EXP 7 Servlet-based project is to store user preferences

AIM:

The goal of this Servlet-based project is to store user preferences (such as theme and language) using cookies and retrieve and display them on subsequent visits.

ALGORITHM:

Step 1: Load Preferences Page → **Browser checks for existing cookies.**

Step 2 Retrieve Preferences (GET Request) → **Servlet reads cookies and applies saved settings.**

Step 3: User Selects Preferences → **User picks theme and language.**

Step 4: Save Preferences (POST Request) → **JavaScript sends data to Servlet.**

Step 5: Servlet Stores Preferences → **Cookies are updated and sent back to the browser.**

Step 6: Preferences Applied on Next Visit → **Browser loads saved settings automatically.**

PROGRAM:

index.html (Frontend - Combined HTML, CSS & JavaScript)

```
html
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<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Preferences using Cookies</title>
    <style>
        body {
            font-family: 'Poppins', sans-serif;
            background: linear-gradient(to right, #ffafbd, #ffc3a0);
            text-align: center;
            display: flex;
            justify-content: center;
            align-items: center;
            height: 100vh;
            margin: 0;
            transition: background 0.5s ease-in-out;
        }

        .container {
            background: white;
            padding: 20px;
            border-radius: 15px;
            box-shadow: 0 4px 8px rgba(0, 0, 0, 0.2);
```

```css
            width: 320px;
        }

        h2 {
            color: #ff6f61;
        }

        select, button {
            width: 90%;
            padding: 10px;
            margin: 10px 0;
            border: 1px solid #ff6f61;
            border-radius: 8px;
            text-align: center;
        }

        button {
            background: #ff6f61;
            color: white;
            border: none;
            cursor: pointer;
            transition: 0.3s;
        }

        button:hover {
            background: #e6514a;
        }

        .pref-box {
            margin-top: 20px;
            padding: 10px;
            background: rgba(255, 255, 255, 0.8);
            color: black;
            border-radius: 10px;
            font-weight: bold;
        }

        .hidden {
            display: none;
        }

        .dark-mode {
            background: linear-gradient(to right, #333333, #1e1e1e);
            color: white;
        }

        .dark-mode .container {
            background: rgba(255, 255, 255, 0.1);
            backdrop-filter: blur(10px);
        }

        .dark-mode .pref-box {
            background: rgba(255, 255, 255, 0.2);
            color: white;
        }
    </style>
</head>
<body>
    <div class="container">
        <h2>Set Your Preferences</h2>
        <div id="form-section">
```

```html
            <label for="theme">Choose Theme:</label>
            <select id="theme">
                <option value="light">Light</option>
                <option value="dark">Dark</option>
            </select>

            <label for="language">Choose Language:</label>
            <select id="language">
                <option value="English">English</option>
                <option value="French">French</option>
            </select>

            <button onclick="savePreferences()">Save Preferences</button>
        </div>

        <div id="view-section" class="hidden">
            <h2>Your Preferences</h2>
            <div class="pref-box">
                <p>✸ Theme: <span id="saved-theme">-</span></p>
                <p>🌐 Language: <span id="saved-language">-</span></p>
            </div>
            <button onclick="resetPreferences()">Change
Preferences</button>
        </div>
    </div>

    <script>
        function savePreferences() {
            let theme = document.getElementById("theme").value;
            let language = document.getElementById("language").value;

            fetch("PreferenceServlet", {
                method: "POST",
                headers: { "Content-Type": "application/x-www-form-
urlencoded" },
                body: `theme=${theme}&language=${language}`
            }).then(() => updateView());
        }

        function updateView() {
            fetch("PreferenceServlet")
                .then(response => response.json())
                .then(data => {
                    document.getElementById("saved-theme").innerText =
data.theme;
                    document.getElementById("saved-language").innerText =
data.language;
                    document.body.classList.toggle("dark-mode", data.theme
=== "dark");

                    document.getElementById("form-
section").classList.add("hidden");
                    document.getElementById("view-
section").classList.remove("hidden");
                });
        }

        function resetPreferences() {
            fetch("PreferenceServlet", { method: "DELETE" }).then(() => {
                document.getElementById("form-
section").classList.remove("hidden");
```

```
                    document.getElementById("view-
section").classList.add("hidden");
            });
        }

        window.onload = updateView;
    </script>
</body>
</html>
```

