

1. Write a program to create a servlet that displays the welcome message.

WelcomeServlet.java

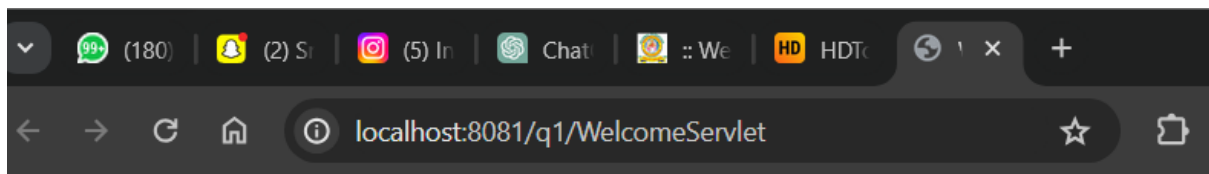
```
import java.io.IOException;
import java.io.PrintWriter;
import javax.servlet.ServletException;
import javax.servlet.annotation.WebServlet;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;

@WebServlet("/WelcomeServlet")
public class WelcomeServlet extends HttpServlet {
    private static final long serialVersionUID = 1L;

    protected void doGet(HttpServletRequest request, HttpServletResponse response) throws
ServletException, IOException {
        response.setContentType("text/html");
        PrintWriter out = response.getWriter();

        out.println("<html>");
        out.println("<head>");
        out.println("<title>Welcome Servlet</title>");
        out.println("</head>");
        out.println("<body>");
        out.println("<h1>Welcome to our website!</h1>");
        out.println("<p>This is a simple servlet example.</p>");
        out.println("</body>");
        out.println("</html>");
    }
}
```

Ouput:



Welcome to our website!

This is a simple servlet example.

2. Create a simple interest calculator web page using a servlet.

Index.html:

```
<!DOCTYPE html>
<html>
<head>
  <title>Simple Interest Calculator</title>
</head>
<body>
  <h1>Simple Interest Calculator</h1>
  <form action="SimpleInterestServlet" method="get">
    <label for="principal">Principal Amount:</label>
    <input type="text" id="principal" name="principal"><br><br>
    <label for="rate">Rate of Interest:</label>
```

```

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

        <label for="time">Time Period (in years):</label>
        <input type="text" id="time" name="time"><br><br>

        <input type="submit" value="Calculate">
    </form>
</body>
</html>

```

SimpleInterestServlet.java:

```

package q2;

import java.io.IOException;
import java.io.PrintWriter;

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

@WebServlet("/SimpleInterestServlet")
public class SimpleInterestServlet extends HttpServlet {
    private static final long serialVersionUID = 1L;

    protected void doGet(HttpServletRequest request, HttpServletResponse
response) throws ServletException, IOException {
        response.setContentType("text/html");
        PrintWriter out = response.getWriter();

        // Getting parameters from the request
        double principal =
Double.parseDouble(request.getParameter("principal"));
        double rate = Double.parseDouble(request.getParameter("rate"));
        double time = Double.parseDouble(request.getParameter("time"));

        // Calculating simple interest
        double simpleInterest = (principal * rate * time) / 100;

        // Displaying the result
        out.println("<html>");
        out.println("<head>");
        out.println("<title>Simple Interest Calculator</title>");
        out.println("</head>");
        out.println("<body>");
        out.println("<h1>Simple Interest Calculator</h1>");
        out.println("<p>Principal Amount: " + principal + "</p>");
        out.println("<p>Rate of Interest: " + rate + "</p>");
        out.println("<p>Time Period (in years): " + time + "</p>");
        out.println("<p>Simple Interest: " + simpleInterest + "</p>");
        out.println("</body>");
        out.println("</html>");
    }
}

```

Output:

Simple Interest Calculator

Principal Amount:

Rate of Interest:

Time Period (in years):

Simple Interest Calculator

Principal Amount: 1000.0

Rate of Interest: 1.0

Time Period (in years): 2.0

Simple Interest: 20.0

3. Develop a dynamic web application using servlets to create and display cookies.

CookieServlet.java:

```
package q3;

import java.io.IOException;
import java.io.PrintWriter;

import javax.servlet.ServletException;
import javax.servlet.annotation.WebServlet;
import javax.servlet.http.Cookie;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;

@WebServlet("/CookieServlet")
public class CookieServlet extends HttpServlet {
    private static final long serialVersionUID = 1L;

    protected void doGet(HttpServletRequest request, HttpServletResponse response) throws ServletException, IOException {
        response.setContentType("text/html");
        PrintWriter out = response.getWriter();

        // Creating a cookie
        Cookie cookie = new Cookie("username", "JohnDoe");

        // Adding the cookie to the response
        response.addCookie(cookie);

        out.println("<html>");
        out.println("<head>");
        out.println("<title>Cookie Example</title>");
        out.println("</head>");
        out.println("<body>");
        out.println("<h1>Cookie Created</h1>");
        out.println("<p>A cookie named 'username' with value 'JohnDoe' has been created.</p>");
        out.println("<a href='DisplayCookieServlet'>Display Cookie</a>");
        out.println("</body>");
        out.println("</html>");
    }
}
```

```
}  
}
```

