

Chapter 12

How to work with cookies and sessions

How cookies work

- A cookie is a name/value pair that is stored in a browser.
- On the server, a web application creates a cookie and sends it to the browser.
- On the client, the browser saves the cookie and sends it back to the server every time it accesses a page from that server.
- By default, cookies only last until the user closes his or her web browser. However, cookies can be set to persist in the user's browser until a specified expiration date.
- Some users disable cookies in their browsers.
- Browsers generally accept only 20 cookies from each site and 300 cookies total.
- Browsers can also limit each cookie to 4 kilobytes.
- A cookie can be associated with one or more subdomain names.

Objectives

Applied

1. Use any of the functions and techniques presented in this chapter as you use cookies and session tracking in your applications.

Knowledge

1. Describe the use of cookies, and distinguish between session and persistent cookies.
2. Describe the use of session tracking.
3. Describe the use of the `$_COOKIE` and `$_SESSION` variables.
4. Describe the use of the functions for working with cookies and sessions.

The syntax of the `setcookie()` function

```
setcookie($name, $value, $expire, $path,
         $domain, $secure, $httponly)
```

Setting a cookie in the browser

```
$name = 'userid';
$value = '87';
$expire = strtotime('+1 year');
$path = '/';
setcookie($name, $value, $expire, $path);
```

Getting the value of a cookie from the browser

```
$userid = filter_input(INPUT_COOKIE, 'userid',
                    FILTER_VALIDATE_INT);
```

Deleting a cookie from the browser

```
$expire = strtotime('-1 year');
setcookie('userid', '', $expire, '/');
```

Examples of cookies

```
PHPSESSID=D1F15245171203E8670487F020544490
user_id=87
email=jsmith@hotmail.com
```

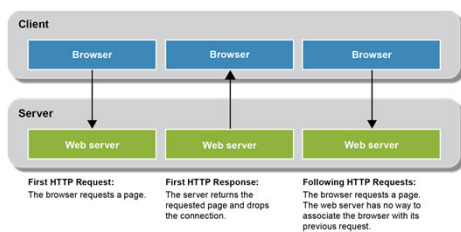
Key terms

- cookie
- session cookie
- persistent cookie

How to enable or disable cookies in Chrome 59

1. Open the Customize and control Google Chrome menu and select the Settings command.
2. Scroll down and click on the "Advanced." link.
3. In the Privacy and security section, click on the "Content settings" link.
4. Click on the Cookies link.
5. Turn the "Allow sites to save and read cookie data" option on to enable cookies or off to disable cookies.

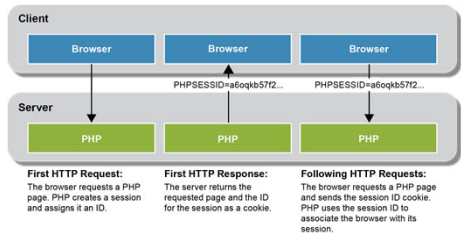
Why session tracking is difficult with HTTP



How to enable or disable cookies in IE 11

1. Open the Tools menu and select the Internet Options command.
2. Click the Privacy tab.
3. Use the slider control to enable or disable cookies, or click on the Advanced button, check the "Override automatic cookie handling" checkbox, configure cookies, and click the OK button.
4. To undo changes made with the slider control or in the Advanced section, click the Default button to return to default privacy settings.

How PHP keeps track of sessions



How to reset default security settings in IE 11

1. Open the Tools menu and select the Internet Options command.
2. Click the Security tab.
3. If not disabled, click the "Reset all zones to default level" button.

Key terms

- State
- Stateless protocol
- Session tracking
- URL encoding

A function to start a session

```
session_start()
```

Start a session with the default cookie parameters

```
session_start();
```

**How to set and get arrays****Set an array in a session**

```
if (!isset($_SESSION['cart'])) {
    $_SESSION['cart'] = array();
}
```

Add an element to an array that's stored in a session

```
$_SESSION['cart']['key1'] = 'value1';
$_SESSION['cart']['key2'] = 'value2';
```

Get and use an array that's stored in a session

```
$cart = $_SESSION['cart'];
foreach ($cart as $item) {
    echo '<li>' . $item . '</li>';
}
```

**The session_set_cookie_params() function**

```
session_set_cookie_params($lifetime, $path, $domain,
    $secure, $httponly)
```

Start a session with custom cookie parameters

```
$lifetime = 60 * 60 * 24 * 365; // 1 year in seconds
session_set_cookie_params($lifetime, '/');
session_start();
```

