rd.forward(request, response);
        }
        else{
            out.println("<body bgcolor=red >");
            out.println("<h1> Login Fail !!! </h1>");
            RequestDispatcher rd = request.getRequestDispatcher("index.html");
            rd.include(request, response);
        }
        out.println("</body>");
        out.println("</html>");}
```

WelcomeServlet.java

```
package mypack;
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;
import javax.servlet.RequestDispatcher;
public class LoginServlet extends HttpServlet {
public void doGet(HttpServletRequest request, HttpServletResponse response)throws
    ServletException, IOException {
    response.setContentType("text/html;charset=UTF-8");
    PrintWriter out = response.getWriter();
    out.println("<html><head>");
    out.println("<title>Servlet LoginServlet</title></head>");
    String uname = request.getParameter("txtId");
    String upass = request.getParameter("txtPass");
    if(uname.equals("admin") && upass.equals("servlet")){
    RequestDispatcher rd = request.getRequestDispatcher("WelcomeServlet");
    rd.forward(request, response);
    }
    else{
    out.println("<body bgcolor=red >");
    out.println("<h1> Login Fail !!! </h1>");
    RequestDispatcher rd = request.getRequestDispatcher("index.html");
    rd.include(request, response);
    }
    out.println("</body>");
    out.println("</html>");
} }
```



3b. Create a servlet that uses Cookies to store the number of times a user has visited servlet.

index.html

```
<html>
<head><title>Cookie Demo</title></head>
<body>
<form action="Page1" >
    Enter Your Name <input type="text" name="txtName"><br>
<input type="submit" value="~~~ Click to Enter ~~~">
</form>
</body>
</html>
```

Page1.java

```
package mypack;
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;
import javax.servlet.http.Cookie;
public class Page1 extends HttpServlet {
    public void doGet(HttpServletRequest request, HttpServletResponse response)throws
        ServletException, IOException {
        response.setContentType("text/html;charset=UTF-8");
        PrintWriter out = response.getWriter();
        out.println("<html><head><title>Page1</title></head>");out.println("<body
        bgcolor=pink >");
        String uname = request.getParameter("txtName");
        out.println("<h1>~~~ Welcome "+uname+"</h1>");
        Cookie ck1 = new Cookie("username", uname); Cookie
        ck2 = new Cookie("visit","1"); response.addCookie(ck1);
        response.addCookie(ck2);
        out.println("<h1><a href=Page2 >Click to visit Page 2 </a></h1>");
        out.println("</body>");
        out.println("</html>");
    }
}
```

Page2.java

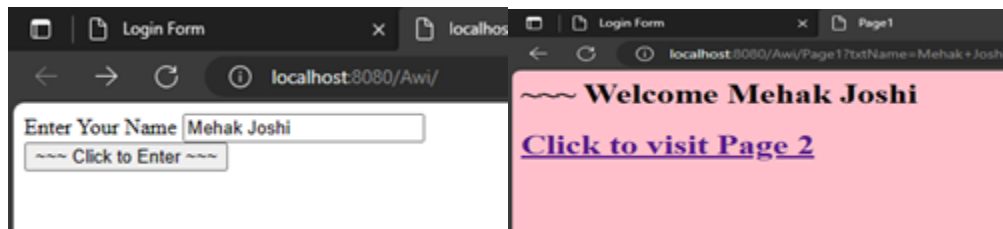
```
package mypack;
import java.io.*;
import javax.servlet.ServletException;
import javax.servlet.http.*;
public class Page2 extends HttpServlet {
```

```

public void doGet(HttpServletRequest request, HttpServletResponse response)throws
ServletException, IOException {
response.setContentType("text/html;charset=UTF-8");
PrintWriter out = response.getWriter();
out.println("<html><head><title>Page2</title></head>");out.println("<body
bgcolor=yellow >");
Cookie [] ck = request.getCookies();
for(int i=0;i<ck.length;i++){
if(ck[i].getName().equals("visit")){
int count = Integer.parseInt(ck[i].getValue())+1;
out.println("<h1>Visit No : "+count+"</h1>"); ck[i]
= new Cookie("visit",count+"");
response.addCookie(ck[i]);
}
else {
out.println(ck[i].getName()+ " = "+ck[i].getValue());
out.println("<h1><a href=Page3 >Click to visit Page 3 </a></h1>");
out.println("<h1><a href=Page4 >Click to visit Page 4 </a></h1>");
out.println("<h1><a href=Page5 >Click to visit Page 5 </a></h1>");
out.println("</body>");
out.println("</html>");
} }
}

```

Repeat the code from Page2.java for Page3.java, Page4.java and Page5.java with relevant changes.



Practical No :4

4. Create a servlet demonstrating the use of session creation and destruction. Also check whether the user has visited this page first time or has visited earlier also using sessions.

index.html

```
<html>
<head><title>Session Demo</title></head>
<form action="Page1" method="get" >
    Enter User ID <input type="text" name="txtName"><br>
<input type="reset" ><input type="submit" >
</form>
</html>
```

Page1.java

```
package mypack;
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;
import javax.servlet.http.HttpSession;

public class Page1 extends HttpServlet {
    public void doGet(HttpServletRequest request, HttpServletResponse response) throws
        ServletException, IOException {
        response.setContentType("text/html;charset=UTF-8");
        PrintWriter out = response.getWriter();
        out.println("<html><head><title>Servlet Page1</title></head>");

        HttpSession hs = request.getSession(true);
        if(hs.isNew()){
            out.println("<body bgcolor=yellow>");
            String name = request.getParameter("txtName");
            hs.setAttribute("uname", name);
            hs.setAttribute("visit", "1");
            out.println("<h1>Welcome First Time</h1>");
        }
        else{
            out.println("<h1>Welcome Again</h1>");
            int visit = Integer.parseInt((String)hs.getAttribute("visit"))+1;
            out.println("<h1>You Visited "+visit+"Times</h1>");
            hs.setAttribute("visit", ""+visit);
        }
        out.println("<h1>Your Session ID "+hs.getId()+"</h1>");
        out.println("<h1>You Logged in at "+new java.util.Date(hs.getCreationTime())+"</h1>");
        out.println("<h1><a href=Page2>Click for Page 2 </a></h1>");
        out.println("<h1><a href=Page3>Click for Page 3 </a></h1>");
    }
}
```

```

        out.println("<h1><a href=Page4>Click for Page 4 </a></h1>"); out.println("<h1><a href=LogoutServlet>Click to Terminate Session </a></h1>");out.println("</body>");
        out.println("</html>");
    }
}

```

Page2.java

```

package mypack;
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;
import javax.servlet.http.HttpSession;
public class Page2 extends HttpServlet {
    public void doGet(HttpServletRequest request, HttpServletResponse response)throws
        ServletException, IOException {
        response.setContentType("text/html;charset=UTF-8");
        PrintWriter out = response.getWriter();
        out.println("<html><head><title>Servlet Page2</title></head>");

        HttpSession hs = request.getSession(false);
        out.println("<h1>Welcome Again on Page No. 2</h1>");
        int visit = Integer.parseInt((String)hs.getAttribute("visit"))+1;
        out.println("<h1>You Visited "+visit+"Times</h1>");
        hs.setAttribute("visit", ""+visit);

        out.println("<h1>Your Session ID "+hs.getId()+"</h1>");
        out.println("<h1>You Logged in at "+new java.util.Date(hs.getCreationTime())+"</h1>");
        out.println("<h1><a href=Page1>Click for Page 1 </a></h1>");
        out.println("<h1><a href=Page3>Click for Page 3 </a></h1>"); out.println("<h1><a href=Page4>Click for Page 4 </a></h1>"); out.println("<h1><a href=LogoutServlet>Click for Terminate Session </a></h1>");out.println("</body>");
        out.println("</html>");
    }
}

```

Repeat the code from Page2.java in Page3.java and Page4.java with relevant changes.

LogoutServlet.java

