Parul® University

NAAC A++

Enterprise Programming using JAVA

Chapter-2: Servlets

Prof. ARNIKA PATEL
Assistant Professor
Department of CSE

Parul® University

NAAC A++

Content

INDEX

Servlets Session Tracking

- Servlets are the Java programs that run on the Java-enabled web server or application server.
- They are used to handle the request obtained from the webserver, process the request, produce the response, then send a response back to the webserver
- HTTP is a “stateless” protocol, which means that each time a client requests a Web page, the client establishes a new connection with the Web server, and the server does not retain track of prior requests.

Servlets Session Tracking

- The conversation of a user over a period of time is referred to as a **session**. In general, it refers to a certain period of time.
- The recording of the object in session is known as **tracking**.
- **Session tracking** is the process of remembering and documenting customer conversations over time. Session management is another name for it.
- The term "**stateful web application**" refers to a web application that is capable of remembering and recording client conversations over time.

Servlets Session Tracking

Why is Session Tracking Required?

- Because the HTTP protocol is stateless, we require Session Tracking to make the client-server relationship stateful.
- Session tracking is important for tracking conversions in online shopping, mailing applications, and E-Commerce applications.
- The HTTP protocol is stateless, which implies that each request is treated as a new one. As you can see in the image below.

Servlets Session Tracking

Deleting Session Data

- Remove a specific attribute You can delete the value associated with a specific key by calling the public void removeAttribute(String name) function.
- Delete your whole session. To delete an entire session, use the public void invalidate() function.
- Setting Session Timeout You may set the timeout for a session separately by calling the public void setMaxInactiveInterval(int interval) function.
- Log the user out On servers that support servlets 2.4, you may use the logout method to log the client out of the Web server and invalidate all of the users' sessions.

Servlets Session Tracking

Deleting Session Data

- web.xml Configuration If you're using Tomcat, you may set the session timeout in the web.xml file, in addition to the ways listed above.

```
<session-config>
    <session-timeout>20</session-timeout>
</session-config>
```

Servlets Session Tracking

Session Tracking employs Four Different techniques

Cookies

Cookies are little pieces of data delivered by the web server in the response header and kept by the browser.

Each web client can be assigned a unique session ID by a web server.

Cookies are used to keep the session going. Cookies can be turned off by the client.

Servlets Session Tracking

Session Tracking employs Four Different techniques

Hidden Form Field

The information is inserted into the web pages via the hidden form field, which is then transferred to the server. These fields are hidden from the user’s view.

<input type = hidden' name = 'session' value = '12345' >

Servlets Session Tracking

Session Tracking employs Four Different techniques

URL Rewriting

With each request and return, append some more data via URL as request parameters. URL rewriting is a better technique to keep session management and browser operations in sync.

Servlets Session Tracking

Session Tracking employs Four Different techniques

HttpSession

A user session is represented by the HttpSession object. A session is established between an HTTP client and an HTTP server using the HttpSession interface. A user session is a collection of data about a user that spans many HTTP requests.

HttpSession session = request.getSession( );
Session.setAttribute("username", "password");

Servlets CRUD Operations

CRUD means Create, Read, Update and Delete. These are the basic important operations carried out on the Database and in applications.

Technology tools:

MySQL(workbench) Database
IDE(Intellij)
Apache Tomcat(I used the Tomcat 9 version).

PPT Content Resources Reference Sample:

1. **Book Reference**

   Jim Farley, William Crawford, David Flanagan. Java Enterprise in a Nutshell, O'Reilly

2. **Book Reference**

   Rocha, R., Purificação, J. (2018). Java EE 8 Design Patterns and Best Practices: Build Enterprise-ready Scalable Applications with Architectural Design Patterns. Germany: Packt Publishing..

3. **Website Reference**

   https://www.scribd.com/document/268349254/Java-8-Programming-Black-Book .

4. **Sources**

   https://developers.redhat.com/topics/enterprise-java

5. **Article**

   https://www.researchgate.net/publication/276412369_Advanced_Java_Programming

Parul® University | NAAC GRADE A++

https://paruluniversity.ac.in/