

## Exp 1

```
import java.applet.*;
import java.awt.Graphics;
import java.awt.event.KeyEvent;
import java.awt.event.KeyListener;

public class Exp_001 extends Applet implements KeyListener {String msg="";

    public void init() { addKeyListener(this);
    }

    public void paint(Graphics g) {g.drawString(msg,
        90, 40);
    }

    @Override
    public void keyTyped(KeyEvent e) {char c =
        e.getKeyChar();
        msg = "Key Typed : "+c;repaint();
    }

    @Override
    public void keyPressed(KeyEvent e) {msg = "Key
        Pressed"; repaint();
    }

    @Override
    public void keyReleased(KeyEvent e) {msg = "Key
        Released"; repaint();
    }
}
```

## Exp 2

```
import java.awt.Frame;
import java.awt.Label;
import java.awt.event.MouseEvent;
import java.awt.event.MouseListener;
import java.awt.event.WindowAdapter;
import java.awt.event.WindowEvent;

public class Exp04 implements MouseListener{Label l;
    Exp04(){
        Frame f = new Frame("Mouse Event");
        f.setSize(300,300); f.setLayout(null);
        f.setVisible(true); f.addMouseListener(this);

        l = new Label("Mouse Events");
        l.setBounds(100, 100, 150, 30);f.add(l);

        f.addWindowListener(new WindowAdapter() { public void
            windowClosing(WindowEvent e) {
                f.dispose();
            }
        });
    }
    public static void main(String[] args) {Exp04 obj = new
        Exp04();
    }
    @Override
```

```
public void mouseClicked(MouseEvent e) {  
    l.setText("Mouse Clicked");  
}  
@Override  
public void mousePressed(MouseEvent e) {  
    l.setText("Mouse Pressed");  
}  
@Override  
public void mouseReleased(MouseEvent e) {  
    l.setText("Mouse released");  
}  
@Override  
public void mouseEntered(MouseEvent e) {  
    l.setText("Mouse Entered");  
}  
@Override  
public void mouseExited(MouseEvent e) {  
    l.setText("Mouse Exited");  
}  
}
```

## Exp 3

```
import java.awt.event.ActionEvent;
import java.awt.event.ActionListener;
import javax.swing.JButton;
import javax.swing.JFrame;
import javax.swing.JLabel;
import javax.swing.JTextField;

public class Exp02 implements ActionListener { JTextField
    jtf1,jtf2,jtf3,jtf4,jtf5,jtf6,jtf7;Exp02(){
        JFrame f = new JFrame("Students Results");f.setLayout(null);
        f.setSize(500,500);f.setVisible(true);

        JLabel l1 = new JLabel("Exam Marks Entry");l1.setBounds(175,20,150,30);
        f.add(l1);

        JLabel l2 = new JLabel("Name:");
        l2.setBounds(125,60,150,20); f.add(l2);

        jtf1 = new JTextField(); jtf1.setBounds(175,60,150,20);f.add(jtf1);

        JLabel l3 = new JLabel("Roll No:");
        l3.setBounds(125,90,150,20); f.add(l3);
```

```
jtf2 = new JTextField(); jtf2.setBounds(175,90,150,20);f.add(jtf2);
```

```
JLabel l4 = new JLabel("Subjects");  
l4.setBounds(150,120,150,20); f.add(l4);
```

```
JLabel l5 = new JLabel("Marks");  
l5.setBounds(275,120,150,20); f.add(l5);
```

```
JLabel l6 = new JLabel("English");  
l6.setBounds(150,150,150,20); f.add(l6);
```

```
jtf3 = new JTextField(); jtf3.setBounds(225,150,150,20);f.add(jtf3);
```

```
JLabel l7 = new JLabel("Maths");  
l7.setBounds(150,180,150,20); f.add(l7);
```

```
jtf4 = new JTextField(); jtf4.setBounds(225,180,150,20);f.add(jtf4);
```

```
JLabel l8 = new JLabel("Science");  
l8.setBounds(150,210,150,20); f.add(l8);
```

```

jtf5 = new JTextField(); jtf5.setBounds(225,210,150,20);f.add(jtf5);

JLabel l9 = new JLabel("Hindi");
l9.setBounds(150,240,150,20); f.add(l9);

jtf6 = new JTextField(); jtf6.setBounds(225,240,150,20);f.add(jtf6);

JLabel l10 = new JLabel("Marathi");
l10.setBounds(150,270,150,20); f.add(l10);

jtf7 = new JTextField(); jtf7.setBounds(225,270,150,20);f.add(jtf7);

JButton jb = new JButton("Submit"); jb.setBounds(175,310,150,20);
jb.addActionListener(this);//imp to register listenerf.add(jb);
}

public static void main(String[] args) {Exp02 obj = new Exp02();
}

@Override

public void actionPerformed(ActionEvent e) { JFrame f1 = new
JFrame("Students Results");