```

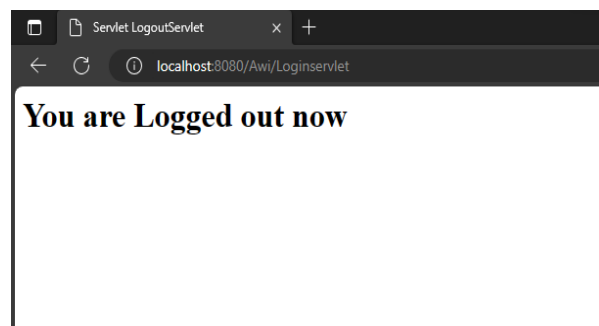
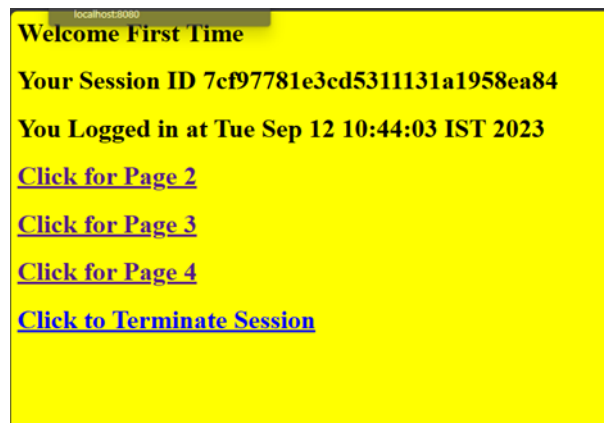
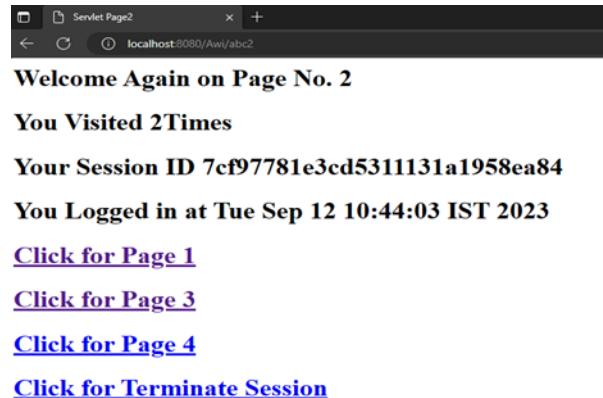
package mypack;
import java.io.IOException;
import java.io.PrintWriter;
import javax.servlet.ServletException;

```

```

import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest; import
javax.servlet.http.HttpServletResponse; public class
LogoutServlet extends HttpServlet {
public void doGet(HttpServletRequest request, HttpServletResponse response)throws
    ServletException, IOException {
    response.setContentType("text/html;charset=UTF-8");
    PrintWriter out = response.getWriter();
    out.println("<html><head><title>Servlet LogoutServlet</title></head>");
    out.println("<body>");
    javax.servlet.http.HttpSession hs = request.getSession();if(hs !=
    null) hs.invalidate();
    out.println("<h1>You are Logged out now.....</h1>");
    out.println("</body>");
    out.println("</html>"); }}

```



PRACTICAL NO:5

5a. Create a Servlet application to upload and download a file.

~~~~~ index.html ~~~~~

```
<html>
  <body>
    <form action="FileUploadServlet" method="post" enctype="multipart/form-data">
      Select File to Upload:<input type="file" name="file" id="file">
      Destination <input type="text" value="/tmp" name="destination">
      <br>
      <input type="submit" value="Upload file" name="upload" id="upload">
    </form>
  </body>
</html>
```

~~~~~ FileUploadServlet.java ~~~~~

```
package fileservletapp;

import java.io.*;
import javax.servlet.*;
import javax.servlet.annotation.MultipartConfig;
import javax.servlet.http.*;
@MultipartConfig
public class FileUploadServlet extends HttpServlet {
    @Override
    public void doPost(HttpServletRequest req, HttpServletResponse res) throws ServletException,
    IOException
    {
        res.setContentType("text/html");
        PrintWriter out = res.getWriter();
        String path=req.getParameter("destination");
        Part filePart=req.getPart("file");
        String filename=filePart.getSubmittedFileName().toString();
        out.print("<br><br><hr> file name:" +filename);
        OutputStream os=null;
        InputStream is=null;
        try {
            os=new FileOutputStream(new File(path+File.separator+filename));
            is=filePart.getInputStream();
            int read=0;

            while ((read = is.read()) != -1){
                os.write(read);
            }
            out.println("<br>file uploaded sucessfully...!!!");
        }
        catch(FileNotFoundException e) {out.print(e);}
    }
}
```

}
}

~~~~~ **index.html** ~~~~~

```
<html>
  <head>
    <title>File Download Page</title>
  </head>
  <body>
    <h1>File Download Application</h1>
    Click <a href="DownloadServlet?filename=SampleChapter.pdf">Sample Chapter</a>
    <br/><br/>
    Click <a href="DownloadServlet?filename=TOC.pdf">Table Of Contents</a>
  </body>
</html>
```

~~~~~ **DownloadServlet.java** ~~~~~

```
package filedownloadapp;

import java.io.IOException;
import java.io.InputStream;
import java.io.PrintWriter;
import javax.servlet.ServletContext;
import javax.servlet.ServletException;
import javax.servlet.ServletOutputStream;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;

public class DownloadServlet extends HttpServlet {
    public void doGet(HttpServletRequest request, HttpServletResponse response)
throws ServletException, IOException {
    response.setContentType("APPLICATION/OCTET-STREAM");String
filename = request.getParameter("filename"); ServletContext context =
getServletContext();

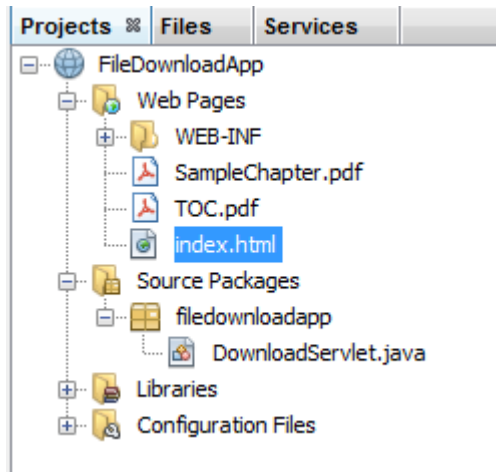
        InputStream is = context.getResourceAsStream("/") + filename);
        //ServletOutputStream out = response.getOutputStream(); // any of the two works
        PrintWriter out=response.getWriter();
        response.setHeader("Content-Disposition","attachment; filename=\"\" + filename + "\"");
```

//if comment this statement then it will ask you about the editor with which you want to open the file

```
int i;

while ((i=is.read()) != -1) {
    out.write(i);
}
is.close();
out.close();
}

}
```



5b. Develop Simple Servlet Question Answer Application using Database.

