

Chapter 18: PHP

CS 80: Internet Programming

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PHP

- Extremely common
- Open-source
- Platform independent

Preliminaries

- PHP handles client requests
- PHP is embedded into HTML documents, but executes on the server *before* the HTML document is delivered to the client
- PHP files have the extension .php

Preliminaries

- php code resides between `<?php /*PHP code */?>`
 - Single line php comments start with `//`
 - Multiline comments are enclosed with `/* */`
- Statements terminated with a semicolon `;` (required)

Variables

- Declared with `$name`
 - `name` must start with a letter or underscore
 - `name` can only contain `A–z`, `0–9`, and `_`

Variables

- Variables are case-sensitive
- Loosely typed
 - Similar idea as Javascript. Variables have types, but their type can change on the fly
 - In PHP, we have to explicitly change types

PHP Types

Type	Description
int, integer	Whole numbers (i.e., numbers without a decimal point).
float, double, real	Real numbers (i.e., numbers containing a decimal point).
string	Text enclosed in either single (') or double (") quotes. [<i>Note:</i> Using double quotes allows PHP to recognize more escape sequences.]
bool, boolean	true or false.
array	Group of elements.
object	Group of associated data and methods.
resource	An external source—usually information from a database.
NULL	No value.

Figure 1: PHP Types

Example: first.php

```
1 <!DOCTYPE html>
2 <!-- Fig. 19.1: first.php -->
3 <!-- Simple PHP program. -->
4 <html>
5   <?php
6     $name = "Paul"; // declaration and initialization
7   ?><!-- end PHP script -->
8   <head>
9     <meta charset = "utf-8">
10    <title>Simple PHP document</title>
11  </head>
12  <body>
13    <!-- print variable name's value -->
14    <h1><?php print( "Welcome to PHP, $name!" ); ?></h1>
15  </body>
16 </html>
```

Important Notes

- Line 6 declares a php variable named `name` and sets it equal to Paul

- Line 14 prints text into the `<h1>` tag **before the file is served to the client**
 - Note that the value of `$name` is printed, not the string `"$name"`
 - Double quoted strings will have variables evaluated (called *interpolating* a variable)
 - Single quoted strings will have the entire string taken as a literal value (no interpolation)

Example: data.php

```
1 <!DOCTYPE html>
2 <!-- Fig. 19.3: data.php -->
3 <!-- Data type conversion. -->
4 <html>
5   <head>
6     <meta charset = "utf-8">
7     <title>Data type conversion</title>
8     <style type = "text/css">
9       p
10      {
11        margin: 0;
12      }
13    .head
14    {
15      margin-top: 10px;
16      font-weight: bold;
17    }
18    .space
19    {
20      margin-top: 10px;
21    }
22  </style>
23 </head>
24 <body>
25   <?php
26     // declare a string, double and integer
27     $testString = "3.5 seconds";
28     $testDouble = 79.2;
29     $testInteger = 12;
30     ?><!-- end PHP script -->
31     <!-- print each variable's value and type -->
32     <p class = "head">Original values:</p>
33     <?php
34       print( "<p>$testString is a(n) " . gettype( $testString ) . "</p>"
35             >" );
```

```
35     print( "<p>$testDouble is a(n) " . gettype( $testDouble ) . "</p>" );
36     print( "<p>$testInteger is a(n) " . gettype( $testInteger ) . "</p>" );
37     ?><!-- end PHP script -->
38     <p class = "head">Converting to other data types:</p>
39     <?php
40         // call function settype to convert variable
41         // testString to different data types
42         print( "<p>$testString " );
43         settype( $testString, "double" );
44         print( " as a double is $testString</p>" );
45         print( "<p>$testString " );
46         settype( $testString, "integer" );
47         print( " as an integer is $testString</p>" );
48         settype( $testString, "string" );
49         print( "<p class = 'space'>Converting back to a string results in $testString</p>" );
50         // use type casting to cast variables to a different type
51         $data = "98.6 degrees";
52         print( "<p class = 'space'>Before casting: $data is a " . gettype( $data ) . "</p>" );
53         print( "<p class = 'space'>Using type casting instead:</p>" );
54         print( "<p>as a double: " . (double) $data . "</p>" );
55         print( "<p>as an integer: " . (integer) $data . "</p>" );
56         print( "<p class = 'space'>After casting: $data is a " . gettype( $data ) . "</p>" );
57     ?><!-- end PHP script -->
58     </body>
59 </html>
```