PreferenceServlet.java (Backend - Java Servlet)

```java
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import java.io.IOException;
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;
import org.json.JSONObject;

@WebServlet("/PreferenceServlet")
public class PreferenceServlet extends HttpServlet {
    protected void doPost(HttpServletRequest request, HttpServletResponse
response) throws ServletException, IOException {
        String theme = request.getParameter("theme");
        String language = request.getParameter("language");

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

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

        response.addCookie(themeCookie);
        response.addCookie(languageCookie);
    }

    protected void doGet(HttpServletRequest request, HttpServletResponse
response) throws ServletException, IOException {
        String theme = "light";
        String language = "English";

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

        JSONObject json = new JSONObject();
        json.put("theme", theme);
        json.put("language", language);
```
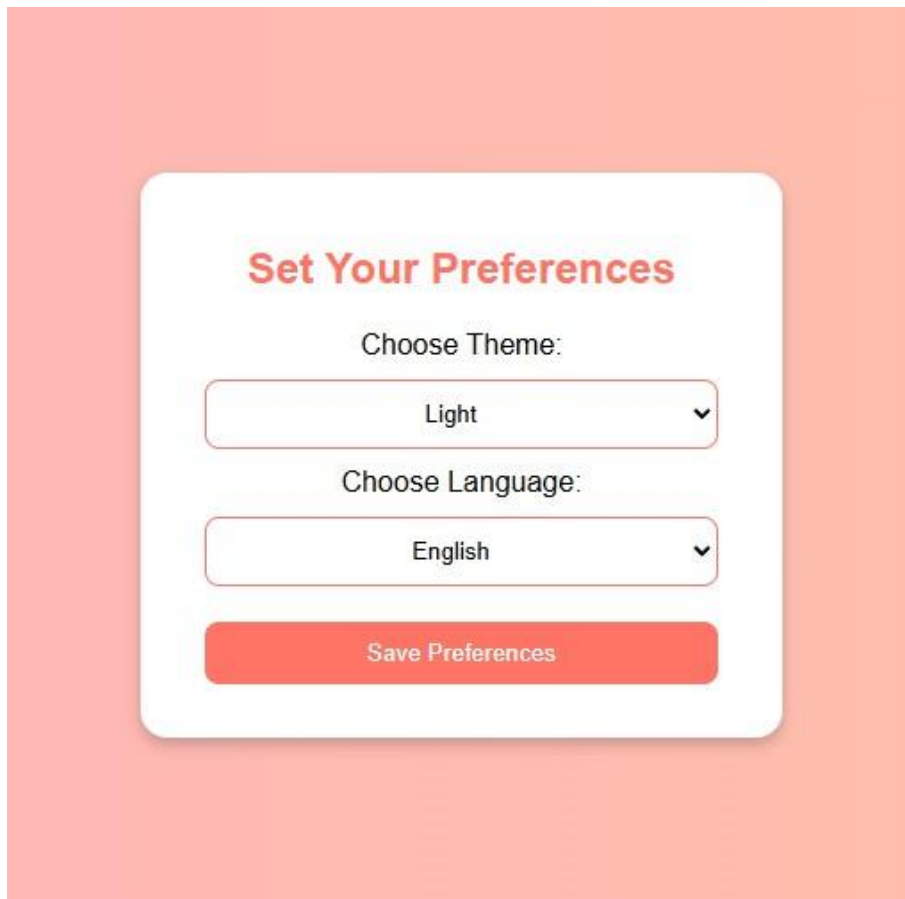
```
        response.setContentType("application/json");
        response.getWriter().write(json.toString());
    }

    protected void doDelete(HttpServletRequest request, HttpServletResponse
response) throws ServletException, IOException {
        Cookie themeCookie = new Cookie("theme", "");
        Cookie languageCookie = new Cookie("language", "");

        themeCookie.setMaxAge(0);
        languageCookie.setMaxAge(0);

        response.addCookie(themeCookie);
        response.addCookie(languageCookie);
    }
}
```
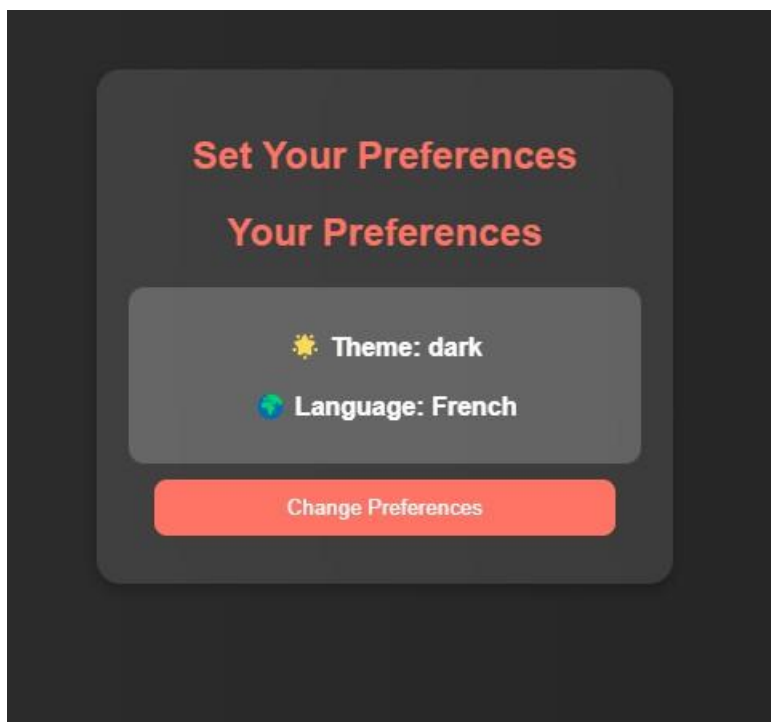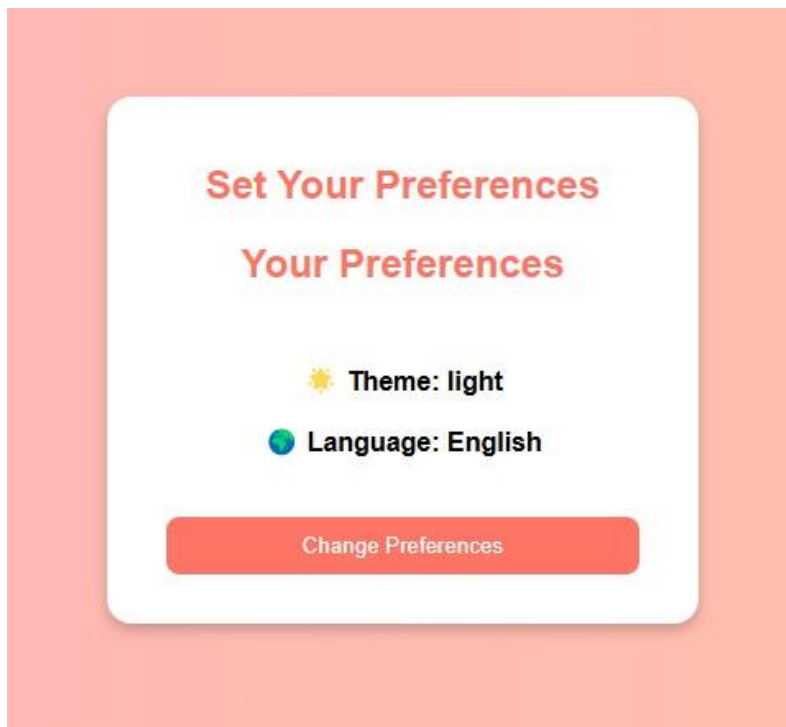
OUTPUT:

RESULT: The Servlet-based project to store user preferences using cookies were executed successfully.