```
create database qadb;
use qadb;
create table quiz (qno varchar(5) PRIMARY KEY,question varchar(100), op1 varchar(50), op2
varchar(50), op3 varchar(50), op4 varchar(50), ans varchar(50))
insert into quiz values('001','What is the capital of India??','New
Delhi','Kolkata','Chennai','Mumbai','New Delhi');
insert into quiz values('002','Who was the First President of India??','Dr. Rajendra Prasad','Dr. S.
Radhakrishnan','Ram Nath Kovind','V. V. Giri','Dr. Rajendra Prasad');
insert into quiz values('003','What is ORM','Object Ratio Mean','Object Rotation Measure','Object
Relation Mapping','Oracle Request Management','Object Relation Mapping');
insert into quiz values('004','Unit of Energy is ____','Dozon','Kilo Meter ','Joul','Hertz','Joul')
insert into quiz values('005',' --- is the smallest memory unit.','bit','byte','Kilo Byte','Giga Byte','bit')
```

index.html

```
<html><head><title>Quiz Application</title></head>
<body>
<h1>Welcome to Quiz Servlet </h1>
<h1><a href="QuizServlet" >CLICK TO START QUIZ</a></h1>
</body>
</html>
```

QuizServlet.java

```
package mypack;

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

public class QuizServlet extends HttpServlet {
    public void doGet(HttpServletRequest request, HttpServletResponse response)
        throws ServletException, IOException {
        response.setContentType("text/html;charset=UTF-8");
        PrintWriter out = response.getWriter();
        out.println("<form action=ShowResult >");
        try {
            Class.forName("com.mysql.jdbc.Driver");
            Connection con =
                DriverManager.getConnection("jdbc:mysql://localhost:3306/qadb","root","root");
            Statement stmt = con.createStatement();
            ResultSet res = stmt.executeQuery("select * from quiz");
            out.println("<table border=1 >");
            int qno=0;
            while(res.next()){
                qno++;
                out.println("<tr><td>" + res.getString(1) + "</td>");
                out.println("<td>" + res.getString(2) + "</td></tr>");
                out.println("<tr><td><input type=radio name="+qno+"
                value="+res.getString(3)+"></td><td>" + res.getString(3) + "</td></tr>");
                out.println("<tr><td><input type=radio name="+qno+"
                value="+res.getString(4)+"></td><td>" + res.getString(4) + "</td></tr>");
                out.println("<tr><td><input type=radio name="+qno+"
                value="+res.getString(5)+"></td><td>" + res.getString(5) + "</td></tr>");
                out.println("<tr><td><input type=radio name="+qno+"
                value="+res.getString(6)+"></td><td>" + res.getString(6) + "</td></tr>");
            }
        } catch (Exception e) { out.println(e); }
        out.println("</table>");
        out.println("<input type=reset >");
    }
}
```



```

out.println("<input type=submit value=SUBMIT >");
out.println("</form>");    } }

```

.....ShowResult.java.....

```

package mypack;
import java.io.*;
import java.sql.*;
import javax.servlet.*;
import javax.servlet.http.*;

public class ShowResult extends HttpServlet {
    public void doGet(HttpServletRequest request, HttpServletResponse response)
        throws ServletException, IOException {
        response.setContentType("text/html;charset=UTF-8");
        PrintWriter out = response.getWriter();
        try {
            Class.forName("com.mysql.jdbc.Driver");
            Connection con = DriverManager.getConnection("jdbc:mysql://localhost:3306/qadb","root","root");
            Statement stmt = con.createStatement();
            ResultSet res = stmt.executeQuery("select ans from quiz");
            int count =0, qno=0;
            while(res.next()){
                if(res.getString(1).equals(request.getParameter(""+(++qno))))
                { count++;
                  out.println("<h1>Correct </h1>");
                }
                else {
                    out.println("<h1>Incorrect </h1>");
                }
            }
            out.println("<h1>Your Score is "+count+" </h1>");
        } catch (Exception e) {out.println(e);} } }

```

OUTPUT:

| | |
|----------------------------------|-----------|
| 001 | 1000+2000 |
| <input checked="" type="radio"/> | 3000 |
| <input type="radio"/> | 4000 |
| <input type="radio"/> | 5000 |
| <input type="radio"/> | 6000 |
| 002 | 3000-2000 |
| <input checked="" type="radio"/> | 1000 |
| <input type="radio"/> | 2000 |
| <input type="radio"/> | 8000 |
| <input type="radio"/> | 1500 |
| 003 | 300-200 |
| <input type="radio"/> | 100 |
| <input type="radio"/> | 2000 |
| <input type="radio"/> | 8000 |
| <input type="radio"/> | 1500 |
| 004 | 30*20 |
| <input checked="" type="radio"/> | 600 |
| <input type="radio"/> | 2000 |
| <input type="radio"/> | 8000 |
| <input type="radio"/> | 1500 |
| 005 | 3*2 |
| <input checked="" type="radio"/> | 6 |
| <input type="radio"/> | 2000 |
| <input type="radio"/> | 8000 |
| <input type="radio"/> | 1500 |

Reset SUBMIT

5c. Create simple Servlet application to demonstrate Non-Blocking Read Operation.

```
<html>
<head>
<title>Non Blocking IO</title>
<meta charset="UTF-8">
<meta http-equiv="Refresh" content="0; URL=NonBlockingServlet">
</head>
<body>
</body>
</html>
```

```
..... NonBlockingServlet.java .....
package nonblkapp;

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

public class NonBlockingServlet extends HttpServlet {
    protected void service(HttpServletRequest request, HttpServletResponse response)
        throws ServletException, IOException {
        response.setContentType("text/html;charset=UTF-8");
        try (PrintWriter out = response.getWriter()) {

            out.println("<h1>FileReader</h1>");
            String filename="/WEB-INF/booklist.txt";
            ServletContext c=getServletContext();
            InputStream in=c.getResourceAsStream(filename);
            String
path="http://" + request.getServerName() + ":" + request.getServerPort() + request.getContextPath() + "/ReadingNonBlockingServlet";
            URL url=new URL(path);
            HttpURLConnection conn=(HttpURLConnection)url.openConnection();
            conn.setChunkedStreamingMode(2);
            conn.setDoOutput(true);
            conn.connect();
            if(in!=null)
            {
                InputStreamReader inr=new InputStreamReader(in);
                BufferedReader br = new BufferedReader(inr);
                String text="";
                System.out.println("Reading started... ");
                BufferedWriter bw=new BufferedWriter(new
OutputStreamWriter(conn.getOutputStream()));
                while((text=br.readLine())!=null){
```

```

        out.print(text+"<br>");

try{ Thread.sleep(1000);
out.flush();

    }
    catch(InterruptedException ex){}
}out.print("reading completed. ..");
    bw.flush();
    bw.close();

    }
}
}
}

```

.....ReadingListener.java

```

package nonblkapp;
import java.io.IOException;
import java.util.logging.Level;
import java.util.logging.Logger;
import javax.servlet.AsyncContext;
import javax.servlet.ReadListener;
import javax.servlet.ServletInputStream;

public class ReadingListener implements ReadListener
{
    private ServletInputStream input = null;
    private AsyncContext ac = null;

    ReadingListener(ServletInputStream in, AsyncContext c) {
        input = in;
        ac = c;
    }
    @Override
    public void onDataAvailable() throws IOException {
    }
    public void onAllDataRead() throws IOException {
        ac.complete();
    }
    public void onError(final Throwable t) {
        ac.complete();
        t.printStackTrace();
    }
}

```

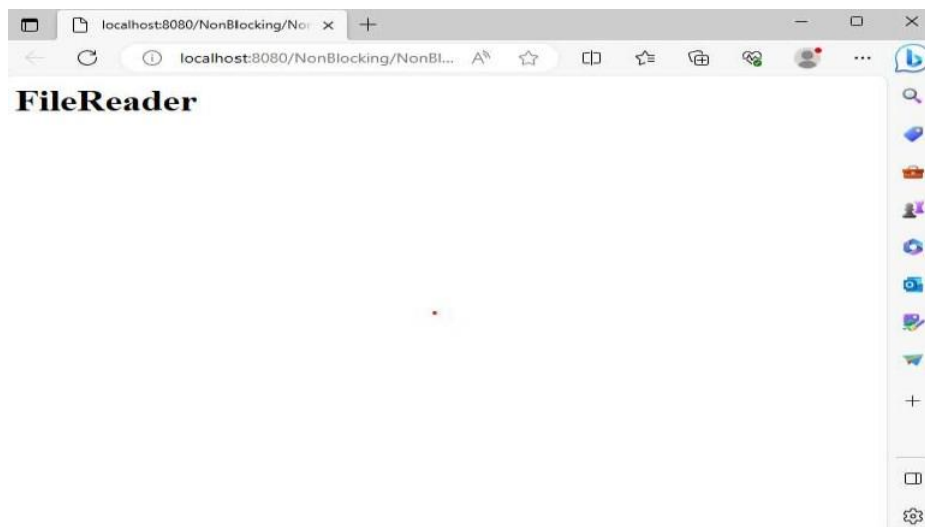
.....ReadingNonBlockingServlet.java