Types and Conversion

- `gettype` gets the type of the parameter
- `settype` changes the type of first parameter to the second parameter
- Using `settype` can result in data loss: values may be truncated
 - For example, converting 3.5 to an int yields 3, and converting the int back to a double yields 3
 - Same thing happens with strings "3.5 seconds" as a double becomes 3.5

Types and Conversion

- Casting
 - Creates a temporary copy of the data before converting it
 - Means we won't lose data
 - Useful when a different type is required for a specific operation, but you want to retain the original value

String Concatenation

- Same as with javascript, but the operator is .

Constant values

- Created with `DEFINE("NAME", value);`
- Not a variable, a constant
- Used by simply typing `NAME` where you want the value

Conditionals

- Basically the same as Javascript, but `else if` is `elseif` (another keyword)

Arithmetic Operators

- Same as Javascript

Example: operators.php

```
1 <!DOCTYPE html>
2 <!-- Fig. 19.4: operators.php -->
3 <!-- Using arithmetic operators. -->
4 <html>
5   <head>
6     <meta charset = "utf-8">
7     <style type = "text/css">
8       p { margin: 0; }
9     </style>
10    <title>Using arithmetic operators</title>
11  </head>
12  <body>
```

```
13  <?php
14      $a = 5;
15      print( "<p>The value of variable a is $a</p>" );
16
17      // define constant VALUE
18      define( "VALUE", 5 );
19
20      // add constant VALUE to variable $a
21      $a = $a + VALUE;
22      print( "<p>Variable a after adding constant VALUE is $a</p>" );
23
24      // multiply variable $a by 2
25      $a *= 2;
26      print( "<p>Multiplying variable a by 2 yields $a</p>" );
27
28      // test if variable $a is less than 50
29      if ( $a < 50 )
30      {
31          print( "<p>Variable a is less than 50</p>" );
32      }
33
34      // add 40 to variable $a
35      $a += 40;
36      print( "<p>Variable a after adding 40 is $a</p>" );
37
38      // test if variable $a is 50 or less
39      if ( $a < 51 )
40      {
41          print( "<p>Variable a is still 50 or less</p>" );
42      }
43      elseif ( $a < 101 )
44      {
45          // $a >= 51 and <= 100
46          print( "<p>Variable a is now between 50 and 100, inclusive</p>"
47                );
48      }
49      else // $a > 100
50      {
51          print( "<p>Variable a is now greater than 100</p>" );
52      }
53      // print an uninitialized variable
```

```
54     print( "<p>Using a variable before initializing: $nothing</p>" );
        // nothing evaluates to ""
55
56     // add constant VALUE to an uninitialized variable
57     $test = $num + VALUE;
58
59     // num evaluates to 0
60     print( "<p>An uninitialized variable plus constant VALUE yields
        $test</p>" );
61
62     // add a string to an integer
63     $str = "3 dollars";
64     $a += $str;
65     print( "<p>Adding a string to variable a yields $a</p>" );
66     ?><!-- end PHP script -->
67 </body>
68 </html>
```

Arrays

- PHP also supports arrays
 - Note that if an array does not exist, but is assigned, the array will be created
- PHP arrays may be *associative arrays*, meaning they have non-integer indices
 - E.g. you index an array by a name, or by student ID number (stored as a string)

Arrays

- `reset` resets the internal pointer of the array to the beginning of the array
 - `key` returns the index of the element pointed to by the internal pointer
 - `next` moves the internal pointer down one element of the array
- `foreach` is specifically for iterating through arrays
 - `as` divides the key/value (key is on the left, value is on the right)

