

Some Web Code

JavaScript and Cookies

This example program uses JavaScript to set a cookie on the user's machine. This is done using `document.cookie`. Whenever the user returns to this page they are greeted appropriately. N.B. This page is completely static on the server side, all storage and computation take place on the client side.

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN">
<html>
  <head>
    <script>
      function helloTime (name)
      {
        var now = new Date;
        if (now.getHours()<12)
          return ("Good morning "+name);
        else
          return ("Good afternoon "+name);
      }
    </script>
  </head>

  <body>
    <p>The first time the user visits this webpage they are prompted for their name. This is
      then stored in a cookie and the user is greeted by name the next time they visit.</p>

    <script type="text/javascript">
      if (document.cookie.length>0)
      {
        document.write("Hello again: "+document.cookie);
      }
      else
      {
        var name=prompt("Enter your name","nobody");
        document.write(helloTime(name));
        document.cookie=name;
      }
    </script>

    <noscript> You need JavaScript enabled. </noscript>

  </body>
</html>
```

JavaServer Pages Example

In this example an HTML form passes values to a JSP page that performs some computation on the server. The HTML uses a form to pass an upper and lower bound for a computation, using the URL query string. A little JavaScript ensures that only integer values are entered.

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN">
<html>
  <head>
    <title></title>
    <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">

    <!-- this functions checks to see it high and low are both ints -->
    <script type="text/javascript">
      function checkInt()
      {
        var high=document.forms["input"]["high"].value;
        var low=document.forms["input"]["low"].value;
        if ( isNaN(parseInt(high)) || !isFinite(high)
            || isNaN(parseInt(low)) || !isFinite(low)) {
          alert("Please enter integers for the high and low bound");
          return false;
        } else {
          if (low>high) {
            alert("The lower bound must not be greater than the higher bound");
            return false;
          } else {
            return true;
          }
        }
      }
    </script>
  </head>

  <body>

    <h2> Enter Values </h2>
    <p>Here you can enter a range in an HTML form a JSP page will do a
      calculation using numbers in this range: </p>

    <!-- This form can only be submitted if high and low are ints
      It passes these arguments to a JSP page using a query string -->
    <form name="input" action="calc.jsp" onsubmit="return checkInt();" method="p" >
      Lower bound: <input type="text" name="low" /> <br>
      Upper bound: <input type="text" name="high" /> <br><br>

      <input type="checkbox" name="working"/>Show working<br><br>
      <input type="submit" value="Send" />
    </form>
  </body>
</html>
```

The form specifies that the query should be submitted to the page calc.jsp, which contains the following:

```
<!--
  This is a simple JSP page that uses the Java Random Object to do a sum. It must be
  called with the high and low fields set to integers in the query string. JSP lets you
  put Java code in your HTML, it goes between the <% %> tags, and must write to out.
--%>

<!-- Notice that java.util.Random is imported here --%>
<%@page contentType="text/html" pageEncoding="UTF-8" import="java.util.Random"%>
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN"
  "http://www.w3.org/TR/html4/loose.dtd">

<html>
  <head>
    <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
    <title>JSP Page</title>
  </head>
  <body>
    <h1>Doing a sum: </h1>
    <%
      boolean show = false;
      String working = request.getParameter("working");
      if (working != null && working.equals("on")) {show = true;}
      if (show) { out.println("Query string: "+request.getQueryString()+"<br>"); }

      // This relies on the JavaScript in index.html to avoid type errors
      int low = (int)Float.parseFloat(request.getParameter("low"));
      int high = (int)Float.parseFloat(request.getParameter("high"));

      if (show) { out.println("Working in range: "+low+" to "+high+"<br>"); }

      out.println("<br><b>Here is an example of a sum:</b><br>");

      // Generated two random numbers using java.util.random
      Random gen = new Random();
      int x = gen.nextInt(high-low+1)+low;
      int y = gen.nextInt(high-low+1)+low;

      // Print their product
      out.print(x+" times " +y+" = "+x*y);
    %>
  </body>
</html>
```

Learning more

To learn about:

HTML see: <http://www.w3schools.com/HTML>

SQL see: <http://www.w3schools.com/sql/default.asp>

JavaScript see: <http://www.w3schools.com/js/default.asp>

JSP see <http://www.jsptut.com> and the demo code in NetBeans.