

## **14. Maintaining the transactional history of any user is very important. Explore the various session tracking mechanism (Cookies, HTTP Session)**

**AIM:** Maintaining the transactional history of any user is very important. Explore the various session tracking mechanism (Cookies, HTTP Session)

**DESCRIPTION:** Session tracking mechanisms are crucial for maintaining the state of a user's interactions with a web application. Two common methods for session tracking are

### **Cookies and HTTP Sessions.**

**1. Cookies:** Cookies are small data pieces stored on a user's device by a web browser, used to maintain user-specific information between the client and the server.

**2. HTTP Session:** An HTTP session is a way to store information on the server side between requests from the same client. Each client gets a unique session ID, which is used to retrieve session data.

### **Procedure:**

#### **Step 1: Install Prerequisites**

Ensure Python is installed on your machine. Then, install Flask using pip in cmd:

**pip install flask**

#### **Step 2: Set Up Project Directory**

Create a project folder structure like this:

session tracking/

```
|— app.py
|— templates/
|   |— index.html
|   |— set_language.html
|   |— index_session.html
```

#### **Step 3: Code Setup**

##### **File: app.py**

Copy and paste the Python code into the app.py file:

```
from flask import Flask, request, render_template, make_response, session

app = Flask(__name__)
app.secret_key = 'super_secret_key' # Set a secret key for session management

# Cookie Example Routes
@app.route('/')
def index():
    # Check if the language cookie is set
```

```

user_language = request.cookies.get('user_language')
return render_template('index.html', user_language=user_language)

@app.route('/set_language/<language>')
def set_language(language):
    # Set the language preference in a cookie
    response = make_response(render_template('set_language.html'))
    response.set_cookie('user_language', language)
    return response

# HTTP Session Example Route
@app.route('/session_example')
def session_example():
    # Increment the visit count in the session
    session['visit_count'] = session.get('visit_count', 0) + 1
    return render_template('index_session.html', visit_count=session['visit_count'])
if __name__ == '__main__':
    app.run(debug=True)

```

## Templates

### File: templates/index.html

```

<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Cookie Example</title>
</head>
<body>
    <h1>Welcome to the website!</h1>
    {% if user_language %}
        <p>Your preferred language is: {{ user_language }}</p>
    {% else %}
        <p>Your language preference is not set.</p>
    {% endif %}
    <p><a href="/set_language/en">Set language to English</a></p>
    <p><a href="/set_language/es">Set language to Spanish</a></p>
</body>
</html>

```

### File: templates/set\_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 Language</title>

```

```
</head>
<body>
  <h2>Language set successfully!</h2>
  <p><a href="/">Go back to the home page</a></p>
</body>
</html>
```

#### File: templates/index\_session.html

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Session Example</title>
</head>
<body>
  <h1>Welcome to the website!</h1>
  <p>This is your visit number: {{ visit_count }}</p>
</body>
</html>
```

#### Step 4: Run the Application

1. Open a terminal in the project directory and run:

**python app.py**

2. You should see output like this:

\* Running on <http://127.0.0.1:5000> (Press CTRL+C to quit)

#### Step 5: Access the Application

##### Cookies Example

1. Open your browser and navigate to:

<http://127.0.0.1:5000/>

2. Initially, the page will say:  
*"Your language preference is not set."*
3. Click "Set language to English" or "Set language to Spanish." The preference will be stored in a cookie.
4. Reload the page, and it will display the selected language preference.

##### HTTP Session Example

1. Open your browser and navigate to:

[http://127.0.0.1:5000/session\\_example](http://127.0.0.1:5000/session_example)

1. The page will display the visit count for the user. Reloading the page will increment the count.

**Output:**

**1. For Cookies Example:**

- First visit:  
*"Your language preference is not set."*
- After setting language:  
*"Your preferred language is: English."*

**2. For HTTP Session Example:**

- First visit:  
*"This is your visit number: 1."*
- Reloading:  
*"This is your visit number: 2."*