Example: array.php

```
1 <!DOCTYPE html>
2 <!-- Fig. 19.7: arrays.php -->
3 <!-- Array manipulation. -->
4 <html>
5 <head>
```

```
6 <meta charset = "utf-8">
7 <title>Array manipulation</title>
8 <style type = "text/css">
9 p
10 { margin: 0; }
11 .head { margin-top: 10px; font-weight: bold; }
12 </style>
13 </head>
14 <body>
15 <?php
16     // create array first
17     print( "<p class = 'head'>Creating the first array</p>" );
18     $first[ 0 ] = "zero";
19     $first[ 1 ] = "one";
20     $first[ 2 ] = "two";
21     $first[] = "three";
22     // print each element's index and value
23     for ( $i = 0; $i < count( $first ); ++$i )
24         print( "<p>Element $i is $first[$i]</p>" );
25     print( "<p class = 'head'>Creating the second array</p>" );
26     // call function array to create array second
27     $second = array( "zero", "one", "two", "three" );
28     for ( $i = 0; $i < count( $second ); ++$i )
29         print( "<p>Element $i is $second[$i]</p>" );
30     print( "<p class = 'head'>Creating the third array</p>" );
31     // assign values to entries using nonnumeric indices
32     $third[ "Amy" ] = 21;
33     $third[ "Bob" ] = 18;
34     $third[ "Carol" ] = 23;
35     // iterate through the array elements and print each
36     // element's name and value
37     for ( reset( $third ); $element = key( $third ); next( $third ) )
38         print( "<p>$element is $third[$element]</p>" );
39     print( "<p class = 'head'>Creating the fourth array</p>" );
40     // call function array to create array fourth using
41     // string indices
42     $fourth = array(
43         "January" => "first",
44         "February" => "second",
45         "March" => "third",
46         "April" => "fourth",
47         "May" => "fifth",
48         "June" => "sixth",
```



```
49     "July"    => "seventh",
50     "August"  => "eighth",
51     "September" => "ninth",
52     "October"  => "tenth",
53     "November" => "eleventh",
54     "December" => "twelfth" );
55     // print each element's name and value
56     foreach ( $fourth as $element => $value )
57         print( "<p>$element is the $value month</p>" );
58 ?><!-- end PHP script -->
59 </body>
60 </html>
```

String Comparisons

- `strcmp` compares two strings.
 - returns -1 if the first string alphabetically precedes the second string
 - returns 0 if the two strings are equal
 - returns 1 if the first string alphabetically follows the second string
- Can also use relational operators
 - `==`, `!=`, `<`, `<=`, `>`, `>=`

Example: `compare.php`

```
1 <!DOCTYPE html>
2 <!-- Fig. 19.8: compare.php -->
3 <!-- Using the string-comparison operators. -->
4 <html>
5     <head>
6         <meta charset = "utf-8">
7         <title>String Comparison</title>
8         <style type = "text/css">
9             p { margin: 0; }
10        </style>
11    </head>
12    <body>
13        <?php
14            // create array fruits
15            $fruits = array( "apple", "orange", "banana" );
16            // iterate through each array element
```

```
17     for ( $i = 0; $i < count( $fruits ); ++$i )
18     {
19         // call function strcmp to compare the array element
20         // to string "banana"
21         if (strcmp( $fruits[ $i ], "banana" ) < 0) {
22             print( "<p>" . $fruits[ $i ] . " is less than banana " );
23         } elseif ( strcmp( $fruits[ $i ], "banana" ) > 0 ) {
24             print( "<p>" . $fruits[ $i ] . " is greater than banana ");
25         } else {
26             print( "<p>" . $fruits[ $i ] . " is equal to banana " );
27         }
28         // use relational operators to compare each element
29         // to string "apple"
30         if ( $fruits[ $i ] < "apple" )
31             print( "and less than apple!</p>" );
32         elseif ( $fruits[ $i ] > "apple" )
33             print( "and greater than apple!</p>" );
34         elseif ( $fruits[ $i ] == "apple" )
35             print( "and equal to apple!</p>" );
36     } // end for
37     ?><!-- end PHP script -->
38     </body>
39     </html>
```

Regular Expressions

- There is no escape from regular expressions
- php uses the `preg_match` function to search for a string with the specified pattern