**How to remove variables from a session****Remove a session variable**

```
unset($_SESSION['cart']);
```

Remove all session variables

```
$_SESSION = array();
```

**How to set and get scalar variables****Set a variable in a session**

```
$_SESSION['product_code'] = 'MBT-1753';
```

Get a variable from a session

```
$product_code = $_SESSION['product_code'];
```

**Functions to manage sessions**

```
session_name()
session_id([$id])
session_write_close()
session_regenerate_id()
```

Get the name of the session cookie

```
$name = session_name(); // By default, PHPSESSID
```

Get the value of the session ID

```
$id = session_id();
```

Set the session ID

```
session_id('abc123');
```



A function to end a session

```
session_destroy()
```

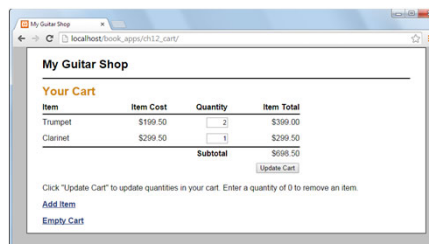
End a session

```
$_SESSION = array(); // Clear session data from memory
session_destroy(); // Clean up the session ID
```



Murach's PHP and MySQL (3rd Ed.)

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The Cart page

Murach's PHP and MySQL (3rd Ed.)

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Delete the session cookie from the browser

```
// Get name of session cookie
$name = session_name();

// Create expire date in past
$expire = strtotime('-1 year');

// Get session params
$params = session_get_cookie_params();
$path = $params['path'];
$domain = $params['domain'];
$secure = $params['secure'];
$httponly = $params['httponly'];

setcookie($name, '', $expire, $path, $domain,
         $secure, $httponly);
```



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The index.php file

```
<?php
// Start session management with a persistent cookie
$lifetime = 60 * 60 * 24 * 14; // 2 weeks in seconds
session_set_cookie_params($lifetime, '/');
session_start();

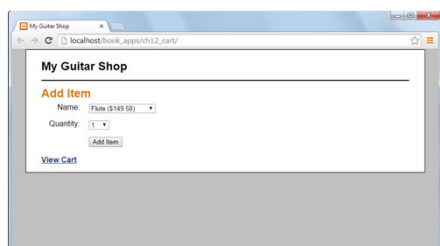
// Create a cart array if needed
if (empty($_SESSION['cart12'])) { $_SESSION['cart12'] =
    array(); }

// Create a table of products
$products = array();
$products['MMS-1754'] =
    array('name' => 'Flute', 'cost' => '149.50');
$products['MMS-6289'] =
    array('name' => 'Trumpet', 'cost' => '199.50');
$products['MMS-3408'] =
    array('name' => 'Clarinet', 'cost' => '299.50');
```



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The Add Item page

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The index.php file (continued)

```
// Include cart functions
require_once('cart.php');

// Get the action to perform
$action = filter_input(INPUT_POST, 'action');
if ($action === NULL) {
    $action = filter_input(INPUT_GET, 'action');
    if ($action === NULL) {
        $action = 'show_add_item';
    }
}

// Add or update cart as needed
switch($action) {
    case 'add':
        $product_key = filter_input(INPUT_POST,
            'productKey');
        $item_qty = filter_input(INPUT_POST, 'itemqty');
        add_item($product_key, $item_qty);
        include('cart_view.php');
        break;
```



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The index.php file (continued)

```

case 'update':
    $new_qty_list = filter_input(INPUT_POST, 'newqty',
        FILTER_DEFAULT, FILTER_REQUIRE_ARRAY);
    foreach($new_qty_list as $key => $qty) {
        if ($SESSION['cart12'][$key]['qty'] != $qty) {
            update_item($key, $qty);
        }
    }
    include('cart_view.php');
    break;
case 'show_cart':
    include('cart_view.php');
    break;
case 'show_add_item':
    include('add_item_view.php');
    break;
case 'empty_cart':
    unset($SESSION['cart12']);
    include('cart_view.php');
    break;
}

```



The cart.php file (continued)

```

// Update an item in the cart
function update_item($key, $quantity) {
    $quantity = (int) $quantity;
    if (isset($SESSION['cart12'][$key])) {
        if ($quantity <= 0) {
            unset($SESSION['cart12'][$key]);
        } else {
            $SESSION['cart12'][$key]['qty'] = $quantity;
            $total = $SESSION['cart12'][$key]['cost'] *
                $SESSION['cart12'][$key]['qty'];
            $SESSION['cart12'][$key]['total'] = $total;
        }
    }
}

