EX:7 Write a Servlet program to store a user preferences (like theme or language) using cookies. Retrieve and display these preferences on subsequent visits.

Aim:

The aim of this Servlet program is to demonstrate how to store and retrieve user preferences, such as theme or language, using cookies. The preferences are saved as cookies in the user's browser, and they persist across multiple visits to the website. When the user visits the site again, the preferences are retrieved and displayed.

Algorithm:

1. **Save Preferences**:
   - When the user selects a theme (light or dark) or language (English, Spanish), the `PreferenceServlet` stores this data in cookies.
   - The cookies are then set with an expiration time to ensure the data persists for a set period (e.g., 1 week).
2. **Retrieve Preferences**:
   - On subsequent visits, the `PreferenceServlet` checks if the cookies exist.
   - If cookies are found, the values for theme and language are retrieved and displayed to the user.
   - If no cookies exist (first visit or cookies expired), default preferences (e.g., light theme, English language) are applied.

CODE:

PreferenceServlet.java:

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("/PreferenceServlet")

public class PreferenceServlet extends HttpServlet {

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

```java
        response.setContentType("text/html");

        PrintWriter out = response.getWriter();


        // Retrieve preferences from the form

        String theme = request.getParameter("theme");

        String language = request.getParameter("language");


        // Set cookies with user preferences

        if (theme != null) {

            Cookie themeCookie = new Cookie("theme", theme);

            themeCookie.setMaxAge(60 * 60 * 24 * 7); // 1 week

            response.addCookie(themeCookie);

        }


        if (language != null) {

            Cookie languageCookie = new Cookie("language", language);

            languageCookie.setMaxAge(60 * 60 * 24 * 7); // 1 week

            response.addCookie(languageCookie);

        }


        // Display the saved preferences

        out.println("<html><head><title>User Preferences</title></head><body>");

        out.println("<h2>Your preferences have been saved.</h2>");

        out.println("<p>Theme: " + theme + "</p>");

        out.println("<p>Language: " + language + "</p>");

        out.println("<a href='index.html'>Go Back</a>");

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

    }


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

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


        // Retrieve cookies
        Cookie[] cookies = request.getCookies();
        String theme = "light"; // Default theme
        String language = "English"; // Default language


        if (cookies != null) {
            for (Cookie cookie : cookies) {
                if ("theme".equals(cookie.getName())) {
                    theme = cookie.getValue();
                }
                if ("language".equals(cookie.getName())) {
                    language = cookie.getValue();
                }
            }
        }


        // Display the stored preferences
        out.println("<html><head><title>User Preferences</title></head><body>");
        out.println("<h2>Welcome back!</h2>");
        out.println("<p>Theme: " + theme + "</p>");
        out.println("<p>Language: " + language + "</p>");
        out.println("<a href='index.html'>Go Back</a>");
        out.println("</body></html>");
    }
}
```

index.html - Form to collect user preferences (theme and language)

```html
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Set Preferences</title>
</head>
<body>
  <h2>Set Your Preferences</h2>
  <form action="PreferenceServlet" method="post">
    <label for="theme">Select Theme:</label><br>
    <input type="radio" id="light" name="theme" value="light" checked> Light<br>
    <input type="radio" id="dark" name="theme" value="dark"> Dark<br><br>


    <label for="language">Select Language:</label><br>
    <input type="radio" id="english" name="language" value="English" checked> English<br>
    <input type="radio" id="spanish" name="language" value="Spanish"> Spanish<br><br>


    <input type="submit" value="Save Preferences">
  </form>
</body>
</html>
```
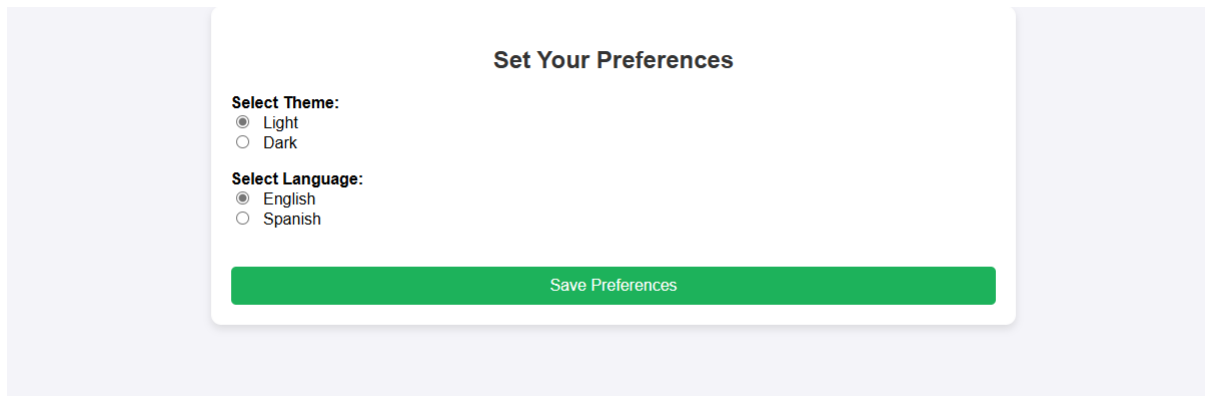
OUTPUT :

Set Your Preferences

Select Theme:
◉ Light
○ Dark

Select Language:
◉ English
○ Spanish

Save Preferences

Your preferences have been saved.

Theme: light

Language: English

Go Back

RESULT :

Thus the program is execyted successfully.