Regular Expressions

- Important regex characters
 - `^` means beginning of line
 - `$` means end of line
 - `[]` denotes a bracket expression
 - * lists of characters
 - * can specify a range with `-`
 - * E.g. `[a-z]` are all characters a through z

Regular Expressions

- Quantifiers
 - specifies a quantity to match with the previous expression
 - * means 'zero or more times'
 - + means 'one or more times'
 - ? means 'zero or one times'
 - {n} means 'exactly n times'
 - {m,n} means 'between m and n times'
 - {n,} means 'n or more times'

Character Classes

Character class	Description
<code>\alnum</code>	Alphanumeric characters (i.e., letters [a-zA-Z] or digits [0-9])
<code>\alpha</code>	Word characters (i.e., letters [a-zA-Z])
<code>\digit</code>	Digits
<code>\space</code>	White space
<code>\lower</code>	Lowercase letters
<code>\upper</code>	Uppercase letters

Figure 2: Regex Character Classes

Example: `expression.php`

```
1 <!DOCTYPE html>
2 <!-- Fig. 19.9: expression.php -->
3 <!-- Regular expressions. -->
4 <html>
5   <head>
6     <meta charset = "utf-8">
7     <title>Regular expressions</title>
8     <style type = "text/css">
9       p { margin: 0; }
10    </style>
11  </head>
12  <body>
```

```
13     <?php
14         $search = "Now is the time";
15         print( "<p>Test string is: '$search'</p>" );
16         // call preg_match to search for pattern 'Now' in variable search
17         if (
18             preg_match( "/Now/", $search )
19         )
20             print( "<p>'Now' was found.</p>" );
21         // search for pattern 'Now' in the beginning of the string
22         if (
23             preg_match( "^Now/", $search )
24         )
25             print( "<p>'Now' found at beginning of the line.</p>" );
26         // search for pattern 'Now' at the end of the string
27         if (
28             !preg_match( "Now$/", $search )
29         )
30             print( "<p>'Now' was not found at the end of the line.</p>" );
31         // search for any word ending in 'ow'
32         if (
33             preg_match( "/\b([a-zA-Z]*ow)\b/i", $search, $match )
34         )
35             print( "<p>Word found ending in 'ow': " .
36                 $match[ 1 ]
37                 . "</p>" );
38         // search for any words beginning with 't'
39         print( "<p>Words beginning with 't' found: " );
40         while (
41             preg_match( "/\b(t[[:alpha:]]+)\b/", $search, $match )
42         )
43         {
44             print(
45                 $match[ 1 ]
46                 . " " );
47             // remove the first occurrence of a word beginning
48             // with 't' to find other instances in the string
49             $search = preg_replace("/" . $match[ 1 ] . "/", "", $search);
50         } // end while
51         print( "</p>" );
52     ?><!-- end PHP script -->
53 </body>
54 </html>
```

Form Processing

Superglobal Arrays

- Special arrays that contain client information
- Client information includes:
 - Client's web browser
 - Data sent to the server by the client `$_GET` and `$_POST`
 - * E.g. if the user submit's a form and it is posted to a script (remember the `action` attribute), then the information is available in the `$_POST` array
 - Cookies

Superglobal Arrays

Variable name	Description
<code>\$_SERVER</code>	Data about the currently running server.
<code>\$_ENV</code>	Data about the client's environment.
<code>\$_GET</code>	Data sent to the server by a get request.
<code>\$_POST</code>	Data sent to the server by a post request.
<code>\$_COOKIE</code>	Data contained in cookies on the client's computer.
<code>\$GLOBALS</code>	Array containing all global variables.