```

import java.io.IOException;
import java.io.PrintWriter;
import javax.servlet.AsyncContext;
import javax.servlet.ServletException;
import javax.servlet.ServletInputStream;
import javax.servlet.annotation.WebServlet;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
/**
 *
 * @author Beena
 */
@WebServlet (name = "ReadingNonBlockingServlet", urlPatterns =
{"/ReadingNonBlockingServlet"},asyncSupported = true )
public class ReadingNonBlockingServlet extends HttpServlet {
@Override
protected void service(HttpServletRequest request, HttpServletResponse response)
throws ServletException, IOException {
response.setContentType("text/html");
AsyncContext ac = request.startAsync();
ServletInputStream in=request.getInputStream();
in.setReadListener(new ReadingListener(in,ac));
}}

```

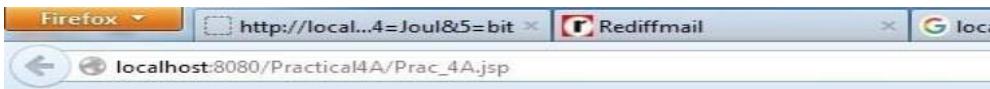
OUTPUT :



PRACTICAL NO: 6

6a. Develop a simple JSP application to display values obtained from the use of intrinsic objects of various types.

```
<%@page contentType="text/html" pageEncoding="UTF-8"%>
<html><head><title>JSP Page</title></head>
<body>
<h1>Use of Intrinsic Objects in JSP</h1>
<h1>Request Object </h1>
    Query String <%=request.getQueryString() %><br>
    Context Path <%=request.getContextPath() %><br>
    Remote Host <%=request.getRemoteHost() %><br>
<h1>Response Object </h1>
    Character Encoding Type <%=response.getCharacterEncoding() %><br>
    Content Type <%=response.getContentType() %><br>
    Locale <%=response.getLocale() %><br>
<h1>Session Object </h1>
    ID <%=session.getId() %><br>
    Creation Time <%=new java.util.Date(session.getCreationTime()) %><br>
    Last Access Time<%=new java.util.Date(session.getLastAccessedTime()) %><br>
</body>
</html>
```



Use of Intrinsic Objects in JSP

Request Object

Query String null
Context Path /Practical4A
Remote Host 0:0:0:0:0:0:1

Response Object

Character Encoding Type UTF-8
Content Type text/html; charset=UTF-8
Locale en_US

Session Object

ID 39a6dd44e151027609e21c8b80c6
Creation Time Thu Jul 19 23:03:19 IST 2018
Last Access Time Thu Jul 19 23:09:20 IST 2018

6b. Develop a simple JSP application to pass values from one page to another with validations. (Name-txt, age-txt, hobbies-checkbox, email-txt, gender-radio button).

index.html

```
<html><head><title>User Information Paage</title>
</head>
<body>
<form action="Validate.jsp">
    Enter Your Name<input type="text" name="name" ><br>
    Enter Your Age<input type="text" name="age" ><br>
    Select Hobbies
<input type="checkbox" name="hob" value="Singing">Singing
<input type="checkbox" name="hob" value="Reading">Reading Books
<input type="checkbox" name="hob" value="Football">Playing Football<br>
    Enter E-mail<input type="text" name="email" ><br>
    Select Gender
<input type="radio" name="gender" value="male">Male
<input type="radio" name="gender" value="female">Female
<input type="radio" name="gender" value="other">Other<br>
<input type="hidden" name="error" value="">
<input type="submit" value="Submit Form">
</form>
</body>
</html>
```

.....Validate.jsp.....

```
<%@page contentType="text/html" pageEncoding="UTF-8" import="mypack.*" %>
<html><head><title>JSP Page</title></head>
<body>
<h1>Validation Page</h1>

<jsp:useBean id="obj" scope="request"
    class="mypack.CheckerBean" >
<jsp:setProperty name="obj" property="*" />
</jsp:useBean>

<%if (obj.validate())
{ %>
<jsp:forward page="successful.jsp"/>
<% }
else { %>
<jsp:include page="index.html"/>
<% } %>
<%=obj.getError() %>
</body></html>
```

CheckerBean.java

```
package mypack;

public class CheckerBean {
    private String name, age, hob, email, gender, error;
    public CheckerBean(){error="";}
    public void setName(String n){name=n;}
    public void setAge(String a){age=a;}
    public void setHob(String h){hob=h;}
    public void setEmail(String e){email=e;}
    public void setGender(String g){gender=g;}
    public void setError(String e){error=e;}
    public String getName(){return name;}
    public String getAge(){return age;}
    public String getHob(){return hob;}
    public String getEmail(){return email;}
    public String getGender(){return gender;}
    public String getError(){return error;}
    public boolean validate(){
        boolean res=true;
        if(name.trim().equals("")) {error+="<br>Enter First Name";res=false;}
        if(age.length() > 2 )
            {error+="<br>Age Invalid";res=false;}

        return res;
    }
}
```

OUTPUT:

Firefox - Rediffmail - How To Display Text when a Ch...

localhost:8080/Practica4B/

Enter Your Name

Enter Your Age

Select Hobbies ☒ Singing ☒ Reading Books ☐ Playing Football

Enter E-mail

Select Gender ☐ Male ☒ Female ☐ Other

Firefox - Rediffmail - How To Display Text when a Ch...

localhost:8080/Practica4B/Validate.jsp?name=*****&age=111&hob=Singing&hob=F...

Validation Page

Enter Your Name

Enter Your Age

Select Hobbies ☐ Singing ☐ Reading Books ☐ Playing Football

Enter E-mail

Select Gender ☐ Male ☐ Female ☐ Other

Enter First Name
Age Invalid

6c. Create a registration and login JSP application to register and authenticate the user based on username and password using JDBC.

```
.....Register.html.....
<html><head><title>New User Registration Page</title></head>
<body>
<form action="Register.jsp" >
<h1> New User Registration Page</h1>
    Enter User Name <input type="text" name="txtName" ><br>
    Enter Password <input type="password" name="txtPass1" ><br>
    Re-Enter Password<input type="password" name="txtPass2" ><br>
    Enter Email<input type="text" name="txtEmail" ><br>
    Enter Country Name <input type="text" name="txtCon" ><br>
<input type="reset" ><input type="submit" value="REGISTER" >
</form>
</body>
</html>
```

