8.5 Using Cookies to Detect First-Time Visitors

Suppose that, at your site, you want to display a prominent banner to first-time visitors, telling them to register. But, you don't want to clutter up the display showing a useless banner to return visitors.

A cookie is the perfect way to differentiate first-timers from repeat visitors. Check for the existence of a uniquely named cookie; if it is there, the client is a repeat visitor. If the cookie is not there, the visitor is a newcomer, and you should set an outgoing "this user has been here before" cookie.

Although this is a straightforward idea, there is one important point to note: you cannot determine if the user is a newcomer by the mere existence of entries in the cookie array. Many beginning servlet programmers erroneously use the following approach.

```
Cookie[] cookies = request.getCookies();
if (cookies == null) {
  doStuffForNewbie();        // Correct.
} else {
  doStuffForReturnVisitor(); // Incorrect.
}
```

Wrong! Sure, if the cookie array is `null`, the client is a newcomer (at least as far as you can tell—he could also have deleted or disabled cookies). But, if the array is non-`null`, it merely shows that the client has been to your *site* (or domain—see `setDomain` in the next section), not that they have been to your *servlet*. Other servlets, JSP pages, and non-Java Web applications can set cookies, and any of those cookies could get returned to your browser, depending on the path settings (see `setPath` in the next section).

Listing 8.1 illustrates the correct approach: checking for a specific cookie. Figures 8-3 and 8-4 show the results of initial and subsequent visits.

Listing 8.1 RepeatVisitor.java

```
package coreservlets;

import java.io.*;
import javax.servlet.*;
import javax.servlet.http.*;

/** Servlet that says "Welcome aboard" to first-time
 *  visitors and "Welcome back" to repeat visitors.
 *  Also see RepeatVisitor2 for variation that uses
 *  cookie utilities from later in this chapter.
 */

public class RepeatVisitor extends HttpServlet {
  public void doGet(HttpServletRequest request,
                    HttpServletResponse response)
      throws ServletException, IOException {
    boolean newbie = true;
    Cookie[] cookies = request.getCookies();
    if (cookies != null) {
      for(int i=0; i<cookies.length; i++) {
        Cookie c = cookies[i];
        if ((c.getName().equals("repeatVisitor")) &&
            // Could omit test and treat cookie name as a flag
```

```
            (c.getValue().equals("yes"))) {
          newbie = false;
          break;
        }
      }
    }
    String title;
    if (newbie) {
      Cookie returnVisitorCookie =
        new Cookie("repeatVisitor", "yes");
      returnVisitorCookie.setMaxAge(60*60*24*365); // 1 year
      response.addCookie(returnVisitorCookie);
      title = "Welcome Aboard";
    } else {
      title = "Welcome Back";
    }
    response.setContentType("text/html");
    PrintWriter out = response.getWriter();
    String docType =
      "<!DOCTYPE HTML PUBLIC \"-//W3C//DTD HTML 4.0 " +
      "Transitional//EN\">\n";
    out.println(docType +
                "<HTML>\n" +
                "<HEAD><TITLE>" + title + "</TITLE></HEAD>\n" +
                "<BODY BGCOLOR=\"#FDF5E6\">\n" +
                "<H1 ALIGN=\"CENTER\">" + title + "</H1>\n" +
                "</BODY></HTML>");
  }
}
```

Figure 8-3. First visit by a client to the `RepeatVisitor` servlet.

Figure 8-4. Subsequent visits by a client to the `RepeatVisitor` servlet.