```

```
f1.setLayout(null); f1.setSize(500,500);  
f1.setVisible(true);
```

```
JLabel l1 = new JLabel("Examination Results");l1.setBounds(175,20,150,30);  
f1.add(l1);
```

```
JLabel l2 = new JLabel("Name:");  
l2.setBounds(125,60,150,20); f1.add(l2);
```

```
String na = jtf1.getText(); JLabel l11 = new JLabel(na);  
l11.setBounds(175,60,150,20);f1.add(l11);
```

```
JLabel l3 = new JLabel("Roll No:");  
l3.setBounds(125,90,150,20); f1.add(l3);
```

```
String ro = jtf2.getText(); JLabel l12 = new JLabel(ro);  
l12.setBounds(175,90,150,20);f1.add(l12);
```

```
JLabel l4 = new JLabel("Subjects");  
l4.setBounds(150,120,150,20); f1.add(l4);
```

```
JLabel l5 = new JLabel("Marks");  
l5.setBounds(275,120,150,20);
```

```
f1.add(15);
```

```
JLabel l6 = new JLabel("English");  
l6.setBounds(150,150,150,20); f1.add(l6);
```

```
String se = jtf3.getText(); JLabel l13 = new JLabel(se);  
l13.setBounds(280,150,150,20);f1.add(l13);
```

```
JLabel l7 = new JLabel("Maths");  
l7.setBounds(150,180,150,20); f1.add(l7);
```

```
String sm = jtf4.getText(); JLabel l14 = new  
JLabel(sm); l14.setBounds(280,180,150,20);f1.add(l14);
```

```
JLabel l8 = new JLabel("Science");  
l8.setBounds(150,210,150,20); f1.add(l8);
```

```
String ss = jtf5.getText(); JLabel l15 = new JLabel(ss);  
l15.setBounds(280,210,150,20);f1.add(l15);
```

```
JLabel l9 = new JLabel("Hindi");  
l9.setBounds(150,240,150,20); f1.add(l9);
```



```
String sh = jtf6.getText(); JLabel l16 = new JLabel(sh);  
l16.setBounds(280,240,150,20);f1.add(l16);
```

```
JLabel l10 = new JLabel("Marathi");  
l10.setBounds(150,270,150,20); f1.add(l10);
```

```
String smar = jtf7.getText(); JLabel l17 = new  
JLabel(smar);l17.setBounds(280,270,150,20);  
f1.add(l17);
```

```
int s1 = Integer.parseInt(se); int s2 =  
Integer.parseInt(sm); int s3 = Integer.parseInt(ss); int s4  
= Integer.parseInt(sh); int s5 = Integer.parseInt(smar);
```

```
int sum = s1+s2+s3+s4+s5;  
double percentage = (sum*100)/500;
```

```
JLabel l18 = new JLabel("Percentage = " + percentage);l18.setBounds(180, 300, 150, 20);  
f1.add(l18);
```

```
String str;  
    if(percentage > 35 && percentage >75) {str = "Fail";  
}
```

```
        else if(percentage > 35 && percentage > 95 ){str = "Outstanding";  
    }  
        else if(percentage > 35) {str = "Pass";  
    }  
    else {  
        str = "Fail";  
    }  
  
    JLabel l19 = new JLabel("Status = " + str);l19.setBounds(180, 330, 150, 20); f1.add(l19);  
    }  
}
```

## Exp 4

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

```
public class Exp4 {
```

