Ex No:7 **Simple Servlet Program**

Date : 2-03-2023

Aim:

To write servlet for the give programs.

1. Create a web application that allows the user to enter a number and determine whether it is prime.

Algorithm:

step1: Create a web form that allows the user to enter a number.

Step2: When the user submits the form, retrieve the entered number from the form data.

Step3: Check whether the entered number is a positive integer greater than 1, since prime numbers are defined as positive integers greater than 1 that have no positive integer divisors other than 1 and themselves.

Step4: If the entered number is not a positive integer greater than 1, display an error message to the user and prompt them to enter a valid input.

Step5: If the entered number is a positive integer greater than 1, implement a function to determine whether the number is prime.

Step6: To determine whether a number is prime, iterate over all integers from 2 to the square root of the entered number. Check whether the entered number is divisible by any of these integers. If it is, the entered number is not prime. If it is not, the entered number is prime.

Step7: Display the result to the user, indicating whether the entered number is prime or not.

Step8 : Allow the user to enter another number and repeat the process.

Program:

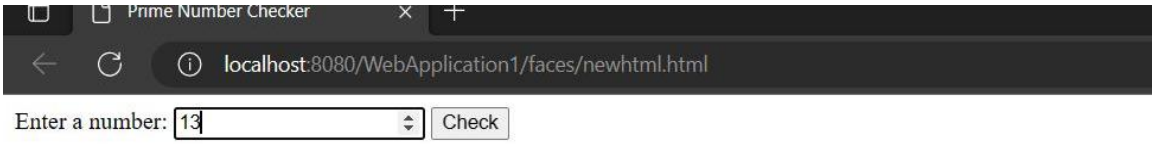
```
<?xml version='1.0' encoding='UTF-8' ?>

<!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>Prime Number Checker</title>

  </h:head>

  <h:body>

    <form method="get" action="http://localhost:8080/WebApplication1/PrimeServlet">
```

```
        Enter a number: <input type="number" name="number"></input>
                    <input type="submit" value="Check"></input>
        </form>
    </h:body>
</html>
/*
 * To change this license header, choose License Headers in Project Properties.
 * To change this template file, choose Tools | Templates
 * and open the template in the editor.
 */
import java.io.IOException;
import java.io.PrintWriter;
import javax.servlet.ServletException;
import javax.servlet.annotation.WebServlet;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
@WebServlet(urlPatterns = {"/PrimeServlet"})
public class PrimeServlet extends HttpServlet {
    /**
     * Processes requests for both HTTP <code>GET</code> and <code>POST</code>
     * methods.
     *
     * @param request servlet request
     * @param response servlet response
     * @throws ServletException if a servlet-specific error occurs
     * @throws IOException if an I/O error occurs
     */
    protected void processRequest(HttpServletRequest request, HttpServletResponse response)
```

```
        throws ServletException, IOException {
    response.setContentType("text/html;charset=UTF-8");
    try (PrintWriter out = response.getWriter()) {
            response.setContentType("text/html");
            String input = request.getParameter("number");
            if(input == null || input.trim().isEmpty()) {
                out.println("<h3>Please enter a number.</h3>");
                return;
            }
            int num = Integer.parseInt(input);
            if(num < 2) {
                out.println("<h3>The number is not prime.</h3>");
                return;
            }
            boolean isPrime = true;
            for(int i=2; i<=Math.sqrt(num); i++) {
                if(num % i == 0) {
                    isPrime = false;
                    break;
                }
            }
            if(isPrime) {
                out.println("<h3>The number is prime.</h3>");
            } else {
                out.println("<h3>The number is not prime.</h3>");
            }
        }
}
    // <editor-fold defaultstate="collapsed" desc="HttpServlet methods. Click on the + sign on the left to edit the code.">
```

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

```
     */
    @Override
    public String getServletInfo() {
        return "Short description";
    }// </editor-fold>
}
```



2. Create a web application that displays a list of sports teams. Allow the user to click on a team to view their roster.