Figure 3: Superglobal arrays

Example: form.html

```
1 <!DOCTYPE html>
2 <!-- Fig. 19.13: form.html -->
3 <!-- HTML form for gathering user input. -->
4 <html>
5 <head>
6   <meta charset="utf-8">
7   <title>Sample Form</title>
8   <style type="text/css">
9     label {
10       width: 5em;
11       float: left;
12     }
```

```
13     </style>
14 </head>
15 <body>
16     <h1>Registration Form</h1>
17     <p>Please fill in all fields and click Register.</p>
18     <!-- post form data to form.php -->
19     <form method="post" action="form.php">
20         <h2>User Information</h2>
21         <!-- create four text boxes for user input -->
22         <div>
23             <label>First name:</label>
24             <input type="text" name="fname">
25         </div>
26         <div>
27             <label>Last name:</label>
28             <input type="text" name="lname">
29         </div>
30         <div>
31             <label>Email:</label>
32             <input type="text" name="email">
33         </div>
34         <div>
35             <label>Phone:</label>
36             <input type="text" name="phone" placeholder="(555) 555-5555">
37         </div>
38         <h2>Publications</h2>
39         <p>Which book would you like information about?</p>
40         <!-- create drop-down list containing book names -->
41         <select name="book">
42             <option>Internet and WWW How to Program</option>
43             <option>C++ How to Program</option>
44             <option>Java How to Program</option>
45             <option>Visual Basic How to Program</option>
46         </select>
47         <h2>Operating System</h2>
48         <p>Which operating system do you use?</p>
49         <!-- create five radio buttons -->
50         <p>
51             <input type = "radio" name = "os" value = "Windows" checked>
                Windows
52             <input type = "radio" name = "os" value = "Mac OS X">Mac OS X
53             <input type = "radio" name = "os" value = "Linux">Linux
54             <input type = "radio" name = "os" value = "Other">Other
```

```
55     </p>
56     <!-- create a submit button -->
57     <p>
58         <input type = "submit" name = "submit" value = "Register">
59     </p>
60 </form>
61 </body>
62 </html>
```

Form Processing

- Let's break down this form (it's been a while)
 - It uses the **POST** HTTP method to send data to `form.php`
 - It has the following inputs:
 - * `fname` (text)
 - * `lname` (text)
 - * `email` (text)
 - * `phone` (text)
 - * `book` (options)
 - * `os` (radio)

Form Processing

- So when we hit **Register** (the `submit` input), we will send the inputs to `form.php` using the `$_POST` superarray
 - Had we used the **GET** method we'd see values in the `$_GET` superarray
- The input names are the glue; the register an input to an entry in the superarray
 - This is why names mattered in chapter 2/3!!

Example: `form.php`

```
1 <!DOCTYPE html>
2 <!-- Fig. 19.14: form.php -->
3 <!-- Process information sent from form.html. -->
4 <html>
5     <head>
6         <meta charset = "utf-8">
7         <title>Form Validation</title>
8         <style type = "text/css">
```

```
9      p
10      { margin: 0px; }
11      .error
12      { color: red }
13      p.head { font-weight: bold; margin-top: 10px; }
14  </style>
15  </head>
16  <body>
17      <?php
18          // determine whether phone number is valid and print
19          // an error message if not
20          // regex looks for the following pattern "(###) ###-####"
21          if (!preg_match( "/^\([0-9]{3}\) [0-9]{3}-[0-9]{4}$/", $_POST["
22              phone"]))
23          {
24              print( "<p class = 'error'>Invalid phone number</p>
25                  <p>A valid phone number must be in the form
26                  (555) 555-5555</p><p>Click the Back button,
27                  enter a valid phone number and resubmit.</p>
28                  <p>Thank You.</p></body></html>" );
29              die(); // terminate script execution
30          }
31      ?><!-- end PHP script -->
32      <p>
33          <!-- Access information from the submission using the $_POST
34              superarray -->
35          Hi <?php print( $_POST["fname"] ); ?>. Thank you for completing
36              the survey. You have been added to the
37              <?php print( $_POST["book"] ); ?>mailing list.
38      </p>
39      <p class = "head">
40          The following information has been saved in our database:
41      </p>
42      <p>Name: <?php print( $_POST["fname"] ); print( " " . $_POST["lname
43          " ] ); ?></p>
44      <p>Email: <?php print( $_POST["email"] ); ?></p>
45      <p>Phone: <?php print( $_POST["phone"] ); ?></p>
46      <p>OS: <?php print( $_POST["os"] ); ?></p>
47      <p class = "head">
48          This is only a sample form. You have not been added to a mailing
49          list.
50      </p>
51  </body>
```



```
47 </html>
```