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

```
        String url = "jdbc:mysql://localhost:3306/jdbcdcb"; String usr = "root";
```

```
        String psw = "Sakshi@1026";
```

```
        String query1 = "insert into studentdata values(1,34, 'Sakshi', 'Kadu',  
'sakshikadu2922@gmail.com', 9322387494)";
```

```
        String query2 = "select * from studentdata";
```

```
        try {
```

```
            Class.forName("com.mysql.cj.jdbc.Driver"); Connection con =  
            DriverManager.getConnection("jdbc:mysql://localhost:3306/jdbcdcb", "root", "Sakshi@1026");
```

```
            Statement stmt = con.createStatement(); System.out.println("Inserting data...");
```

```

        stmt.execute(query1);

        System.out.println("Data after insertion..."); ResultSet rs =

        stmt.executeQuery(query2);

        System.out.println("Sr.No. " + "Roll No. " + "First Name " + "Last Name " + " Email ID
        "+ " Mobile No.");

        while (rs.next()) {

            System.out.println(" " + rs.getInt("SrNo") + " " + rs.getInt("RollNo") + "
            "+rs.getString("first_name")+ " " + rs.getString("last_name") + " " + rs.getString("email_id")+ " " +
            rs.getString("mobile"));

            }

            rs.close();
            stmt.close();
            con.close();

        } catch (SQLException e) { e.printStackTrace();
        } catch (ClassNotFoundException e) { e.printStackTrace();
        }

    }

}

```

## Exp 5

```
package RMI_5; import
java.rmi.Remote;
import java.rmi.RemoteException;
public interface PallindromeChecker extends Remote {
boolean isPalindrome(String str) throws RemoteException;
}
```

Remote Interface Implementation:

```
package RMI_5; import
java.rmi.RemoteException;
import java.rmi.server.UnicastRemoteObject;
public class PallindromeCheckerImpl extends UnicastRemoteObject
implements PallindromeChecker {
protected PallindromeCheckerImpl() throws RemoteException {
super();
}
@Override
public boolean isPalindrome(String str) throws RemoteException {
// Remove all non-alphanumeric characters and convert to lowercase
String cleanStr = str.replaceAll("[^a-zA-Z0-9]", "").toLowerCase();
// Check if the clean string is a palindrome int
left = 0;
int right = cleanStr.length() - 1;
while (left < right) {
if (cleanStr.charAt(left) != cleanStr.charAt(right)) {
return false;
}
left++; right--;
}
return true;
}
}
```

RMIServer :

```
package RMI_5;

import java.rmi.RemoteException; import
java.rmi.registry.LocateRegistry; import
java.rmi.registry.Registry; import
java.rmi.server.UnicastRemoteObject; public
class RMIServer extends
UnicastRemoteObject implements
PalindromeChecker { protected RMIServer() throws
RemoteException {
super();
}
@Override
public boolean isPalindrome(String str) throws RemoteException {
// Remove all non-alphanumeric characters and convert to lowercase
String cleanStr = str.replaceAll("[^a-zA-Z0-9]", "").toLowerCase();
// Check if the clean string is a palindrome
int left = 0;
int right = cleanStr.length() - 1;
while (left < right) {
if (cleanStr.charAt(left) != cleanStr.charAt(right)) {
return false;
}
left++; right--;
}
return true;
}
public static void main(String[] args) {
try {
// Create an instance of the RMIServer
RMIServer server = new RMIServer();
// Bind the RMIServer to the RMI registry
```

```

Registry registry = LocateRegistry.createRegistry(1099);
// Default RMI registry port registry.rebind("PalindromeService",
server);
System.out.println("Server started...");
} catch (Exception e) {
System.err.println("Server exception: " + e.toString());
e.printStackTrace();
}
}
}

```

RMIClient:

```

package RMI_5;
import java.rmi.registry.LocateRegistry;
import java.rmi.registry.Registry;
import java.util.Scanner; public class
RMIClient {
public static void main(String[] args) { try
{
// Get a reference to the RMI registry
Registry registry = LocateRegistry.getRegistry("localhost", 1099);
// Use the same port as server
// Look up the remote object from the registry
PalindromeChecker palindromeChecker =
(PallindromeChecker)registry.lookup("PalindromeService");
// Create a Scanner object for user input
Scanner scanner = new Scanner(System.in);
// Ask the user for input
System.out.print("Enter a string or number to check for palindrome: ");
String input = scanner.nextLine();
// Call the remote method with the user's input boolean
isPalindrome = palindromeChecker.isPalindrome(input);
// Display the result

