

Session Tracking

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Agenda

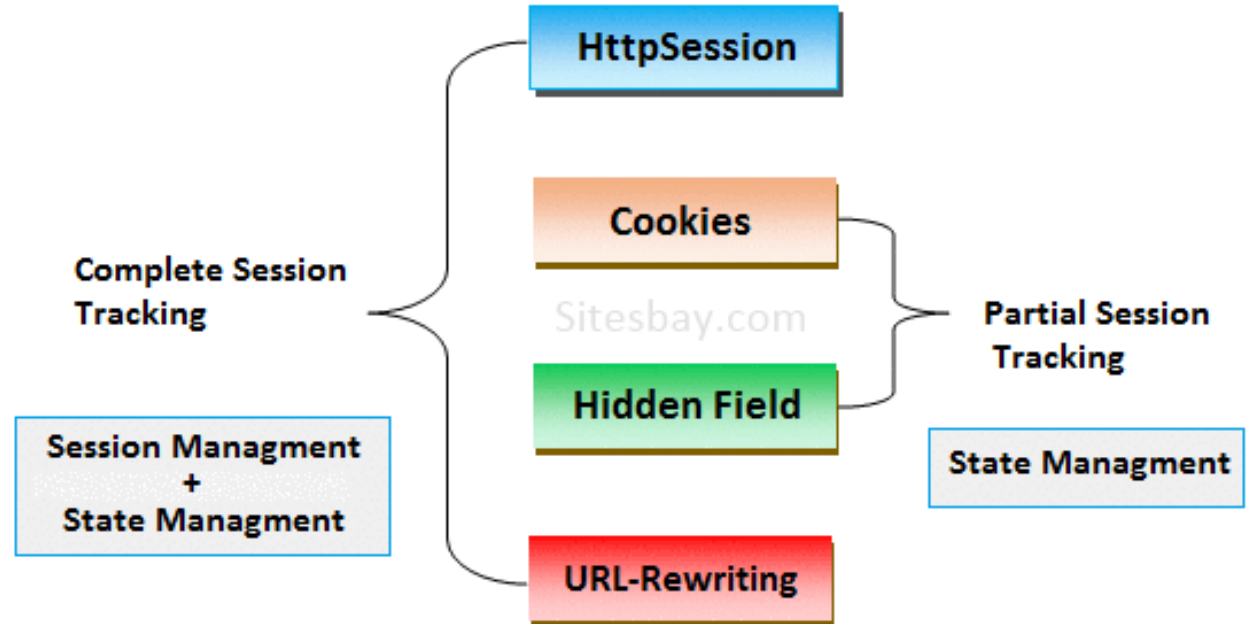
- **What is Session?**
- **How to maintain sessions?**
- **Different way of session tracking.**

Session

- Session is simply the limited interval of time in which two systems communicate with each other.
- As HTTP is a **stateless** protocol, server do not remember the client over multiple request.
- In situations where a series of request and response takes place between same client and a server (for example online shopping system) so to maintain the conversational state , session tracking is needed.