Algorithm:

step1: Create a database or data source containing information about the sports teams, including their name and roster.

step2: Create a web page that displays a list of the sports teams, either in a table or a list format. Each team should be represented by a link or a button that the user can click on to view their roster.

step3:When the user clicks on a team link or button, retrieve the information about that team from the database or data source.

step4: Display the team's roster on the same web page, either below the list of teams or on a separate page that is dynamically loaded using AJAX.

step5: If the roster is displayed on a separate page, provide a back button or link to allow the user to return to the list of teams.

step6: Allow the user to click on other teams to view their rosters, and repeat the process.

step 7: Optionally, add search and filter functionality to the list of teams, allowing the user to narrow down the list based on criteria such as team name or location.

Program:

```
/*
 * To change this license header, choose License Headers in Project Properties.
 * To change this template file, choose Tools | Templates
 * and open the template in the editor.
 */
import java.io.IOException;
import java.io.PrintWriter;
import javax.servlet.ServletException;
import javax.servlet.annotation.WebServlet;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;



@WebServlet(urlPatterns = {"/servlet1"})
public class servlet1 extends HttpServlet {
    /**
     * Processes requests for both HTTP <code>GET</code> and <code>POST</code>
     * methods.
     *
     * @param request servlet request
     * @param response servlet response
     * @throws ServletException if a servlet-specific error occurs
     * @throws IOException if an I/O error occurs
     */
    private String[] teams = {"Team A", "Team B", "Team C", "Team D"};
    public 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>Sports Teams List</title>");
        out.println("</head>");
        out.println("<body>");
        out.println("<h1>Sports Teams List</h1>");
        out.println("<ul>");
        for (String team : teams) {
            out.println("<li><a  href='/WebApplication1/RosterServlet?team=" + team + "'>" + team + "</a></li>");
        }
        out.println("</ul>");
        out.println("</body>");
        out.println("</html>");
    }
}
       /* out.println("<form >");
        out.println("enter the team name");
        out.println("<input type='text'></input>");
        out.println("<input type='submit'>");
        out.println("</form>");*/
```

Output:

Sports Teams List

- Team A
- Team B
- Team C
- Team D

Team Roster

Team A Roster

- Player 1
- Player 2
- Player 3
- Player 4

Observation(20)	
Record(5)	
Total(25)	
Initial	

Result :

The servlet program and its output for the given programs have been created successfully.

Ex No:8 **Session Tracking using Cookies**

Date : 9-03-2023

Aim:

To write program using Session Tracking using Cookies

1.Create an HTML form that asks the user for their name, email address, and preferred language.Create a servlet that will receive this information and store it in a cookie. The servlet should then redirect the user to a page that displays a greeting in their preferred language, and theirname and email address. The servlet should also provide a link to allow the user to update their preferences.

Algorithm:

step 1: Create an HTML form that asks the user for their name, email address, and preferred language. The form should include an input field for each piece of information, as well as a submit button.

Step2: When the user submits the form, the form data should be sent to a Java servlet that will handle the data.

Step3: In the servlet, retrieve the user's name, email address, and preferred language from the form data.

Step4: Use the Java Cookie API to create a cookie that will store the user's name, email address, and preferred language. Set the cookie's expiration time to a reasonable value.

Step5: Redirect the user to a new page that displays a greeting in their preferred language, along with their name and email address. You can use a switch statement or a similar construct to choose the appropriate greeting based on the user's preferred language.

Step6: On the new page, provide a link that allows the user to update their preferences. This link should point to another HTML form that allows the user to change their name, email address, or preferred language.

Step7: When the user submits the preferences update form, the form data should be sent to another servlet that will handle the data. In this servlet, update the user's cookie with the new preferences and redirect the user back to the greeting page.

Step8: If the user visits the greeting page again, retrieve their preferences from the cookie and display the appropriate greeting.

Program:

```
<?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>Facelet Title</title>
    </h:head>
    <h:body>
        <form action="http://localhost:8080/exp8/NewServlet">
            <label>username</label>
            <input type='text' name='name'></input>
              <br>
            </br>
            <label>emailaddress</label>
             <input type='email' name='email'></input>
              <br>
            </br>
          <label for="language">preferred language:</label>
<select name="TAMIL" id="language">
  <option value="ENGLISH">ENGLISH</option>
  <option value="HINDI">HINDI</option>
  <option value="TELUGU">TELUGU</option>
  <option value="MARATHI">MARATHI</option>
</select>
           <input type='submit'></input>
        </form>
    </h:body>
</html>
/*
 * To change this license header, choose License Headers in Project Properties.
 * To change this template file, choose Tools | Templates
 * and open the template in the editor.
```

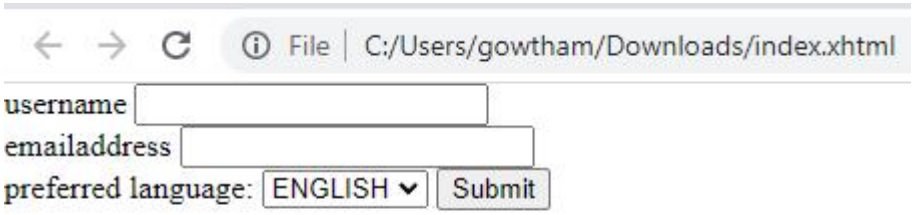
```
 */
import java.io.IOException;
import java.io.PrintWriter;
import static java.lang.System.out;
import javax.servlet.ServletException;
import javax.servlet.annotation.WebServlet;
import javax.servlet.http.Cookie;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
/**
 *
 * @author 21cse104
 */
@WebServlet(urlPatterns = {"/NewServlet"})
public class NewServlet extends HttpServlet {
    /**
     * Processes requests for both HTTP <code>GET</code> and <code>POST</code>
     * methods.
     *
     * @param request servlet request
     * @param response servlet response
     * @throws ServletException if a servlet-specific error occurs
     * @throws IOException if an I/O error occurs
     */
    protected void processRequest(HttpServletRequest request, HttpServletResponse response)
            throws ServletException, IOException {
        response.setContentType("text/html;charset=UTF-8");
       Cookie name =new Cookie("name",request.getParameter("name"))  ;
```

```
        Cookie email =new Cookie("Email",request.getParameter("email"))  ;
        Cookie lang =new Cookie("Language",request.getParameter("TAMIL"))  ;
        response.addCookie(name);
        response.addCookie(email);
        response.addCookie(lang);
        try (PrintWriter out = response.getWriter()) {
            /* TODO output your page here. You may use following sample code. */
            out.println("<!DOCTYPE html>");
            out.println("<html>");
            out.println("<head>");
            out.println("<title>Servlet NewServlet</title>");
            out.println("</head>");
            out.println("<body>");
            if(lang.getValue().equalsIgnoreCase("ENGLISH"))
               //response.sendRedirect("https://www.tandem.net/blog/20-greetings-in-english");
                  out.println("<h1>welcome</h1>");
            else if(lang.getValue().equalsIgnoreCase("HINDI"))
                out.println("<h1>       </h1>");
//response.sendRedirect("https://www.rocketlanguages.com/hindi/salutations/greetings-in-
hindi");
                  else if(lang.getValue().equalsIgnoreCase("TELUGU"))
                      out.println("<h1>namaskaaramu</h1>");
                  //response.sendRedirect("https://omniglot.com/language/phrases/telugu.php");
                  else
                      out.println("<h1>          </h1>");
                    //response.sendRedirect("https://omniglot.com/language/phrases/marathi.php");
            out.println("<h1>" + name.getValue()+ "<br>"+email.getValue()+"<br>" + "</h1>");
            out.println("<a href='index.xhtml'>change preference</a>");
            out.println("</body>");
            out.println("</html>");
```

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

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


}
```

Output:



Observation(20)	
Record(5)	
Total(25)	
Initial	

Result :

The session tracking cookies and its output for the given programs have been created successfully.