```

```
System.out.println("'" + input + "' is a palindrome: " + isPalindrome);  
// Close the scanner scanner.close();  
} catch (Exception e) {  
System.err.println("Client exception: " + e.toString());  
e.printStackTrace();  
}  
}  
}
```



## Exp 6

```
public static void main(String args[])
throws UnknownHostException
{
    System.out.println("Details of Machine
    getLocalHost(): ");
    InetAddress Address =
    InetAddress.getLocalHost();
    System.out.println(Address);
    System.out.println();
    System.out.println("Details of Machine
    getByName(): ");
    Address =
    InetAddress.getByName("LAPTOP-LR493K09");
    System.out.println(Address);
    System.out.println();
    System.out.println("Details
    'www.google.com' getByName(): ");
    InetAddress SW1[]=
    InetAddress.getAllByName("www.google.com");
    for (int i=0; i<SW1.length; i++)
    System.out.println(SW1[i]);
    System.out.println();
    System.out.println("Details
    'www.sinhgad.com' getByName(): ");
    InetAddress
    SW2[]=InetAddress.getAllByName("www.sinhgad.c
    om");
    for (int i=0; i<SW2.length; i++)
    System.out.println(SW2[i]);
}}
```

## Exp 7

Programs:

For html page:

```
<!DOCTYPE html>

<html>

<head>

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

<title>Input Page</title>

</head>

<body>

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

<h1>Login</h1>

<label>Username</label>

<input type="text" name="username">

<br><br>

<label>Password</label>

<input type="password" name="password">

<br><br>

<input type="submit" value="Submit"><br/>

</form>

</body>

</html>
```

JDBCDAO java program:

```
import java.sql.*;

public class JDBCDAO { public ResultSet
checkUserData(String str){
String driver = "com.mysql.cj.jdbc.Driver";
String url = "jdbc:mysql://localhost:3306/exp7";
String user = "root";
String pass = "Avish@101";
ResultSet rs = null;
try{
```

```

Class.forName(driver);
Connection con =
DriverManager.getConnection(url,user,pass);
String query = "SELECT * FROM UserInfo WHERE
username=?";
PreparedStatement
pstmt=con.prepareStatement(query);
pstmt.setString(1, str);
rs=pstmt.executeQuery();
}catch(Exception e){
System.out.println(e);
}
return rs;
}
}

```

Servlet Program:

```

import java.sql.*; import
jakarta.servlet.ServletException; import
jakarta.servlet.annotation.WebServlet; import
jakarta.servlet.http.HttpServlet; import
jakarta.servlet.http.HttpServletRequest; import
jakarta.servlet.http.HttpServletResponse; import
java.io.IOException;
/**
 * Servlet implementation class Login_Servlet
 */ public class Login_Servlet extends HttpServlet {
private static final long serialVersionUID = 1L;
/**
 * @see HttpServlet#HttpServlet()
 */ public
Login_Servlet() {
super();

```

```

// TODO Auto-generated constructor stub
}

/**
 * @see HttpServlet#doGet(HttpServletRequest request,
HttpServletResponse response)
 */ protected void doGet(HttpServletRequest request,
HttpServletResponse
response) throws ServletException, IOException { //
TODO Auto-generated method stub
response.getWriter().append("Served at:
").append(request.getContextPath());
}

/**
 * @see HttpServlet#doPost(HttpServletRequest request,
HttpServletResponse response)
 */ protected void doPost(HttpServletRequest request,
HttpServletResponse
response) throws ServletException, IOException { //
TODO Auto-generated method stub
doGet(request, response);
System.out.println("Servlet Called...");
String username = request.getParameter("username");
String password = request.getParameter("password");
response.getWriter().print("Client: Username - " + username);
response.getWriter().print("<br>");
response.getWriter().print("Client: Password - " +
password);
response.getWriter().print("<br><br>");
String un="";
String pas="";
JDBCDAO ud = new JDBCDAO();
ResultSet rs = ud.checkUserData(username);