Form Processing

- This validates the phone number!
 - Very important to validate your form inputs
- `die()` terminates the script, stops processing the form

Example: data.html

```
1 <!DOCTYPE html>
2 <!-- Fig. 19.15: data.html -->
3 <!-- Form to query a MySQL database. -->
4 <html>
5   <head>
6     <meta charset = "utf-8">
7     <title>Sample Database Query</title>
8   </head>
9   <body>
10    <h1>Querying a MySQL database.</h1>
11    <form method = "post" action = "database.php">
12      <p>Select a field to display:
13      <!-- add a select box containing options -->
14      <!-- for SELECT query -->
15      <select name = "select">
16        <option selected>*</option>
17        <option>ID</option>
18        <option>Title</option>
19        <option>Category</option>
20        <option>ISBN</option>
21      </select>
22    </p>
23    <p>
24      <input type = "submit" value = "Send Query">
25    </p>
26  </form>
27 </body>
28 </html>
```

Example: database.php

```
1 <!DOCTYPE html>
2 <!-- Fig. 19.16: database.php -->
3 <!-- Querying a database and displaying the results. -->
4 <html>
5   <head>
6     <meta charset = "utf-8">
7     <title>Search Results</title>
8     <style type = "text/css">
9       body
10        { font-family: sans-serif;
11          background-color: lightyellow; }
12       table { background-color: lightblue;
13              border-collapse: collapse;
14              border: 1px solid gray; }
15       td
16        { padding: 5px; }
17       tr:nth-child(odd) {
18         background-color: white; }
19     </style>
20   </head>
21   <body>
22     <?php
23       $select = $_POST["select"]; // creates variable $select
24       // build SELECT query
25       $query = "SELECT " . $select . " FROM books";
26       // Connect to MySQL
27       if ( !( $database = mysqli_connect( "localhost", "iw3htp", "
28         password" ) ) )
29         die( "Could not connect to database </body></html>" );
30       // open Products database
31       if ( !mysqli_select_db($database, "products") )
32         die( "Could not open products database </body></html>" );
33       // query Products database
34       if ( !( $result = mysqli_query($database, $query) ) )
35       {
36         print( "<p>Could not execute query!</p>" );
37         die( mysqli_error() . "</body></html>" );
38       } // end if
39       mysqli_close( $database );
40     ?><!-- end PHP script -->
41   <table>
```

```
41     <caption>Results of "SELECT <?php print( "$select" ) ?>
42     FROM books"</caption>
43     <?php
44         // fetch each record in result set
45         while (
46             $row = mysqli_fetch_row( $result )
47         )
48         {
49             // build table to display results
50             print( "<tr>" );
51             foreach ( $row as $key => $value )
52                 print( "<td>$value</td>" );
53             print( "</tr>" );
54         } // end while
55     ?><!-- end PHP script -->
56     </table>
57     <p>
58         Your search yielded <?php print( mysqli_num_rows( $result ) ) ?>
59         results.
60     </p>
61     Please email comments to <a href = "mailto:deitel@deitel.com">
62         Deitel and Associates, Inc.</a>
63 </body>
64 </html>
```

Database Processing

- This assumed we followed the Chapter 18 instructions for setting up MySQL
 - Includes source-ing the `products.sql` file
- `mysqli_connect` connects to the database
- `mysqli_select_db` opens the `products` database
- `mysqli_query` executes a MySQL query (what we learned about in chapter 18)
- `mysqli_close` closes the database

Database Processing

- `mysqli_fetch_row` returns an associative array containing the column of the current row from the query result

- The `key` is a unique column ID for the query
- `mysqli_fetch_assoc` returns an associative array where the column names are the keys storing the corresponding values
- `mysqli_num_rows` stores the number of rows in the query result

Cookies

- What is a cookie?
 - A piece of information from the server that resides on the client's computer
 - Maintains information about the client in between browsing sessions
 - * Cookies mean you don't have to login everytime you visit a website
 - * The cookie stores your login session (not password), basically meaning the website assumes you are the same user
 - You can disable cookies if you want, but it makes browsing significantly more annoying!
 - Can also track other client activity