```
.....Register.jsp.....
<%@page contentType="text/html" import="java.sql.*"%>
<html><body>
<h1>Registration JSP Page</h1>
<%
    String  uname=request.getParameter("txtName");
    String  pass1 = request.getParameter("txtPass1");
    String  pass2 = request.getParameter("txtPass2");
    String  email = request.getParameter("txtEmail");
    String  ctry = request.getParameter("txtCon");
    if(pass1.equals(pass2)){
        try{
            Class.forName("com.mysql.jdbc.Driver");
            Connection con = DriverManager.getConnection("jdbc:mysql://localhost:3306/logindb");
            PreparedStatement stmt = con.prepareStatement("insert into user values (?, ?, ?, ?)");
            stmt.setString(1, uname);    stmt.setString(2, pass1);
            stmt.setString(3, email);    stmt.setString(4, ctry);
            int row = stmt.executeUpdate();
            if(row==1) { out.println("Registration Successful"); }
            else {
                out.println("Registration FFFFFAAAIILLLLL !!!!");
                %><jsp:include page="Register.html" ></jsp:include>
<%
            }
        }catch(Exception e){out.println(e);}
    }
    else
    {
        out.println("<h1>Password Mismatch</h1>");
    }
}
```

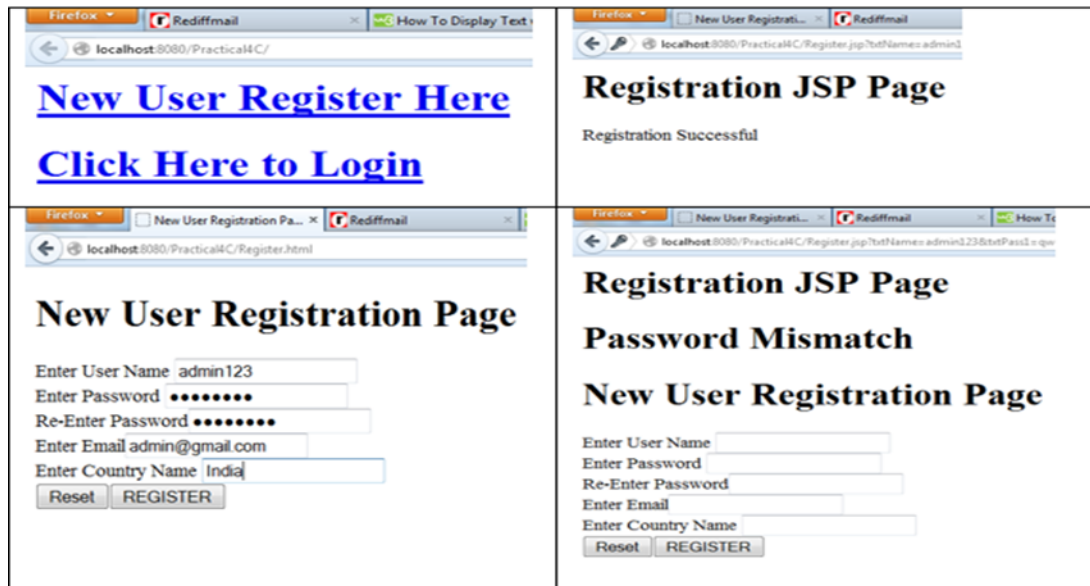


```

%>
<jsp:include page="Register.html" ></jsp:include>
<% }
    %>
</body>
</html>

```

OUTPUT:



```

.....Login.html .....
<html>
<body>
<h1>Login Page</h1>
<form action="Login.jsp" >
    Enter User Name <input type="text" name="txtName" ><br>
    Enter Password <input type="password" name="txtPass" ><br>
<input type="reset" ><input type="submit" value="~~~LOGIN~~" >
</form>
</body>
</html>

```

.....Login.jsp

```
<%@page contentType="text/html" import="java.sql.*"%>
<html><body>
<h1>Registration JSP Page</h1>
<%
    String uname=request.getParameter("txtName");
    String pass = request.getParameter("txtPass");
    try{
    Class.forName("com.mysql.jdbc.Driver");
    Connection con = DriverManager.getConnection("jdbc:mysql://localhost:3306/logindb");
    PreparedStatement stmt = con.prepareStatement("select password from user where username=?");
    stmt.setString(1, uname);
    ResultSet rs = stmt.executeQuery();
    if(rs.next()){
        if(pass.equals(rs.getString(1)))
        {
            out.println("<h1>~~~ LOGIN SUCCESSFULL ~~~ </h1>");
        }
    }
    else{
        out.println("<h1>User Name not exist !!!!!</h1>");
    }
    %>
<jsp:include page="Register.html" ></jsp:include>
<%
    }
    } catch(Exception e){out.println(e);}
    %>
</body></html>
```

PRACTICAL NO : 7

7a. Create an html page with fields, eno, name, age, desg, salary. Now on submit this data to a JSPpage which will update the employee table of database with matching eno.

```
create table emp(empid varchar(10) PRIMARY KEY, ename varchar(50), salary varchar(50),age
varchar(50) )
```

```
insert into emp values('1','aaa','221234','11')
```

```
insert into emp values('2','bbb','334567','22')
```

```
insert into emp values('3','ccc','44454','33')
```

```
insert into emp values('4','ddd','55123','44')
```

```
---- index.html -----
```

```
<html>
```

```
<body>
```

```
<form action="UpdateEmp.jsp" >
```

```
    Enter Employee Number<input type="text" name="txtEno" ><br>
```

```
    Enter Name<input type="text" name="txtName" ><br>
```

```
    Enter age<input type="text" name="txtAge" ><br>
```

```
    Enter Salary<input type="text" name="txtSal" ><br>
```

```
<input type="reset" ><input type="submit">
```

```
</form>
```

```
</body>
```

```
</html>
```

```
.....UpdateEmp.java .....
```

```
<%@page contentType="text/html" import="java.sql.*" %>
```

```
<html><body>
```

```
<h1>Employee Record Update</h1>
```

```
<%
```

```
    String eno=request.getParameter("txtEno");
```

```
    String name=request.getParameter("txtName");
```

```
    String age = request.getParameter("txtAge");
```

```
    String sal = request.getParameter("txtSal");
```

```
    try{
```

```
Class.forName("com.mysql.jdbc.Driver");
```

```
Connection con = DriverManager.getConnection("jdbc:mysql://localhost:3306/empdb");
```

```
PreparedStatement stmt = con.prepareStatement("select * from emp where empid=?");
```

```
stmt.setString(1, eno);
```

```
ResultSet rs = stmt.executeQuery();
```

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

```
    out.println("<h1>~~~ Employee "+name+" Exist ~~~ </h1>");
```

```
    PreparedStatement pst1= con.prepareStatement("update emp set salary=? where empid=?");
```

```
    PreparedStatement pst2= con.prepareStatement("update emp set age=? where empid=?");
```

```
    pst1.setString(1, sal); pst1.setString(2, eno);
```

```
    pst2.setString(1, age); pst2.setString(2, eno);
```

```
    pst1.executeUpdate();    pst2.executeUpdate();
```

```

    }
else{
    out.println("<h1>Employee Record not exist !!!!!</h1>");

    }
    }catch(Exception e){out.println(e);}
%></body></html>

```

OUTPUT:

SELECT * FROM emp LIMIT 1... 11

Max. rows: 100 | Fetched Rows: 5

| # | empid | ename | salary | age |
|---|-------|-------|--------|-----|
| 1 | 1 | aaaa | 12345 | 11 |
| 2 | 2 | bbbb | 2222 | 22 |
| 3 | 3 | cccc | 12121 | 33 |
| 4 | 4 | dddd | 123123 | 44 |
| 5 | 5 | eeee | 12123 | 55 |

SELECT * FROM emp LIMIT 1... 11

Max. rows: 100 | Fetched Rows: 5

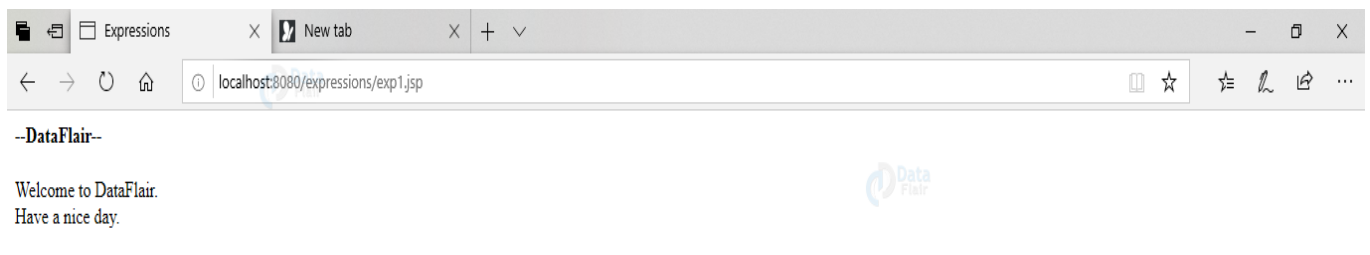
| # | empid | ename | salary | age |
|---|-------|-------|--------|-----|
| 1 | 1 | aaaa | 54321 | 99 |
| 2 | 2 | bbbb | 2222 | 22 |
| 3 | 3 | cccc | 12121 | 33 |
| 4 | 4 | dddd | 123123 | 44 |

7b. Create a JSP page to demonstrate the use of Expression language

exp1.jsp

