Databases and Cookies

From a programmer's standpoint, one great problem of the web is the lack of an intrinsic identification of visitors. Cookies provide a means of identifying visitors, with their approval, so that continuity can be established between visits. Cookies are limited in the amount of information they can hold but, by storing an identification number in a cookie, we can then use that ID with ASP-ADO to look up a returning visitor in our database, and thus have all of the visitor's data available.

Review of Cookies

The following section provides a review of the purpose of cookies and a few key points to remember about cookies. If you have been working with ASP pages for very long you are probably already familiar with the basics and can skip to the section entitled "Using cookies with ADO and a Database." The topic of cookies is also covered in depth in Beginning and Professional Active Server Pages (ISBN 1-861001-34-7 and 1-861001-26-6) with additional information on cookies in the context of sessions and applications.

Purpose of Cookies

Cookies were created to overcome the problem of identifying visitors to the site for the purpose of maintaining some continuity between requests. There is no mechanism built into the World Wide Web that states the name of the PC that is sending a request, or that provides the ability to sense that a series of requests are all coming from the same visitor. Recall that the WWW was originally designed to provide rapid and universal access to pages of information. There was no need for a system to track a series of requests as being from the same user. Implementation of that type of continuity would slow down the server.

However, modern sites provide a more interactive experience, which frequently requires that the server has an identification of the visitor. For example, visitors may proceed through many pages of forms to place an order; the server will have to know which was the last page completed by that user and be capable of holding information between submissions. Cookies were designed to hold information about a user, including an identifying number. When a visitor returns to a site after a few minutes or a few years the site can identify that user and serve appropriate pages.
Key Points About Cookies

After teaching the concepts and techniques of cookies to several classes, I have found that the same concepts cause confusion for many people. This section provides explanations for those problems areas. Note that these explanations are in the context of a site designer working with ASP-ADO, and are generalities. Other site design tools offer their own techniques for working with cookies. In each case there are a few exceptions, but it helps my students to understand the core ideas first, then deal with exceptions later.

Cookies are created by an ASP page

Many people wonder how the cookie gets set in the first place. It is not automatic. There is nothing built into the server or the browser that automatically sets cookies. The cookie-making process starts with several lines of code that you write in a page of your site. When the visitor opens that page, the lines of code instruct the browser to create the cookie. In summary, the script of the page instructs the browser to carry out the cookie baking.

Cookies are located on the visitor's machine

Cookies are stored on the hard drive of the browser's machine. Each cookie has several pieces of data:

- Which domain (web site) set the cookie
- A date of expiration for this cookie
- One or more pieces of data
- Optional: keys that organize multiple data in folder-like groups

Note that the browser knows that a particular domain set a particular cookie.

The mechanism of how cookies are stored and organized on the user's PC is browser-specific

As programmers, we can write an ASP page that tells the browser to create a cookie. We do not need to know any further specifics about how the browser creates the cookie since the browser performs the actual writing. Many students ask about the intricacies of how cookies are formatted and organized on the disk, but that topic is not part of ASP-ADO, it is part of a course in programming IE or Netscape. As programmers, we only need to know that all browsers have the ability to receive and carry out generic (not browser-specific) instructions regarding cookies. To summarize, to the programmer all browsers have the same interface regarding cookies. The details of carrying out the job vary between browsers, but that does not concern us in this book.

Cookies do not persist unless instructed

Cookies, by default, only last as long as the browser is open. To make a cookie persist beyond the current session of the browser, you as the programmer must set an expiration date for some day in the future.