```



The cart.php file

```

<?php
// Add an item to the cart
function add_item($key, $quantity) {
    global $products;
    if ($quantity < 1) return;

    // If item already exists in cart, update quantity
    if (isset($SESSION['cart12'][$key])) {
        $quantity += $SESSION['cart12'][$key]['qty'];
        update_item($key, $quantity);
        return;
    }
}

```



The cart.php file (continued)

```

// Get cart subtotal
function get_subtotal() {
    $subtotal = 0;
    foreach ($SESSION['cart12'] as $item) {
        $subtotal += $item['total'];
    }
    $subtotal_f = number_format($subtotal, 2);
    return $subtotal_f;
}
?>

```



The cart.php file (continued)

```

// Add item
$cost = $products[$key]['cost'];
$total = $cost * $quantity;
$item = array(
    'name' => $products[$key]['name'],
    'cost' => $cost,
    'qty' => $quantity,
    'total' => $total
);
$SESSION['cart12'][$key] = $item;
}

```



The add_item_view.php file

```

<!DOCTYPE html>
<html>
<head>
    <title>My Guitar Shop</title>
    <link rel="stylesheet" type="text/css" href="main.css">
</head>
<body>
    <header>
        <h1>My Guitar Shop</h1>
    </header>
    <main>

```



The add_item_view.php file (continued)

```

<h1>Add Item</h1>
<form action="." method="post">
  <input type="hidden" name="action" value="add">

  <label>Name:</label>
  <select name="productkey">
    <?php foreach($products as $key => $product) :
      $cost = number_format($product['cost'], 2);
      $name = $product['name'];
      $item = $name . ' (' . $cost . ')';
    ?>
    <option value="<?php echo $key; ?>">
      <?php echo $item; ?>
    </option>
  <?php endforeach; ?>
</select><br>

```



The cart_view.php file (continued)

```

<h1>Your Cart</h1>
<?php if (empty($_SESSION['cart12']) ||
count($_SESSION['cart12']) == 0) : ?>
  <p>There are no items in your cart.</p>
<?php else: ?>
  <form action="." method="post">
    <input type="hidden" name="action"
      value="update">

    <table>
      <tr id="cart_header">
        <th class="left">Item</th>
        <th class="right">Item Cost</th>
        <th class="right">Quantity</th>
        <th class="right">Item Total</th>
      </tr>

```



The add_item_view.php file (continued)

```

  <label>Quantity:</label>
  <select name="itemqty">
    <?php for($i = 1; $i <= 10; $i++) : ?>
      <option value="<?php echo $i; ?>">
        <?php echo $i; ?>
      </option>
    <?php endfor; ?>
  </select><br>

  <label>&nbsp;</label>
  <input type="submit" value="Add Item">
</form>
<p><a href="."?action=show_cart">View Cart</a></p>
</main>
</body>
</html>

```



The cart_view.php file (continued)

```

    <?php foreach(
      $_SESSION['cart12'] as $key => $item ) :
      $cost = number_format($item['cost'], 2);
      $total = number_format($item['total'], 2);
    ?>
    <tr><td><?php echo $item['name']; ?> </td>
      <td class="right">
        <?php echo $cost; ?> </td>
      <td class="right">
        <input type="text" class="cart_qty"
          name="newqty[<?php
            echo $key; ?>]"
          value="<?php
            echo $item['qty']; ?>">
      <td class="right">
        <?php echo $total; ?></td>
    </tr>
  <?php endforeach; ?>

```



The cart_view.php file

```

<!DOCTYPE html>
<html>
<head>
  <title>My Guitar Shop</title>
  <link rel="stylesheet" type="text/css" href="main.css">
</head>
<body>
  <header>
    <h1>My Guitar Shop</h1>
  </header>
  <main>

```



The cart_view.php file (continued)

```

    <tr id="cart_footer">
      <td colspan="3"><b>Subtotal</b></td>
      <td><?php echo get_subtotal(); ?></td>
    </tr>
  <tr>
    <td colspan="4" class="right">
      <input type="submit"
        value="Update Cart"></td>
    </tr>
</table>
<p>Click "Update Cart" to update quantities in
your cart. Enter a quantity of 0 to remove
an item.</p>
</form>
<?php endif; ?>
<p><a href="."?action=show_add_item">Add Item</a></p>
<p><a href="."?action=empty_cart">Empty Cart</a></p>
</main>
</body>
</html>

```