```

```

System.out.println("ResultSet = " + rs);

// Inside your doPost method after retrieving data from the
database

boolean credentialsMatch = false;

try {
while(rs.next()) {

response.getWriter().print("Server: Username - " +
rs.getString(1));

un = rs.getString(1);

response.getWriter().print("<br>");

response.getWriter().print("Server: Password - " + rs.getString(2));

pas = rs.getString(2);

// Comparing usernames and passwords if
(pas.equals(password) && un.equals(username)) {
credentialsMatch = true;

System.out.println("Username and Password Matched");

break; // No need to continue once matched
}

}

if (credentialsMatch) {
response.getWriter().print("<br><br>");

response.getWriter().print("Username and Password
Matched!");
} else {
response.getWriter().print("<br><br>");

response.getWriter().print("Username and Password did not match.");
}

} catch (SQLException e) {
e.printStackTrace();
}

}

}

```

## Exp 8

```
import
java.util.Scanner; import
java.sql.*;
public class Exp_08 { public static void
main(String[] args) {
String driver = "com.mysql.cj.jdbc.Driver";
String username = "root";
String password = "061304";
String url = "jdbc:mysql://localhost:3306/College2";
try {
Class.forName(driver);
Connection con = DriverManager.getConnection(url, username,
password);
Statement stmt = con.createStatement();
String q1 = "insert into Student2
values(101,'Kalpana','Kalpanajoshi@gmail.com',9843453626)";
String q2 = "select *from Student2";
String q3 = "update Student2 set Mobile = 8982127123 where
Name = 'Kalpana'";
String q4 = "delete from Student2 where Roll_No = 101";
boolean continueloop = true;
do {
System.out.print("Enter your Choice: ");
Scanner sc = new Scanner(System.in);
int choice = sc.nextInt();
switch(choice){
case 1:
System.out.println("Insert Values into Table:");
stmt.execute(q1);
System.out.println("Data inserted
successfully.");
```

```

break;
case 2:
System.out.println("Read Values from Table:");
ResultSet rs = stmt.executeQuery(q2);
System.out.println("Roll_No Name Email
Mobile");
while(rs.next()) {
System.out.println(rs.getInt("Roll_No") + "
"+ rs.getString("Name") + " " +
rs.getString("Email") + " " + rs.getLong("Mobile") );
}
break
case 3:
System.out.println("Update the Table");
stmt.executeUpdate(q3);
System.out.println("Data updated successfully");
break;
case 4:
System.out.println("Delete Values from Table:");
stmt.execute(q4);
System.out.println("Data deleted successfully.");
break;
default:
System.out.print("Invaild Choice");
break;
}
if(continueloop) {
System.out.println("Do you really want to continue (Y/N)
?");
String response = sc.next();
if (response== "Y") {
continueloop = false;

```

```
}  
}  
}while(continueloop);  
}catch(ClassNotFoundException | SQLException e) {  
e.printStackTrace();  
}}  
}
```



## Exp 9

Html Program:

```
<!DOCTYPE html>

<html>

<head>

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

<title>Input Webpage</title>

</head>

<body>

<form action="Exp9_cube.jsp">

<label>Enter the number : </label>

<input type="text" name="un">

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

<br>

</form>

</body>

</html>
```

Jsp Program:

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

<!DOCTYPE html>

<html>

<head>
```

```
<meta charset="ISO-8859-1">
<title>Output WebPage</title>
</head>
<body>
<h1>Welcome to JSP</h1>
<br>
<%
String n = request.getParameter("un");
int no = Integer.parseInt(n); out.println("Number Entered is : " + no);
out.println("<br> <br>");
out.println("Cube of Number : " + no*no*no);
%>
</body>
</html>
```

## Exp 10

HTML page:

```
<!DOCTYPE html>

<html>

<head>

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

<title>Inpute html webpage</title>

</head>

<body>

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

<h1>Registration Details</h1>

<label>Username</label>

<input type="text" name="username">

<br><br>

<label>Password</label>

<input type="password" name="password">

<br><br>

<label>Email Id</label>

<input type="email" name="email">

<br><br>

<label>Country</label>

<input type="text" name="country">

<br><br>

<input type="submit" value="Register"><br/>

</body>

</html>
```

Servlet Program:

```
import java.sql.*;

import jakarta.servlet.ServletException; import
jakarta.servlet.annotation.WebServlet; import
jakarta.servlet.http.HttpServlet; import
jakarta.servlet.http.HttpServletRequest; import
```

```

jakarta.servlet.http.HttpServletResponse; import
java.io.IOException;
/**
 * Servlet implementation class Servlet_file
 */
public class Servlet_file extends HttpServlet {
    private static final long serialVersionUID = 1L;
    /**
     * @see HttpServlet#HttpServlet()
     */
    public
    Servlet_file() {
        super();
        // TODO Auto-generated constructor stub
    }
    /**
     * @see HttpServlet#doGet(HttpServletRequest request,
    HttpServletResponse response)
     */
    protected void doGet(HttpServletRequest request,
    HttpServletResponse
    response) throws ServletException, IOException { //
        TODO Auto-generated method stub
        response.getWriter().append("Served at:
        ").append(request.getContextPath());
    }
    /**
     * @see HttpServlet#doPost(HttpServletRequest request,
    HttpServletResponse response)
     */
    protected void doPost(HttpServletRequest request,
    HttpServletResponse
    response) throws ServletException, IOException {
        String username = request.getParameter("username");
        String password = request.getParameter("password");
        String email = request.getParameter("email");

```

```

String country = request.getParameter("country");
System.out.println(username);
try {
RegistrationDao regdao = new RegistrationDao();
regdao.createUser(username, password, email, country);
response.getWriter().print("User Registered Successfully");
} catch (SQLException e) {
e.printStackTrace();
response.getWriter().print("An error occurred while registering user");
}
}
}

```

DAO class Program:

```

import java.sql.*;

public class RegistrationDao {
private static final String DRIVER = "com.mysql.cj.jdbc.Driver"; private
static final String URL = "jdbc:mysql://localhost:3306/EXP10"; private
static final String USER = "root"; private static final String PASSWORD
= "avish@101";

private static final String INSERT_QUERY = "INSERT INTO exp10T (user,
password, email, country) VALUES (?, ?, ?, ?)";

public void createUser(String usr, String password, String email, String
country) throws SQLException {
Connection con = null;
PreparedStatement pstmt = null;
try {
Class.forName(DRIVER);
con = DriverManager.getConnection(URL, USER, PASSWORD); pstmt
= con.prepareStatement(INSERT_QUERY);
pstmt.setString(1, usr);
pstmt.setString(2, password);
pstmt.setString(3, email);

```

```
pstmt.setString(4, country);
pstmt.executeUpdate();
System.out.println("User Registered Successfully");
} catch (ClassNotFoundException | SQLException e) {
// Log the exception or throw it to the caller // You
might want to throw a custom exception here
e.printStackTrace();
throw new SQLException("Error in database operation", e);
} finally {
// Close resources in reverse order
if (pstmt != null) { try {
pstmt.close();
} catch (SQLException e) {
e.printStackTrace();
}
}
if (con != null) {
try {
con.close();
} catch (SQLException e) {
e.printStackTrace();
}
}
}
}
```

## Exp 11

Program:

Login Page:

```
<!DOCTYPE html>

<html>

<head>

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

<title>Login Page</title>

</head>

<body>

    <h2>Login</h2>

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

        <label for="username">Username:</label><br>

        <input type="text" id="username" name="username"><br><br>

        <label for="password">Password:</label><br>

        <input type="password" id="password" name="password"><br><br>

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

    </form>

</body>

</html>
```

Profile Page:

```
<!DOCTYPE html>

<html>

<head>

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

<title>Profile Page</title>

</head>
```

```
<body>
    <body>
    <h2>Welcome, User!</h2>
    <!-- Display user profile information here -->

    <br><br>
    <a href="logout.html">Logout</a>
</body>
</html>
```

Logout Page:

```
<!DOCTYPE html>
<html>
<head>
<meta charset="ISO-8859-1">
<title>Logout Page</title>
</head>
<body>
    <h2>Logout Successful</h2>
    <p>You have been logged out.</p>
</body>
</html>
```

Login Servlet :

```
import jakarta.servlet.ServletException;
import jakarta.servlet.annotation.WebServlet;
import jakarta.servlet.http.HttpServlet;
import jakarta.servlet.http.HttpServletRequest;
import jakarta.servlet.http.HttpServletResponse;
import jakarta.servlet.http.HttpSession;
```



