

Ques: Design a Java JSP program to implement verification of a particular user login and display a welcome page.

index.jsp (Login Page)

```
<%@page language="java" contentType="text/html";
    charset=UTF-8"%>
<!DOCTYPE html>
<html>
<head>
    <title>Login Page </title>
</head>
<body>
    <h2>Login </h2>
    <form action="Login.jsp" method="post">
        <label>Username : </label>
        <input type="text" name="username" required>
        <br><br>
        <label>Password : </label>
        <input type="password" name="password"
            required><br><br>
        <input type="Submit" value="Login">
    </form>
</body>
</html>
```

Login.jsp

```
<%@page language="java" contentType="text/html",
    charset=UTF-8"%>
```

```
<%
String username = request.getParameter("username");
String password = request.getParameter("password");
```

```
String validUser = "admin";
```

```
String validPass = "1234";
```

```
if (username != null && password != null &&
    username.equals(validUser) &&
    Password.equals(validPass)) {
```

Prog 1 WAP to create a simple web application to -
using Servlet interface and print hello on
browser.

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

public class HelloServlet implements Servlet {
    public void init(ServletConfig config) throws
        ServletException {
    }

    public void service(ServletRequest request, Servlet-
        Response response) throws ServletException,
        IOException {
        response.setContentType("text/html");
        PrintWriter out = response.getWriter();
        out.println("<html><body>");
        out.println("<h1> Hello, </h1>");
        out.println("</html></body>");
    }

    public ServletConfig getServletConfig() {
        return null;
    }

    public String getServletInfo() {
        return "HelloServlet";
    }

    public void destroy() {
    }
}
```

web.xml

```
<web-apps> <Servlet>
    <Servlet-name> HelloServlet </Servlet-name>
    <Servlet-class> HelloServlet </Servlet-class>
</Servlet>
<Servlet-mapping>
    <Servlet-name> HelloServlet </Servlet-name>
    <url-pattern> /hello </url-pattern>
</Servlet-mapping>
</web-apps>
```

```

    dispatcher.include(request, response);
  }
}

```

(16)

ForwardingServlet.java.

```

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

public class ForwardServlet extends HttpServlet {
    protected void doGet(HttpServletRequest request,
        HttpServletResponse response) throws IOException,
        ServletException {
        request.setAttribute("message", "Request forwarded
            successfully!");
        request.getRequestDispatcher("forward.jsp").
            forward(request, response);
    }
}

```

IncludeServlet.java

```

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

public class IncludeServlet extends HttpServlet {
    protected void doGet(HttpServletRequest request,
        HttpServletResponse response) throws
        IOException, ServletException {
        PrintWriter out = response.getWriter();
        out.println("<h3> This content is included from
            IncludeServlet </h3>");
    }
}

```

forward.jsp

```

<%@page language="java" contentType="text/html;
    %>

<!DOCTYPE html>
<html>

```

Prog 4 Implement a Java Servlet program to 11
Implement a dynamic HTML using Servlet
(user name and password should be accepted
using HTML and displayed using a Servlet)

index.html file

```
<!DOCTYPE html>
<html lang="en">
<head>
  <title>Login Form </title>
</head>
<body>
  <h2>Login Form </h2>
  <form action="Login" method="POST">
    <label for="username">Username: </label> <br>
    <input type="text" id="username" name="username"
      required ><br><br>
    <label for="password">Password: </label> <br>
    <input type="password" name="password"
      required ><br><br>
    <input type="submit" value="Submit">
  </form>
```

LoginServlet.java

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

public class LoginServlet extends HttpServlet {
  @Override
  protected void doPost(HttpServletRequest request,
    HttpServletResponse response) throws ServletException,
    IOException {
    String username = request.getParameter("username");
    String password = request.getParameter("password");
    response.setContentType("text/html");
    PrintWriter out = response.getWriter();
    out.println("<html><body>");
    out.println("<h2>Welcome, " + username + "! </h2>");
    out.println("<p>Your password is : " + password + "</p>");
    out.println("</body></html>");
  }
}
```

Prog 2. WAP to create a simple web application using generic Servlet class and print hello on browser.

```
package com.prog.Servlet;  
import javax.servlet.*;  
import java.io.*;  
public class HelloGenericServlet extends GenericServlet {  
    @Override  
    public void service(ServletRequest request,  
        ServletResponse response) throws ServletException,  
        IOException {  
        response.setContentType("text/html");  
        PrintWriter out = response.getWriter();  
        out.println("<html><body>");  
        out.println("<h1> Hello World </h1>");  
        out.println("</body></html>");  
    }  
}
```

```
}
```

```
web.xml
```

```
<web-app>
```

```
<Servlet>
```

```
<Servlet-name>HelloGenericServlet </Servlet-name>
```

```
<Servlet-class>com.prog.Servlet.HelloGenericServlet </Servlet-class>
```

```
</Servlet>
```

```
<Servlet-mapping>
```

```
<Servlet-name>HelloGenericServlet </Servlet-name>
```

```
<url-pattern>/HelloGenericServlet </url-pattern>
```

```
</Servlet-mapping>
```

```
</web-app>
```

Prog 7. Create Servlet for login page, if the (19)
username and password is correct then
prints message "Hello username" else a message
"login failed".

Login.html

```
<!DOCTYPE html>
<html>
<head>
  <title>Login Page </title>
</head>
<body>
  <h2>Login</h2>
  <form action="LoginServlet" method="post">
    <label for="username">Username: </label>
    <input type="text" id="username" name="username"
      required >
    <br><br>
    <label for="password">Password: </label>
    <input type="password" name="password" required >
    <br><br>
    <input type="Submit" value="Login">
  </form>
</body>
</html>
```

LoginServlet.java

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

public class LoginServlet extends HttpServlet {
  protected void doPost (HttpServletRequest request,
    HttpServletResponse response) throws
    ServletException, IOException {
    response.setContentType("text/html");
    PrintWriter out = response.getWriter();
    String validUsername = "admin";
    String validPassword = "password123";
```

Lab Assignment = 02

8

Prog 3. WAP to create a simple web application using HttpServlet class and print hello on browser.

```
package com.prog.servlet;  
import javax.servlet.*;  
import javax.servlet.http.*;  
import java.io.IOException;  
public class HelloServlet extends HttpServlet {  
    protected void doGet(HttpServletRequest request,  
        HttpServletResponse response) throws  
        ServletException, IOException {  
        response.setContentType("text/html");  
        PrintWriter out = response.getWriter();  
        out.println("<html><body>");  
        out.println("<h1> Hello World !,</h1>");  
        out.println("</body></html>");  
    }  
}
```

web.xml

```
<web-app>  
    <servlet>  
        <servlet-name>HelloServlet</servlet-name>  
        <servlet-class>com.prog.servlet.HelloServlet</servlet-class>  
    </servlet>  
    <servlet-mapping>  
        <servlet-name>HelloServlet</servlet-name>  
        <url-pattern>/hello</url-pattern>  
    </servlet-mapping>  
</web-app>
```

<head>

<title> Forwarded page </title>

</head>

<h2> Forward Example </h2>

<p><%= request.getAttribute("message") %></p>

</body>

</html>

Include.jsp

<%@page language="java" contentType="text/html">

<!DOCTYPE html>

<html>

<head>

<title> Include Example </title>

</head>

<body>

<h2> Include Example </h2>

<jsp:include page="IncludeServlet"/>

</body>

</html>

web.xml

<web-app>

<servlet>

<servlet-name> MainServlet </servlet-name>

<servlet-class> MainServlet </servlet-class>

</servlet>

<servlet-mapping>

<servlet-name> MainServlet </servlet-name>

<url-pattern> /MainServlet </~~servlet~~url-pattern>

</servlet-mapping>

<servlet>

<servlet-name> ForwardedServlet </servlet-name>

<servlet-class> ForwardedServlet </servlet-class>

</servlet>

<servlet-mapping>

<servlet-name> ForwardedServlet </servlet-name>

<~~servlet~~url-pattern> /ForwardedServlet </url-pattern>

index.html

Servlet RequestDispatcher Example

Forward

Include

forward.jsp (If user click on forward)

Forward Example

Request forwarded Successfully!

Include.jsp (If user click on include)

Include Example

This content is included
from from Include
Servlet.

index.html

Login

Username:

Password:

Login Button

LoginServlet.java

Login Failed.

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

response.setContentType("text/html");
PrintWriter out = response.getWriter();
String name = request.getParameter("name");
out.println("<h> Post Request Received </h2>");
out.println("<p> Hello, " + name + "! </p>");
}

}

web.xml

<web-app>

<servlet>

<servlet-name> MyServlet </servlet-name>

<servlet-class> MyServlet </servlet-class>

</servlet>

<servlet-mapping>

<servlet-name> MyServlet </servlet-name>

<url-pattern> /MyServlet </url-pattern>

</servlet-mapping>

</web-app>

(22)

```

Cookie visitCookie = new Cookie("visitCount",
    Integer.toString(visitCount));
visitCookie.setMaxAge(60 * 60 * 24 * 30); // store cookie for 30 days
response.addCookie(visitCookie);
out.println("<h1> Welcome to the visit counter Servlet
    </h1>");
out.println("<p> You have visited this page "
    + visitCount + " times. </p>");

out.close();
}
}

```

web.xml

```

<web-app>
  <servlet>
    <servlet-name> visitCounterServlet </servlet-name>
    <servlet-class> VisitCounterServlet </servlet-class>
  </servlet>
  <servlet-mapping>
    <servlet-name> visitCounterServlet </servlet-name>
    <url-pattern> /visitCounterServlet </url-pattern>
  </servlet-mapping>
</web-app>

```

web.xml file

12

```
<web-app>
  <servlet>
    <servlet-name>LoginServlet</servlet-name>
    <servlet-class>LoginServlet</servlet-class>
  </servlet>
  <servlet-mapping>
    <servlet-name>LoginServlet</servlet-name>
    <url-pattern>/login</url-pattern>
  </servlet-mapping>
</web-app>
```

index.html

Click below to track your visits.
[Visit the Servlet](#)

VisitCounterServlet.java (first time)

Welcome to the visit counter Servlet
You have visited this page
1 time.

After Refreshing the page.

Welcome to the visit counter Servlet
You have visited this page
2 times.

Prog 5. WAP to create a simple web application using HttpServlet and demonstrate the concept of Get and Post request method. (13)

Index.html -

```
<!DOCTYPE html>
<html>
<head>
<title>Servlet Example</title>
</head>
<body>
<h2>Get and post Request Example</h2>
<form action="MyServlet" method="GET">
<label>Enter Name (GET Request):</label>
<input type="text" name="name">
<input type="submit" value="Send GET">
</form>
<form action="MyServlet" method="POST">
<label>Enter Name (POST Request):</label>
<input type="text" name="name">
<input type="submit" value="Send POST">
</form>
</body>
</html>
```

MyServlet.java

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

public class MyServlet extends HttpServlet {
    private static final long
    protected void doGet(HttpServletRequest request,
        HttpServletResponse response) throws
        ServletException, IOException {
        response.setContentType("text/html");
        PrintWriter out = response.getWriter();
        String name = request.getParameter("name");
        out.println("<h> GET Request Received</h>");
        out.println("<p> Hello, " + name + "!</p>");
    }
}
```

Prog 6:- WAP to create a simple web application (15)
using HttpServlet and demonstrate the concept
of forward and include method of RequestDispatcher.
index.html

```
<!DOCTYPE html>
<html>
<head>
  <title>RequestDispatcher</title>
</head>
<body>
  <h2>Servlet RequestDispatcher Example</h2>
  <form action = "MainServlet" method = "post">
    <input type = "Submit" name = "action" value =
      "Forward">
    <input type = "Submit" name = "action"
      value = "Include">
  </form>
</body>
</html>
```

MainServlet.java (Handles Request & Dispatches)

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

public class MainServlet extends HttpServlet {
  protected void doPost(HttpServletRequest request,
    HttpServletResponse response) throws IOException,
    ServletException {

    String action = request.getParameter("action");
    if ("Forward".equals(action)) {
      RequestDispatcher dispatcher = request.getRequestDispatcher(
        "ForwardServlet");
      dispatcher.forward(request, response);
    } else if ("Include".equals(action)) {
      RequestDispatcher dispatcher = request.getRequestDispatcher(
        "IncludeServlet");
    }
  }
}
```

</Servlet-mapping>

(78)

<Servlet>

<Servlet-name>IncludeServlet</Servlet-name>

<Servlet-class>IncludeServlet</Servlet-class>

</Servlet>

<Servlet-mapping>

<Servlet-name>IncludeServlet</Servlet-name>

<url-pattern>/IncludeServlet</url-pattern>

</Servlet-mapping>

</web-app>

</Servlet-mapping>

(78)

<Servlet>

<Servlet-name>IncludeServlet</Servlet-name>

<Servlet-class>IncludeServlet</Servlet-class>

</Servlet>

<Servlet-mapping>

<Servlet-name>IncludeServlet</Servlet-name>

<url-pattern>/IncludeServlet</url-pattern>

</Servlet-mapping>

</web-app>

index.html

http://localhost:8080/login.html

Login

Username :

Password :

LoginServlet.java

~~Username : admin~~

Hello, admin!

```

String username = request.getParameter("username");
String password = request.getParameter("password");
if (validUsername.equals(username) &&
    validPassword.equals(password)) {
    out.println("<h1> Hello, " + username + "! </h1>");
} else {
    out.println("<h1> Login Failed </h1>");
}
out.close();
}
}

```

web.xml

```

<web-app>
  <servlet>
    <servlet-name>LoginServlet</servlet-name>
    <servlet-class>LoginServlet</servlet-class>
  </servlet>

  <servlet-mapping>
    <servlet-name>LoginServlet</servlet-name>
    <url-pattern>/LoginServlet</url-pattern>
  </servlet-mapping>
</web-app>

```

Prorgo. Create Servlet that use cookies to store the number of times a user has visited the Servlet. (21)

index.html

```
<!DOCTYPE html>
<html>
<head>
  <title>Visit Counter</title>
</head><body>
  <h2>click below to track your visits </h2>
  <a href = "VisitCounterServlet">Visit the Servlet </a>
</body>
</html>
```

VisitCounterServlet.java

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

public class VisitCounterServlet extends HttpServlet {
  protected void doGet(HttpServletRequest request,
    HttpServletResponse response) throws IOException,
    ServletException {

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

    int VisitCount = 0;
    Cookie[] cookies = request.getCookies();
    if (cookies != null) {
      for (Cookie cookie : cookies) {
        if (cookie.getName().equals("VisitCount"))
          VisitCount = Integer.parseInt(cookie.
            getValue());
      }
    }
    VisitCount++;
  }
}
```

Lab Assignment - 03

23

Prog 1: Write a java program to implement a simple Client Server Application using RMI.

```
RemoteInterface.java
import java.rmi.Remote;
import java.rmi.RemoteException;

public interface RemoteInterface extends Remote {
    String SayHello(String name) throws RemoteException;
}
```

ServerImpl.java

```
import java.rmi.RemoteException;
import java.rmi.server.UnicastRemoteObject;

public class ServerImpl extends UnicastRemoteObject
    implements RemoteInterface {
    protected ServerImpl() throws RemoteException {
        super();
    }
    @Override
    public String SayHello(String name) throws
        RemoteException {
        return "Hello, " + name + "! Welcome to RMI Server";
    }
}
```

Server.java

```
import java.rmi.Naming;
import java.rmi.registry.LocateRegistry;

public class Server {
    public static void main(String[] args) {
        try {
            LocateRegistry.createRegistry(1099);
        }
    }
}
```

Ques 4: Develop a sample web application using MVC design pattern in Struts framework. (30)

HelloForm.java

```
package com.example.form;  
import org.apache.struts.action.ActionForm;  
public class HelloForm extends ActionForm {  
    private String userName;  
    public String getUserName() {  
        return userName;  
    }  
    public void setUserName(String userName) {  
        this.userName = userName;  
    }  
}
```

HelloAction.java

```
package com.example.action;  
import javax.servlet.http.HttpServletRequest;  
import javax.servlet.http.HttpServletResponse;  
import com.example.form.HelloForm;  
import org.apache.struts.action.*;  
public class HelloAction extends Action {  
    public ActionForward execute(ActionMapping  
        mapping, ActionForm form,  
        HttpServletRequest request, HttpServletResponse  
        response) throws Exception {  
        HelloForm helloForm = (HelloForm) form;  
        String userName = helloForm.getUserName();  
        request.setAttribute("message", "Welcome," +  
            userName + "!");  
        return mapping.findForward("success");  
    }  
}
```

96

```

session.setAttribute("user", username);
response.sendRedirect("Welcome.jsp");
} else {
    <script>
        alert("Invalid username or password!");
        window.location.href = "Index.jsp";
    </script>
}
%>

```

Welcome.jsp

```

<%@page language="java" contentType="text/html;"
    charset="UTF-8" pageEncoding="UTF-8"%>
<%
    String user = (String) session.getAttribute("user");
    <%
        String user = (String) session.
        if (user == null) {
            response.sendRedirect("Index.jsp");
        }
    %>
%>
<!DOCTYPE html>
<html>
<head>
    <title> Welcome </title>
</head>
<body>
    <h2> Welcome, <%= user %>! </h2>
    <a href="Logout.jsp">Logout </a>
</body>
</html>

```

(29)

```

public String getCourse() {
    return course;
}
public void setCourse(String course) {
    this.course = course;
}

```

populateStudent.jsp

```

<%@ page import = "beans.StudentBean" %>
<jsp:useBean id = "Student" class = "beans.Student-
    Bean" scope = "request" />
<jsp:setProperty name = "Student" property = "*" />
<jsp:forward page = "displayStudent.jsp" />

```

displayStudent.jsp

```

<%@ page import = "beans.StudentBean" %>
<jsp:useBean id = "Student" class = "beans.StudentBean"
    scope = "request" />

```

```

<html>

```

```

<head>

```

```

    <title> Student Info </title>

```

```

</head>

```

```

<body>

```

```

    <h2> Student Details </h2>

```

```

    <p> Name : <jsp:getProperty name = "Student"
        property = "name" /> </p>

```

```

    <p> Roll No. : <jsp:getProperty name = "Student"
        property = "rollno" /> </p>

```

```

    <p> Course : <jsp:getProperty name = "Student"
        property = "course" /> </p>

```

```

</body>

```

```

</html>

```

`<%@ taglib uri = "http://struts.apache.org/tags-html"
 prefix = "html" %>`

`<html>
 <head><title> Struts MVC Example </title></head>
 <body>
 <h2> Enter your Name </h2>
 <html:form action = "/hello">
 <html:text property = "userName" />
 <html:submit value = "Submit" />
 </html:form>
 </body>
</html>`

Success.jsp

`<%@ page contentType = "text/html; charset = UTF-8" %>
<html>
<head><title> Welcome Page </title></head>
<body>
 <h2> ${message} </h2>
</body>
</html>`

struts-config.xml

`<struts-config>
 <form-beans>
 <form-bean name = "helloForm"
 type = "com.example.form.HelloForm" />
 </form-beans>

 <action-mappings>
 <action path = "/hello"
 type = "com.example.action.HelloAction"
 name = "helloForm"
 scope = "request"
 input = "/index.jsp">`

```
<forward name="Success" path="/success.jsp">
</action>
</action-mappings>
</struts-config>
```

web.xml

```
<web-app>
  <display-name>StrutsApp</display-name>
  <servlet>
    <servlet-name>action</servlet-name>
    <servlet-class>org.apache.struts.action.
      ActionServlet</servlet-class>
    <init-param>
      <param-name>config</param-name>
      <param-value>/WEB-INF/Struts-config.xml
      </param-value>
    </init-param>
    <load-on-startup>1</load-on-startup>
  </servlet>
  <servlet-mapping>
    <servlet-name>action</servlet-name>
    <url-pattern>*.do</url-pattern>
  </servlet-mapping>
  <welcome-file-list>
    <welcome-file>index.jsp</welcome-file>
  </welcome-file-list>
</web-app>
```

Q3:- Design and implement a java jsp program to get student information through a HTML and create a java Bean class. populate Bean and display the same information through another jsp. (30)

Student.html

```
<!DOCTYPE html>
<html>
<head>
<title>Student Form</title>
</head>
<body>
<h2>Enter Student Information</h2>
<form action="populateStudent.jsp" method="post">
Name: <input type="text" name="name"> <br>
Roll No: <input type="text" name="rollno"> <br>
Course: <input type="text" name="course"> <br>
<input type="submit" value="Submit">
</form>
</body>
</html>
```

StudentBean.java

```
package beans;

public class StudentBean {
    private String name;
    private String rollno;
    private String course;

    public String getName() {
        return name;
    }

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

    public String getRollNo() {
        return rollno;
    }

    public void setRollNo(String rollno) {
        this.rollno = rollno;
    }
}
```

logout.jsp

27

```
<% @page language="java" contentType="text/html";  
    charset=UTF-8" pageEncoding="UTF-8"%>  
  
<%  
    session.invalidate();  
    response.sendRedirect("index.jsp");  
%>
```

```

ServerImpl server = new ServerImpl();
Naming.lookup("rmi://localhost/HelloService",
server);
System.out.println("Server is running.");
} catch (Exception e) {
    e.printStackTrace();
}
}

```

Client.java

```

import java.rmi.Naming;
public class Client {
    public static void main(String[] args) {
        try {
            RemoteInterface remotobj = (RemoteInterface)
                Naming.lookup("rmi://localhost/HelloService");
            String response = remotobj.sayHello("Alice");
            System.out.println("Server Response: " + response);
        } catch (Exception e) {
            e.printStackTrace();
        }
    }
}

```