Cookies

- Cookies are text files
 - Should never store passwords, credit card info, etc
- Cookies are only accessible by the website that placed the cookie on the client's computer
- Cookies have an expiration date - at which point the browser will delete the cookie off of the client's computer
- Cookies are sent back to the originating server when the user connects to that server

Example: cookies.html

```
1 <!DOCTYPE html>
2
3 <!-- Fig. 19.17: cookies.html -->
4 <!-- Gathering data to be written as a cookie. -->
5 <html>
6   <head>
7     <meta charset = "utf-8">
8     <title>Writing a cookie to the client computer</title>
9     <style type = "text/css">
10       label { width: 7em; float: left; }
11     </style>
12   </head>
```

```
13     <body>
14         <h2>Click Write Cookie to save your cookie data.</h2>
15         <form method = "post" action = "cookies.php">
16             <div><label>Name:</label>
17                 <input type = "text" name = "name"></div>
18             <div><label>Height:</label>
19                 <input type = "text" name = "height"></div>
20             <div><label>Favorite Color:</label>
21                 <input type = "text" name = "color"></div>
22             <p><input type = "submit" value = "Write Cookie">
23         </form>
24     </body>
25 </html>
26
27 <!--
28 *****

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```

```
41 *****
42 -->
```

Example: cookies.php

```
1 <!-- Fig. 19.18: cookies.php -->
2 <!-- Writing a cookie to the client. -->
3 <?php
4     define( "FIVE_DAYS", 60 * 60 * 24 * 5 ); // define constant
5
6     // write each form fields value to a cookie and set the
7     // cookies expiration date
8     setcookie( "name", $_POST["name"], time() + FIVE_DAYS );
9     setcookie( "height", $_POST["height"], time() + FIVE_DAYS );
10    setcookie( "color", $_POST["color"], time() + FIVE_DAYS );
11    ?><!-- end PHP script -->
12
13 <!DOCTYPE html>
14
15 <html>
16     <head>
17         <meta charset = "utf-8">
18         <title>Cookie Saved</title>
19         <style type = "text/css">
20             p { margin: 0px; }
21         </style>
22     </head>
23     <body>
24         <p>The cookie has been set with the following data:</p>
25
26         <!-- print each form field's value -->
27         <p>Name: <?php print( $_COOKIE["name"] ) ?></p>
28         <p>Height: <?php print( $_COOKIE["height"] ) ?></p>
29         <p>Favorite Color:
30             <span style = "color: <?php print( $_COOKIE["color"] ) ?> ">
31                 <?php print( $_COOKIE["color"] ) ?></span></p>
32         <p>Click <a href = "readCookies.php">here</a>
33             to read the saved cookie.</p>
34     </body>
35 </html>
36
```

```
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Cookies

- `setcookie` creates a cookie
 - First parameter is the name
 - Second parameter is the data
 - Third parameter is the expiration date
 - * If there is no expiration date, the cookie is a *session cookie*, which means it only exists during the current browsing session (when the user closes the browser, the session ends)

- * If an expiration date is specified, we call this cookie a *persistent cookie*
- Cookies are then accessible through the `$_COOKIE` superarray

Example: readCookies.php

```
1 <!DOCTYPE html>
2
3 <!-- Fig. 19.19: readCookies.php -->
4 <!-- Displaying the cookies contents. -->
5 <html>
6     <head>
7         <meta charset = "utf-8">
8         <title>Read Cookies</title>
9         <style type = "text/css">
10             p { margin: 0px; }
11         </style>
12     </head>
13     <body>
14         <p>The following data is saved in a cookie on your computer.</p>
15         <?php
16             // iterate through array $_COOKIE and print
17             // name and value of each cookie
18             foreach ( $_COOKIE as $key => $value )
19                 print( "<p>$key: $value</p>" );
20         ?><!-- end PHP script -->
21     </body>
22 </html>
23
24 <!--
25 *****
26
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39 -->
```