```
<html>
<head><title>Expressions</title></head>
</head>
<body>
<h4>--DataFlair--</h4>
<%= "Welcome to DataFlair." %><br/>
<%= "Have a nice day." %>
</body>
</html>
```

Output:



Practical NO: 8

8a. Create a Currency Converter application using EJB.

index.html -----

```
<html><head><title>Currency Converter</title></head>
<body>
<form action="CCServlet" >
    Enter Amount <input type="text" name="amt"><br>
    Select Conversion Type
<input type="radio" name="type" value="r2d" checked>Rupees to Dollar
<input type="radio" name="type" value="d2r" >Dollor to Rupees<br>
<input type="reset" ><input type="submit" value="CONVERT" >
</form>
</body>
</html>
```

CCServlet.java -----

```
package mypack;
import java.io.*;
import javax.servlet.*;
import javax.servlet.http.*;
import javax.ejb.EJB;
import mybeans.CCBean;
public class CCServlet extends HttpServlet {
    @EJB CCBean obj;
    public void doGet(HttpServletRequest request, HttpServletResponse response)
        throws ServletException, IOException {
        response.setContentType("text/html;charset=UTF-8");
        PrintWriter out = response.getWriter();
        double amt = Double.parseDouble(request.getParameter("amt"));
        if(request.getParameter("type").equals("r2d"))
        {
            out.println("<h1>"+amt+ " Rupees = "+obj.r2Dollor(amt)+" Dollors</h1>");
        }
        if(request.getParameter("type").equals("d2r"))
        {
            out.println("<h1>"+amt+ " Dollors = "+obj.d2Rupees(amt)+" Rupees</h1>");
        }
    }
}
```

CCBean -----

Create a stateless session bean

package mybeans;

import javax.ejb.Stateless;

@Stateless

```
public class CCBean {  
    public CCBean(){}  
    public double r2Dollor(double r){ return r/65.65; }  
    public double d2Rupees(double d){ return d*65.65; }  
  
}
```

OUTPUT:

The screenshot displays two browser windows. The top window shows the result of a currency conversion: **1000.0 Rupees = 15.23229246001523 Dollors**. The bottom window shows the input form for the conversion. It includes a text input field labeled 'Enter Amount' with the value '1000', a radio button selection for 'Select Conversion Type' with 'Rupees to Dollar' selected, and two buttons: 'Reset' and 'CONVERT'.

localhost:8080/Currency/CCServlet?amt=1000&type=r2d

1000.0 Rupees = 15.23229246001523 Dollors

localhost:8080/Currency/

Enter Amount

Select Conversion Type ☒ Rupees to Dollar ☐ Dollor to Rupees

8b. Develop a Simple Room Reservation System Application Using EJB.

```
Create table roombook(RoomId varchar(4) PRIMARY KEY, RoomType varchar(20), charges
number(5,2), cust varchar(20), mob varchar(20) , status varchar(10))
insert into roombook values('1001','Delux',5000.00,"","Not Booked')
insert into roombook values('1002','Super Delux',7000.00,"","Not Booked')
insert into roombook values('1003','Suit',9500.00,"","Not Booked')
insert into roombook values('2001','Delux',5000.00,"","Not Booked')
insert into roombook values('2002','Super Delux',7000.00,"","Not Booked')
insert into roombook values('2003','Suit',9500.00,"","Not Booked')
```

RoomBook.html

```
<form action="RBServlet" >
  Select a room Type
  <input type="radio" name="txtType" value="Delux">Delux
  <input type="radio" name="txtType" value="Super Delux">Super Delux
  <input type="radio" name="txtType" value="Suit">Suit<br>
  Enter Your Name<input type="text" name="txtCust" ><br>
  Enter Mobile No.<input type="text" name="txtMob" ><br>
  <input type="reset" ><input type="submit" value="Book Room">
</form>
```

RBServlet

```
package mypack;
import java.io.*;
import javax.servlet.*;
import javax.servlet.http.*;
import javax.ejb.EJB;
import mybeans.RRBean;
public class RBServlet extends HttpServlet {
  @EJB RRBean obj;
  public void doGet(HttpServletRequest request, HttpServletResponse response)
  throws ServletException, IOException{
    PrintWriter out=response.getWriter();
    String rt=request.getParameter("txtType");
    String cn=request.getParameter("txtCust");
    String cm=request.getParameter("txtMob");
    String msg = obj.roomBook(rt, cn, cm);
    out.println(msg);
  }
}
```

RRBean.java

```
package mybeans;
import javax.ejb.Stateless;
import java.sql.*;
@Stateless
public class RRBean {
```

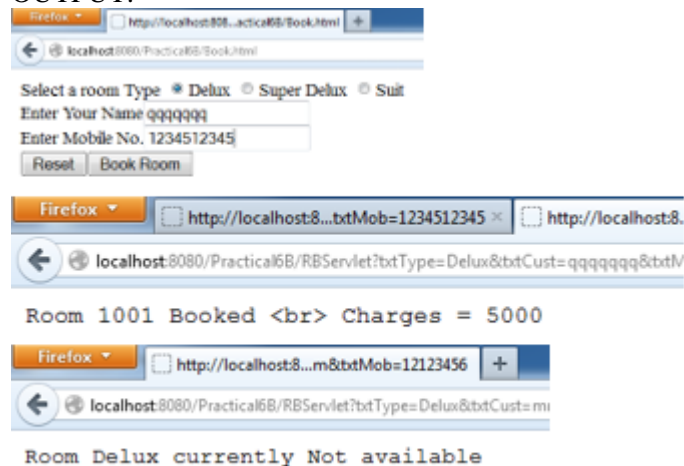


```

public RRBean(){ }
public String roomBook(String rt, String cn, String cm){
String msg="";
try{
Class.forName("com.mysql.jdbc.Driver");
Connection con = DriverManager.getConnection("jdbc:mysql://localhost:3306/rrdb","root","root");
String query="select * from roombook where RoomType=? and status='Not Booked'";
PreparedStatement pst = con.prepareStatement(query);
pst.setString(1,rt);
ResultSet rs= pst.executeQuery();
if(rs.next()){
String rno=rs.getString(1);
PreparedStatement stm1 = con.prepareStatement("update rookbook set cust=? where RoomId=? ");
PreparedStatement stm2 = con.prepareStatement("update rookbook set mobile=? where RoomId=? ");
PreparedStatement stm3 = con.prepareStatement("update rookbook set status=? where RoomId=? ");
stm1.setString(1,cn);      stm1.setString(2,rno);
stm2.setString(1,cm);      stm2.setString(2,rno);
stm3.setString(1, "Booked"); stm3.setString(2,rno);
stm1.executeUpdate();
stm2.executeUpdate();
stm3.executeUpdate();
msg = "Room "+rno+ " Booked <br> Charges = "+rs.getString(3);
}
else
{
msg = "Room "+rt+ " currently Not available";
}
}catch(Exception e){msg=""+"e;}
return msg;}}

```

OUTPUT:



8c. Develop simple shopping cart application using EJB [Stateful Session Bean].

CartBeanLocal.java

```
package cart;

import java.util.List;
import javax.ejb.Local;