DisplayCookieServlet.java:

```
package q3;  
  
import java.io.IOException;  
import java.io.PrintWriter;  
  
import javax.servlet.ServletException;  
import javax.servlet.annotation.WebServlet;  
import javax.servlet.http.Cookie;  
import javax.servlet.http.HttpServlet;  
import javax.servlet.http.HttpServletRequest;  
import javax.servlet.http.HttpServletResponse;  
  
@WebServlet("/DisplayCookieServlet")  
public class DisplayCookieServlet extends HttpServlet {  
    private static final long serialVersionUID = 1L;  
  
    protected void doGet(HttpServletRequest request, HttpServletResponse  
response) throws ServletException, IOException {  
        response.setContentType("text/html");  
        PrintWriter out = response.getWriter();  
  
        // Getting cookies from the request  
        Cookie[] cookies = request.getCookies();  
  
        out.println("<html>");  
        out.println("<head>");  
        out.println("<title>Display Cookie</title>");  
        out.println("</head>");  
        out.println("<body>");  
        out.println("<h1>Displaying Cookie</h1>");  
  
        if (cookies != null) {  
            for (Cookie cookie : cookies) {  
                out.println("<p>Name: " + cookie.getName() + ", Value: " +  
cookie.getValue() + "</p>");  
            }  
        } else {  
            out.println("<p>No cookies found.</p>");  
        }  
  
        out.println("</body>");  
        out.println("</html>");  
    }  
}
```

Output:

Cookie Created

A cookie named 'username' with value 'JohnDoe' has been created.

[Display Cookie](#)

Displaying Cookie

Name: username, Value: JohnDoe

4. Create a registration form and display the values entered by the user in another page using servlets.

Registration form.html:

```
<!DOCTYPE html>
<html>
<head>
  <title>Registration Form</title>
</head>
<body>
  <h1>Registration Form</h1>
  <form action="RegistrationServlet" method="post">
    <label for="username">Username:</label>
    <input type="text" id="username" name="username"><br><br>

    <label for="email">Email:</label>
    <input type="email" id="email" name="email"><br><br>

    <label for="password">Password:</label>
    <input type="password" id="password" name="password"><br><br>

    <input type="submit" value="Register">
  </form>
</body>
</html>
```

RegistrationServlet.java:

```
package q4;

import java.io.IOException;
import java.io.PrintWriter;

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

@WebServlet("/RegistrationServlet")
public class RegistrationServlet extends HttpServlet {
    private static final long serialVersionUID = 1L;
```

```

        protected void doPost(HttpServletRequest request, HttpServletResponse
response) throws ServletException, IOException {
            response.setContentType("text/html");
            PrintWriter out = response.getWriter();

            // Retrieving values from the form submission
            String username = request.getParameter("username");
            String email = request.getParameter("email");
            String password = request.getParameter("password");

            // Displaying the entered values on another page
            out.println("<html>");
            out.println("<head>");
            out.println("<title>Registration Details</title>");
            out.println("</head>");
            out.println("<body>");
            out.println("<h1>Registration Details</h1>");
            out.println("<p>Username: " + username + "</p>");
            out.println("<p>Email: " + email + "</p>");
            out.println("<p>Password: " + password + "</p>");
            out.println("</body>");
            out.println("</html>");
        }
    }
}

```

Output:

Registration Form

Username:

Email:

Password:

Registration Details

Username: 21131A0555

Email: tarshith11638@gmail.com

Password: 556

5 Write a program using servlets to display data from a database table

DisplayDataServlet.java

```
package q5;

import java.io.IOException;
import java.io.PrintWriter;
import java.sql.Connection;
import java.sql.DriverManager;
import java.sql.PreparedStatement;
import java.sql.ResultSet;
import java.sql.SQLException;

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

@WebServlet("/DisplayDataServlet")
public class DisplayDataServlet extends HttpServlet {
    private static final long serialVersionUID = 1L;

    // JDBC URL, username, and password
    private static final String JDBC URL =
"jdbc:oracle:thin:@localhost:1521/xe";
    private static final String USERNAME = "system";
    private static final String PASSWORD = "system";

    protected void doGet(HttpServletRequest request, HttpServletResponse
response) throws ServletException, IOException {
        response.setContentType("text/html");
        PrintWriter out = response.getWriter();

        Connection conn = null;
        PreparedStatement pstmt = null;
        ResultSet rs = null;

        try {
            // Establishing database connection
            Class.forName("oracle.jdbc.driver.OracleDriver");

            conn =
DriverManager.getConnection("jdbc:oracle:thin:@localhost:1521/xe",
"system", "system");

            // SQL query to retrieve data from the table
            String query = "SELECT * FROM data";

            pstmt = conn.prepareStatement(query);
```



```

        // Executing the query
        rs = pstmt.executeQuery();

        // Displaying the data
        out.println("<html>");
        out.println("<head>");
        out.println("<title>Data from Database</title>");
        out.println("</head>");
        out.println("<body>");
        out.println("<h1>Data from Database Table</h1>");
        out.println("<table border='1'>");
        out.println("<tr>");
        out.println("<th>ID</th>");
        out.println("<th>Name</th>");
        out.println("<th>Email</th>");
        out.println("</tr>");

        // Iterating over the result set
        while (rs.next()) {
            out.println("<tr>");
            out.println("<td>" + rs.getInt("id") + "</td>");
            out.println("<td>" + rs.getString("name") + "</td>");
            out.println("<td>" + rs.getString("email") + "</td>");
            out.println("</tr>");
        }

        out.println("</table>");
        out.println("</body>");
        out.println("</html>");

    } catch (ClassNotFoundException | SQLException e) {
        e.printStackTrace();
    } finally {
        // Closing resources
        try {
            if (rs != null) rs.close();
            if (pstmt != null) pstmt.close();
            if (conn != null) conn.close();
        } catch (SQLException e) {
            e.printStackTrace();
        }
    }
}
}

```