

SERVLETS PART-7

Session Tracking:

Session tracking is a mechanism that servlets use to maintain client state information about a series of request from the same user across some time period.

Client state information can be a user name, password, shopping items, examination id, .. etc.,

There are four session tracking methods:

- 1) Cookies
- 2) URL Rewriting
- 3) Http Sessions
- 4) Hidden Form Fields

1) Cookies:

A cookie is a piece of information stored at client side to maintain client state information.

Example:

books.html

```
<html>
<body bgcolor=green text=yellow>
<h1><u>Java Books</u></h1>
<form action=set>
<input type=checkbox name=book1 value=Java2CompleteReference> Java 2
Complete Reference<br>
<input type=checkbox name=book2 value=HeadFirstJava> Head First Java<br>
```

```
<input type=checkbox name=book3 value=SCJPByKathySierra> SCJP By Kathy  
Sierra<br><br>
```

```
<input type=submit><input type=reset>
```

```
</form>
```

```
</body>
```

```
</html>
```

SetCookie.java

```
package cookie;
```

```
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("/set")
```

```
public class SetCookie extends HttpServlet {
```

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

```
        String s1=request.getParameter("book1");
```

```
        String s2=request.getParameter("book2");
```

```
        String s3=request.getParameter("book3");
```

```
        if(s1!=null)
```

```
        {
```

```
        Cookie c1=new Cookie("b1",s1);
        response.addCookie(c1);
    }
    if(s2!=null)
    {
        Cookie c2=new Cookie("b2",s2);
        response.addCookie(c2);
    }
    if(s3!=null)
    {
        Cookie c3=new Cookie("b3",s3);
        response.addCookie(c3);
    }
    PrintWriter pw=response.getWriter();
    pw.println("<html><body bgcolor=cyan text=red>");
    pw.println("<h1>Your Books Are Added To Cart</h1>");
    pw.println("<a href=get>Next</a>");
    pw.println("</body></html>");
}
}
```

GetCookie.java

```
package cookie;

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("/get")
public class GetCookie extends HttpServlet {
    protected void doGet(HttpServletRequest request, HttpServletResponse
response) throws ServletException, IOException {
        PrintWriter pw=response.getWriter();
        pw.println("<html><body bgcolor=yellow text=blue>");
        pw.println("<h1>Selected Books:</h1>");
        Cookie[] c1=request.getCookies();
        for(Cookie c2 : c1)
        {
            String s=c2.getValue();
            pw.println(s+"<br>");
        }
        pw.println("</body></html>");
    }
}
```

2) URL Rewriting:

In this session tracking method client state information appended to URL.

Example:

Set.java

```
package url;

import java.io.IOException;
import java.io.PrintWriter;
import javax.servlet.ServletException;
import javax.servlet.annotation.WebServlet;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
@WebServlet("/set")
public class Set extends HttpServlet {

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

        String s1=request.getParameter("book1");
        String s2=request.getParameter("book2");
        String s3=request.getParameter("book3");
        PrintWriter pw=response.getWriter();
        pw.println("<html><body bgcolor=cyan text=red>");
        pw.println("<h1>Your Books Are Added To Cart</h1>");
        pw.println("<a
href=get?b1="+s1+"&b2="+s2+"&b3="+s3+">Next</a>");
        pw.println("</body></html>");

    }

}
```

Get.java

```
package url;

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("/get")
public class Get extends HttpServlet {
    protected void doGet(HttpServletRequest request, HttpServletResponse
response) throws ServletException, IOException {
        PrintWriter pw=response.getWriter();
        String s1=request.getParameter("b1");
        String s2=request.getParameter("b2");
        String s3=request.getParameter("b3");
        pw.println("<html><body bgcolor=yellow text=blue>");
        pw.println("<h1>Selected Books:</h1>");
        if(!(s1.equals("null")))
        {
            pw.println(s1);
        }
        if(!(s2.equals("null")))
```

```
{  
    pw.println(s2);  
}  
if(!(s3.equals("null")))  
{  
    pw.println(s3);  
}  
pw.println("</body></html>");  
}  
}
```

Cookies Vs URL Rewriting

Cookies

- 1) In this session tracking method client state information stored at client side.
- 2) It supports only text.
- 3) Here size of the data is limited.
- 4) Here it is possible to set the time interval.
- 5) Cookies are not secure because cookies client state information can be viewed by the user through browser settings option.
- 6) This session tracking method fails if the cookies are disabled in a browser.

URL Rewriting

- 1) In this session tracking method client state information appended to URL.
- 2) It is also supports only text.
- 3) Here also size of the data is limited.
- 4) Here it is not possible to set the time interval.
- 5) It is also not secure because here client state information displayed in address bar in a browser window.
- 6) This session tracking method always works.