@Local
public interface CartBeanLocal {
    public void initialize(String person) throws Exception;
    public void initialize(String person, String id)
        throws Exception;
    public void addBook(String title);
    public void removeBook(String title) throws Exception;
    public List<String> getContents();
    public void remove();
}
```

CartBean.java

~~~~~

```
package cart;

import java.util.ArrayList;
import java.util.List;
import javax.ejb.Remove;
import javax.ejb.Stateful;

@Stateful
public class CartBean implements CartBeanLocal {
    String customerName;
    String customerId;
    List<String> contents;

    public void initialize(String person, String id)
        throws Exception {
        if (person == null) {
            throw new Exception("Null person not allowed.");
        } else {

            customerName = person;
        }

        if ( person=="ABC" && id=="123") {
```

```

        customerId = id;
    } else {
        throw new Exception("Invalid id: " + id);
    }

    contents = new ArrayList<String>();
}

public void addBook(String title) {
    contents.add(title);
}

public void removeBook(String title) throws Exception {
    boolean result = contents.remove(title);
    if (result == false) {
        throw new Exception(title + " not in cart.");
    }
}

public List<String> getContents() {
    return contents;
}

@Remove
public void remove() {
    contents = null;
}
} package testcart;

import cart.CartBeanLocal;
import java.io.*;
import java.util.*;
import java.util.logging.Level;
import java.util.logging.Logger;
import javax.naming.*;
import javax.servlet.*;
import javax.servlet.annotation.WebServlet;
import javax.servlet.http.*;

@WebServlet(name = "CartTestServlet", urlPatterns = {"/CartTestServlet"})
public class CartTestServlet extends HttpServlet {

    CartBeanLocal cartBean = lookupCartBeanLocal();

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

```

```

try{
    cartBean.initialize("ABC", "123");
}catch(Exception e){ }
cartBean.addBook("Java 8 Cookbook");
cartBean.addBook("Enterprise Java 7 ");
cartBean.addBook("Java for Dummies");
cartBean.addBook("Learn Java 8");

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

        List<String> books = cartBean.getContents();for(

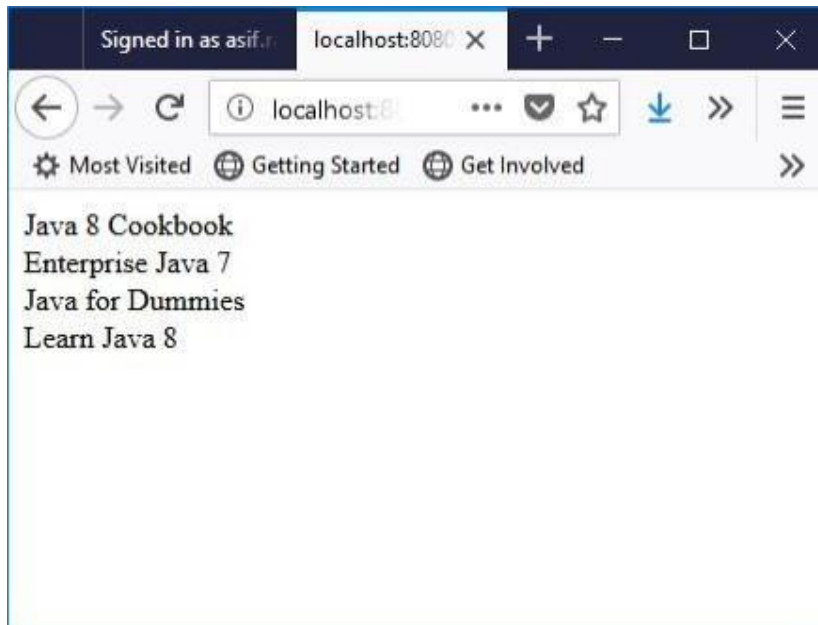
        String s : books)
            out.println(s + "<br />");

        }catch(Exception e){ }
    }
}

private CartBeanLocal lookupCartBeanLocal() {try {
    Context c = new InitialContext();
    return (CartBeanLocal) c.lookup("java:global/EnterpriseApplication1/EnterpriseApplication1-
ejb/CartBean!cart.CartBeanLocal");
} catch (NamingException ne) { Logger.getLogger(getClass().getName()).log(Level.SEVERE,
    "exception caught", ne);throw new RuntimeException(ne);
}
}
}

```

Output:



## Practical No :9

**9a. Develop simple EJB application to demonstrate Servlet Hit count using Singleton Session Beans.**  
**Organization of file in Project Folder**

----- CounterBean.java -----

```
package counter.ejb;
import javax.ejb.Singleton;

@Singleton
public class CounterBean {
    private int hits = 1;

    // Increment and return the number of hits
    public int getHits() {
        return hits++;
    }
}
```

----- Count.java -----

```
package mypack;
import java.io.Serializable;
import javax.ejb.EJB;
import javax.enterprise.context.ConversationScoped;
import javax.inject.Named;
import counter.ejb.CounterBean;

@Named("count")
@ConversationScoped
public class Count implements Serializable {
    @EJB

    private CounterBean counterBean;

    private int hitCount;

    public Count() {
        this.hitCount = 0;
    }

    public int getHitCount() {
        hitCount = counterBean.getHits();
        return hitCount;
    }

    public void setHitCount(int newHits) {
        this.hitCount = newHits;
    }
}
```

## HitCountPage.xhtml

```
<?xml version='1.0' encoding='UTF-8' ?>
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
<html xmlns="http://www.w3.org/1999/xhtml"
      xmlns:h="http://xmlns.jcp.org/jsf/html">
  <h:head>
    <title>Page Hit Counter Using Singleton Session Bean ~~~~ </title>
  </h:head>
  <h:body>
    <h1>Welcome to Hit Count Page</h1>
    Page was hit #{count.hitCount} times
  </h:body>
</html>
```

### Output:



## Welcome to Hit Count Page

Page was hit 4 times

- 7b. Develop simple visitor Statistics application using Message Driven Bean [Stateless Session Bean].
- 7c. Develop simple Marks Entry Application to demonstrate accessing Database using EJB.

<Any application to the best of Teachers assumption >

## 9b. Develop simple visitor Statistics application using Message Driven Bean [Stateless Session Bean]

Step 1:

index.jsp

```
<%@page import="javax.jms.JMSEException"%>
<%@page import="javax.naming.InitialContext"%>
<%@page import="javax.jms.Connection"%>
<%@page import="javax.jms.TextMessage"%>
<%@page import="javax.jms.MessageProducer"%>
<%@page import="javax.jms.Session"%>
<%@page import="javax.jms.Queue"%>
<%@page import="javax.jms.ConnectionFactory"%>
<%@page contentType="text/html" pageEncoding="UTF-8"%>
<!DOCTYPE html>
<%!
private static ConnectionFactory connectionFactory;
private static Queue queue;
Connection connection=null;
Session mySession=null;
MessageProducer messageProducer=null;
TextMessage message=null;
%>
<html>
<head>
<meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
<title>JSP Page</title>
</head>
<body>
Welcome to My Home Page
<%
try{
InitialContext ic= new InitialContext();
queue= (Queue)ic.lookup("jms/Queue");
connectionFactory=(ConnectionFactory)ic.lookup("jms/QueueFactory");

connection= connectionFactory.createConnection();
mySession=connection.createSession(false, Session.AUTO_ACKNOWLEDGE);
messageProducer=mySession.createProducer(queue);
message=mySession.createTextMessage();
message.setText(request.getRemoteAddr());
```

```

messageProducer.send(message);
}
catch(JMSEException e)
{
System.out.println("Exception Occoured "+e.toString());
}
%>
</body>
</html>

```

Step2: Create a Database name visitorstat ☐ Create table name ☐ userstat ☐ column names