Session Tracking Method

- Hidden Form Fields
- URL Rewriting
- Cookies
- Http Session



Hidden Form Fields

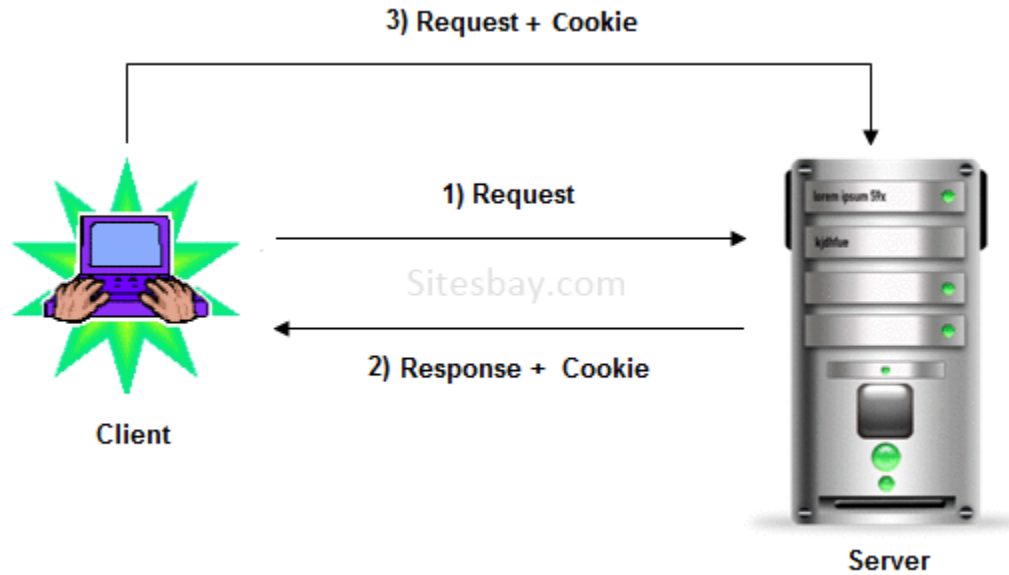
- Hidden Form Fields can be used for storing Session Information
- This information can be retrieved later on through HttpServletRequest.
- This cannot be used for session tracking when the conversation included static resources like html pages.
- Syntax

```
<input type="hidden" name="uname" value="porter">
```
- **Limitations:**
 - Can be used only on Dynamically generated pages
 - Security loopholes

URL Rewriting

- Session parameters are appended to the URL.
- It is a less elegant solution as :
 - Session cannot be maintained by requesting well-known urls
 - Does not allow the use of static pages
 - URLs may get quite lengthy
 - Must be ensured that every URL referencing your site is appended with session info
 - It brings up some privacy issues
 - User may leave the session & come back with a bookmark.
In such cases, Session info is lost.

How Cookie works?



Cookies

- This is the most common way of Session Tracking
- Cookies (Name-Value pairs) are sent to client by server.
- Client sends them back if it wants to continue with session
- Limitations:
 - Cookie can not grow more than 4k in size
 - Cookie may pose some privacy concern for user

Methods of Cookie class

Methods	Description
<code>public void setMaxAge(int expiry)</code>	It is used for Sets the maximum age of the cookie in seconds.
<code>public String getName()</code>	It is used for Returns the name of the cookie. The name cannot be changed after creation.
<code>public String getValue()</code>	It is used for Returns the value of the cookie.
<code>public void setName(String name)</code>	It is used for changes the name of the cookie.
<code>public void setValue(String value)</code>	It is used for changes the value of the cookie.
<code>public void addCookie(Cookie ck)</code>	It is method of HttpServletResponse interface which is used to add cookie in response object.
<code>public Cookie[] getCookies()</code>	It is method of HttpServletRequest interface which is used to return all the cookies from the browser.

HTTP Session Tracking

- This is a reliable way of Session Tracking.
- Obtain a session object.
- Add name-value pairs to Session through `setAttribute()`.
- Retrieve values using `getAttribute()`.

HTTP Session API

Method	Description
<code>public HttpSession getSession():</code>	It returns the current session associated with this request, or if the request does not have a session, creates one.
<code>public HttpSession getSession(boolean create)</code>	It returns the current HttpSession associated with this request or, if there is no current session and create is true, returns a new session.
<code>public String getId()</code>	It returns a string containing the unique identifier value.
<code>public long getCreationTime()</code>	It returns the time when this session was created, measured in milliseconds since midnight January 1, 1970 GMT.
<code>public long getLastAccessedTime()</code>	It returns the last time the client sent a request associated with this session, as the number of milliseconds since midnight January 1, 1970 GMT.
<code>public void invalidate()</code>	Invalidates this session then unbinds any objects bound to it.



Thank You!