```

import java.io.IOException;

import java.sql.*;

/**
 * Servlet implementation class LogiServlet
 */
public class LoginServlet extends HttpServlet {

    private static final long serialVersionUID = 1L;

    // JDBC database URL, username, and password
    private static final String JDBC_URL = "jdbc:mysql://localhost:3306/exp11";
    private static final String DB_USER = "root";
    private static final String DB_PASSWORD = "Avish@101";

    /**
     * Default constructor.
     */
    public LoginServlet() {
        super();
        // TODO Auto-generated constructor stub
    }

    /**
     * @see HttpServlet#doGet(HttpServletRequest request, HttpServletResponse response)
     */
    protected void doGet(HttpServletRequest request, HttpServletResponse response) throws
ServletException, IOException {
        // TODO Auto-generated method stub
        response.getWriter().append("Served at: ").append(request.getContextPath());
    }

    /**
     * @see HttpServlet#doPost(HttpServletRequest request, HttpServletResponse response)
     */

```

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

```
    // TODO Auto-generated method stub
```

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

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

```
    // Check if username and password are valid (for demo, hardcoded validation)
```

```
    if (validateLogin(username, password)) {
```

```
        // Create a session if valid
```

```
        HttpSession session = request.getSession();
```

```
        session.setAttribute("username", username);
```

```
        // Redirect to Home menu
```

```
        response.sendRedirect("profile.html");
```

```
    } else {
```

```
        // Redirect back to login page with error message
```

```
        response.sendRedirect("login.html?error=invalid");
```

```
    }
```

```
    }
```

```
    private boolean validateLogin(String username, String password) {
```

```
    try {
```

```
        // Load the MySQL JDBC driver
```

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

```
        // Establish a connection
```

```
        Connection conn = DriverManager.getConnection(JDBC_URL, DB_USER,
DB_PASSWORD);
```

```
        // Prepare a SQL query to retrieve the password for the provided username
```

```
        String sql = "SELECT password FROM userInfo WHERE username = ?";
```

```
        PreparedStatement statement = conn.prepareStatement(sql);
```

```
        statement.setString(1, username);
```

```

        // Execute the query
        ResultSet resultSet = statement.executeQuery();

        // If a matching record is found and passwords match, return true
        if (resultSet.next()) {
            String dbPassword = resultSet.getString("password");
            return password.equals(dbPassword);
        }

        // Close resources
        resultSet.close();
        statement.close();
        conn.close();
    } catch (ClassNotFoundException | SQLException e) {
        e.printStackTrace();
    }
    return false;
}
}

```

Logout Servlet:

```

import jakarta.servlet.ServletException;
import jakarta.servlet.annotation.WebServlet;
import jakarta.servlet.http.HttpServlet;
import jakarta.servlet.http.HttpServletRequest;
import jakarta.servlet.http.HttpServletResponse;
import jakarta.servlet.http.HttpSession;

import java.io.IOException;

```

```

/**
 * Servlet implementation class LogoServlet
 */
public class LogoutServlet extends HttpServlet {
    private static final long serialVersionUID = 1L;

    /**
     * @see HttpServlet#HttpServlet()
     */
    public LogoutServlet() {
        super();
        // TODO Auto-generated constructor stub
    }

    /**
     * @see HttpServlet#doGet(HttpServletRequest request, HttpServletResponse response)
     */
    protected void doGet(HttpServletRequest request, HttpServletResponse response) throws
ServletException, IOException {
        processLogout(request, response);
    }

    /**
     * @see HttpServlet#doPost(HttpServletRequest request, HttpServletResponse response)
     */
    protected void doPost(HttpServletRequest request, HttpServletResponse response) throws
ServletException, IOException {
        // TODO Auto-generated method stub
        doGet(request, response);
    }

    private void processLogout(HttpServletRequest request, HttpServletResponse response)
throws ServletException, IOException {

```

```
// Invalidate session and redirect to login page
HttpSession session = request.getSession(false);
if (session != null) {
    session.invalidate(); // Invalidate the session
}
response.sendRedirect("login.html");
}

}
```