Firstvisitdt – timestamp

Hostname – varchar 30 Primary Key

Visits – int

Step3: Create a Session Bean named as VisitorStatBean ☐ Select Stateless ☐ package name as ejb, do not select Local / Remote

```

package ejb;
import java.sql.*;
import javax.annotation.PostConstruct;
import javax.annotation.PreDestroy;
import javax.ejb.Stateless;
@Stateless
public class VisitorStatBean {
private Connection conn=null;
private ResultSet rs;
private Statement st=null;
private String query =null;
@PostConstruct
public void connect()
{
try {
Class.forName("com.mysql.jdbc.Driver").newInstance();
conn=DriverManager.getConnection("jdbc:mysql://localhost/visitorstat", "root", "tiger");
}

catch (Exception e) {
System.err.println(e.getMessage());
}
}
@PreDestroy

```



```

public void disconnect()
{
    try {
        conn.close();
    } catch (Exception e) {
        System.err.println(e.getMessage());
    }
}

public void addVisitor(String host)
{
    try {
        st= conn.createStatement();
        query="insert into userstat (hostname,visits) values ('"+host+"','1')";
        st.executeUpdate(query);
    }
    catch (SQLException e)
    {
        try {
            st=conn.createStatement();
            query="update userstat set visits=visits+1 where hostname='"+host+"' ";
            st.executeUpdate(query);

        }
        catch (SQLException ex) {
            System.err.println("Cannot Update"+e.getMessage());
        }
    }
}
}

```

Step 4: Right click on Source Packages ☐ Select New ☐ Other ☐ Enterprise Java Bean  
☐ MessageDrivenBean ☐ EJB Name: BasicMessageBean ☐ Package: ejb ☐ Select  
 Project Destination ☐ Click on Add Button ☐ Destination Name: jms/Queue ☐  
 Destination Type select the option Queue ☐ click on OK ☐ Click on Next ☐ Activation  
 Configuration Properties should be as it is. ☐ Click on Finish

```

package ejb;

import javax.annotation.Resource;
import javax.ejb.ActivationConfigProperty;
import javax.ejb.EJB;
import javax.ejb.MessageDriven;

```

```

import javax.ejb.MessageDrivenContext;
import javax.jms.JMSEException;
import javax.jms.Message;
import javax.jms.MessageListener;
import javax.jms.TextMessage;
@MessageDriven(activationConfig = {
    @ActivationConfigProperty(propertyName = "destinationLookup", propertyValue = "jms/Queue"),
    @ActivationConfigProperty(propertyName = "destinationType", propertyValue =
"javax.jms.Queue")
})
public class BasicMessageBean implements MessageListener {
    @EJB VisitorStatBean vs;
    @Resource
    private MessageDrivenContext mdc;
    public BasicMessageBean() {
    }

    @Override
    public void onMessage(Message message) {
        try {
            if(message instanceof TextMessage){
                TextMessage msg= (TextMessage) message;
                vs.addVisitor(msg.getText());
            }
        }
        catch (JMSEException e) {
            mdc.setRollbackOnly();
        }
    }
}

```

Step 5:

Before deploying and running the application, Glassfish Server setting is required.

Browse the path:

Localhost:4848 on any browser.

Find Resources -> connectors -> Connector Resources double click on Connector

Resources -> click on 'New' Button -> write JNDI name as -> jms/QueryFactory.

Find Admin Object Resources and double click on that -> click on 'New' Button -> write JNDI name as -> jms/Queue.

Output:



**9c. Develop simple Marks Entry Application to demonstrate accessing Database using EJB.**

```
index.jsp
<% @page import="ejb.MarksEntryBean"%>
<% @page import="javax.naming.InitialContext"%>
<% @page contentType="text/html" pageEncoding="UTF-8"%>
<!DOCTYPE html>
<%!
private static MarksEntryBean obj;
public void jspInit()
{
    try
    {
        InitialContext ic=new InitialContext();
        obj=(MarksEntryBean)ic.lookup("java:global/Pract7CMarksApp/MarksEntryBean");
    }
    catch(Exception e)
{
    System.out.println(e);
```

```

    }
}
%>
<%
if(request.getParameter("InsertMarks")!=null)
{
String sname;
int marks1, marks2, marks3;
sname = request.getParameter("sname");
marks1=Integer.parseInt(request.getParameter("m1"));
marks2=Integer.parseInt(request.getParameter("m2"));
marks3=Integer.parseInt(request.getParameter("m3"));
obj.addMarks(sname,marks1,marks2,marks3);
out.print("Marks entered successfully..!!!!");
}
%>
<html>
<head>
<meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
<title>JSP Page</title>
</head>
<body>
<h2>Enter Details</h2>
<form name="result" method="post">
Enter student's name: <input type='text' name="sname" /><br>

Enter subject 1 marks: <input type='text' name="m1" /><br>
Enter subject 2 marks: <input type='text' name="m2" /><br>
Enter subject 3 marks: <input type='text' name="m3" /><br>
<input type='submit' name="InsertMarks" /><br>
</form>
</body>
</html>
package ejb;
import java.sql.*;
import javax.ejb.Stateful;
@Stateful

```

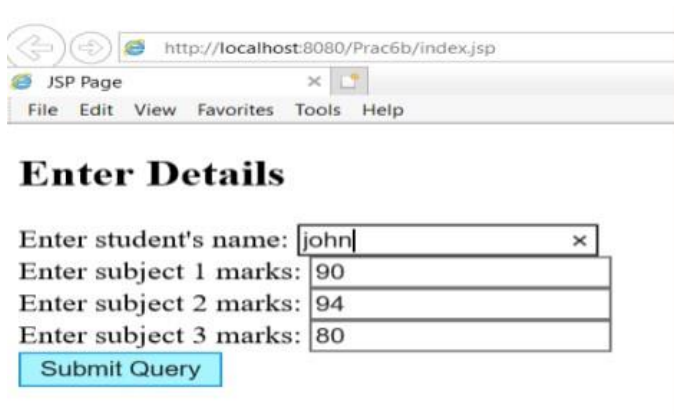
```

public class MarksEntryBean {
    String sname;
    int m1,m2,m3;
    Connection con=null;
    Statement st=null;
    String query="";
    public void addMarks(String sname,int m1,int m2,int m3)
    {
        try
        {
            Class.forName("com.mysql.jdbc.Driver");
            con=DriverManager.getConnection("jdbc:mysql://localhost:3306/marksdb", "root","tiger");

            st=con.createStatement();
            query="insert into marks (sname,marks1,marks2,marks3) values
            ('"+sname+"','"+m1+"','"+m2+"','"+m3+"')";
            st.executeUpdate(query);
            System.out.print("Marks entered sucessfully!!");
        }
        catch(Exception e){System.out.println(e);}
    }
}

```

## Output:



http://localhost:8080/Prac6b/index.jsp

JSP Page

File Edit View Favorites Tools Help

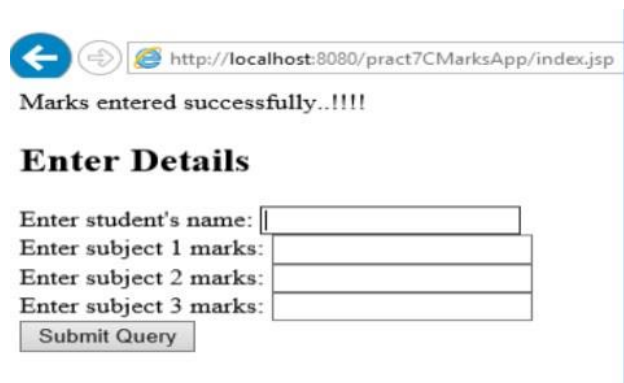
### Enter Details

Enter student's name:

Enter subject 1 marks:

Enter subject 2 marks:

Enter subject 3 marks:



http://localhost:8080/pract7CMarksApp/index.jsp

Marks entered successfully..!!!!

### Enter Details

Enter student's name:

Enter subject 1 marks:

Enter subject 2 marks:

Enter subject 3 marks: