CNT 4714: Enterprise Computing Spring 2012

PHP – Database Connectivity

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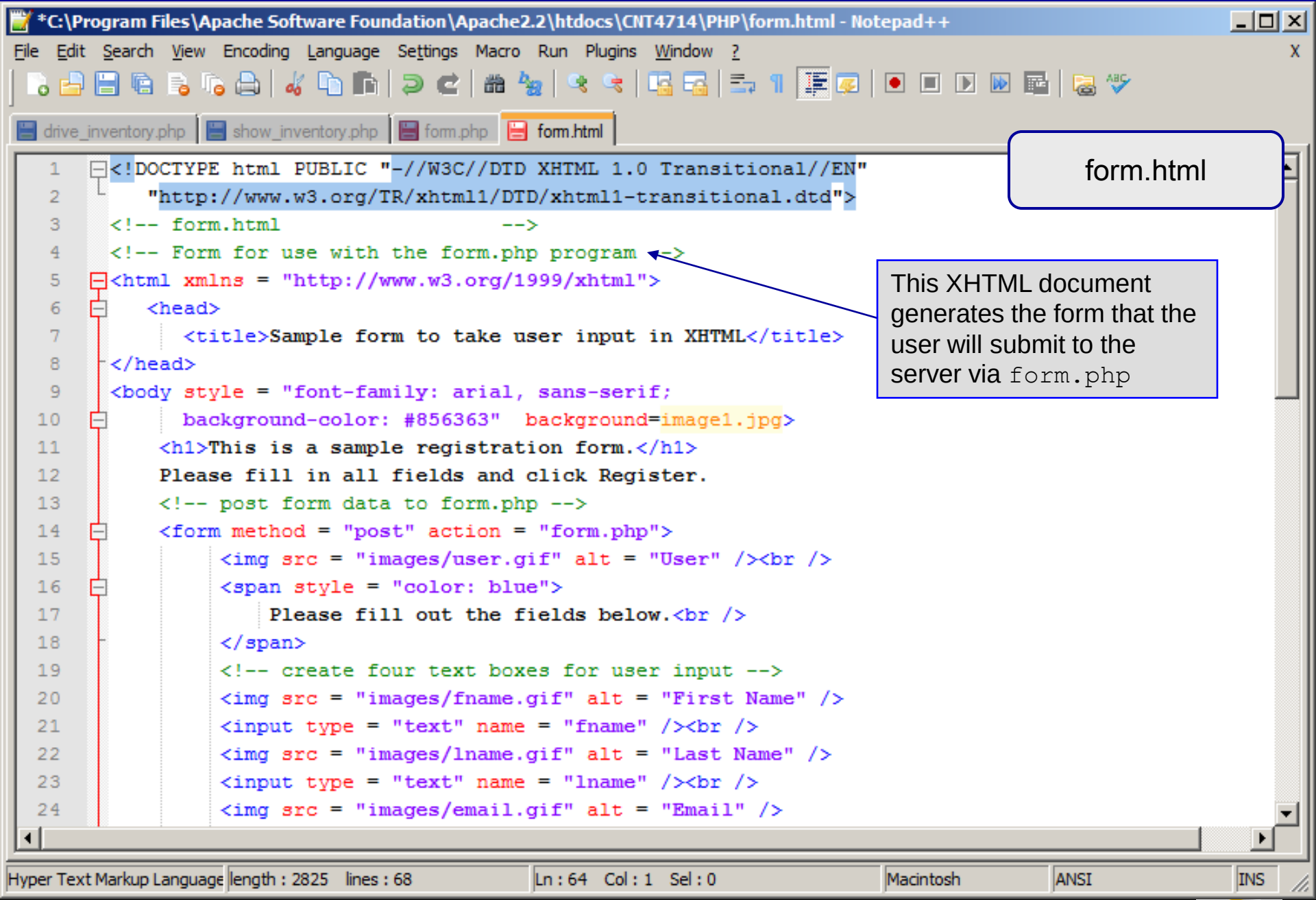
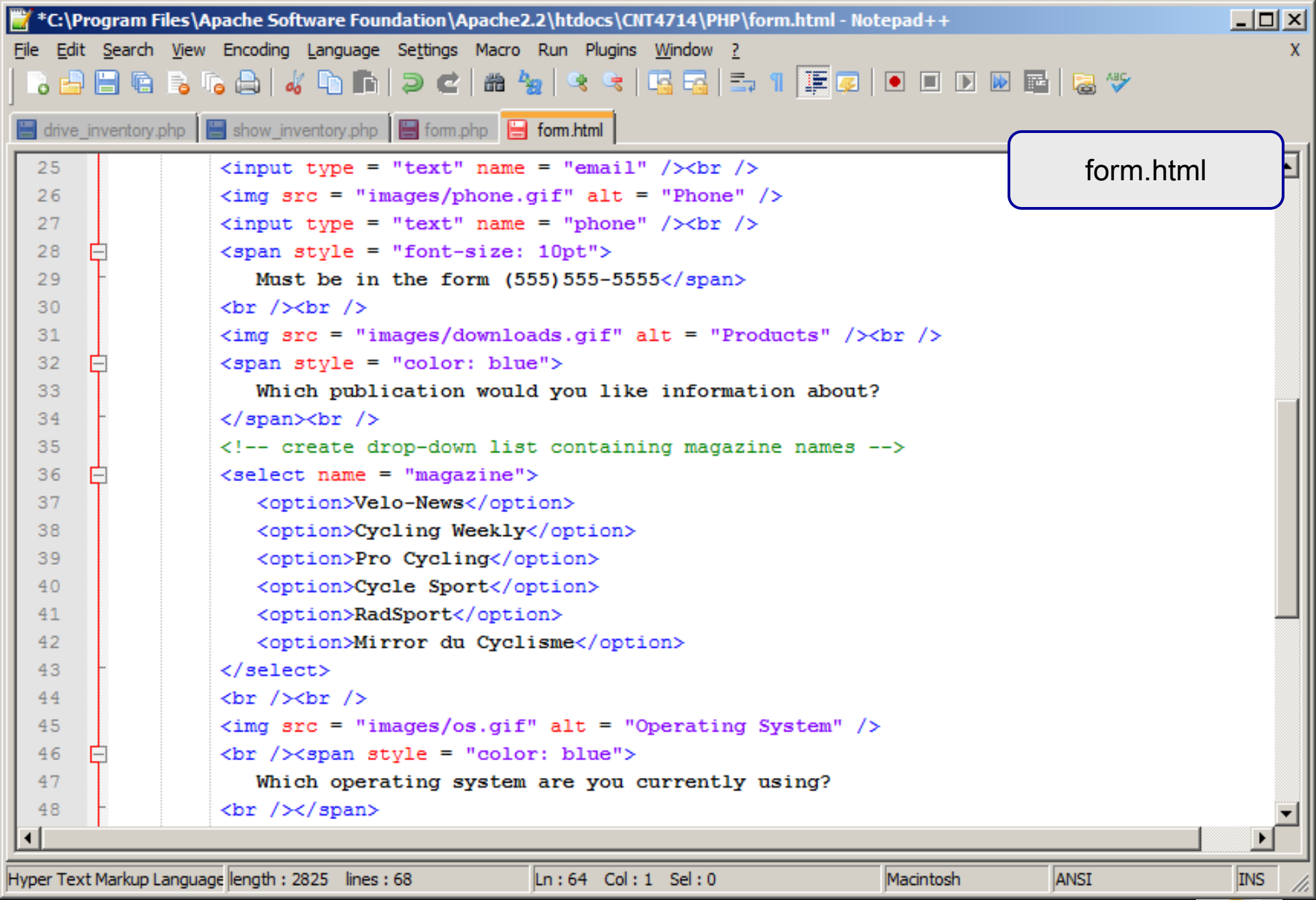
University of Central Florida

Form Processing and Business Logic

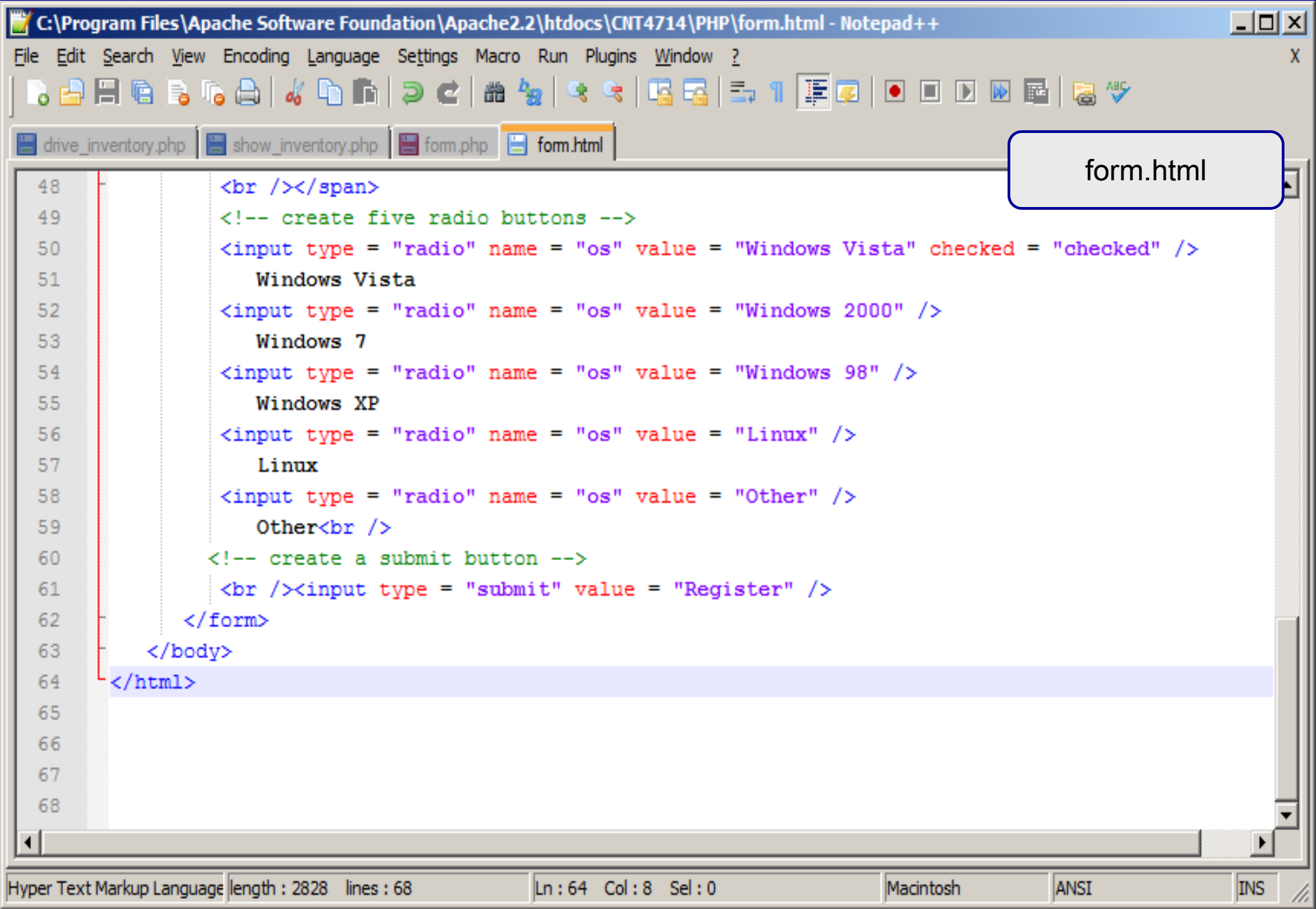
- XHTML forms enable web pages to collect data from users and send it to a web server for processing.
- Interaction of this kind between users and web servers is vital to e-commerce applications. Such capabilities allow users to purchase products, request information, send and receive web-based email, perform on-line paging and take advantage of various other online services.
- The XHTML document on the next few pages collects information from a user for the purposes of adding them to a mailing list.
- The PHP file on page 3 validates the data entered by the user through the form and "registers" them in the mailing list database.


*C:\Program Files\Apache Software Foundation\Apache2.2\htdocs\CNT4714\PHP\form.html - Notepad++
File Edit Search View Encoding Language Settings Macro Run Plugins Window ?
drive_inventory.php
show_inventory.php
form.php
form.html
form.html
This XHTML document generates the form that the user will submit to the server via form.php
1 <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
2 "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
3 <!-- form.html -->
4 <!-- Form for use with the form.php program -->
5 <html xmlns = "http://www.w3.org/1999/xhtml">
6 <head>
7 <title>Sample form to take user input in XHTML</title>
8 </head>
9 <body style = "font-family: arial, sans-serif;
10 background-color: #856363" background=image1.jpg>
11 <h1>This is a sample registration form.</h1>
12 Please fill in all fields and click Register.
13 <!-- post form data to form.php -->
14 <form method = "post" action = "form.php">
15
16
17 Please fill out the fields below.
18
19 <!-- create four text boxes for user input -->
20
21 <input type = "text" name = "fname" />
22
23 <input type = "text" name = "lname" />
24
Hyper Text Markup Language length : 2825 lines : 68 Ln : 64 Col : 1 Sel : 0 Macintosh ANSI INS


*C:\Program Files\Apache Software Foundation\Apache2.2\htdocs\CNT4714\PHP\form.html - Notepad++
File Edit Search View Encoding Language Settings Macro Run Plugins Window ?
drive_inventory.php
show_inventory.php
form.php
form.html
form.html
25 <input type = "text" name = "email" />
26
27 <input type = "text" name = "phone" />
28
29 Must be in the form (555)555-5555
30

31
32
33 Which publication would you like information about?
34
35 <!-- create drop-down list containing magazine names -->
36 <select name = "magazine">
37 <option>Velo-News</option>
38 <option>Cycling Weekly</option>
39 <option>Pro Cycling</option>
40 <option>Cycle Sport</option>
41 <option>RadSport</option>
42 <option>Mirror du Cyclisme</option>
43 </select>
44

45
46
47 Which operating system are you currently using?
48
Hyper Text Markup Language length : 2825 lines : 68 Ln : 64 Col : 1 Sel : 0 Macintosh ANSI INS


C:\Program Files\Apache Software Foundation\Apache2.2\htdocs\CNT4714\PHP\form.html - Notepad++
File Edit Search View Encoding Language Settings Macro Run Plugins Window ?
drive_inventory.php
show_inventory.php
form.php
form.html
form.html
48
49 <!-- create five radio buttons -->
50 <input type = "radio" name = "os" value = "Windows Vista" checked = "checked" />
51 Windows Vista
52 <input type = "radio" name = "os" value = "Windows 2000" />
53 Windows 7
54 <input type = "radio" name = "os" value = "Windows 98" />
55 Windows XP
56 <input type = "radio" name = "os" value = "Linux" />
57 Linux
58 <input type = "radio" name = "os" value = "Other" />
59 Other
60 <!-- create a submit button -->
61
<input type = "submit" value = "Register" />
62 </form>
63 </body>
64 </html>
65
66
67
68
Hyper Text Markup Language length : 2828 lines : 68 Ln : 64 Col : 8 Sel : 0 Macintosh ANSI INS

*C:\Program Files\Apache Software Foundation\Apache2.2\htdocs\CNT4714\PHP\form.php - Notepad++

File Edit Search View Encoding Language Settings Macro Run Plugins Window ?

drive_inventory.php | show_inventory.php | form.php

form.php

```
1  <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
2      "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
3  <!-- form.php      -->
4  <!-- Read information sent from form.html -->
5  <html xmlns = "http://www.w3.org/1999/xhtml">
6     <head>
7        <title>Form Validation</title>
8     </head>
9     <body style = "font-family: arial, sans-serif;
10       background-color: #856363"  background=image1.jpg>
11       <?php
12          extract($_POST);
13          // determine whether phone number is valid and print
14          // an error message if not
15          if ( !eregi( "^\([0-9]{3}\)[0-9]{3}-[0-9]{4}$",
16             $phone ) ){
17             print( "<p><span style = \"color: red;
18                font-size: 2em\">
19                INVALID PHONE NUMBER:</span><br />
20                A valid phone number must be in the form
21                <strong>(555)555-5555</strong><br />
22                <span style = \"color: blue\">
23                Click the Back button, enter a valid phone
24                number and resubmit.<br /><br />
25                Thank You.</span></p></body></html>" );
26             die(); // terminate script execution
27          }
```

Function `extract (associativeArray)` creates a variable-value pair corresponding to each key-value pair in the associative array `$_POST`.

See page 17 for explanation of regular expressions.

Function die() terminates script execution. An error has occurred, no need to continue.

PHP Hypertext Preprocessor | length : 2505 lines : 75 | Ln : 36 Col : 2 Sel : 0

*C:\Program Files\Apache Software Foundation\Apache2.2\htdocs\CNT4714\PHP\form.php - Notepad++

File Edit Search View Encoding Language Settings Macro Run Plugins Window ?

drive_inventory.php | show_inventory.php | form.php

form.php

```
28      ?>
29      <p>Hi
30         <span style = "color: blue">
31            <strong>
32               <?php print( "$fname" ); ?>
33            </strong>
34         </span>.
35         Thank you for completing the survey.<br />
36         You have been added to the
37         <span style = "color: blue">
38            <strong>
39               <?php print( "$magazine " ); ?>
40            </strong>
41         </span>
42         mailing list.
43      </p>
44      <strong>The following information has been saved
45         in our database:</strong><br />
46
47      <table border = "0" cellpadding = "0" cellspacing = "10">
48         <tr>
49            <td bgcolor = "#ffffaa">Name </td>
50            <td bgcolor = "#ffffbb">Email</td>
51            <td bgcolor = "#ffffcc">Phone</td>
52            <td bgcolor = "#ffffdd">OS</td>
53         </tr>
54
```

PHP Hypertext Preprocessor | length : 2505 lines : 75 | Ln : 36 Col : 2 Sel : 0 | Dos\Windows | ANSI | INS

*C:\Program Files\Apache Software Foundation\Apache2.2\htdocs\CNT4714\PHP\form.php - Notepad++

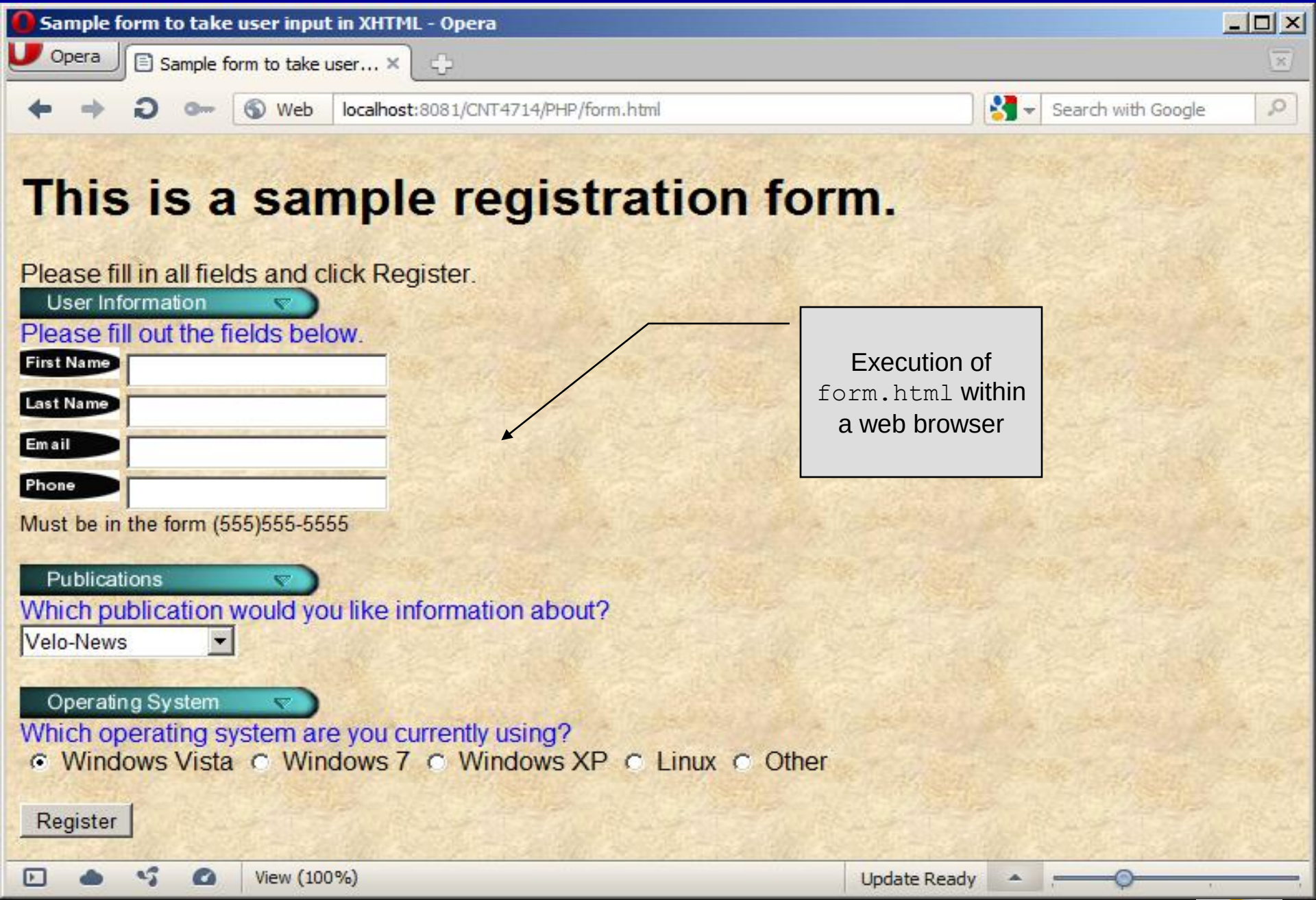
File Edit Search View Encoding Language Settings Macro Run Plugins Window ?

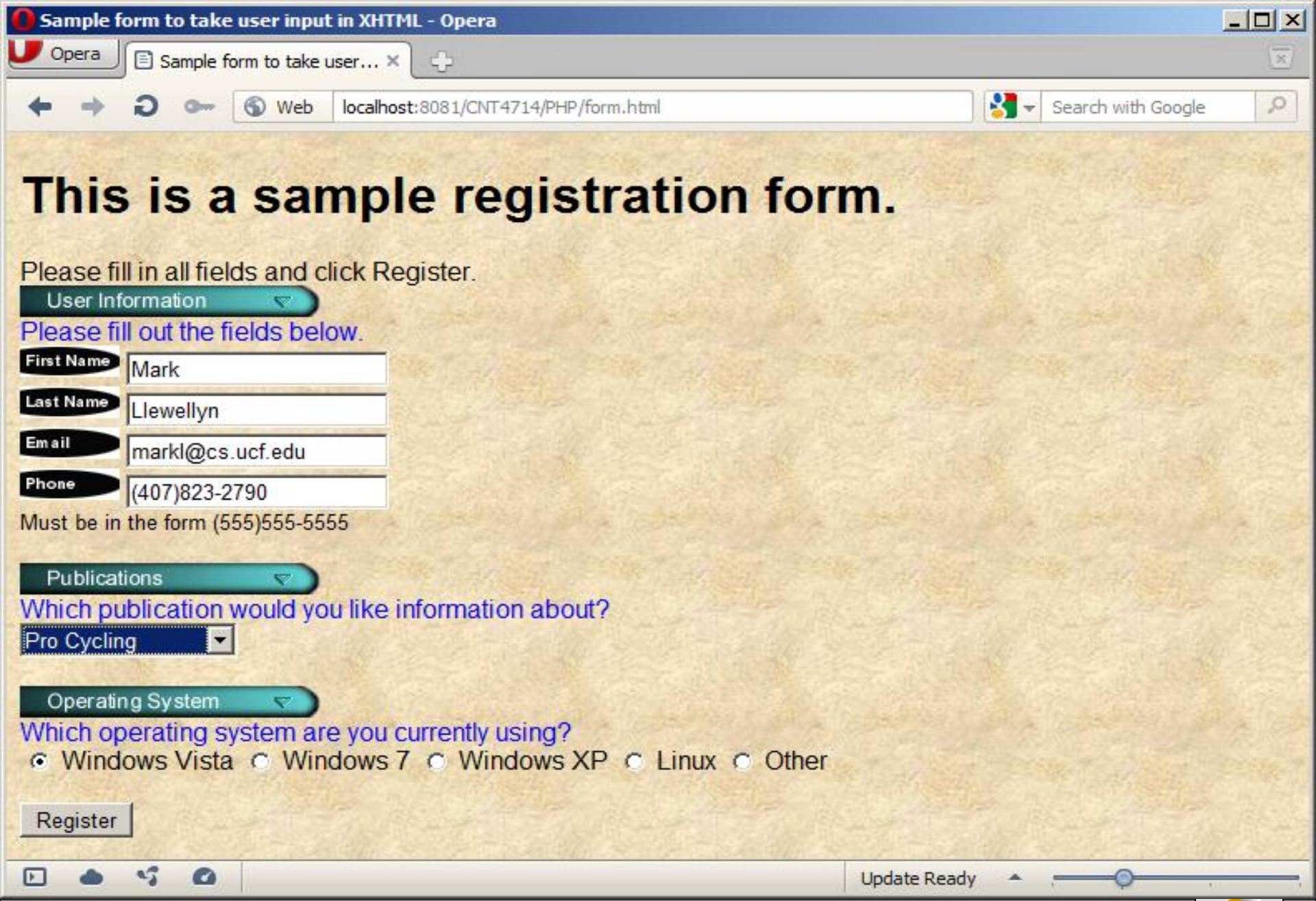
drive_inventory.php | show_inventory.php | form.php

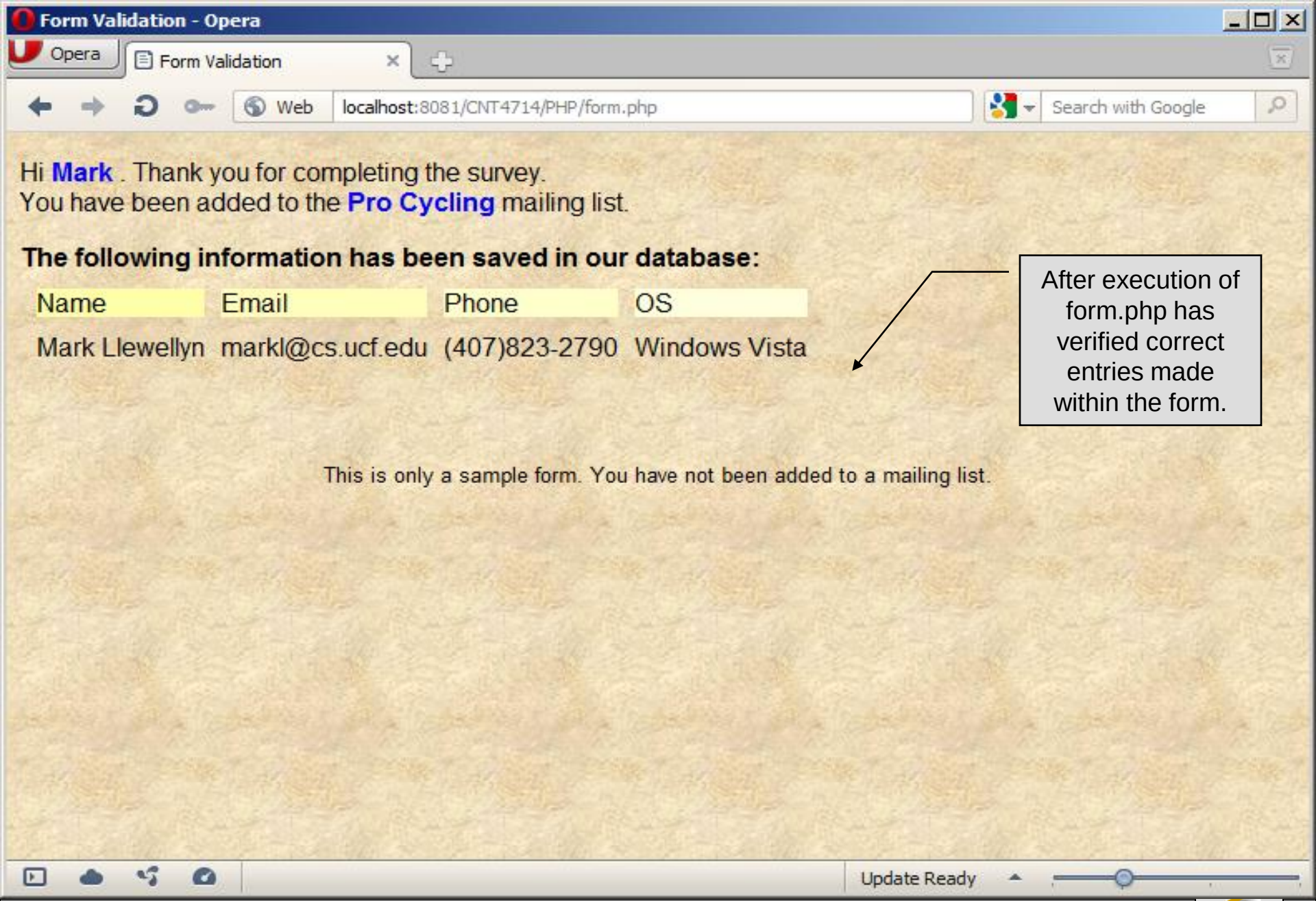
form.php

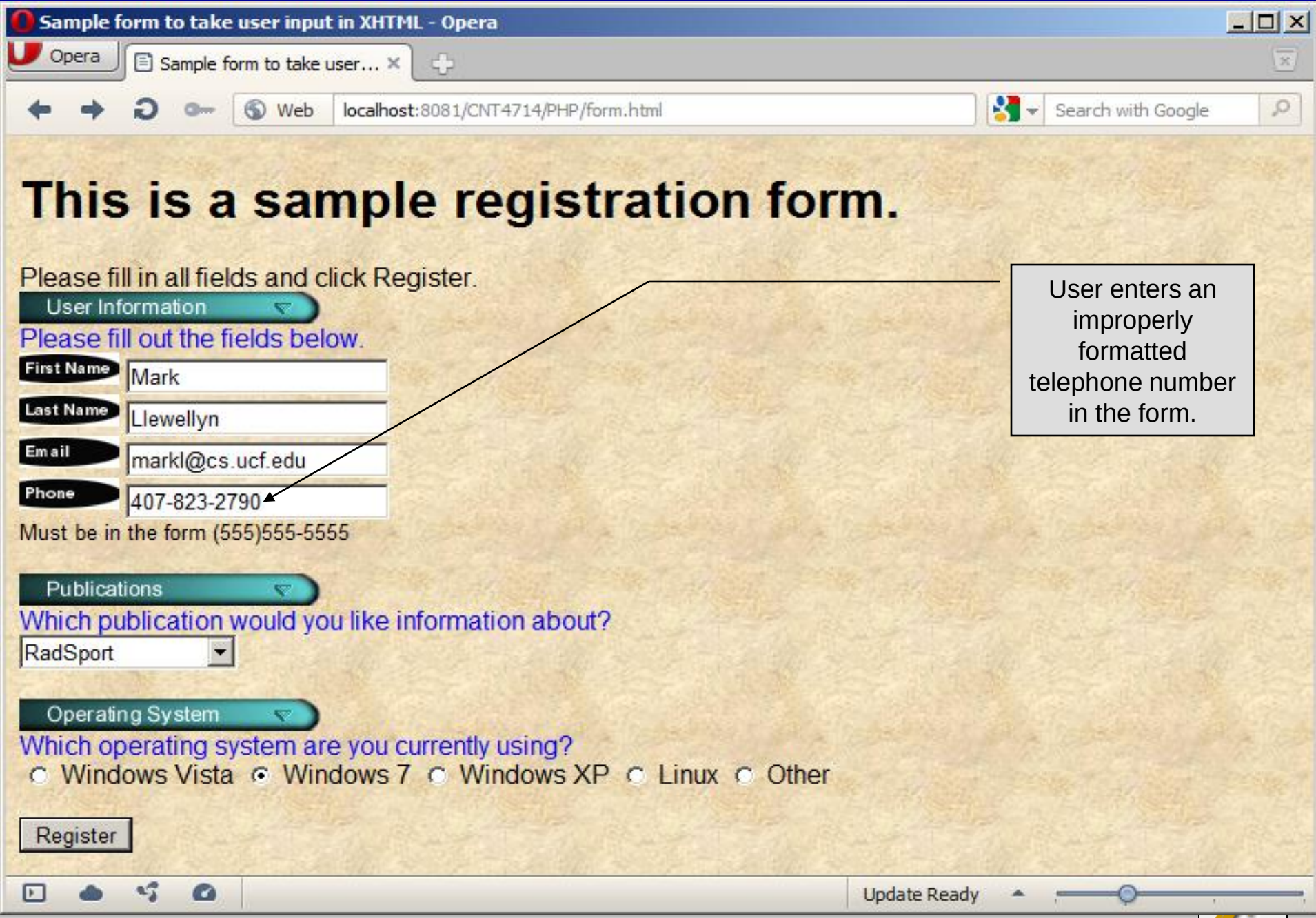
```
55          <tr>
56             <?php
57
58                // print each form field's value
59                print( "<td>$fname $lname</td>
60                   <td>$email</td>
61                   <td>$phone</td>
62                   <td>$os</td>" );
63             ?>
64          </tr>
65       </table>
66
67       <br /><br /><br />
68       <div style = "font-size: 10pt; text-align: center">
69          This is only a sample form.
70          You have not been added to a mailing list.
71       </div>
72    </body>
73 </html>
74
75
```

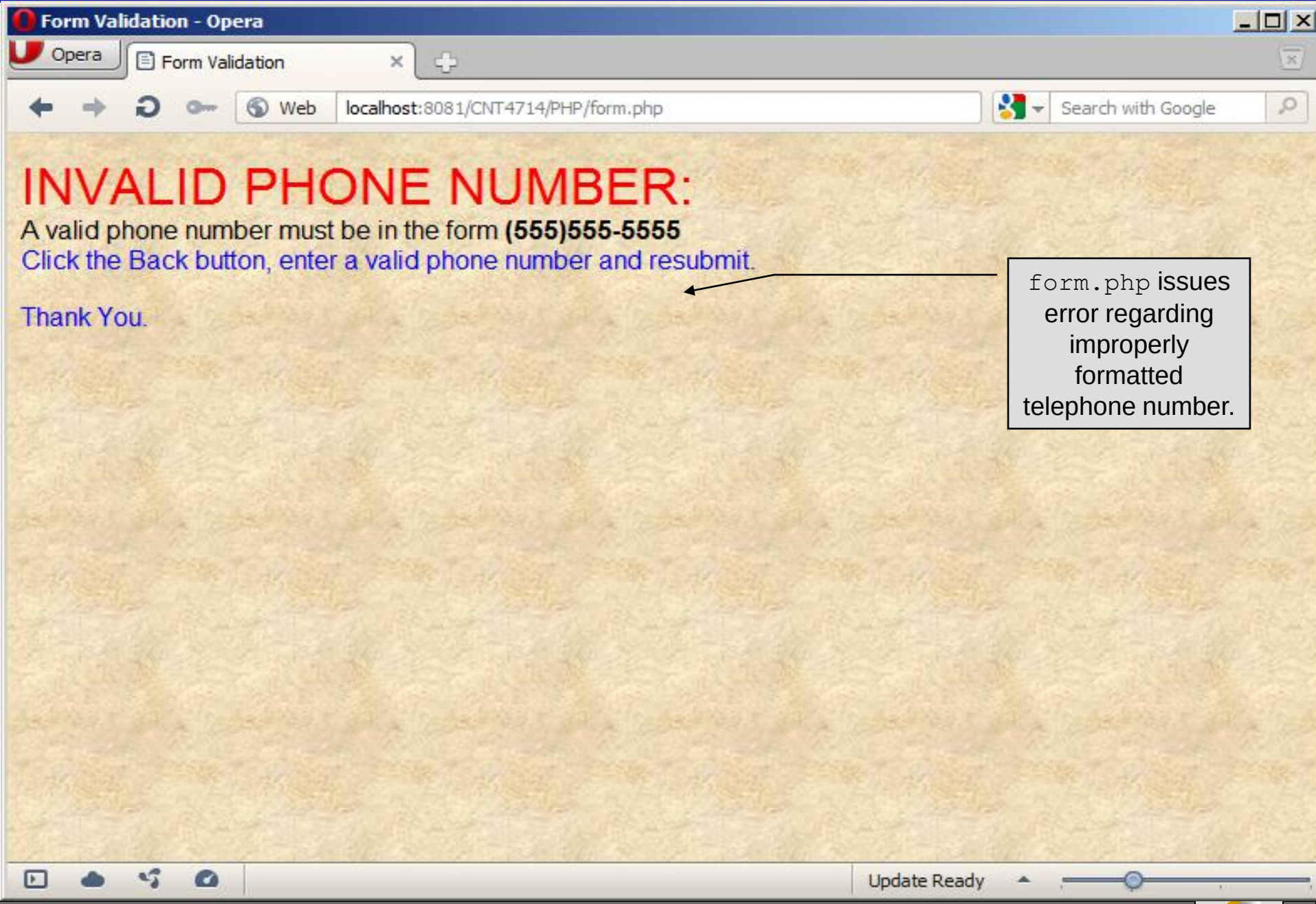
PHP Hypertext Preprocessor | length : 2505 lines : 75 | Ln : 36 Col : 2 Sel : 0 | Dos\Windows | ANSI | INS


Sample form to take user input in XHTML - Opera
Opera
Sample form to take user…
Web
localhost:8081/CNT4714/PHP/form.html
Search with Google
This is a sample registration form.
Please fill in all fields and click Register.
User Information
Please fill out the fields below.
First Name
Last Name
Email
Phone
Must be in the form (555)555-5555
Publications
Which publication would you like information about?
Velo-News
Operating System
Which operating system are you currently using?
Windows Vista
Windows 7
Windows XP
Linux
Other
Register
View (100%)
Update Ready
Execution of form.html within a web browser


Sample form to take user input in XHTML - Opera
Opera
Sample form to take user…
Web
localhost:8081/CNT4714/PHP/form.html
Search with Google
This is a sample registration form.
Please fill in all fields and click Register.
User Information
Please fill out the fields below.
First Name
Mark
Last Name
Llewellyn
Email
markl@cs.ucf.edu
Phone
(407)823-2790
Must be in the form (555)555-5555
Publications
Which publication would you like information about?
Pro Cycling
Operating System
Which operating system are you currently using?
Windows Vista
Windows 7
Windows XP
Linux
Other
Register
Update Ready


Form Validation - Opera
Opera
Form Validation
Web
localhost:8081/CNT4714/PHP/form.php
Search with Google
Hi Mark . Thank you for completing the survey.
You have been added to the Pro Cycling mailing list.
The following information has been saved in our database:
Name
Email
Phone
OS
Mark Llewellyn
markl@cs.ucf.edu
(407)823-2790
Windows Vista
After execution of form.php has verified correct entries made within the form.
This is only a sample form. You have not been added to a mailing list.
Update Ready


Sample form to take user input in XHTML - Opera
Opera
Sample form to take user...
Web
localhost:8081/CNT4714/PHP/form.html
Search with Google
This is a sample registration form.
Please fill in all fields and click Register.
User Information
Please fill out the fields below.
First Name
Mark
Last Name
Llewellyn
Email
markl@cs.ucf.edu
Phone
407-823-2790
Must be in the form (555)555-5555
Publications
Which publication would you like information about?
RadSport
Operating System
Which operating system are you currently using?
Windows Vista
Windows 7
Windows XP
Linux
Other
Register
Update Ready
User enters an improperly formatted telephone number in the form.


Form Validation - Opera
Opera
Form Validation
Web
localhost:8081/CNT4714/PHP/form.php
Search with Google
INVALID PHONE NUMBER:
A valid phone number must be in the form (555)555-5555
Click the Back button, enter a valid phone number and resubmit.
Thank You.
form.php issues error regarding improperly formatted telephone number.
Update Ready

How the Form Example Works

- The `action` attribute of the `form` element, indicates that when the user clicks the `Register` button, the form data will be posted to `form.php` for processing.
- Using `method = "post"` appends the form data to the browser request that contains the protocol (i.e., HTTP) and the requested resource's URL. Scripts located on the web server's machine (or accessible through the network) can access the form data sent as part of the request.
- Each of the form's input fields are assigned a unique name. When `Register` is clicked, each field's `name` and `value` are sent to the web server.
- Script `form.php` then accesses the value for each specific field through the global array `$_POST`.

How the Form Example Works (cont.)

- The superglobal arrays are associative arrays predefined by PHP that hold variable acquired from the user input, the environment, or the web server and are accessible in any variable scope.
  - If the information from the form had been submitted via the HTTP method `get`, then the superglobal array `$_GET` would contain the name-value pairs.
- Since the XHTML form and the PHP script "communicate" via the name-value pairs, it is a good idea to make the XHTML object names meaningful so that the PHP script that retrieves the data is easier to understand.

Register_globals

- In PHP versions 4.2 and higher, the directive `register_globals` is set to `Off` by default for security reasons.
- Turning off `register_globals` means that all variables sent from an XHTML form to a PHP document now must be accessed using the appropriate superglobal array (either `$_POST` or `$_GET`).
- When this directive was turned `On`, as was the default case in PHP versions prior to 4.2, PHP created an individual global variable corresponding to each form field.

Validation of Form Generated Data

- The form example illustrates an important concept in the validation of user input. In this case, we simply checked the validity of the format of the telephone number entered by the client user.
- In general, it is crucial to validate information that will be entered into database or used in mailing lists. For example, validation can be used to ensure that credit-card numbers contain the proper number of digits before the numbers are encrypted to a merchant.
- In this case, the form.php script is implementing the business logic or business rules for our application.

Pattern Matching in PHP

- For powerful string comparisons (pattern matching), PHP provides functions `ereg` and `preg_match`, which use regular expressions to search a string for a specified pattern.
- Function `ereg` uses Portable Operating System Interface (POSIX) extended regular expressions.
  - POSIX-extended regular expressions are a standard to which PHP regular expression conform.
- Function `preg_match` provides Perl-compatible regular expressions.
- Perl-compatible regular expressions are more widely used that POSIX regular expressions. PHP's support for Perl-compatible regular expressions eases migration from Perl to PHP. The following examples illustrates these concepts.

*C:\Program Files\Apache Software Foundation\Apache2.2\htdocs\CNT4714\PHP\expression.php - Notepad++

File Edit Search View Encoding Language Settings Macro Run Plugins Window ?

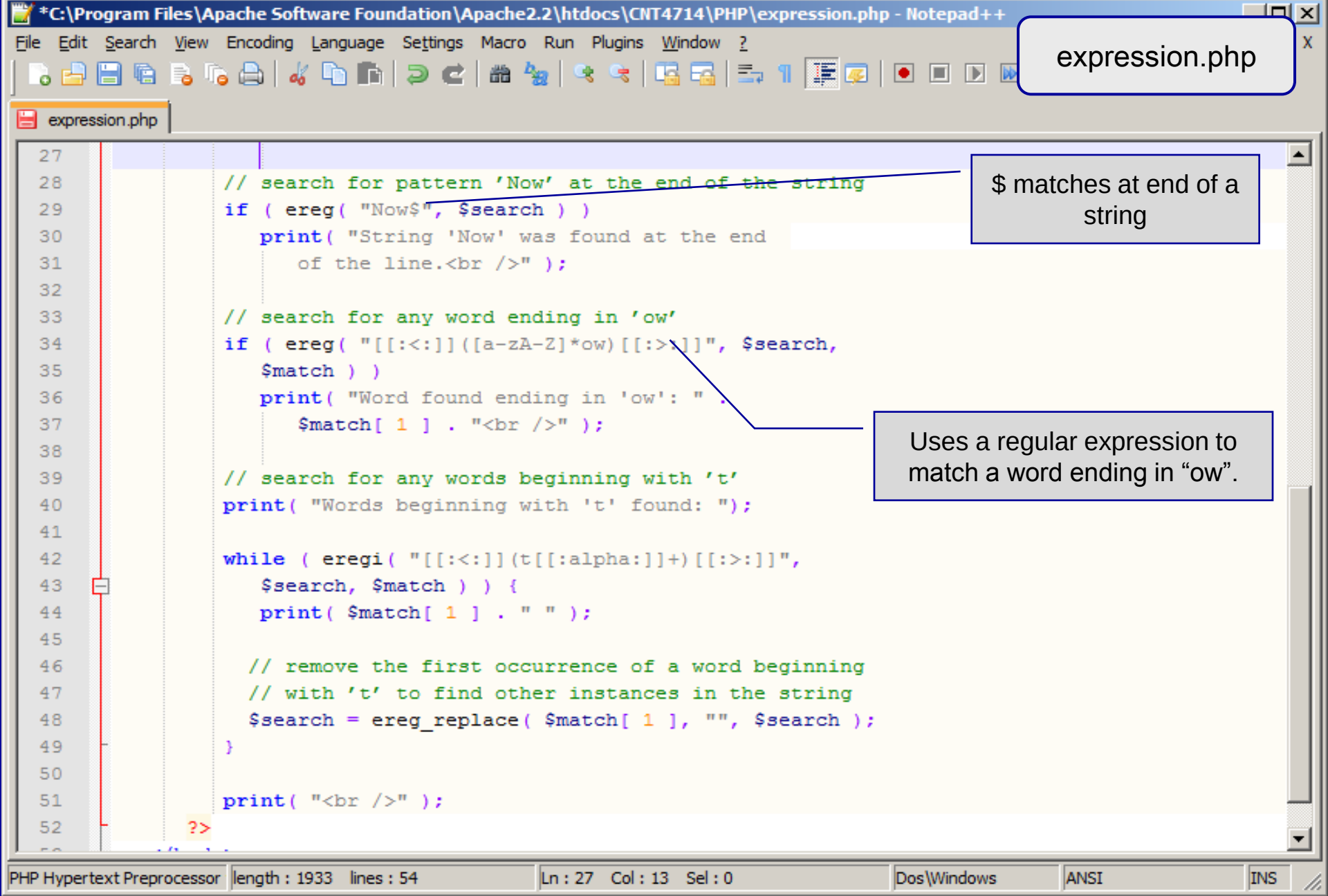
expression.php

expression.php

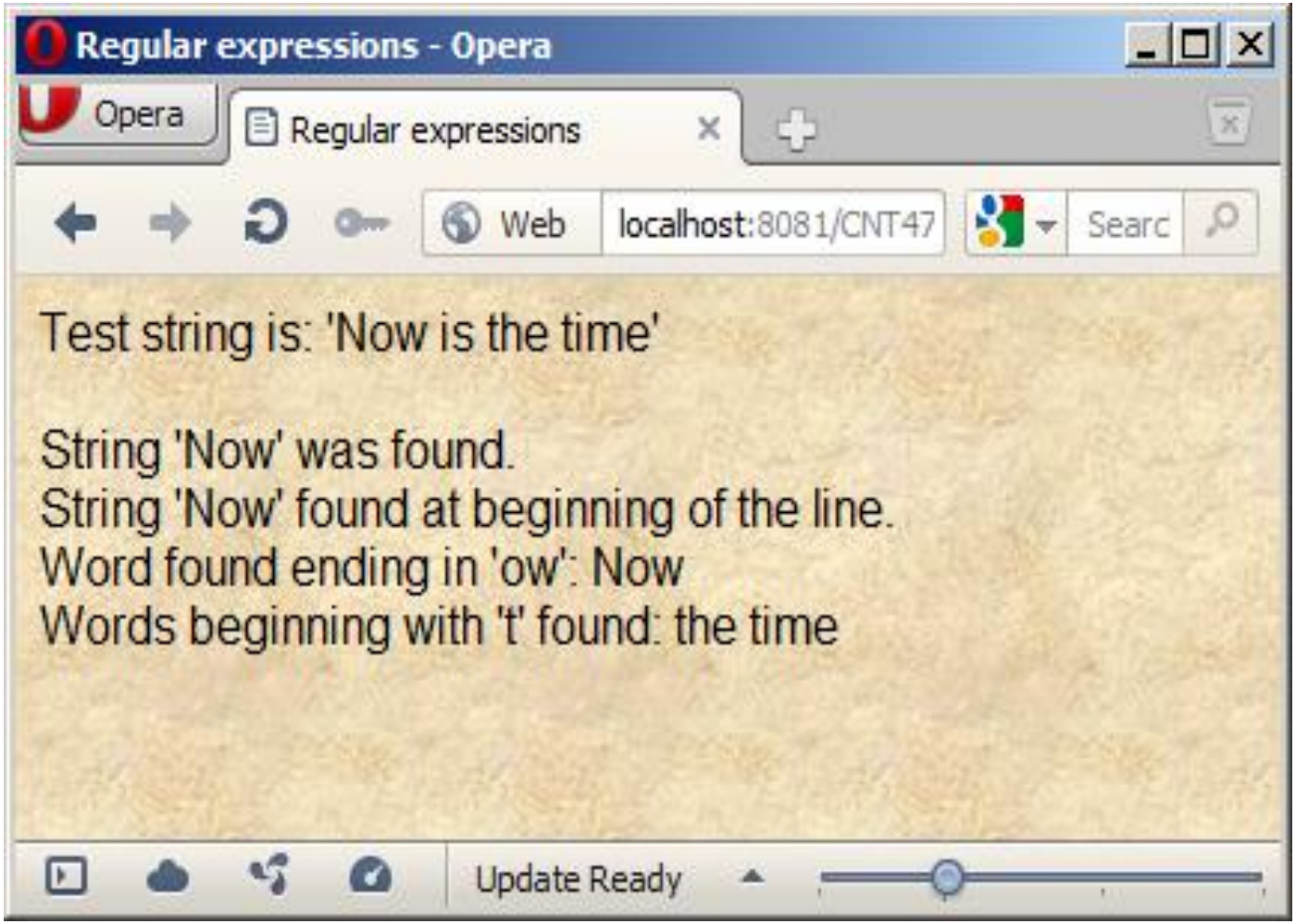
```
1  <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
2     "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
3  <!-- expression.php -->
4  <!-- Using regular expressions -->
5  <html xmlns = "http://www.w3.org/1999/xhtml">
6     <head>
7        <title>Regular expressions</title>
8     </head>
9     <body style = "font-family: arial, sans-serif;
10       background-color: #856363"  background=images/background.jpg>
11
12       <?php
13          $search = "Now is the time";
14          print( "Test string is: '$search'<br /><br />" );
15
16          // call function ereg to search for pattern 'Now'
17          // in variable search
18          if ( ereg( "Now", $search ) )
19             print( "String 'Now' was found.<br />" );
20
21          // search for pattern 'Now' in the beginning of
22          // the string
23          if ( ereg( "^Now", $search ) )
24             print( "String 'Now' found at beginning
25                of the line.<br />" );
26
```

^ matches at beginning of a string

PHP Hypertext Preprocessor | length : 1933 lines : 54 | Ln : 27 Col : 13 Sel : 0 | Dos\Windows | ANSI | INS


*C:\Program Files\Apache Software Foundation\Apache2.2\htdocs\CNT4714\PHP\expression.php - Notepad++
File Edit Search View Encoding Language Settings Macro Run Plugins Window ?
expression.php
expression.php
27
28 // search for pattern 'Now' at the end of the string
29 if (ereg("Now$", $search))
30 print("String 'Now' was found at the end
31 of the line.
");
32
33 // search for any word ending in 'ow'
34 if (ereg("[[:<:]]([a-zA-Z]*ow)[[:>:]]", $search,
35 $match))
36 print("Word found ending in 'ow': " .
37 $match[1] . "<br />");
38
39 // search for any words beginning with 't'
40 print("Words beginning with 't' found: ");
41
42 while (eregi("[[:<:]](t[[:alpha:]]+)[[:>:]]",
43 $search, $match)) {
44 print($match[1] . " ");
45
46 // remove the first occurrence of a word beginning
47 // with 't' to find other instances in the string
48 $search = ereg_replace($match[1], "", $search);
49 }
50
51 print("<br />");
52 ?>
$ matches at end of a string
Uses a regular expression to match a word ending in "ow".
PHP Hypertext Preprocessor
length : 1933 lines : 54
Ln : 27 Col : 13 Sel : 0
Dos\Windows
ANSI
INS

Output From `expression.php` - Example



Verifying a Username and Password Using PHP

- It is often the case that a private website is created which is accessible only to certain individuals.
- Implementing privacy generally involves username and password verification.
- In the next example, we'll see an XHTML form that queries a user for a username and password. The fields USERNAME and PASSWORD are posted to the PHP script `verify.php` for verification.
  - For simplicity, data is not encrypted before sending it to the server.
  - For more information on PHP encryption functions visit: http://www.php.net/manual/en/ref.mcrypt.php.

*C:\Program Files\Apache Software Foundation\Apache2.2\htdocs\CNT4714\PHP\password.html - Notepad++

File Edit Search View Encoding Language Settings Macro Run Plugins Window ?

password.html – page 1

expression.php | password.html

```
1  <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
2     "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
3  <!-- password.html                              -->
4  <!-- XHTML form sent to password.php for verification -->
5  <html xmlns = "http://www.w3.org/1999/xhtml">
6     <head>
7        <title>Verifying a username and a password.</title>
8        <style type = "text/css">
9           td { background-color: #DDDDDD }
10       </style>
11    </head>
12 <body style = "font-family: arial", "font-size: 2em",
13       background-color: #856363"  background=images/background.jpg>
14       <p style = "font-size: 18pt">
15       <font color=red><B>
16       Welcome to the CNT 4714 High Security WebPage
17       </B></font>
18       <HR>
19       <p style = "font-size: 13pt">
20          Type in your username and password below.
21          <br />
22          <span style = "color: #0000FF; font-size: 10pt;
23             font-weight: bold">
24             Note that password will be sent as plain text - encryption not used in this applica
25          </span>
26       </p>
```

Hyper Text Markup Language | length : 2405 lines : 66 | Ln : 26 Col : 11 Sel : 0 | Macintosh | ANSI | INS

password.html – page 2

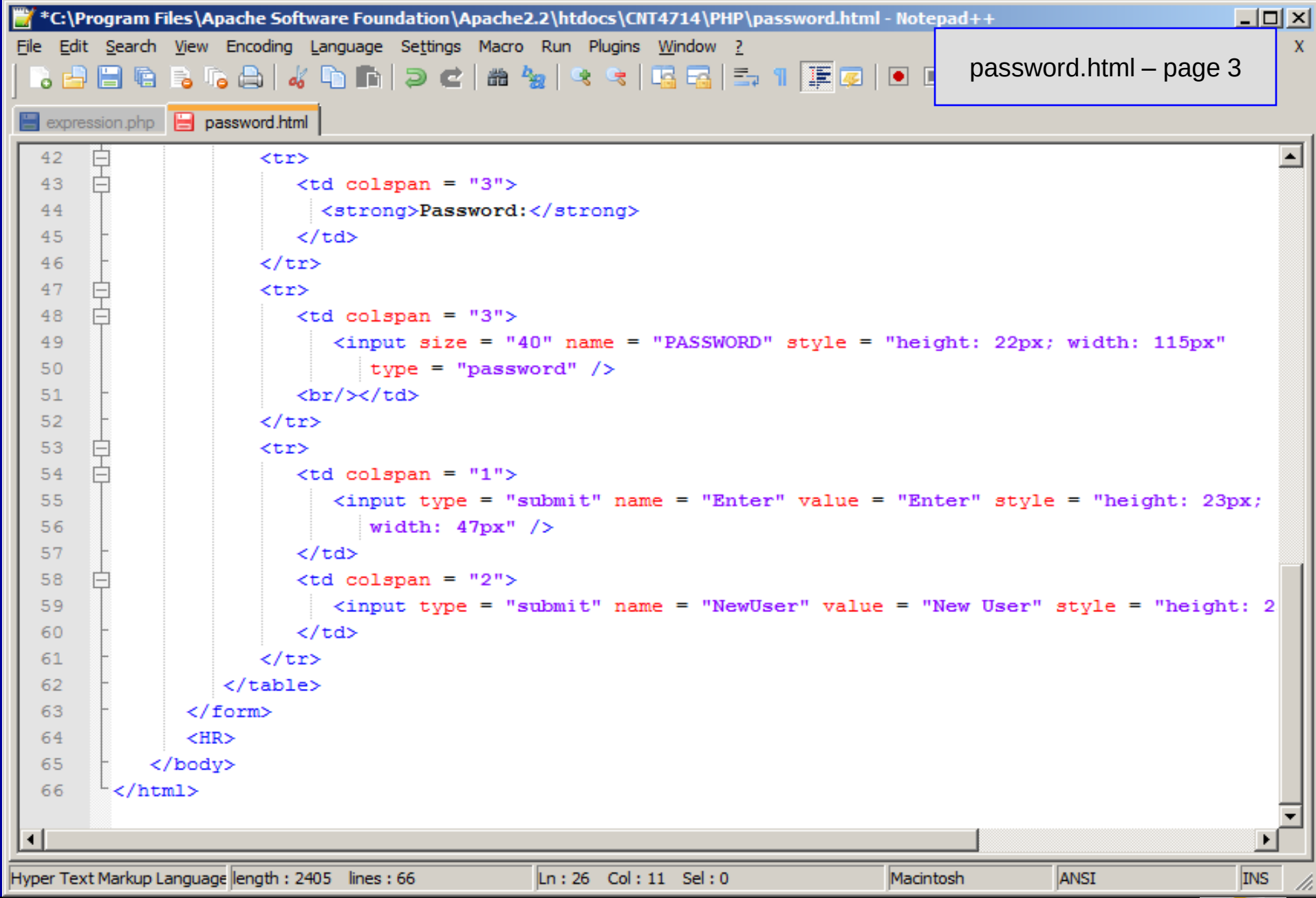
*C:\Program Files\Apache Software Foundation\Apache2.2\htdocs\CNT4714\PHP\password.html - Notepad++

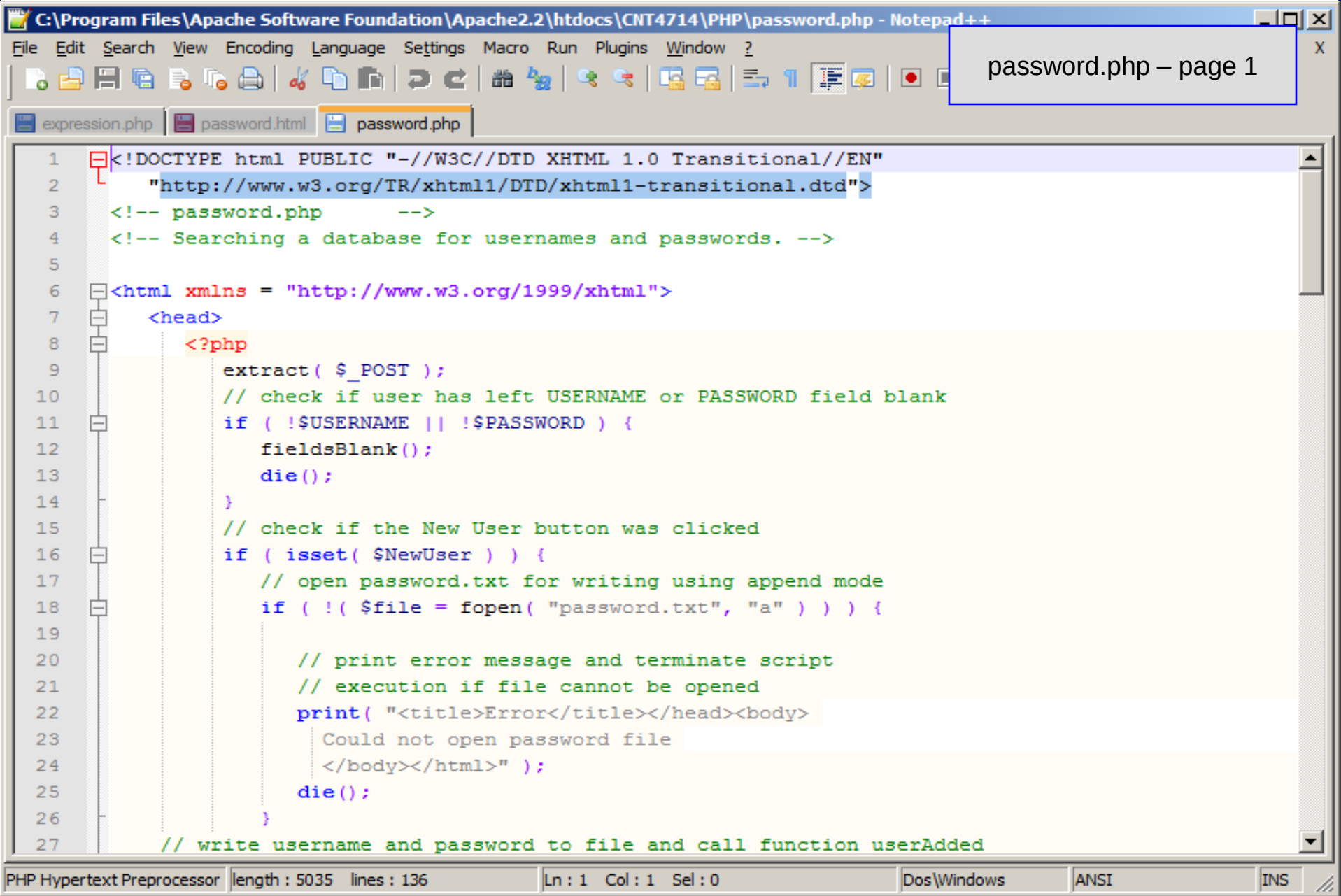
File Edit Search View Encoding Language Settings Macro Run Plugins Window ?

expression.php | password.html

```
27      <!-- post form data to password.php -->
28      <form action = "password.php" method = "post">
29          <br />
30          <table border = "3" cellspacing = "3" style = "height: 90px; width: 150px;
31                  font-size: 10pt" cellpadding = "1">
32              <tr>
33                  <td colspan = "3">
34                      <strong>Username:</strong>
35                  </td>
36              </tr>
37              <tr>
38                  <td colspan = "3">
39                      <input size = "40" name = "USERNAME" style = "height: 22px; width: 115px" />
40                  </td>
41              </tr>
42              <tr>
43                  <td colspan = "3">
44                      <strong>Password:</strong>
45                  </td>
46              </tr>
47              <tr>
48                  <td colspan = "3">
49                      <input size = "40" name = "PASSWORD" style = "height: 22px; width: 115px"
50                          type = "password" />
51                  <br/></td>
52              </tr>
```

Hyper Text Markup Language | length : 2405 lines : 66 | Ln : 26 Col : 11 Sel : 0 | Macintosh | ANSI | INS


*C:\Program Files\Apache Software Foundation\Apache2.2\htdocs\CNT4714\PHP\password.html - Notepad++
File Edit Search View Encoding Language Settings Macro Run Plugins Window ?
expression.php
password.html
password.html – page 3
42 <tr>
43 <td colspan = "3">
44 Password:
45 </td>
46 </tr>
47 <tr>
48 <td colspan = "3">
49 <input size = "40" name = "PASSWORD" style = "height: 22px; width: 115px"
50 type = "password" />
51
</td>
52 </tr>
53 <tr>
54 <td colspan = "1">
55 <input type = "submit" name = "Enter" value = "Enter" style = "height: 23px;
56 width: 47px" />
57 </td>
58 <td colspan = "2">
59 <input type = "submit" name = "NewUser" value = "New User" style = "height: 2
60 </td>
61 </tr>
62 </table>
63 </form>
64 <HR>
65 </body>
66 </html>
Hyper Text Markup Language length : 2405 lines : 66
Ln : 26 Col : 11 Sel : 0
Macintosh
ANSI
INS


C:\Program Files\Apache Software Foundation\Apache2.2\htdocs\CNT4714\PHP\password.php - Notepad++
File Edit Search View Encoding Language Settings Macro Run Plugins Window ?
expression.php
password.html
password.php
password.php – page 1
1 <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
2 "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
3 <!-- password.php -->
4 <!-- Searching a database for usernames and passwords. -->
5
6 <html xmlns = "http://www.w3.org/1999/xhtml">
7 <head>
8 <?php
9 extract($_POST);
10 // check if user has left USERNAME or PASSWORD field blank
11 if (!$USERNAME || !$PASSWORD) {
12 fieldsBlank();
13 die();
14 }
15 // check if the New User button was clicked
16 if (isset($NewUser)) {
17 // open password.txt for writing using append mode
18 if (!($file = fopen("password.txt", "a"))) {
19
20 // print error message and terminate script
21 // execution if file cannot be opened
22 print("<title>Error</title></head><body>
23 Could not open password file
24 </body></html>");
25 die();
26 }
27 // write username and password to file and call function userAdded
PHP Hypertext Preprocessor length : 5035 lines : 136 Ln : 1 Col : 1 Sel : 0 Dos\Windows ANSI INS

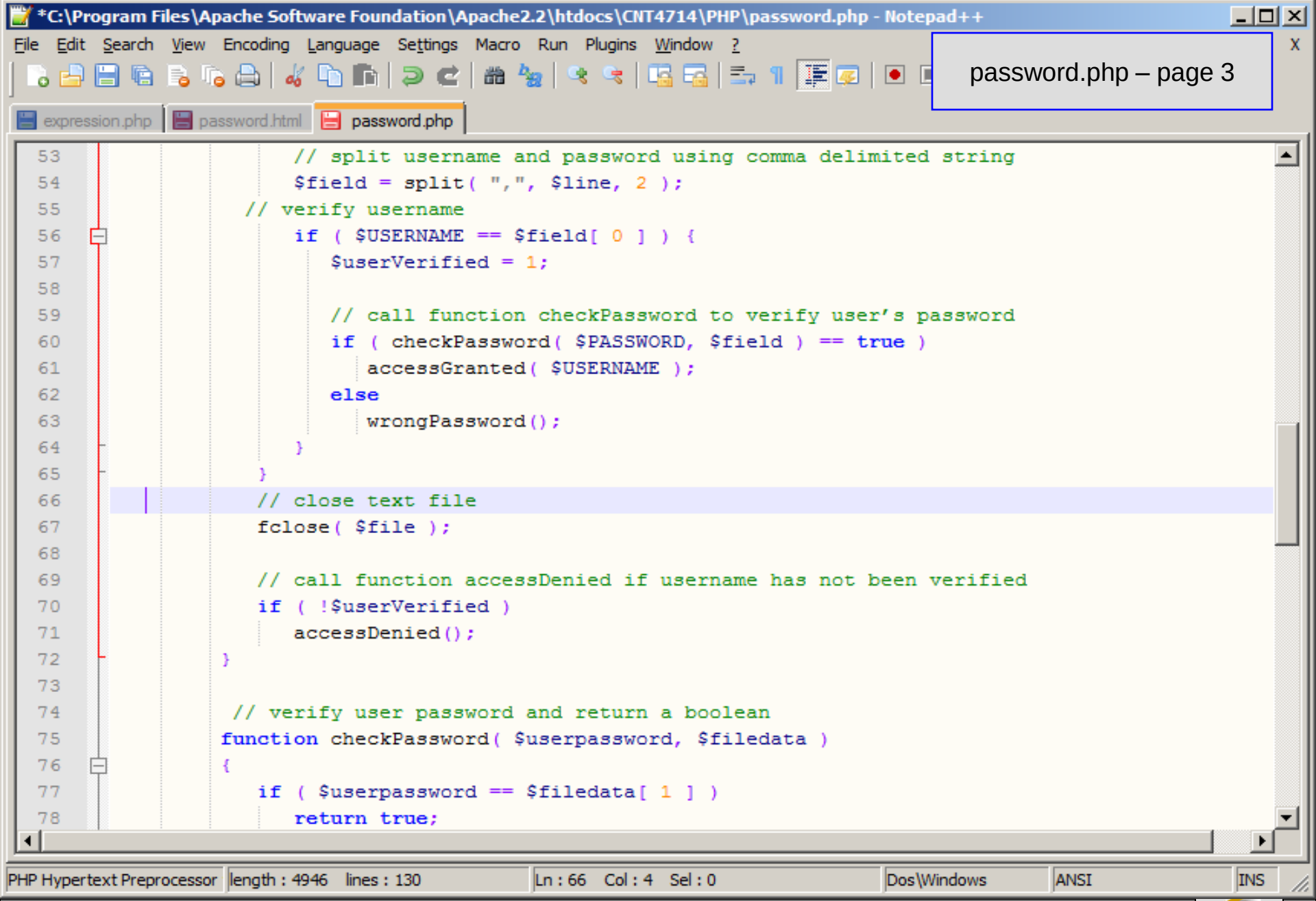
C:\Program Files\Apache Software Foundation\Apache2.2\htdocs\CNT4714\PHP\password.php - Notepad++

File Edit Search View Encoding Language Settings Macro Run Plugins Window ?

expression.php | password.html | password.php

```
27      // write username and password to file and call function userAdded
28          fputs( $file, "$USERNAME,$PASSWORD\n" );
29          userAdded( $USERNAME );
30       }
31       else {
32
33          // if a new user is not being added, open file
34          // for reading
35          if ( !( $file = fopen( "password.txt",  "r" ) ) ) {
36             print( "<title>Error</title></head>
37                <body >Could not open password file
38                </body></html>" );
39             die();
40          }
41
42          $userVerified = 0;
43
44          // read each line in file and check username and password
45          while ( !feof( $file ) && !$userVerified ) {
46
47             // read line from file
48             $line = fgets( $file, 255 );
49
50             // remove newline character from end of line
51             $line = chop( $line );
52
53             // split username and password using comma delimited string
```

PHP Hypertext Preprocessor | length : 5035 lines : 136 | Ln : 1 Col : 1 Sel : 0 | Dos\Windows | ANSI | INS


*C:\Program Files\Apache Software Foundation\Apache2.2\htdocs\CNT4714\PHP\password.php - Notepad++
File Edit Search View Encoding Language Settings Macro Run Plugins Window ?
password.php – page 3
expression.php
password.html
password.php
53 // split username and password using comma delimited string
54 $field = split(",", $line, 2);
55 // verify username
56 if ($USERNAME == $field[0]) {
57 $userVerified = 1;
58
59 // call function checkPassword to verify user's password
60 if (checkPassword($PASSWORD, $field) == true)
61 accessGranted($USERNAME);
62 else
63 wrongPassword();
64 }
65 }
66 // close text file
67 fclose($file);
68
69 // call function accessDenied if username has not been verified
70 if (!$userVerified)
71 accessDenied();
72 }
73
74 // verify user password and return a boolean
75 function checkPassword($userpassword, $filedata)
76 {
77 if ($userpassword == $filedata[1])
78 return true;
PHP Hypertext Preprocessor length : 4946 lines : 130 Ln : 66 Col : 4 Sel : 0 Dos\Windows ANSI INS

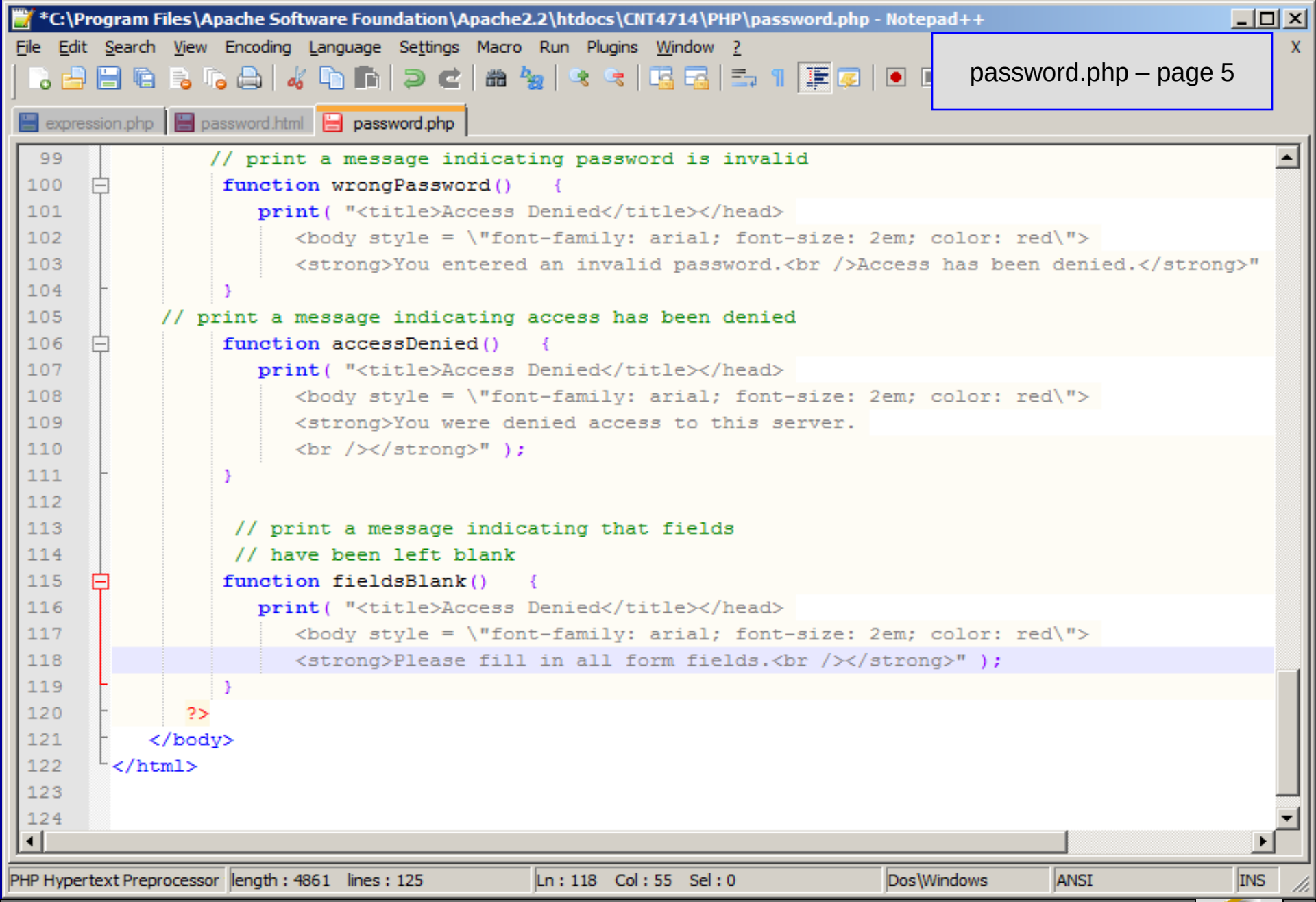
*C:\Program Files\Apache Software Foundation\Apache2.2\htdocs\CNT4714\PHP\password.php - Notepad++

File Edit Search View Encoding Language Settings Macro Run Plugins Window ?

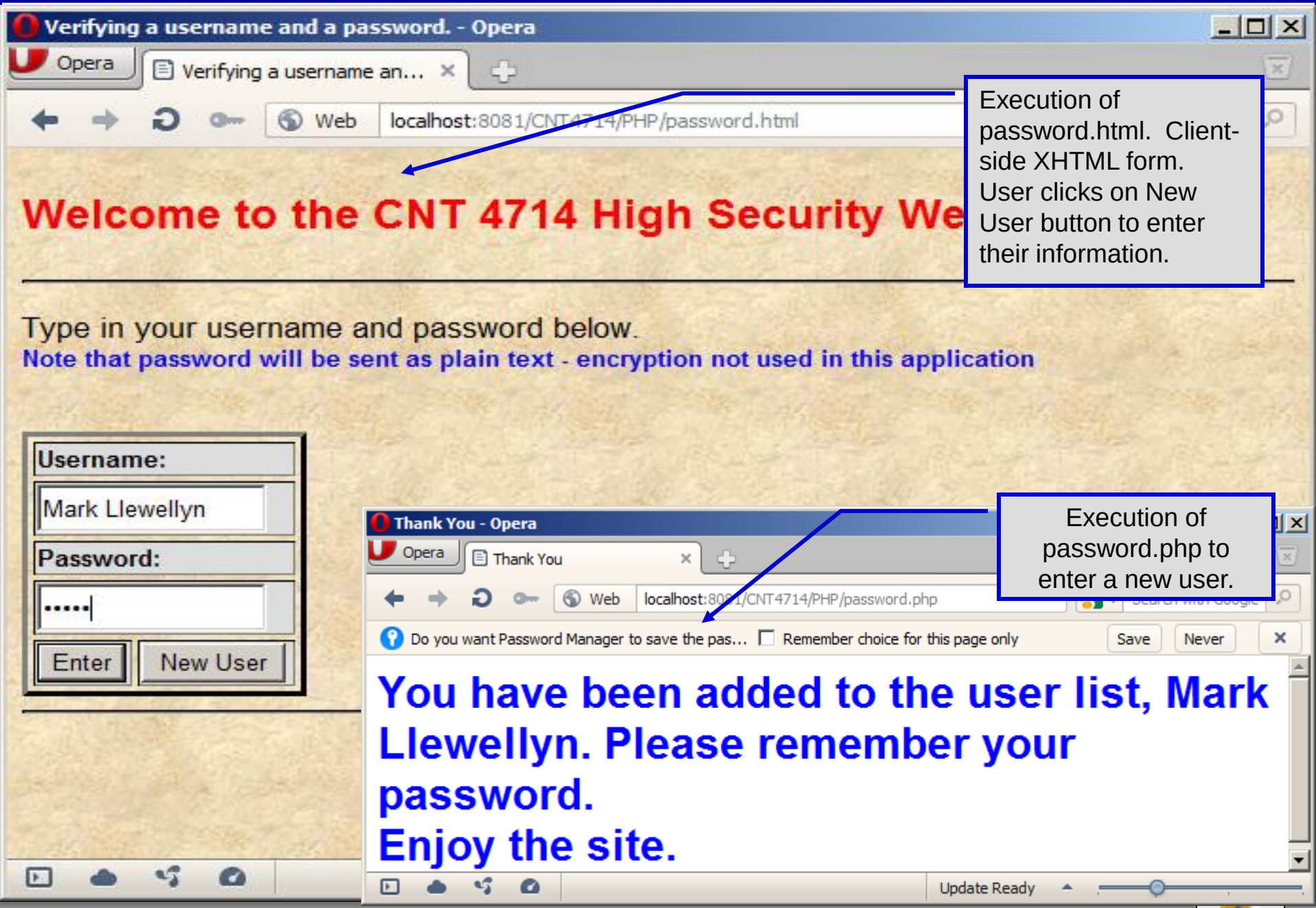
expression.php | password.html | password.php

```
78              return true;
79           else
80              return false;
81        }
82         // print a message indicating the user has been added
83        function userAdded( $name )  {
84           print( "<title>Thank You</title></head>
85              <body style = \"font-family: arial; font-size: 2em; color: blue;\">
86              <strong>You have been added
87              to the user list, $name.  Please remember your password.
88              <br />Enjoy the site.</strong>" );
89        }
90
91         // print a message indicating permission has been granted
92        function accessGranted( $name )  {
93           print( "<title>Thank You</title></head>
94              <body style = \"font-family: arial; font-size: 2em; color: blue\">
95              <strong>Permission has been
96              granted, $name. <br />
97              Enjoy the site.</strong>" );
98        }
99       // print a message indicating password is invalid
100       function wrongPassword()   {
101          print( "<title>Access Denied</title></head>
102             <body style = \"font-family: arial; font-size: 2em; color: red\">
103             <strong>You entered an invalid
```

PHP Hypertext Preprocessor | length : 4946 lines : 130 | Ln : 66 Col : 4 Sel : 0 | Dos\Windows | ANSI | INS


*C:\Program Files\Apache Software Foundation\Apache2.2\htdocs\CNT4714\PHP\password.php - Notepad++
File Edit Search View Encoding Language Settings Macro Run Plugins Window ?
password.php – page 5
expression.php
password.html
password.php
// print a message indicating password is invalid
function wrongPassword() {
print("<title>Access Denied</title></head>
<body style = \"font-family: arial; font-size: 2em; color: red\">
You entered an invalid password.
Access has been denied."
}
// print a message indicating access has been denied
function accessDenied() {
print("<title>Access Denied</title></head>
<body style = \"font-family: arial; font-size: 2em; color: red\">
You were denied access to this server.

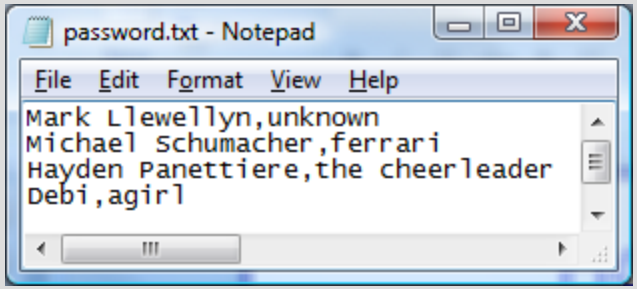
");
}
// print a message indicating that fields
// have been left blank
function fieldsBlank() {
print("<title>Access Denied</title></head>
<body style = \"font-family: arial; font-size: 2em; color: red\">
Please fill in all form fields.
");
}
?>
</body>
</html>
PHP Hypertext Preprocessor
length : 4861 lines : 125
Ln : 118 Col : 55 Sel : 0
Dos\Windows
ANSI
INS


Verifying a username and a password. - Opera
Opera
Verifying a username an...
Web
localhost:8081/CNT4714/PHP/password.html
Execution of password.html. Client-side XHTML form. User clicks on New User button to enter their information.
Welcome to the CNT 4714 High Security We
Type in your username and password below.
Note that password will be sent as plain text - encryption not used in this application
Username:
Mark Llewellyn
Password:
Enter
New User
Thank You - Opera
Thank You
localhost:8081/CNT4714/PHP/password.php
Do you want Password Manager to save the pas...
Remember choice for this page only
Save
Never
Execution of password.php to enter a new user.
You have been added to the user list, Mark Llewellyn. Please remember your password.
Enjoy the site.
Update Ready

Verifying a username and a password. - Opera
Opera
Verifying a username an...
Web
localhost:8081/CNT4714/PHP/password.html
Welcome to the CNT 4714 High Security W
Type in your username and password below.
Note that password will be sent as plain text - encryption not used in this application
Username:
Mark Llewellyn
Password:
Enter
New User
Execution of password.html. Client-side XHTML form. User clicks on Enter button to submit and verify their information.
Execution of password.php to invalidate an attempted entry by a user.
Access Denied - Opera
Opera
Access Denied
Web
localhost:8081/CNT4714/PHP/password.php
Search with Google
You entered an invalid password.
Access has been denied.
Update Ready

How password.php Works

- The PHP script `password.php` verifies the client's username and password by querying a database. For this example, the "database" of usernames and passwords is just a text file (for simplicity). Existing users are validated against this file, and new users are appended to it.



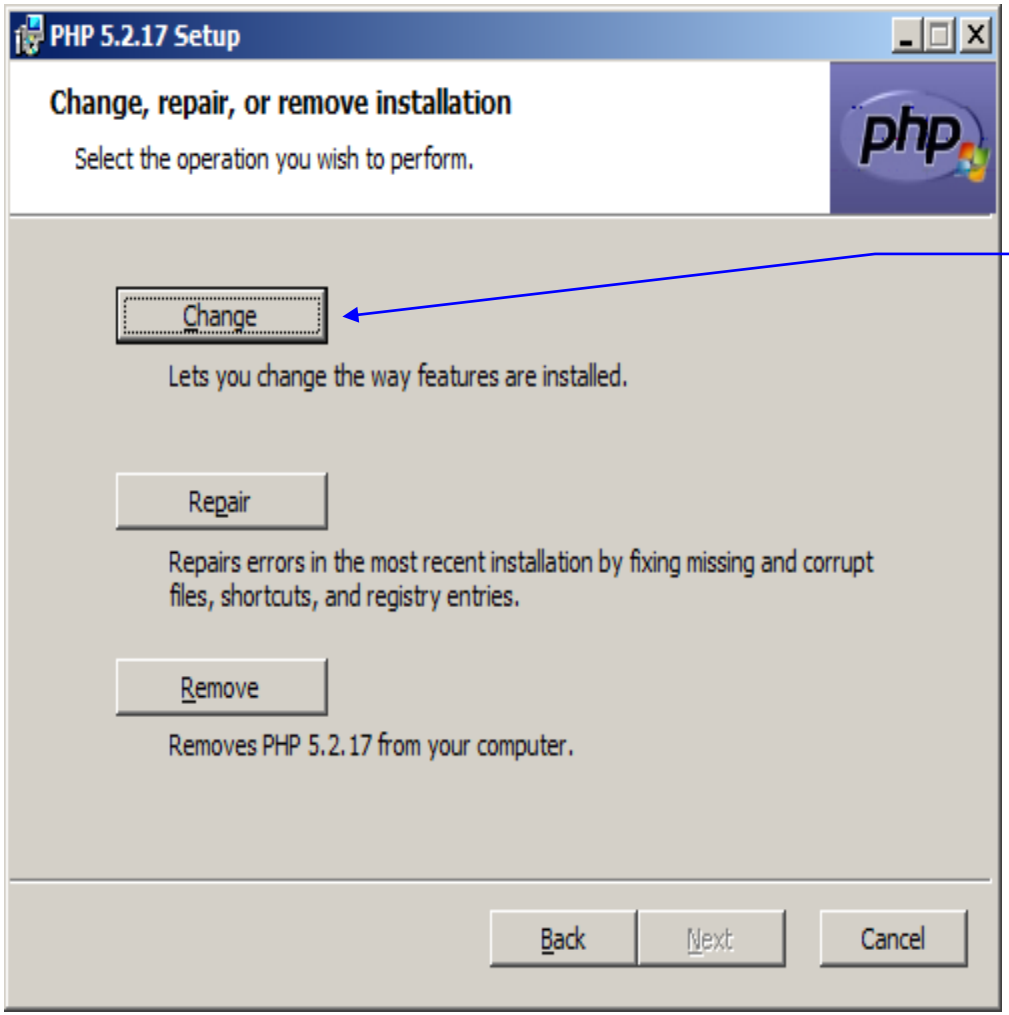
The password.txt "database"

- Whether we are dealing with a new user is determined by calling function `isset` to test if variable `$NewUser` has been set.
- When the user submits the password.html form to the server, they click either Enter or New User button. After calling function extract, either variable `$NewUser` or `$Enter` is created depending on which button was selected. If `$NewUser` has not been set, we assume the user clicked Enter.

PHP and Database Connectivity

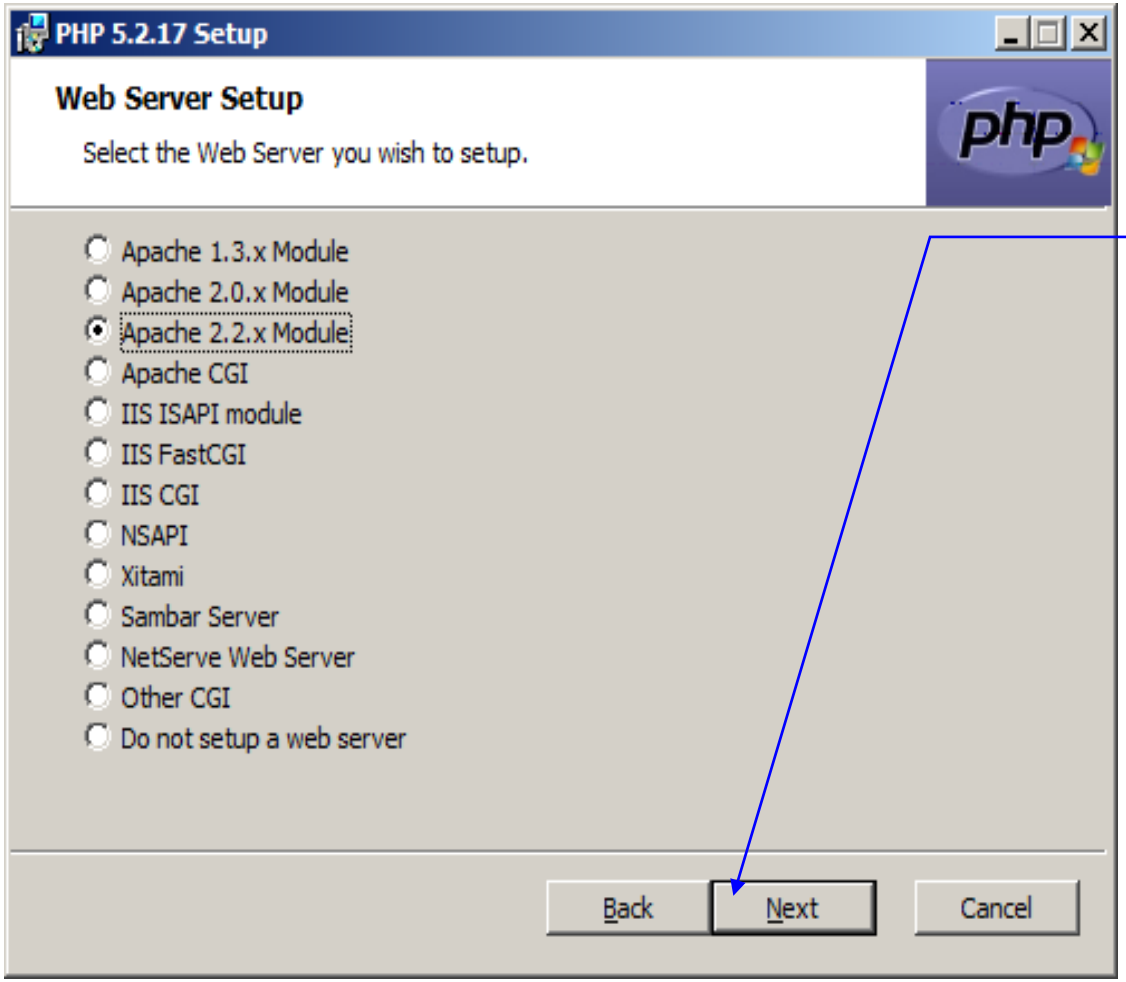
- PHP offers built-in support for a wide variety of database systems from Unix DBM through relational systems such as MySQL to full size commercial systems like Oracle.
- We'll continue to use MySQL as the underlying database system so that you can easily compare the work we've done with MySQL using Java servlets and JSPs.
- Since we installed PHP 5.2.17 without any extensions loaded, you'll need to go back and re-run the PHP installer and this time, select Change (See next page).
  - Versions of MySQL greater than 4.1.0 use MySQLi extensions.
  - Versions of MySQL less than 4.1.0 use MySQL extensions.

PHP and Database Connectivity (cont.)



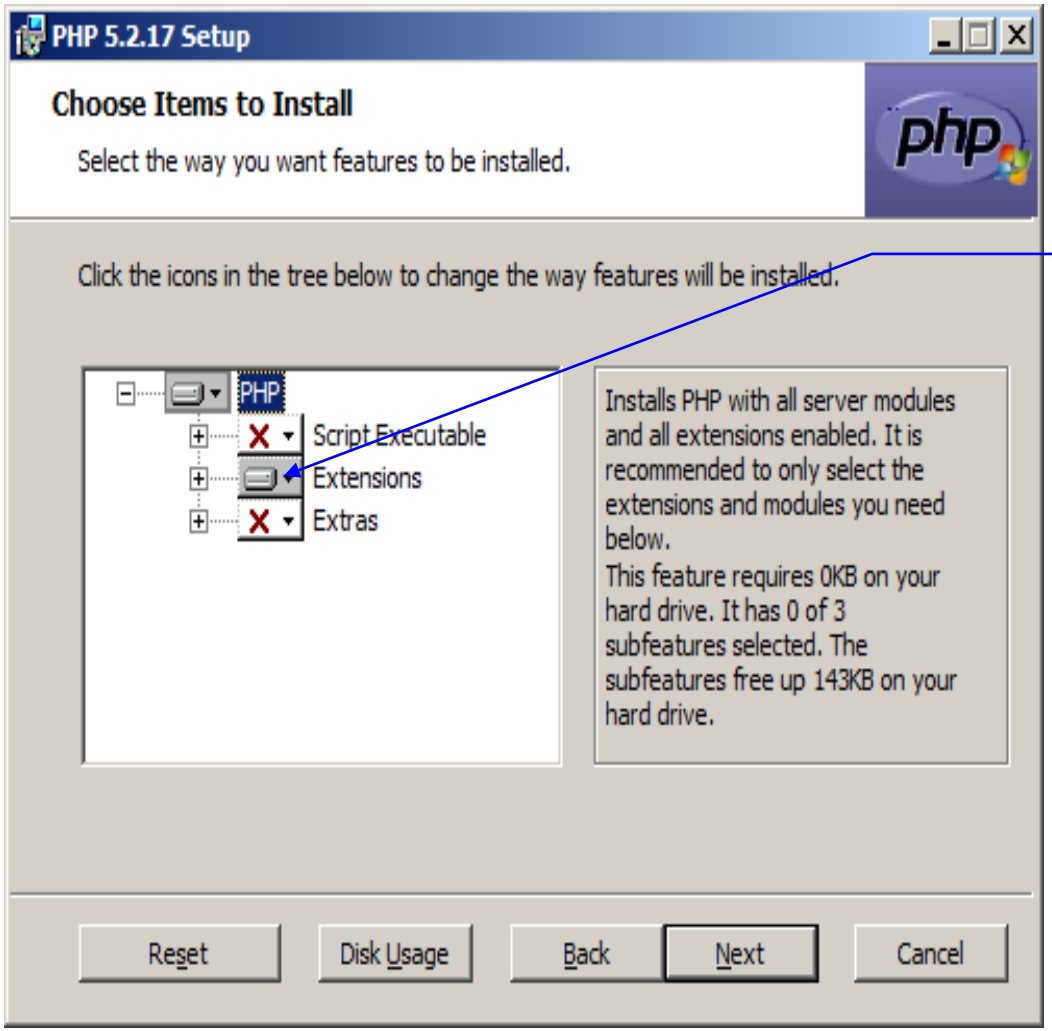
We need to add the `mysql` and `mysqli` extensions to PHP

PHP and Database Connectivity (cont.)



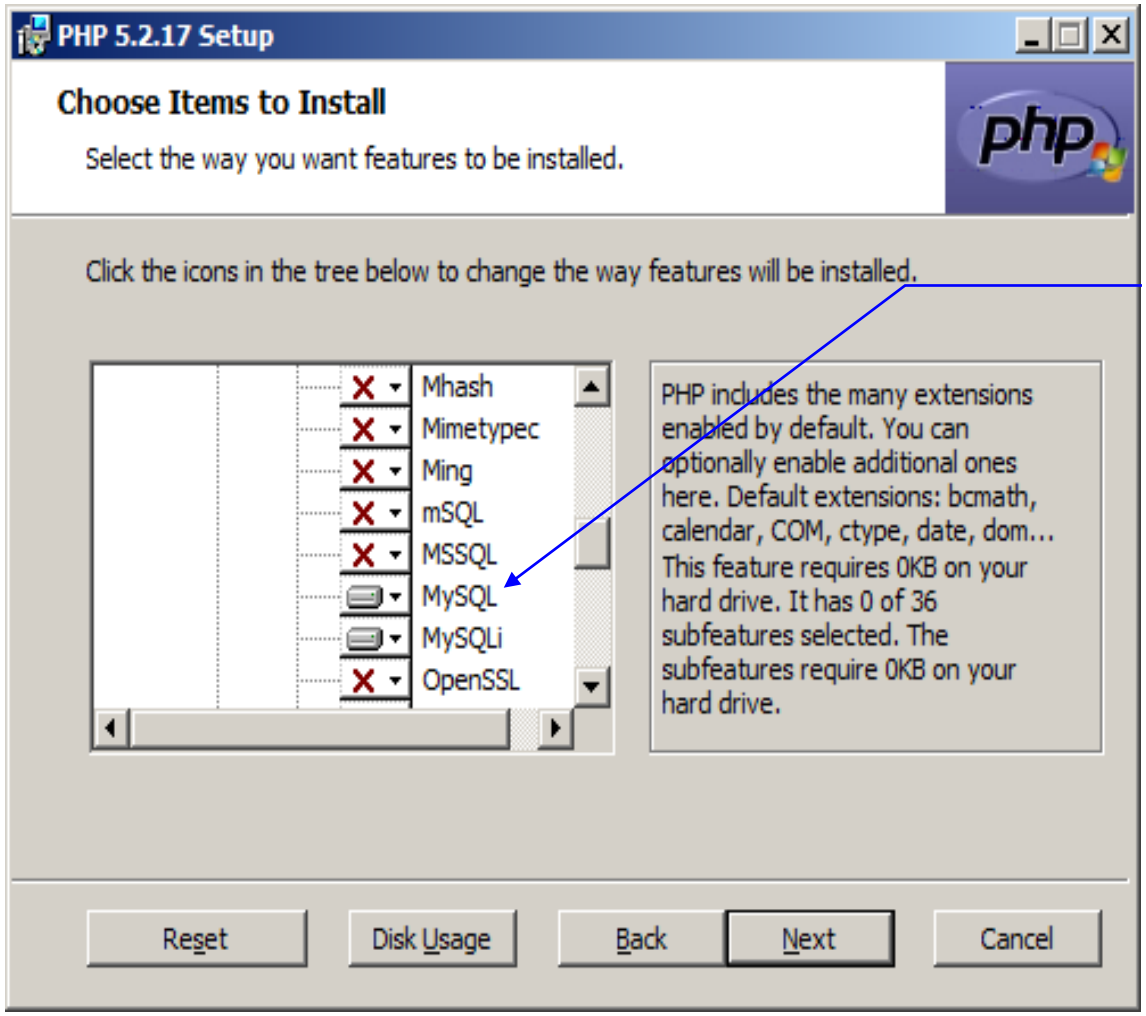
Leave this as it is…click Next.

PHP and Database Connectivity (cont.)



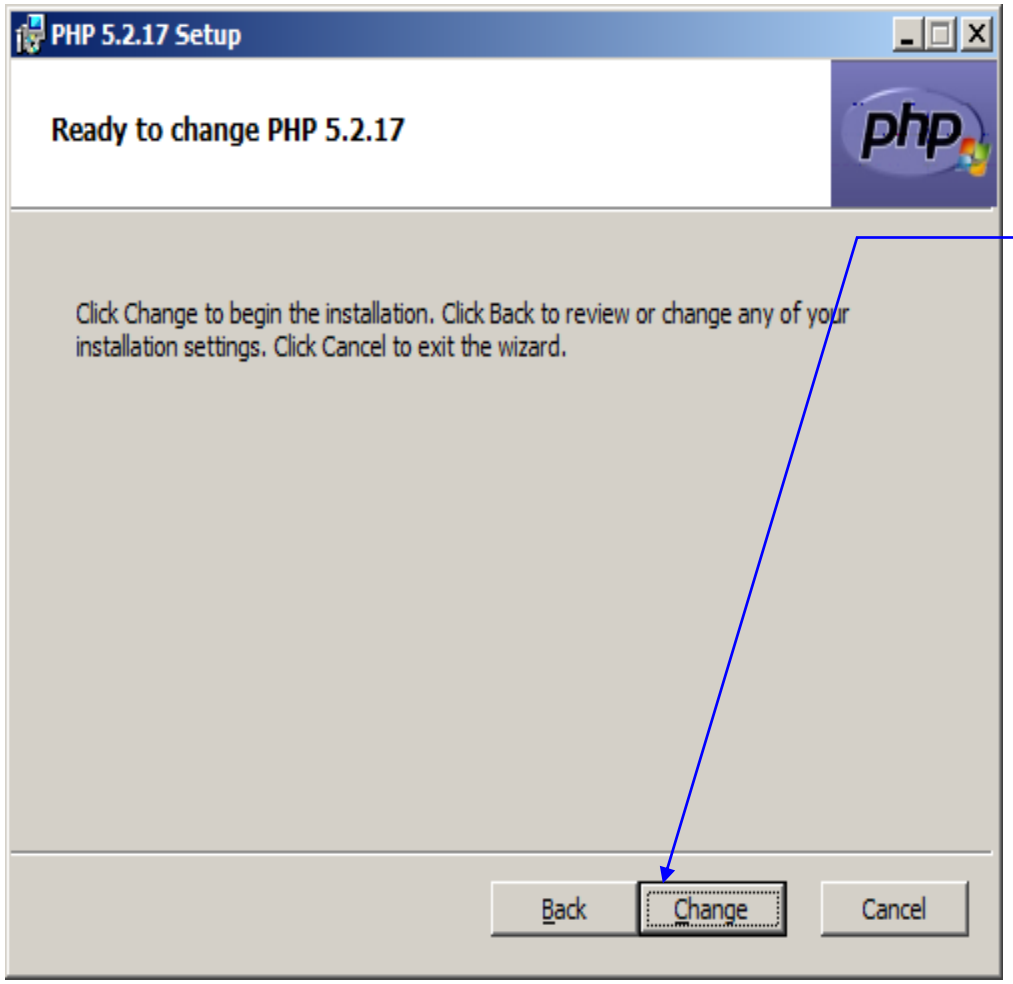
Select the Extensions box….it will also have a big red X in it right now. Click on the + sign to expand it.

PHP and Database Connectivity (cont.)



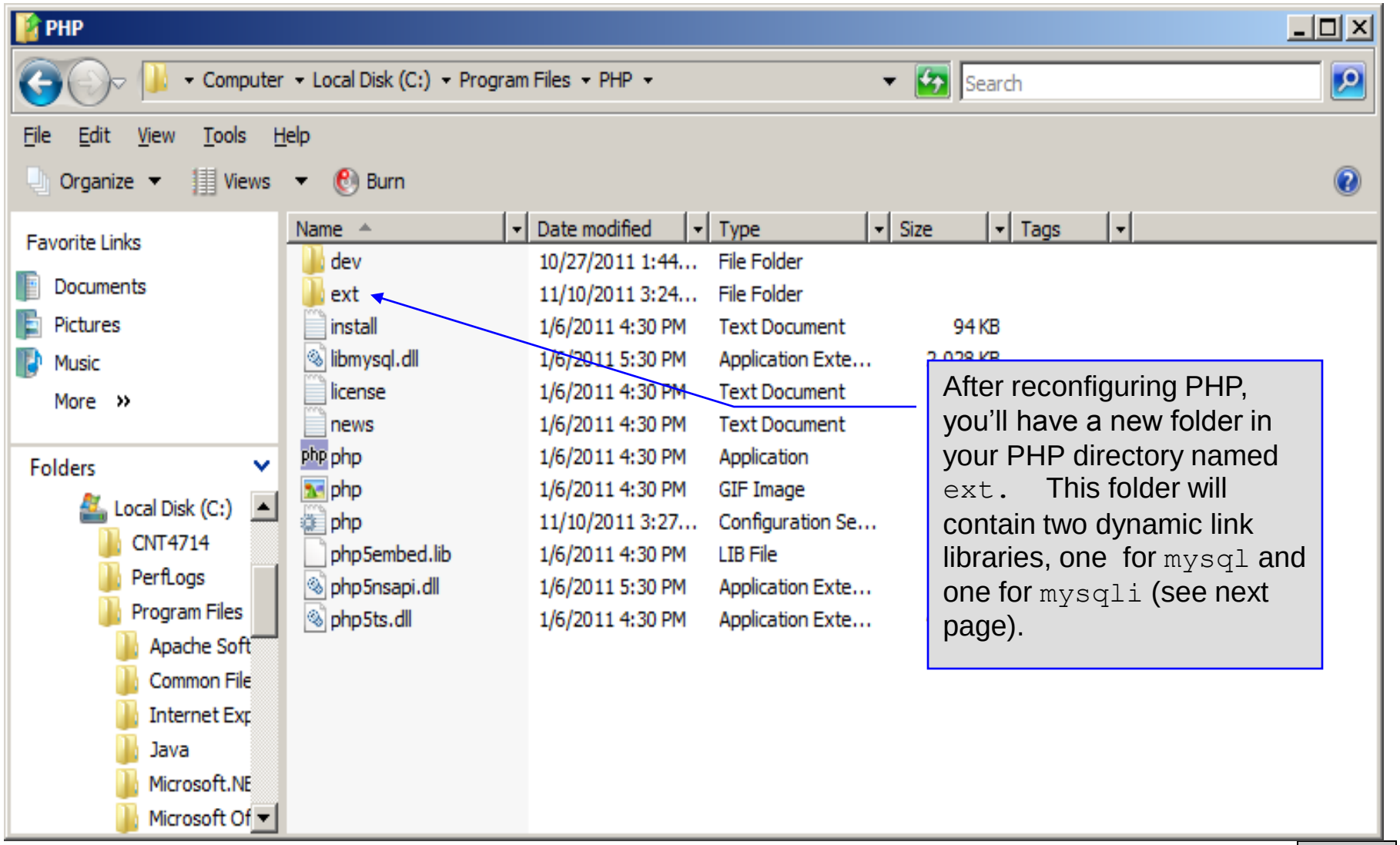
Scroll down through the list of extension until you find Mysql and MySQLi. Select both of them (the big red X will disappear). Then click Next.

PHP and Database Connectivity (cont.)



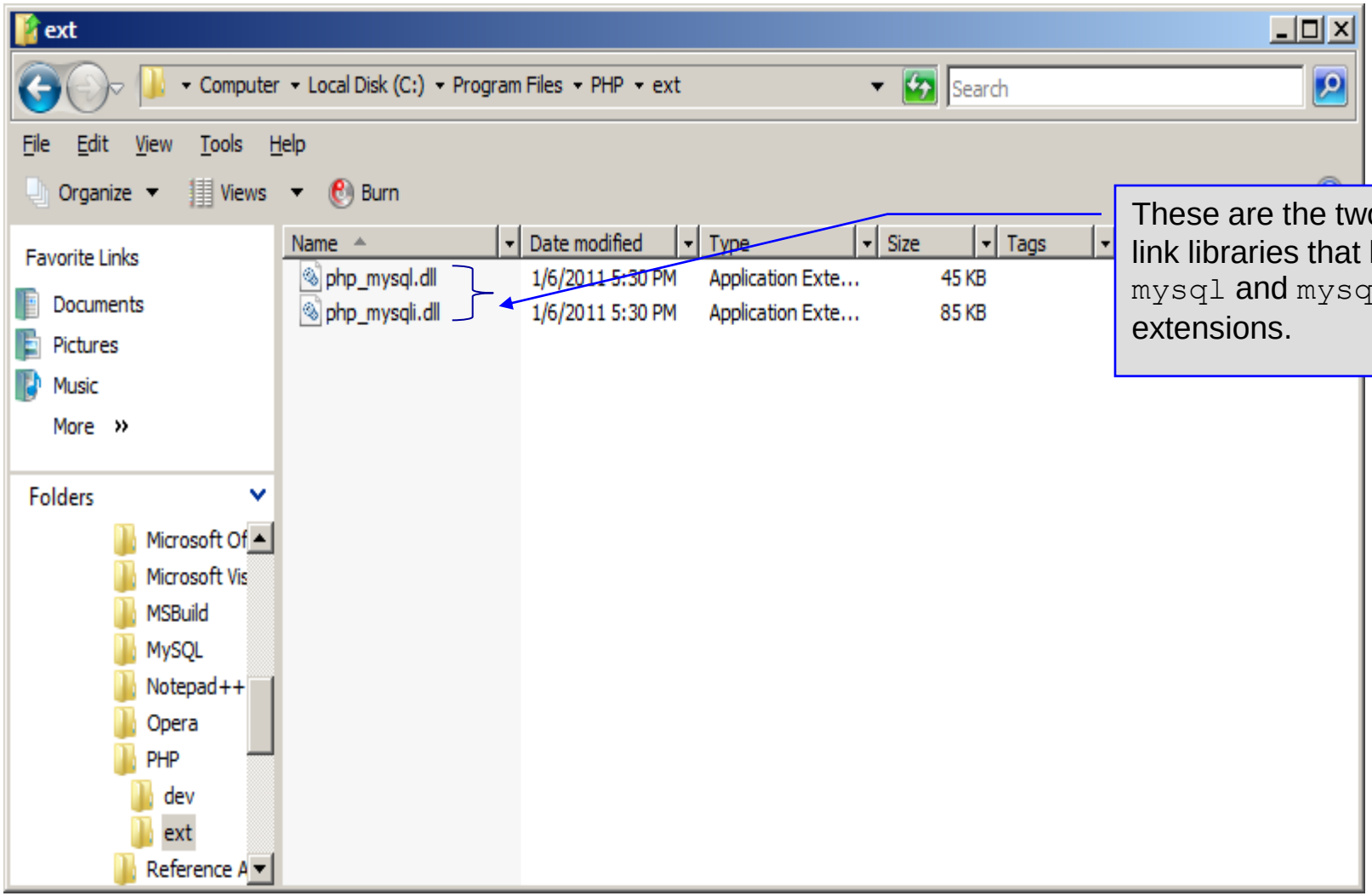
Click Change and you'll be done. This might require a reboot depending on your system. Just follow the PHP prompts.

PHP and Database Connectivity (cont.)

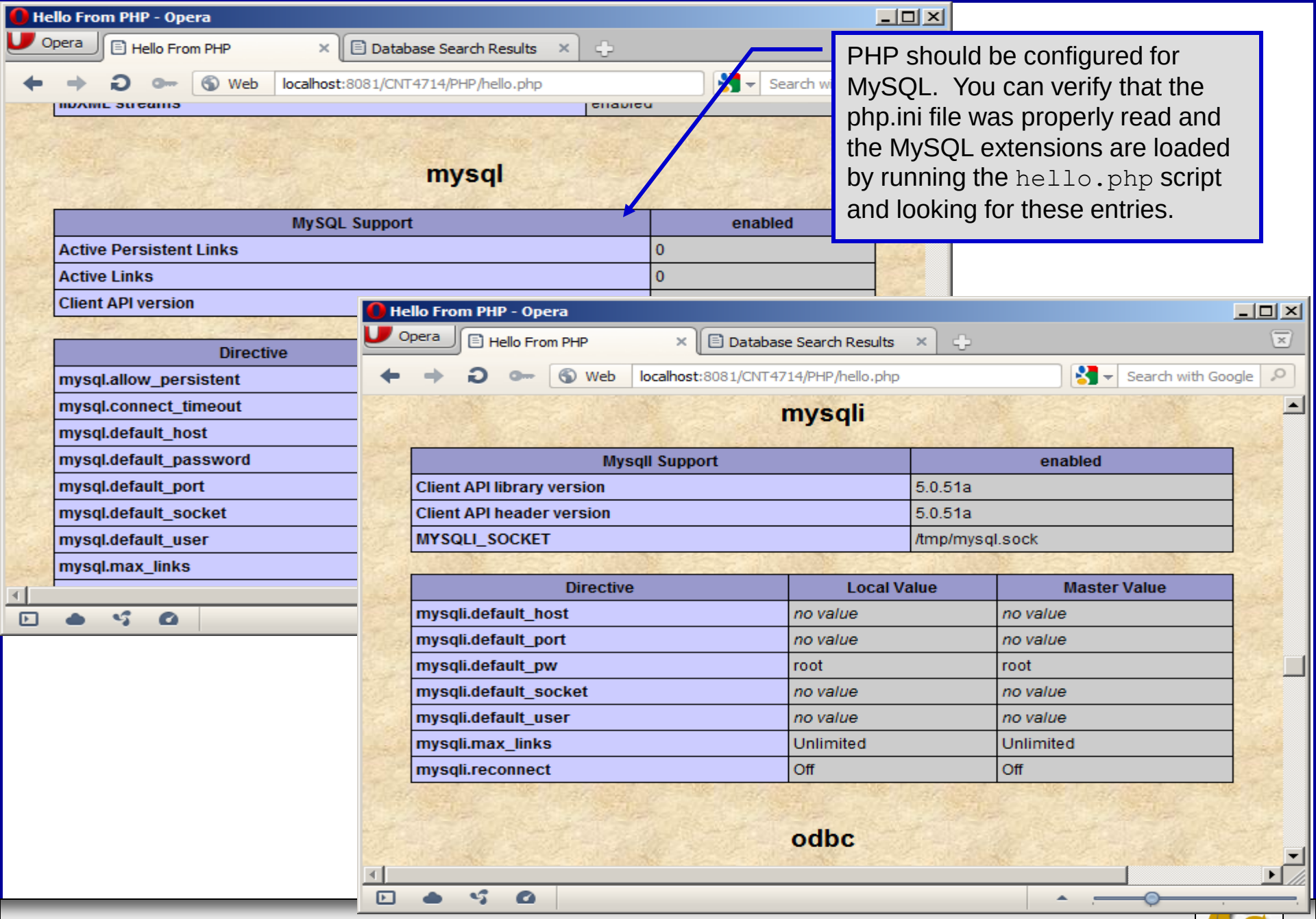


After reconfiguring PHP, you'll have a new folder in your PHP directory named `ext`. This folder will contain two dynamic link libraries, one for `mysql` and one for `mysqli` (see next page).

PHP and Database Connectivity (cont.)



These are the two dynamic link libraries that hold the `mysql` and `mysqli` extensions.



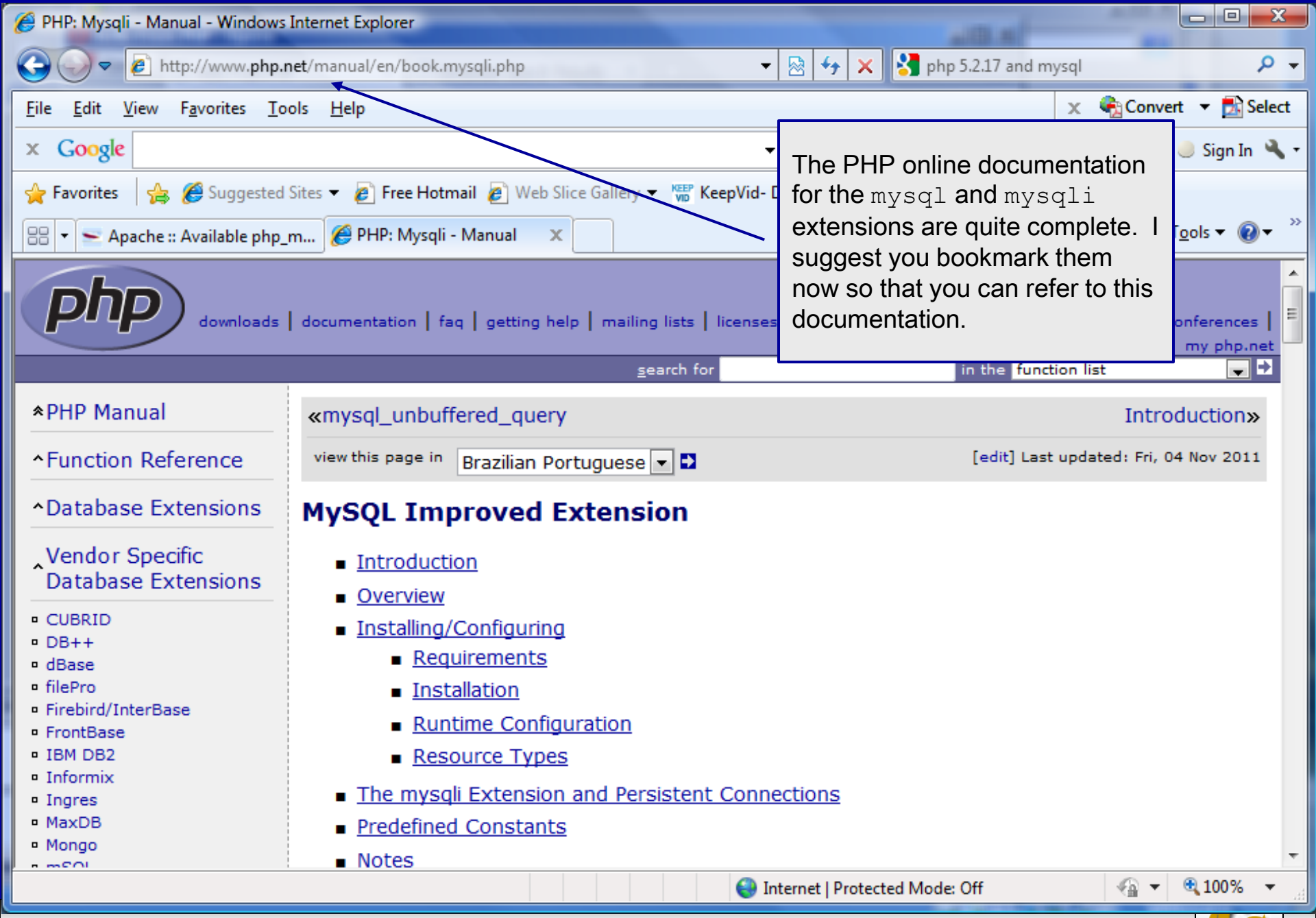
PHP should be configured for MySQL. You can verify that the php.ini file was properly read and the MySQL extensions are loaded by running the `hello.php` script and looking for these entries.

PHP and Database Connectivity (cont.)

- PHP contains a fairly extensive set of commands that can be used to access and manipulate MySQL databases.
- A very brief listing of some of these commands appears on the next page.
- For a complete listing see:

  http://us2.php.net/manual/en/print/ref.mysql.php.

  http://us2.php.net/manual/en/print/ref.mysqli.php.



The PHP online documentation for the `mysql` and `mysqli` extensions are quite complete. I suggest you bookmark them now so that you can refer to this documentation.

PHP and Database Connectivity (cont.)

- Now that you have PHP set to accept MySQL extensions, let's connect to the bike database that we used for examples with Java servlets and JSPs.
- The following example is a simple database connection process in PHP where the client interacts with the database from an XHTML form that simply asks them to select which attributes from the bikes table that they would like to display. This is done through the `data.html` file.
- When the client clicks the submit query button, the `database.php` script executes by connecting to the database, posting the query, retrieving the results, and displaying them to the client.

C:\Program Files\Apache Software Foundation\Apache2.2\htdocs\CNT4714\PHP\data.html - Notepad++

File Edit Search View Encoding Language Settings Macro Run Plugins Window ?

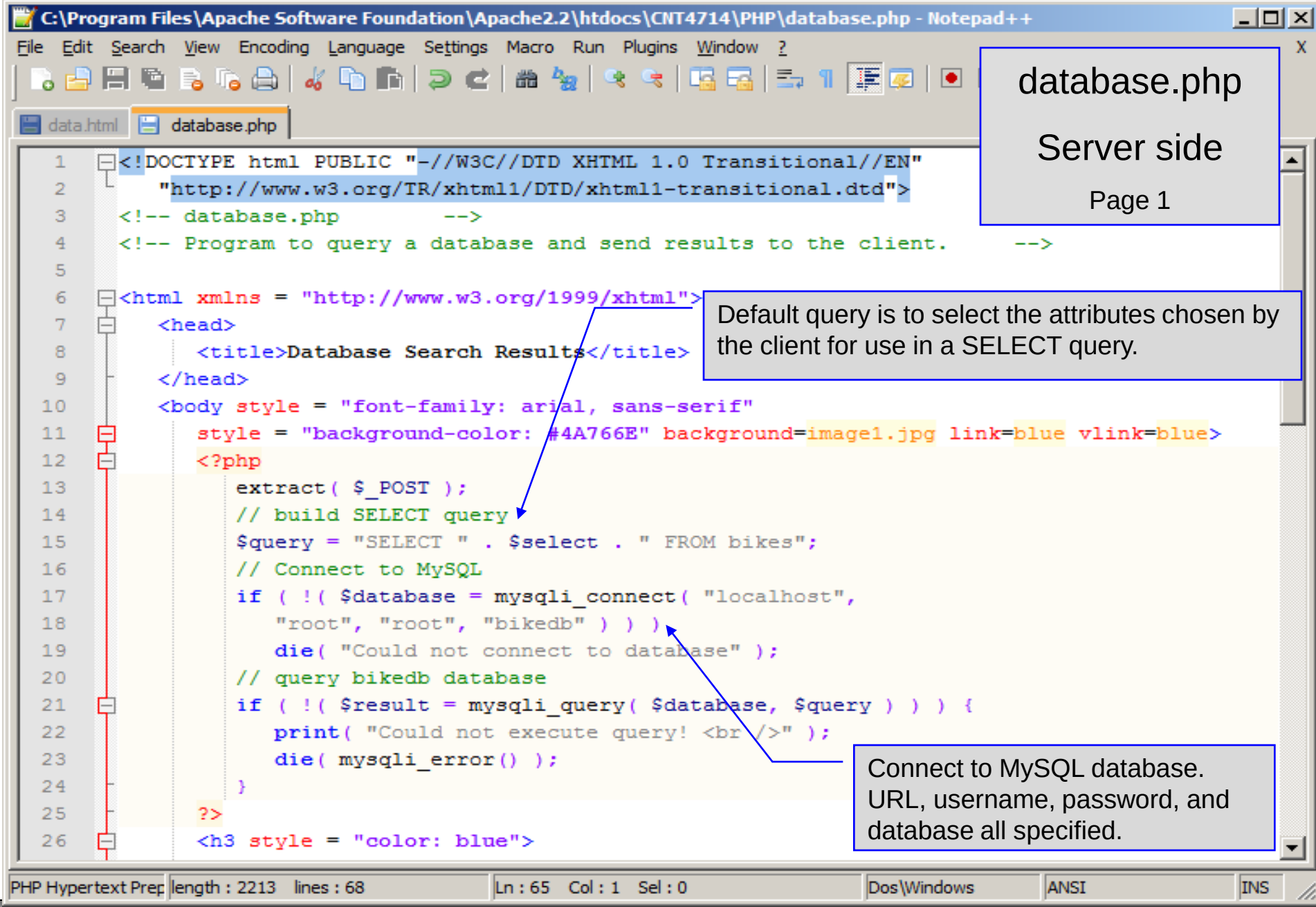
data.html

Client side

data.html database.php

```
6   <head>
7      <title>Sample Database Query From PHP</title>
8   </head>
9   <body style = "background-color: #545454" background=image1.jpg > <!--F0E68C  -->
10     <h2 style = "font-family: arial color: blue">
11        Querying a MySQL database from a PHP Script.
12     </h2>
13     <form method = "post" action = "database.php">
14        <p>Select a field to display:
15           <!-- add a select box containing options -->
16           <!-- for SELECT query                    -->
17           <select name = "select">
18              <option selected = "selected">*</option>
19              <option>bikename</option>
20              <option>size</option>
21              <option>color</option>
22              <option>cost</option>
23              <option>purchased</option>
24              <option>mileage</option>
25           </select>
26        </p>
27        <input type = "submit" value = "Send Query" style = "background-color: blue;
28               color: yellow; font-weight: bold" />
29     </form>
```

Hyper Text Markup | length : 1267 lines : 35 | Ln : 9 Col : 64 Sel : 0 | Macintosh | ANSI | INS



database.php

Server side

Page 1

Default query is to select the attributes chosen by the client for use in a SELECT query.

Connect to MySQL database. URL, username, password, and database all specified.

C:\Program Files\Apache Software Foundation\Apache2.2\htdocs\CNT4714\PHP\database.php - Notepad++

File Edit Search View Encoding Language Settings Macro Run Plugins Window ?

data.html database.php

```
26      <h3 style = "color: blue">
27      Database Search Results</h3>
28      <table border = "1" cellpadding = "3" cellspacing = "3"
29         style = "background-color: #00FFFF">  <!-- ADD8E6  -->
30
31         <?php
32        // fetch meta-data
33        $metadata = mysqli_fetch_fields( $result);
34        print("<tr>");
35        for ($i=0; $i<count($metadata); $i++){
36            print("<td>");
37            printf("%s",$metadata[$i]->name);
38            print("</td>");
39        }
40        print("</tr>");
41
42           // fetch each record in result set
43            for ( $counter = 0;
44               $row = mysqli_fetch_row( $result );
45               $counter++ ){
46
47               // build table to display results
48               print( "<tr>" );
49
50               foreach ( $row as $key => $value )
51                  print( "<td>$value</td>" );
```

PHP Hypertext Prep | length : 2213 lines : 68 | Ln : 65 Col : 1 Sel : 0 | Dos\Windows | ANSI | INS

database.php

Server side

Page 2

Get metadata for the query

Display metadata in the top row of the table

C:\Program Files\Apache Software Foundation\Apache2.2\htdocs\CNT4714\PHP\database.php - Notepad++

File Edit Search View Encoding Language Settings Macro Run Plugins Window ?

data.html database.php

database.php

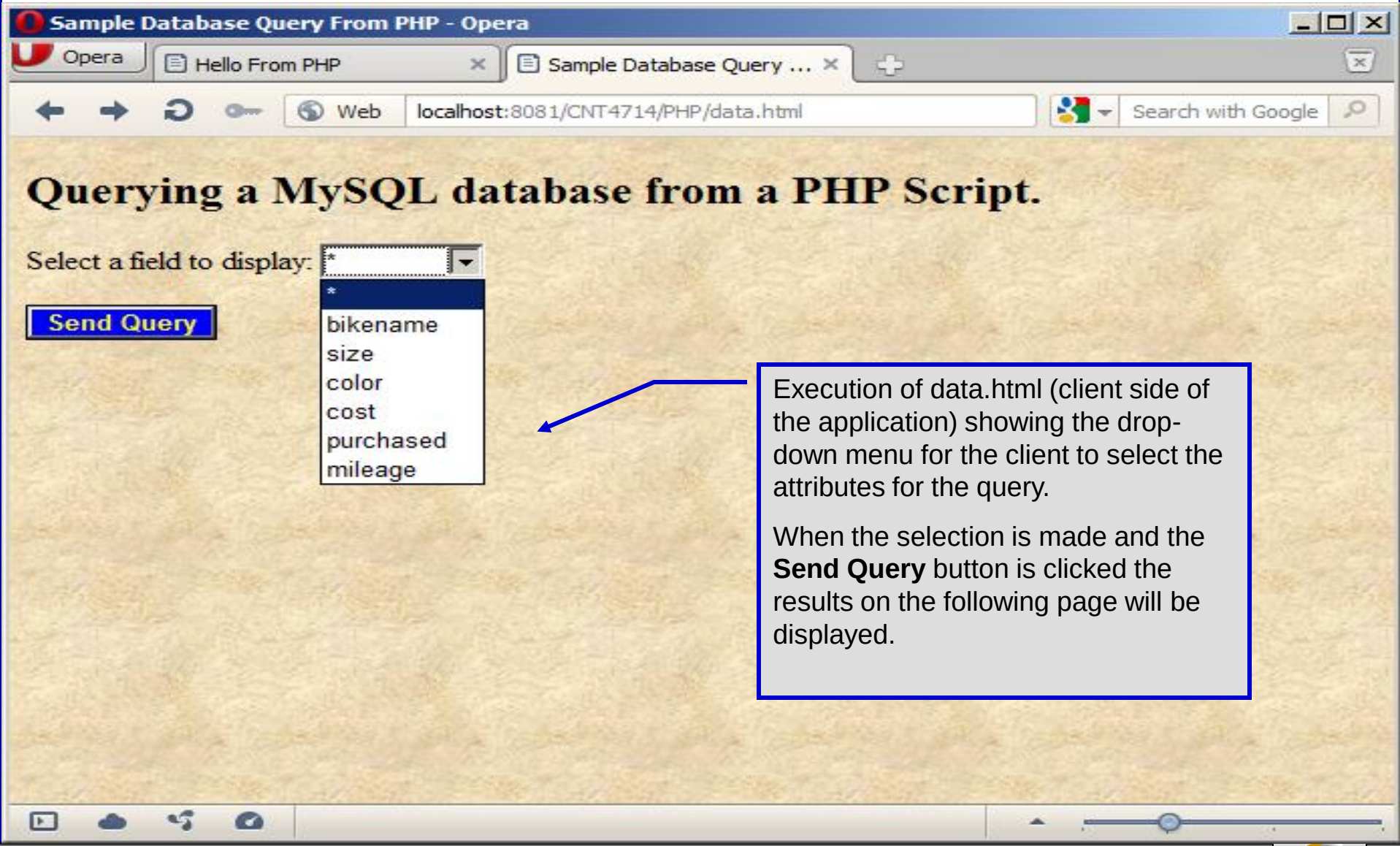
Server side

Page 3

```
43              for ( $counter = 0;
44                 $row = mysqli_fetch_row( $result );
45                 $counter++ ){
46
47                 // build table to display results
48                 print( "<tr>" );
49
50                 foreach ( $row as $key => $value )
51                    print( "<td>$value</td>" );
52
53                 print( "</tr>" );
54              }
55              mysqli_close( $database );
56           ?>
57        </table>
58        <br />Your search yielded <strong>
59        <?php print( "$counter" ) ?> results.<br /><br /></strong>
60        <h5>Please email comments to
61           <a href = "mailto:markl@cs.ucf.edu">
62           markl@cs.ucf.edu
63           </a>
64        </h5>
65     </body>
66  </html>
67
68
```

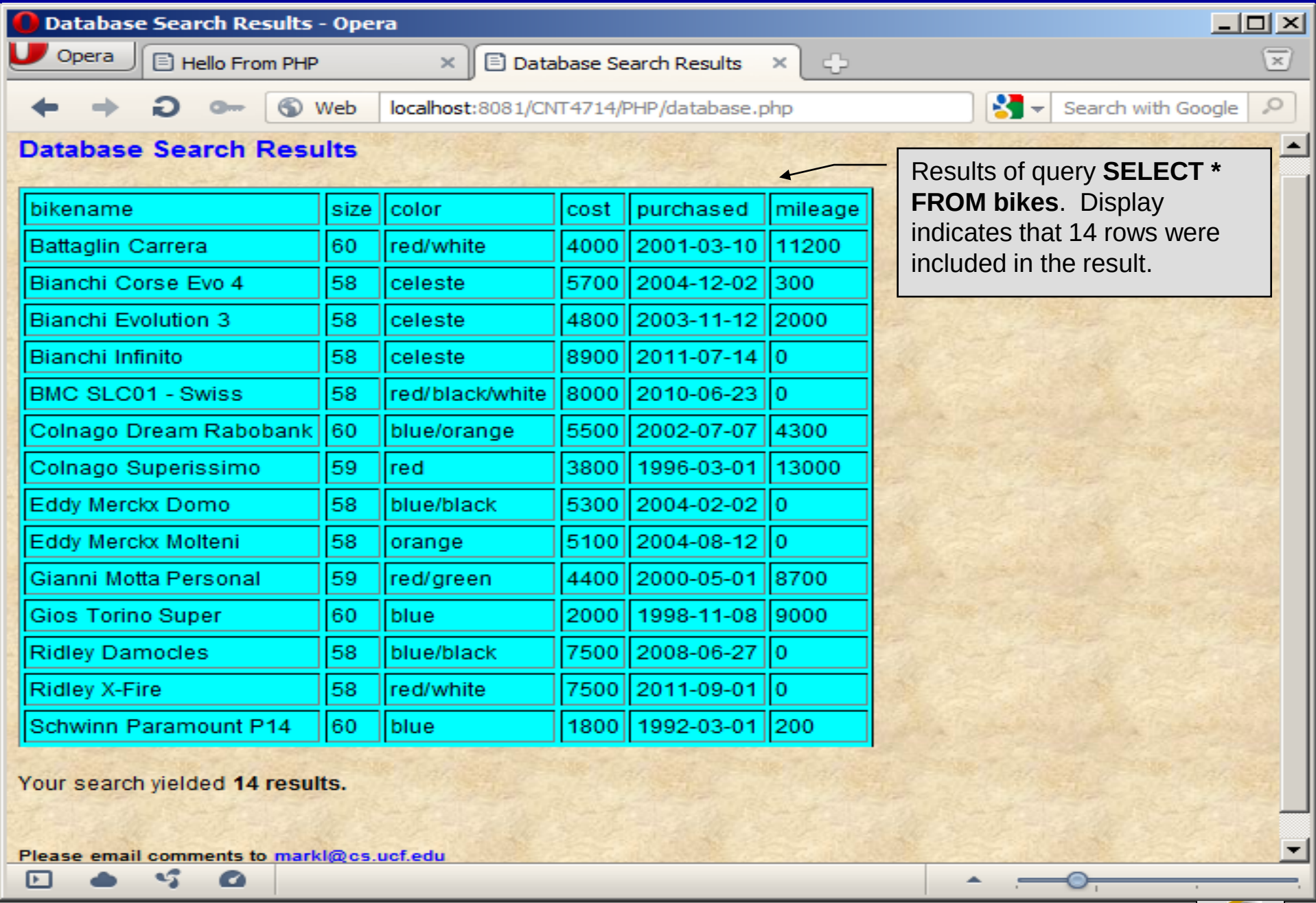
PHP Hypertext Prep | length : 2213 lines : 68 | Ln : 65 Col : 1 Sel : 0 | Dos\Windows | ANSI | INS

Execution of data.html – Client side



Execution of data.html (client side of the application) showing the drop-down menu for the client to select the attributes for the query.

When the selection is made and the **Send Query** button is clicked the results on the following page will be displayed.



bikename	size	color	cost	purchased	mileage
Battaglin Carrera	60	red/white	4000	2001-03-10	11200
Bianchi Corse Evo 4	58	celeste	5700	2004-12-02	300
Bianchi Evolution 3	58	celeste	4800	2003-11-12	2000
Bianchi Infinito	58	celeste	8900	2011-07-14	0
BMC SLC01 - Swiss	58	red/black/white	8000	2010-06-23	0
Colnago Dream Rabobank	60	blue/orange	5500	2002-07-07	4300
Colnago Superissimo	59	red	3800	1996-03-01	13000
Eddy Merckx Domo	58	blue/black	5300	2004-02-02	0
Eddy Merckx Molteni	58	orange	5100	2004-08-12	0
Gianni Motta Personal	59	red/green	4400	2000-05-01	8700
Gios Torino Super	60	blue	2000	1998-11-08	9000
Ridley Damocles	58	blue/black	7500	2008-06-27	0
Ridley X-Fire	58	red/white	7500	2011-09-01	0
Schwinn Paramount P14	60	blue	1800	1992-03-01	200

Cookies

- A cookie is a text file that a Web site stores on a client's computer to maintain information about the client during and between browsing sessions.
- A Web site can store a cookie on a client's computer to record user preferences and other information that the Web site can retrieve during the client's subsequent visits. For example, many Web sites use cookies to store client's zipcodes. The Web site can retrieve the zipcode from the cookie and provide weather reports and news updates tailored to the user's region.
- Web sites also use cookies to track information about client activity. Analysis of information collected via cookies can reveal the popularity of Web sites or products.

Cookies (cont.)

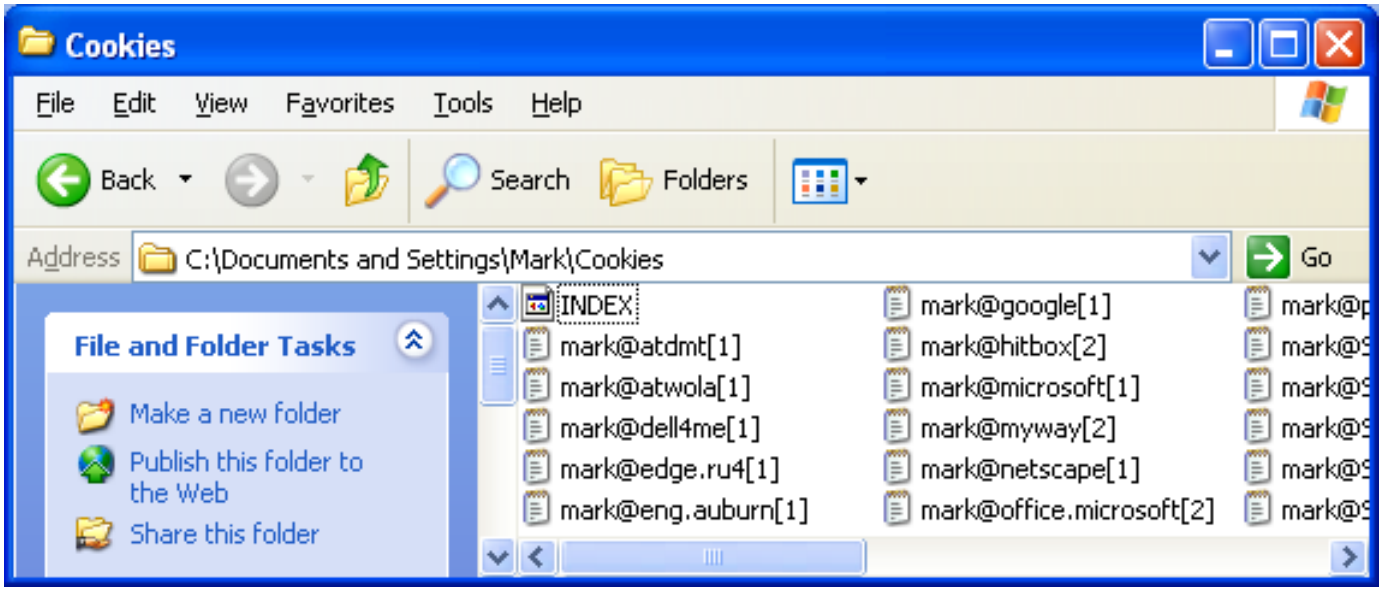
- Marketers use cookies to determine the effectiveness of advertising campaigns.
- Web sites store cookies on users' hard drives, which raises issues regarding security and privacy. Web sites should not store critical information, such as credit-card numbers or passwords, in cookies, because cookies are just text files that anyone can read.
- Several cookie features address security and privacy concerns. A server can access only the cookies that it has placed on the client.
- A cookies has an expiration date, after which the Web browser deletes it.

Cookies (cont.)

- Users who are concerned about the privacy and security implications of cookies can disable them in their Web browsers. However, the disabling of cookies can make it impossible for the user to interact with Web sites that rely on cookies to function properly.
- Information stored in the cookie is sent to the Web server from which it originated whenever the user requests a Web page from that particular server. The Web server can send the client XHTML output that reflects the preferences or information that is stored in the cookie.
- The location of the cookie file varies from browser to browser. Internet Explorer places cookies in the Cookies directory located at `C:\Documents and Settings\...\Cookies`

Cookies (cont.)

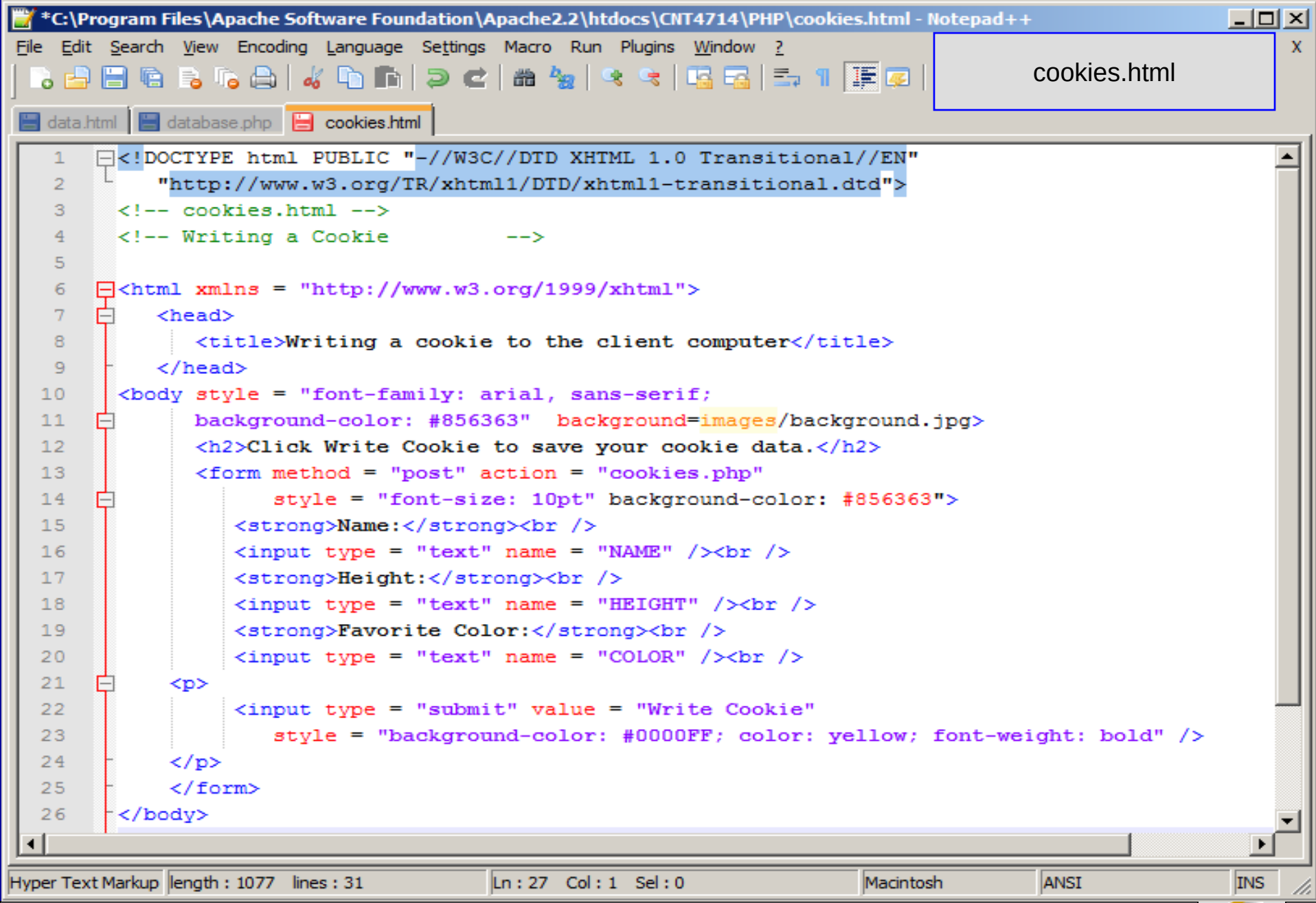
- After a cookie is created, a text file is added to this directory. While the name of the file will vary from user to user a typical example is shown below.

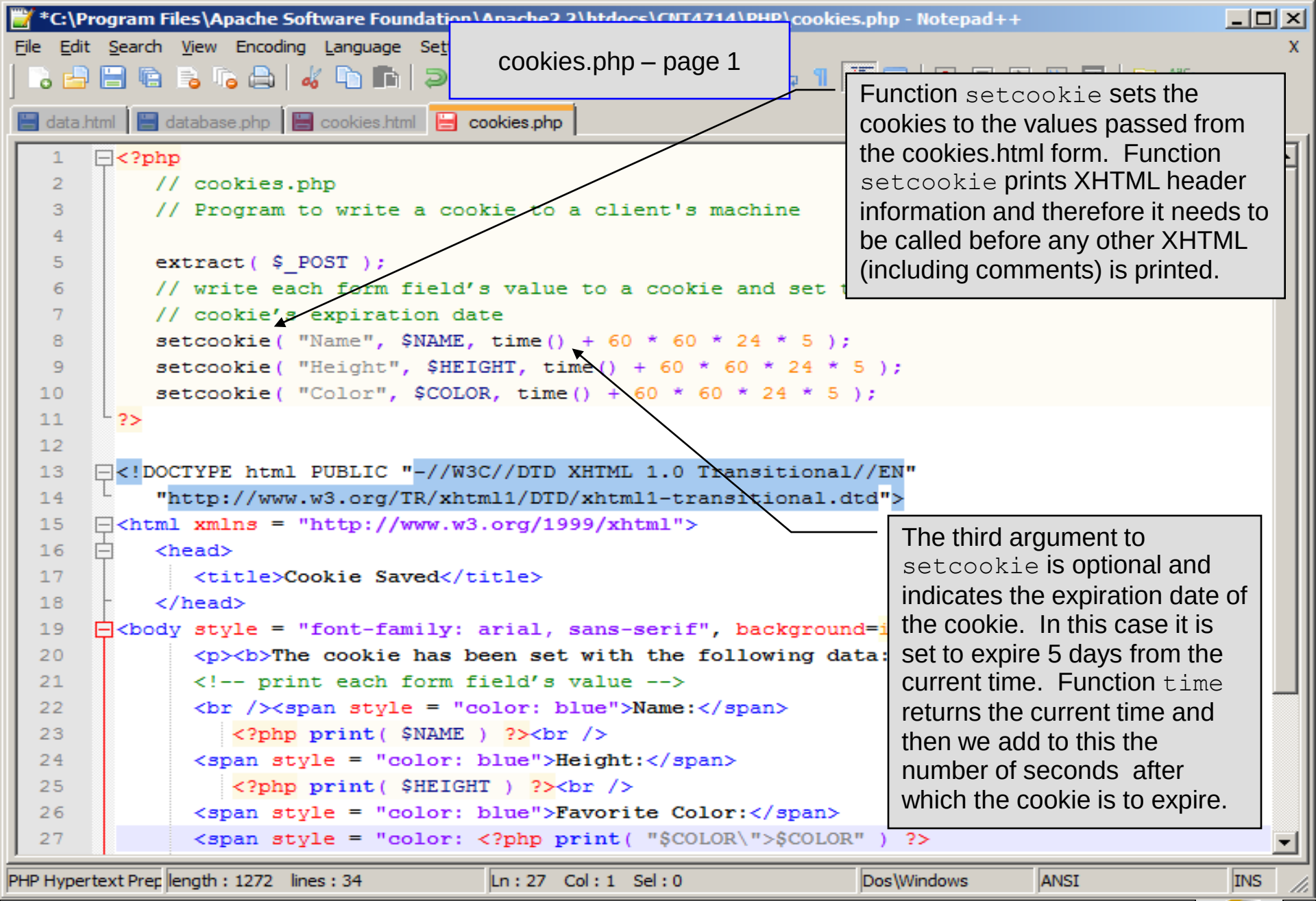


- The contents of a cookie are shown on page 74.

Cookies (cont.)

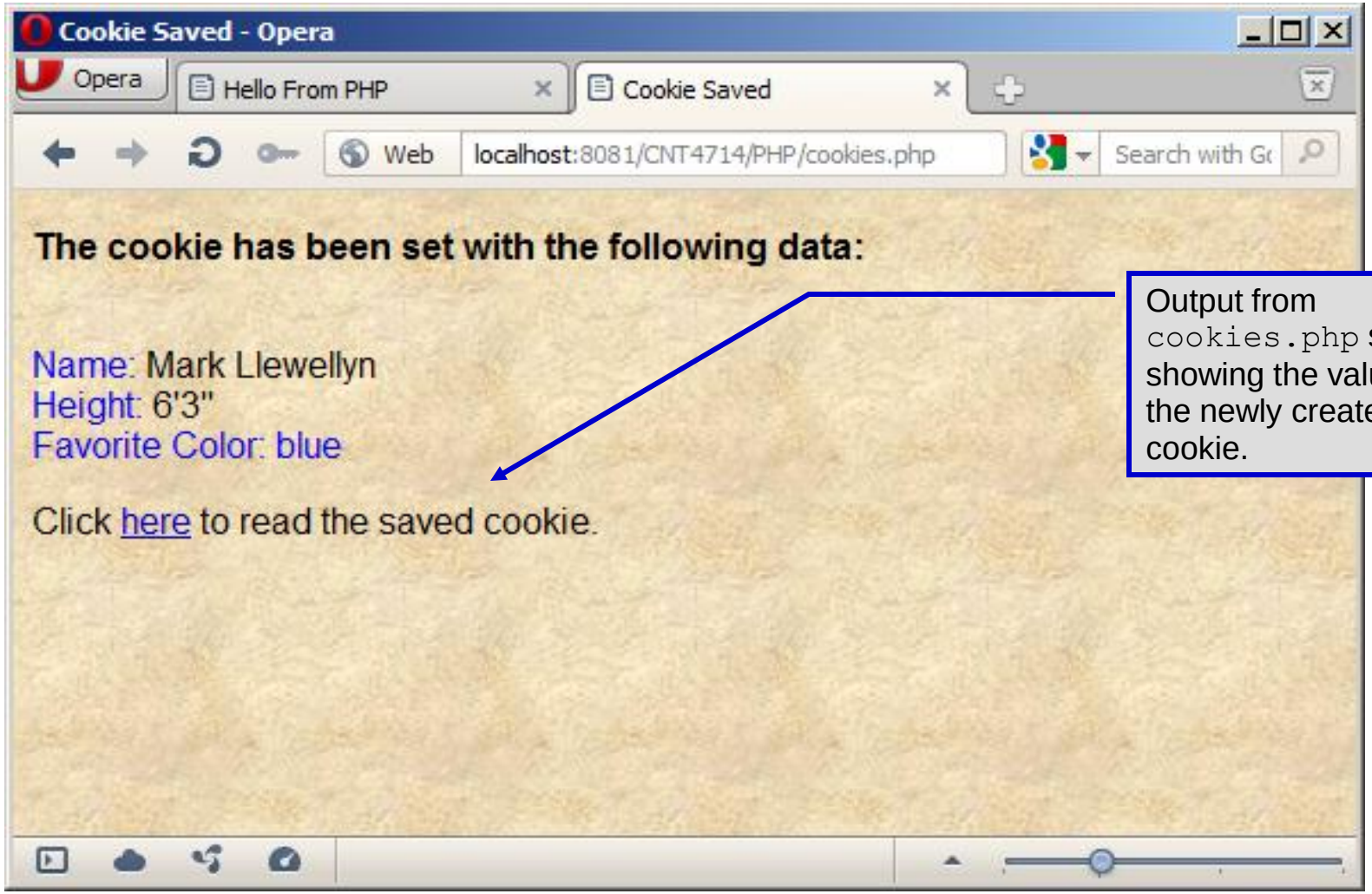
- Now let's create the code necessary to create our own cookie.
- In this example, a PHP script is invoked from a client-side HTML document. The HTML document creates a form for the user to enter the information that will be stored in the cookie. (Often the information that is stored in a cookie will be extracted from several different areas and may involved tracking the client's actions at the Web site.)
- Once the user has entered their information, when they click the Write Cookie button, the `cookies.php` script executes.
- The XHTML document and the PHP script are shown on the next pages. The XHTML document `cookies.html` is on page 36 and the PHP script `cookies.php` appears on page 37.


*C:\Program Files\Apache Software Foundation\Apache2.2\htdocs\CNT4714\PHP\cookies.html - Notepad++
File Edit Search View Encoding Language Settings Macro Run Plugins Window ?
cookies.html
data.html
database.php
cookies.html
1 <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
2 "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
3 <!-- cookies.html -->
4 <!-- Writing a Cookie -->
5
6 <html xmlns = "http://www.w3.org/1999/xhtml">
7 <head>
8 <title>Writing a cookie to the client computer</title>
9 </head>
10 <body style = "font-family: arial, sans-serif;
11 background-color: #856363" background=images/background.jpg>
12 <h2>Click Write Cookie to save your cookie data.</h2>
13 <form method = "post" action = "cookies.php"
14 style = "font-size: 10pt" background-color: #856363">
15 Name:
16 <input type = "text" name = "NAME" />
17 Height:
18 <input type = "text" name = "HEIGHT" />
19 Favorite Color:
20 <input type = "text" name = "COLOR" />
21
22 <input type = "submit" value = "Write Cookie"
23 style = "background-color: #0000FF; color: yellow; font-weight: bold" />
24
25 </form>
26 </body>
Hyper Text Markup length : 1077 lines : 31
Ln : 27 Col : 1 Sel : 0
Macintosh
ANSI
INS


*C:\Program Files\Apache Software Foundation\Apache2.2\htdocs\CNT4714\PHP\cookies.php - Notepad++
File Edit Search View Encoding Language Set
data.html database.php cookies.html cookies.php
cookies.php – page 1
Function setcookie sets the cookies to the values passed from the cookies.html form. Function setcookie prints XHTML header information and therefore it needs to be called before any other XHTML (including comments) is printed.
1 <?php
2 // cookies.php
3 // Program to write a cookie to a client's machine
4
5 extract($_POST);
6 // write each form field's value to a cookie and set t
7 // cookie's expiration date
8 setcookie("Name", $NAME, time() + 60 * 60 * 24 * 5);
9 setcookie("Height", $HEIGHT, time() + 60 * 60 * 24 * 5);
10 setcookie("Color", $COLOR, time() + 60 * 60 * 24 * 5);
11 ?>
12
13 <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
14 "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
15 <html xmlns = "http://www.w3.org/1999/xhtml">
16 <head>
17 <title>Cookie Saved</title>
18 </head>
19 <body style = "font-family: arial, sans-serif", background=i
20 <p><b>The cookie has been set with the following data:
21 <!-- print each form field's value -->
22
Name:
23 <?php print($NAME) ?>
24 Height:
25 <?php print($HEIGHT) ?>
26 Favorite Color:
27 <span style = "color: <?php print("$COLOR\">$COLOR") ?>
The third argument to setcookie is optional and indicates the expiration date of the cookie. In this case it is set to expire 5 days from the current time. Function time returns the current time and then we add to this the number of seconds after which the cookie is to expire.
PHP Hypertext Prep length : 1272 lines : 34 Ln : 27 Col : 1 Sel : 0 Dos\Windows ANSI INS

Cookies (cont.)

Cookies (cont.)



Output from `cookies.php` script showing the values in the newly created cookie.

Cookies (cont.)

- Once the cookie has been created, the `cookies.php` script gives the user the chance to view the newly created cookie by invoking the `readCookies.php` script from within the `cookies.php` script by clicking on the link.
- The `readCookies.php` script code is illustrated on the next page followed by the output from the execution of this PHP script.

*C:\Program Files\Apache Software Foundation\Apache2.2\htdocs\CNT4714\PHP\readCookies.php - Notepad++

File Edit Search View Encoding Language Settings Macro Run Plugins Window ?

readCookies.php

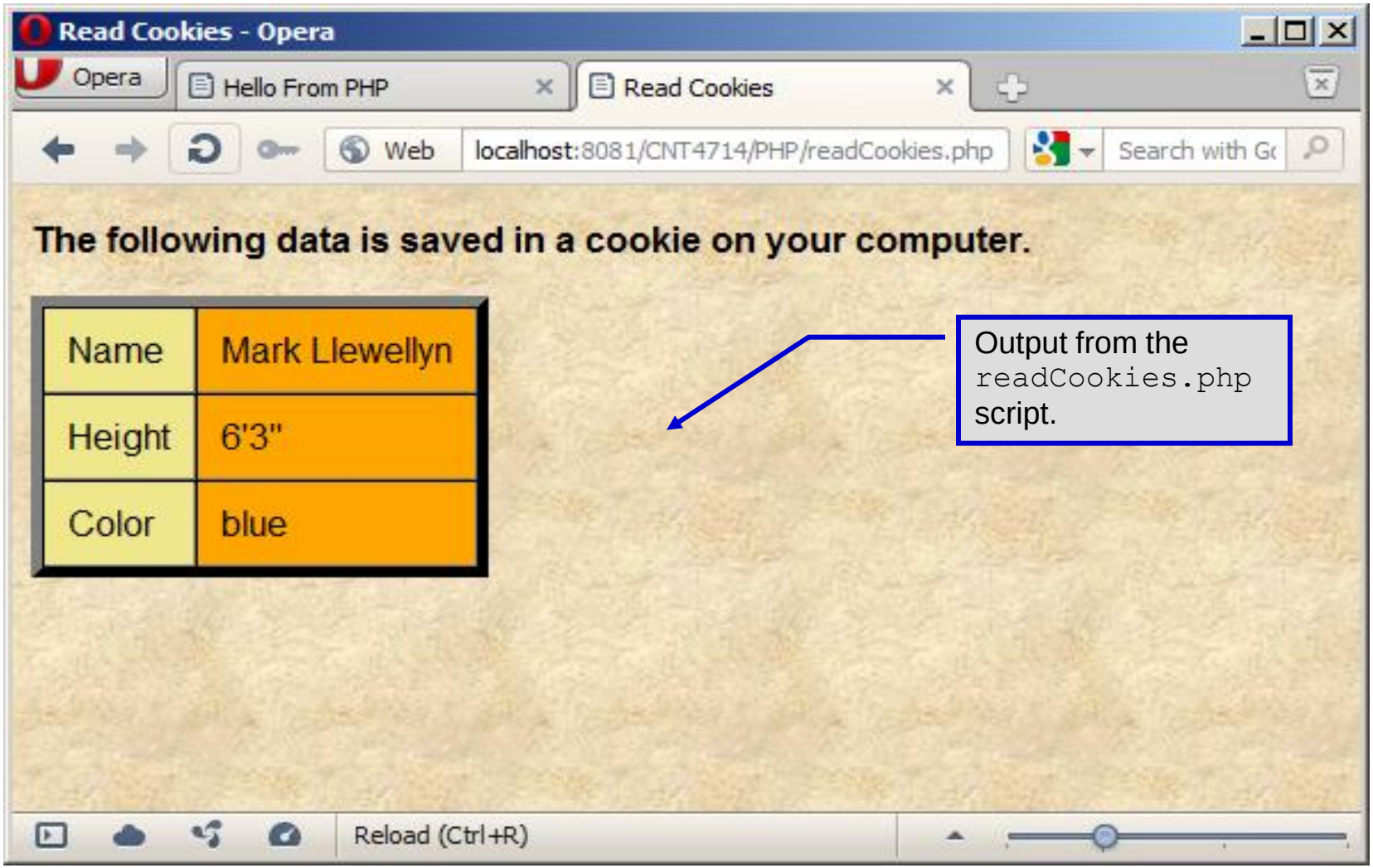
data.html | database.php | cookies.html | cookies.php | readCookies.php

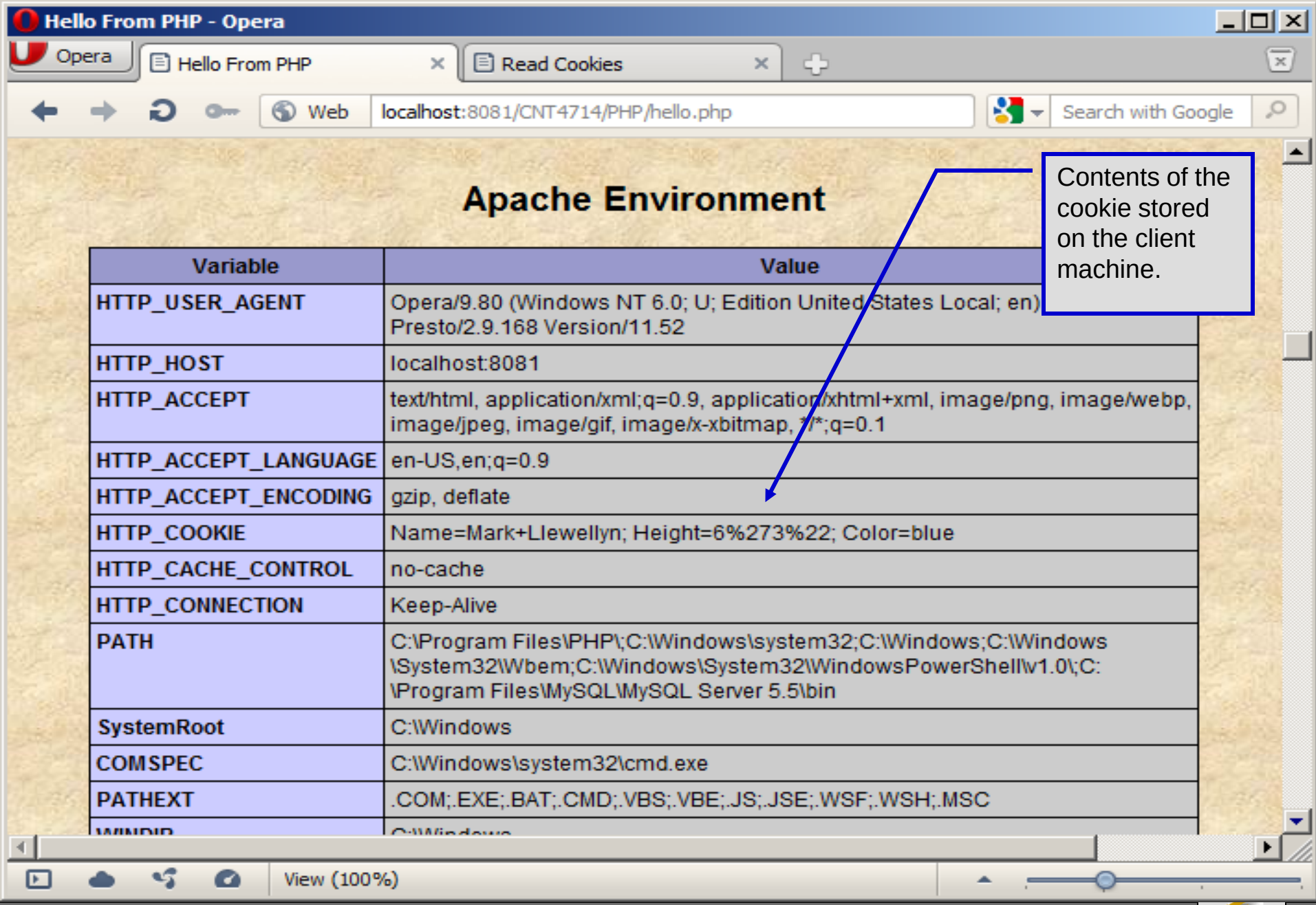
```
1  <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
2      "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
3   <!-- readCookies.php                              -->
4   <!-- Program to read cookies from the client's computer -->
5  <html xmlns = "http://www.w3.org/1999/xhtml">
6     <head><title>Read Cookies</title></head>
7  <body style = "font-family: arial, sans-serif" background=images/background.jpg>
8        <p>
9           <strong>
10             The following data is saved in a cookie on your computer.
11          </strong>
12       </p>
13       <table border = "5" cellspacing = "0" cellpadding = "10">
14          <?php
15             // iterate through array $_COOKIE and print
16             // name and value of each cookie
17             foreach ( $_COOKIE as $key => $value )
18                print( "<tr>
19                   <td bgcolor=\"#F0E68C\">$key</td>
20                   <td bgcolor=\"#FFA500\">$value</td>
21                   </tr>" );
22          ?>
23       </table>
24    </body>
25 </html>
26
27
```

Superglobal array holding cookie.

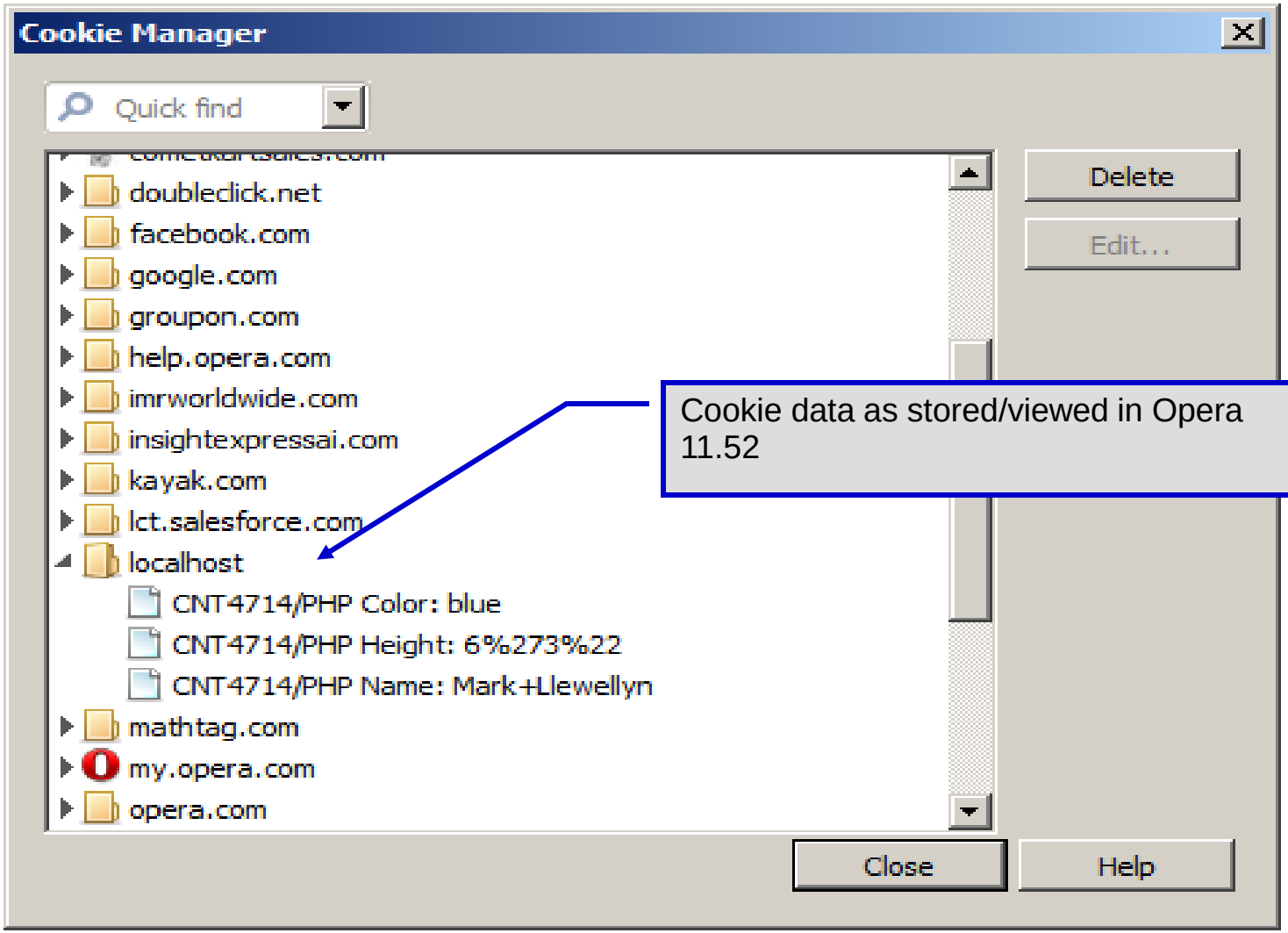
PHP Hypertext Prep | length : 999 lines : 27 | Ln : 23 Col : 1 Sel : 0 | Dos\Windows | ANSI | INS

Cookies (cont.)



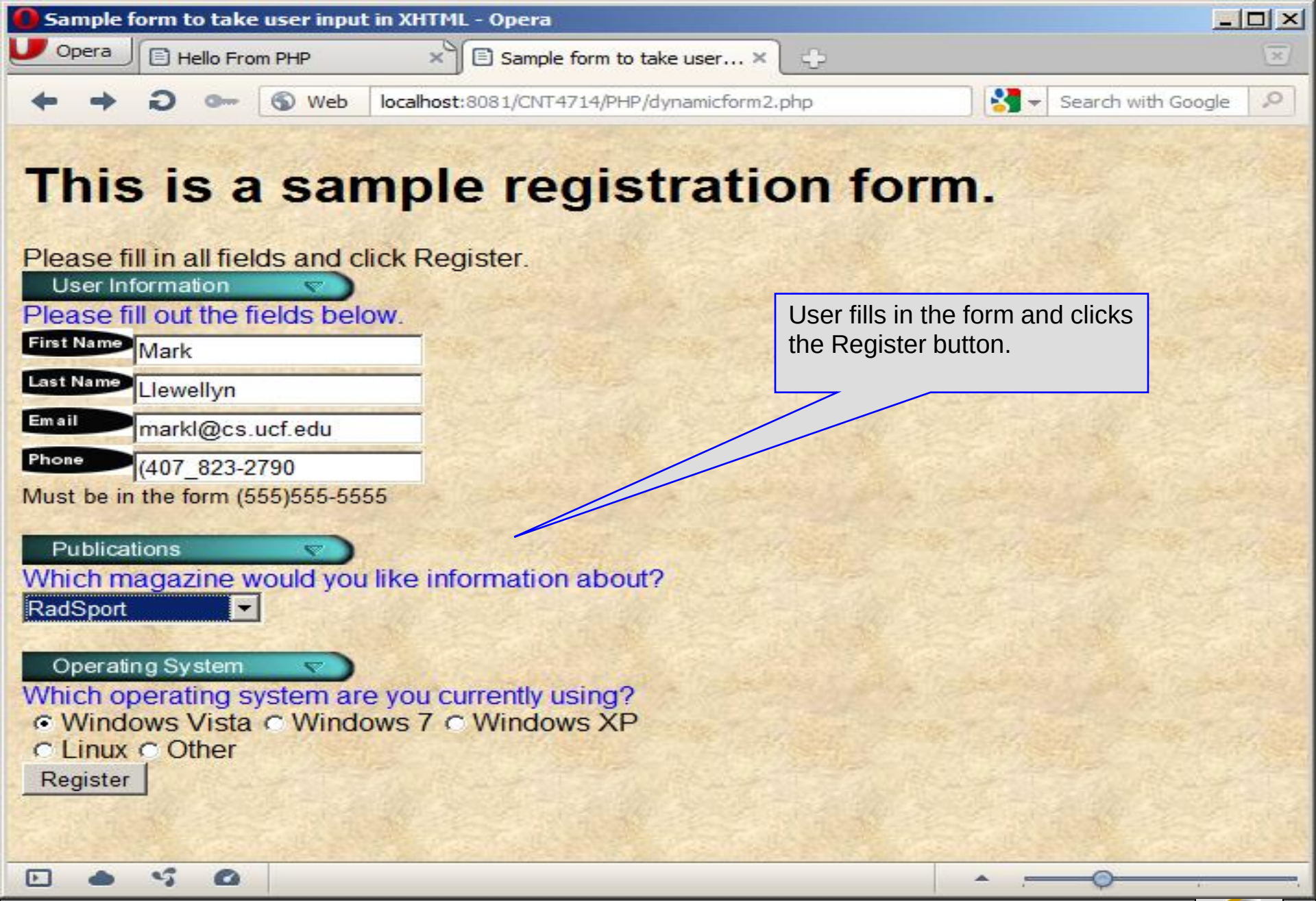

Hello From PHP - Opera
Opera
Hello From PHP
Read Cookies
Web
localhost:8081/CNT4714/PHP/hello.php
Search with Google
Apache Environment
Variable
Value
HTTP_USER_AGENT
Opera/9.80 (Windows NT 6.0; U; Edition United States Local; en) Presto/2.9.168 Version/11.52
HTTP_HOST
localhost:8081
HTTP_ACCEPT
text/html, application/xml;q=0.9, application/xhtml+xml, image/png, image/webp, image/jpeg, image/gif, image/x-xbitmap, */*;q=0.1
HTTP_ACCEPT_LANGUAGE
en-US,en;q=0.9
HTTP_ACCEPT_ENCODING
gzip, deflate
HTTP_COOKIE
Name=Mark+Llewellyn; Height=6%273%22; Color=blue
HTTP_CACHE_CONTROL
no-cache
HTTP_CONNECTION
Keep-Alive
PATH
C:\Program Files\PHP\;C:\Windows\system32;C:\Windows;C:\Windows\System32\Wbem;C:\Windows\System32\WindowsPowerShell\v1.0\;C:\Program Files\MySQL\MySQL Server 5.5\bin
SystemRoot
C:\Windows
COMSPEC
C:\Windows\system32\cmd.exe
PATHEXT
.COM;.EXE;.BAT;.CMD;.VBS;.VBE;.JS;.JSE;.WSF;.WSH;.MSC
Contents of the cookie stored on the client machine.
View (100%)

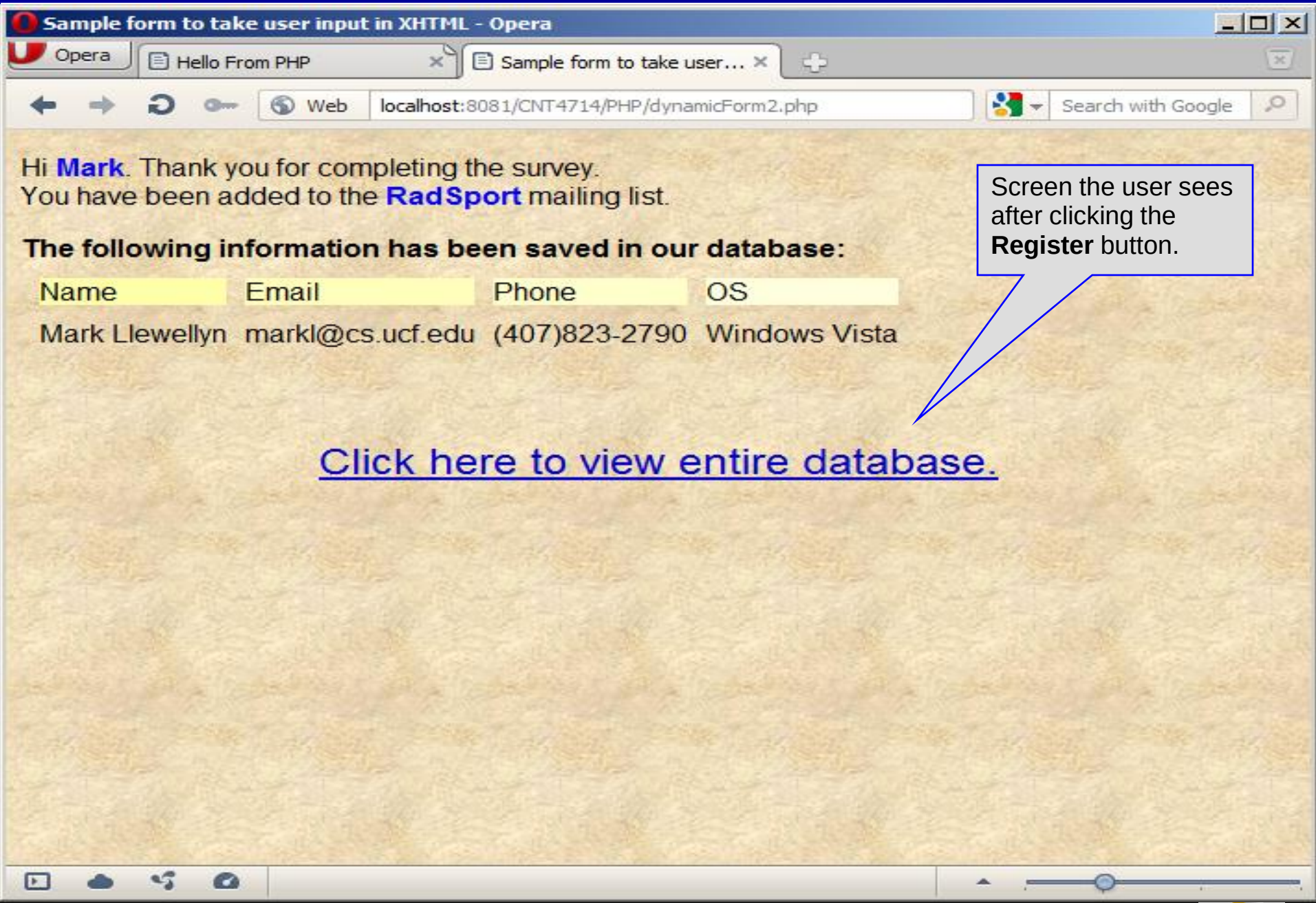
Cookies (cont.)



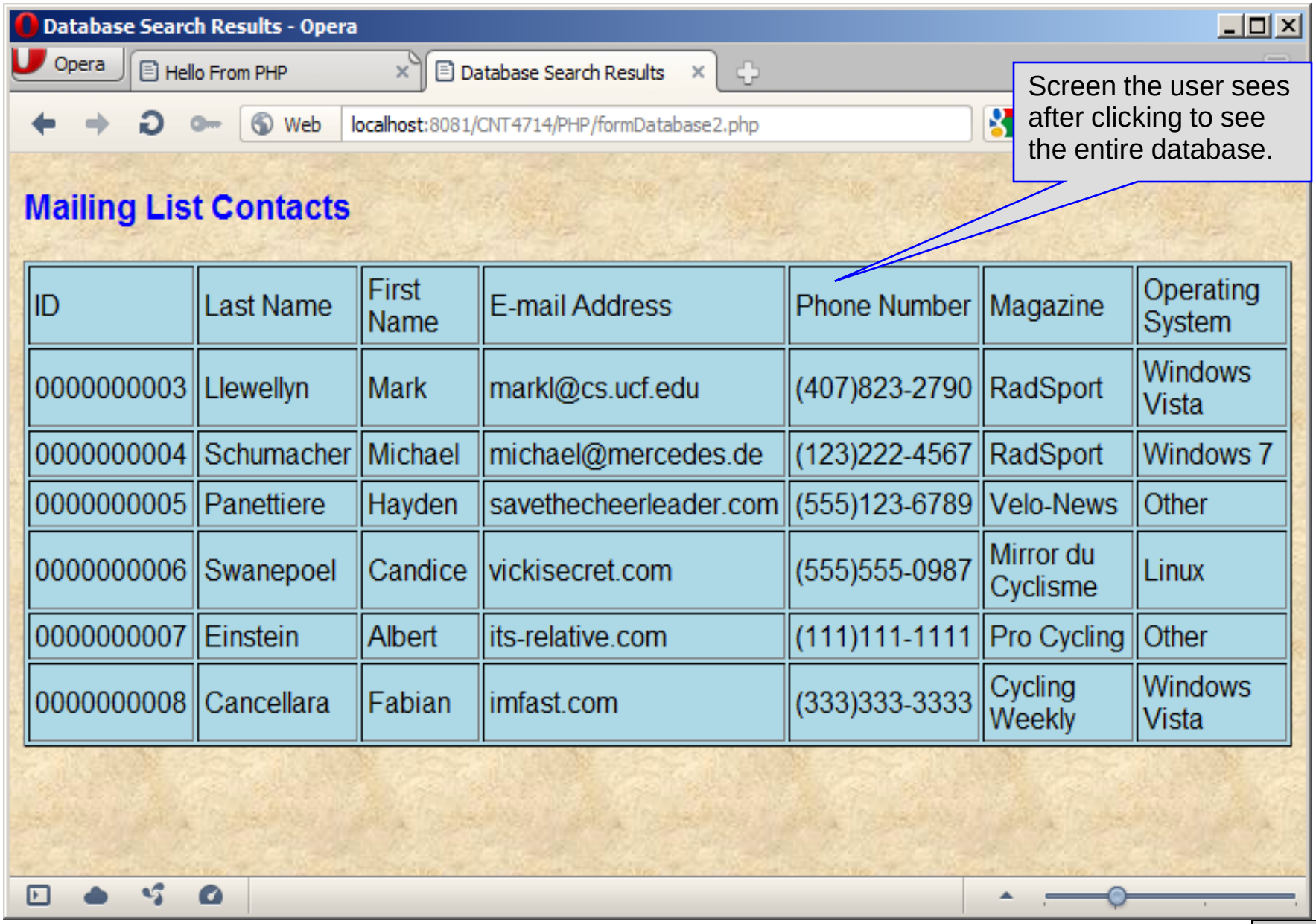
Dynamic Content in PHP

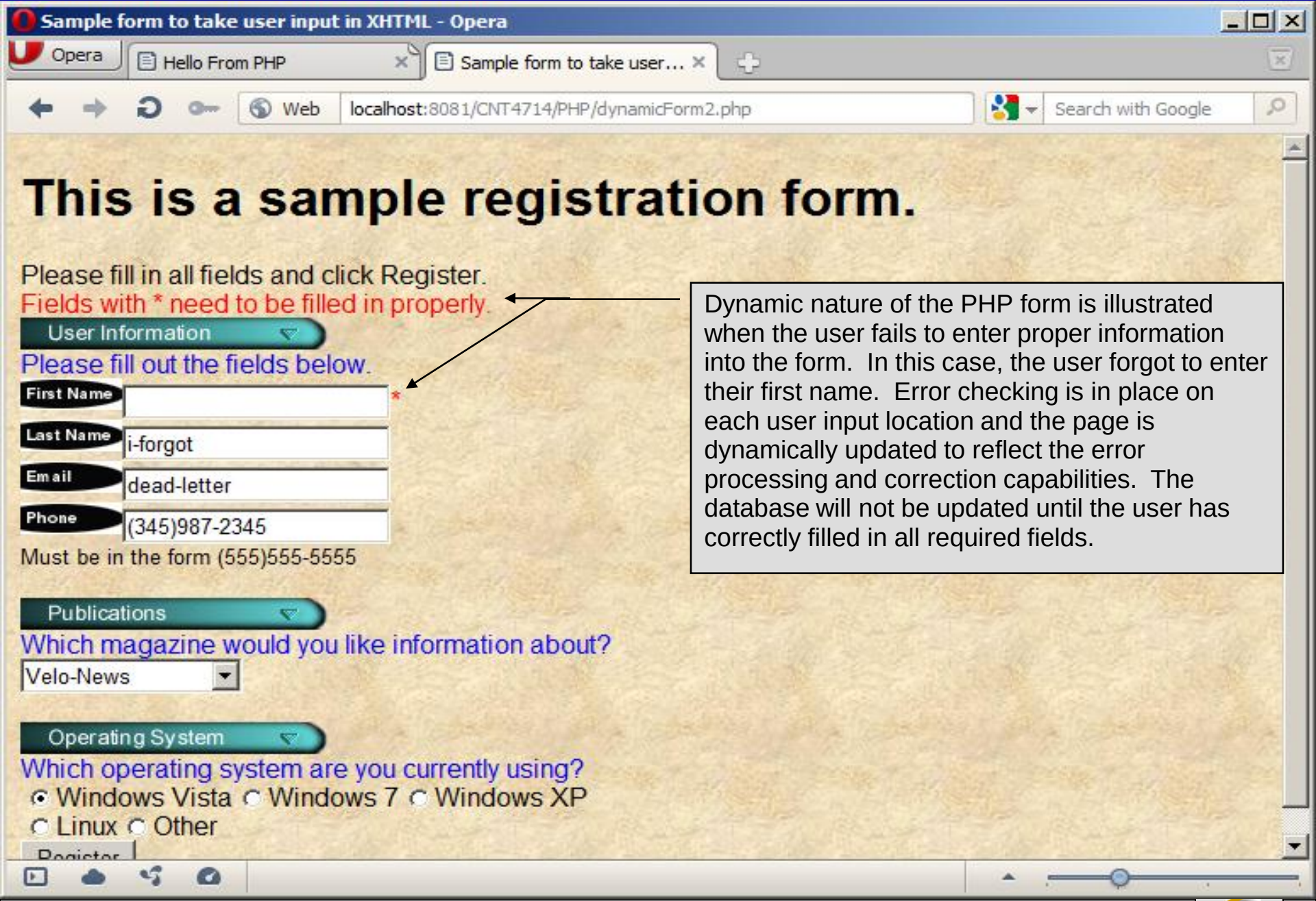
- Of all the strengths PHP exhibits as a server-side scripting language, perhaps its greatest strength lies in its ability to dynamically change XHTML output based on user input.
- In this final section of notes, we'll build on the examples we've constructed in the previous two sets of notes by combining `form.html` and `form.php` into one dynamic PHP document named `dynamicForm2.php`.
- We'll add error checking to the user input fields and inform the user of invalid entries on the form itself, rather than on an error page. If an error exists, the script maintains the previously submitted values in each form element.
- Finally, after the form has been successfully completed, we'll store the input from the user in a MySQL database.


Sample form to take user input in XHTML - Opera
Opera
Hello From PHP
Sample form to take user...
Web
localhost:8081/CNT4714/PHP/dynamicform2.php
Search with Google
This is a sample registration form.
Please fill in all fields and click Register.
User Information
Please fill out the fields below.
First Name
Mark
Last Name
Llewellyn
Email
markl@cs.ucf.edu
Phone
(407_823-2790
Must be in the form (555)555-5555
Publications
Which magazine would you like information about?
RadSport
Operating System
Which operating system are you currently using?
Windows Vista
Windows 7
Windows XP
Linux
Other
Register
User fills in the form and clicks the Register button.

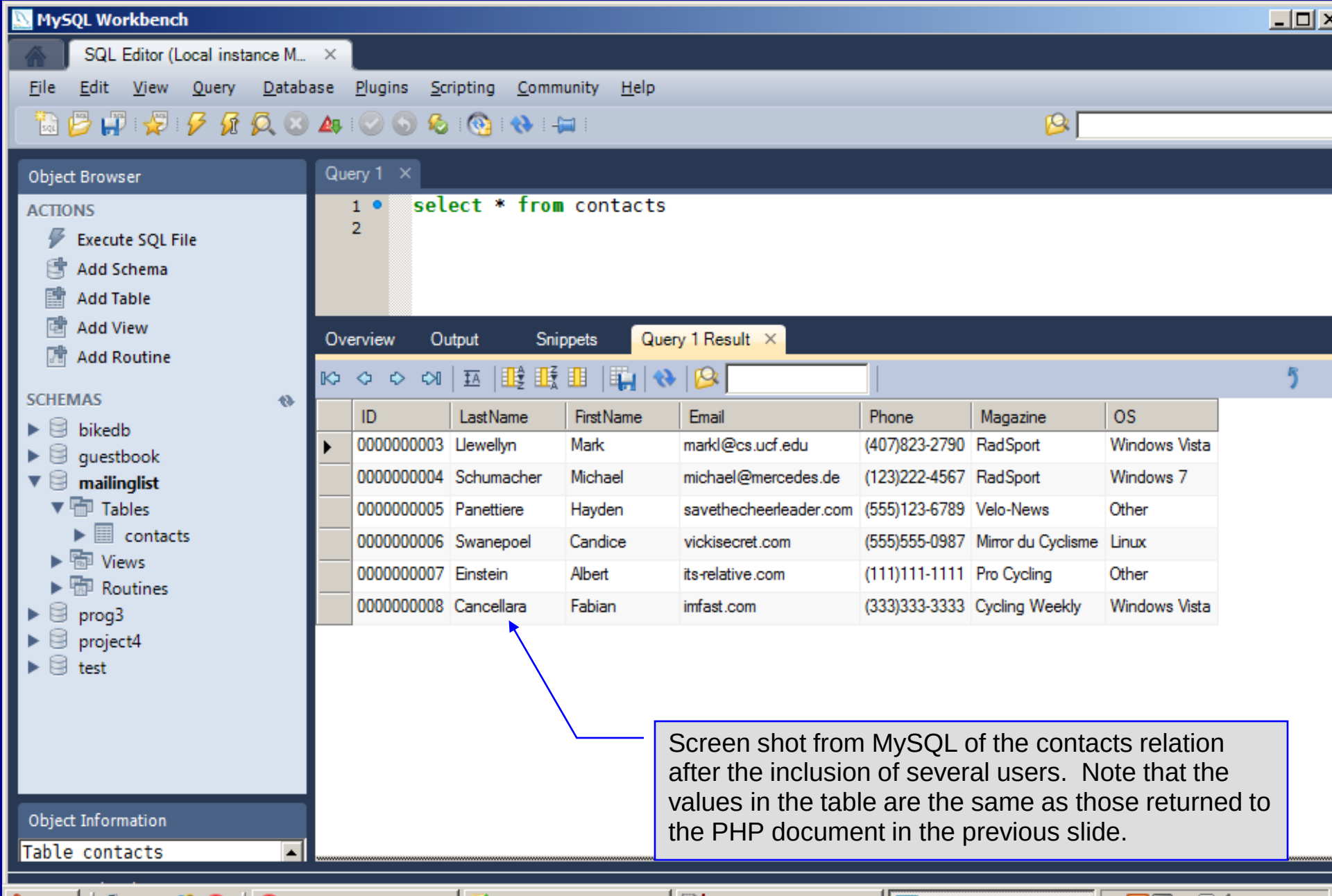


Screen the user sees after clicking the **Register** button.

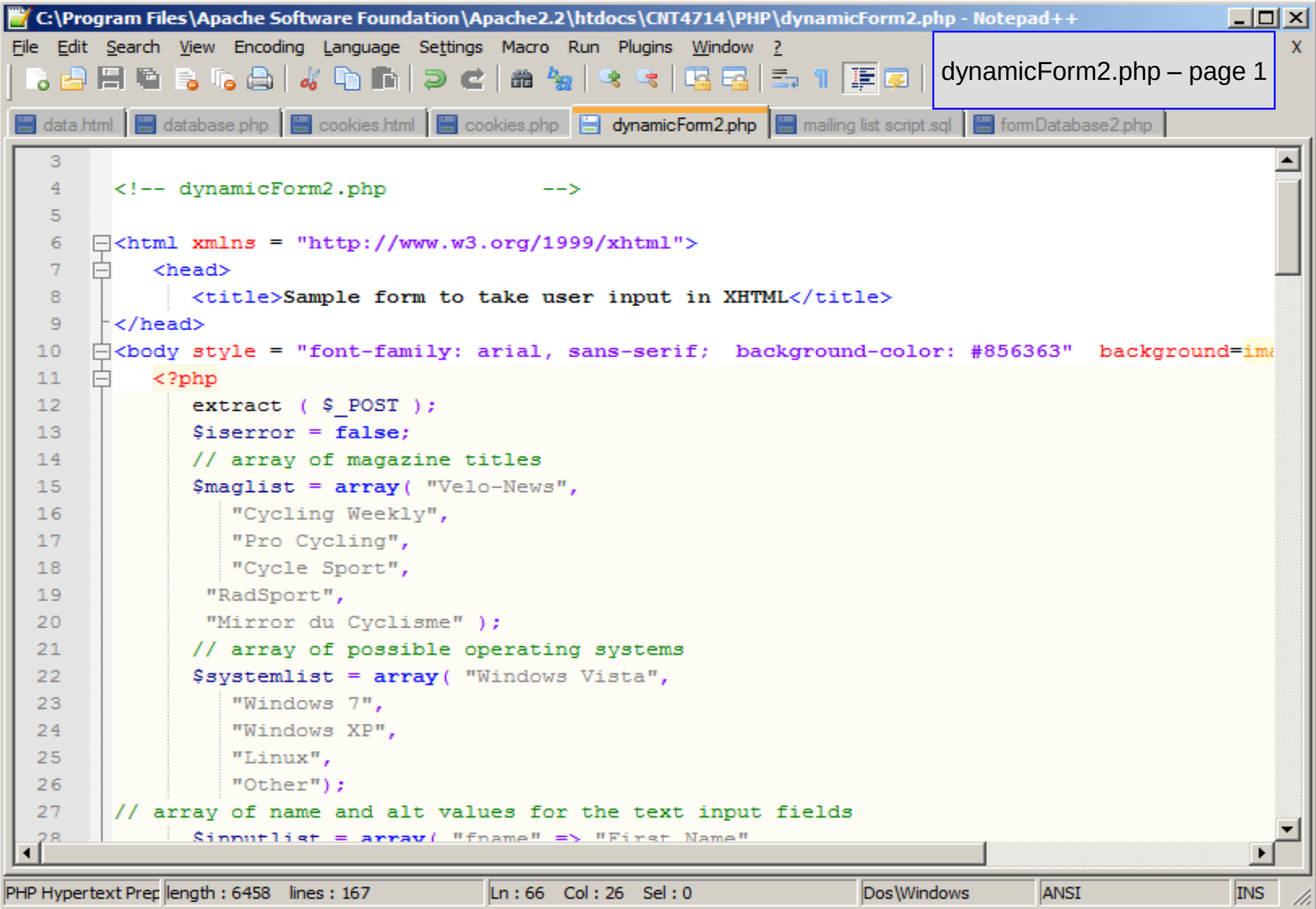

Database Search Results - Opera
Opera
Hello From PHP
Database Search Results
Web
localhost:8081/CNT4714/PHP/formDatabase2.php
Screen the user sees after clicking to see the entire database.
Mailing List Contacts
ID
Last Name
First Name
E-mail Address
Phone Number
Magazine
Operating System
0000000003
Llewellyn
Mark
markl@cs.ucf.edu
(407)823-2790
RadSport
Windows Vista
0000000004
Schumacher
Michael
michael@mercedes.de
(123)222-4567
RadSport
Windows 7
0000000005
Panettiere
Hayden
savethecheerleader.com
(555)123-6789
Velo-News
Other
0000000006
Swanepoel
Candice
vickisecret.com
(555)555-0987
Mirror du Cyclisme
Linux
0000000007
Einstein
Albert
its-relative.com
(111)111-1111
Pro Cycling
Other
0000000008
Cancellara
Fabian
imfast.com
(333)333-3333
Cycling Weekly
Windows Vista



Dynamic nature of the PHP form is illustrated when the user fails to enter proper information into the form. In this case, the user forgot to enter their first name. Error checking is in place on each user input location and the page is dynamically updated to reflect the error processing and correction capabilities. The database will not be updated until the user has correctly filled in all required fields.



Screen shot from MySQL of the contacts relation after the inclusion of several users. Note that the values in the table are the same as those returned to the PHP document in the previous slide.


C:\Program Files\Apache Software Foundation\Apache2.2\htdocs\CNT4714\PHP\dynamicForm2.php - Notepad++
File Edit Search View Encoding Language Settings Macro Run Plugins Window ?
dynamicForm2.php – page 1
data.html database.php cookies.html cookies.php dynamicForm2.php mailing list script.sql formDatabase2.php
3
4 <!-- dynamicForm2.php -->
5
6 <html xmlns = "http://www.w3.org/1999/xhtml">
7 <head>
8 <title>Sample form to take user input in XHTML</title>
9 </head>
10 <body style = "font-family: arial, sans-serif; background-color: #856363" background=ima
11 <?php
12 extract ($_POST);
13 $iserror = false;
14 // array of magazine titles
15 $maglist = array("Velo-News",
16 "Cycling Weekly",
17 "Pro Cycling",
18 "Cycle Sport",
19 "RadSport",
20 "Mirror du Cyclisme");
21 // array of possible operating systems
22 $systemlist = array("Windows Vista",
23 "Windows 7",
24 "Windows XP",
25 "Linux",
26 "Other");
27 // array of name and alt values for the text input fields
PHP Hypertext Prep length : 6458 lines : 167 Ln : 66 Col : 26 Sel : 0 Dos\Windows ANSI INS

C:\Program Files\Apache Software Foundation\Apache2.2\htdocs\CNT4714\PHP\dynamicForm2.php - Notepad++

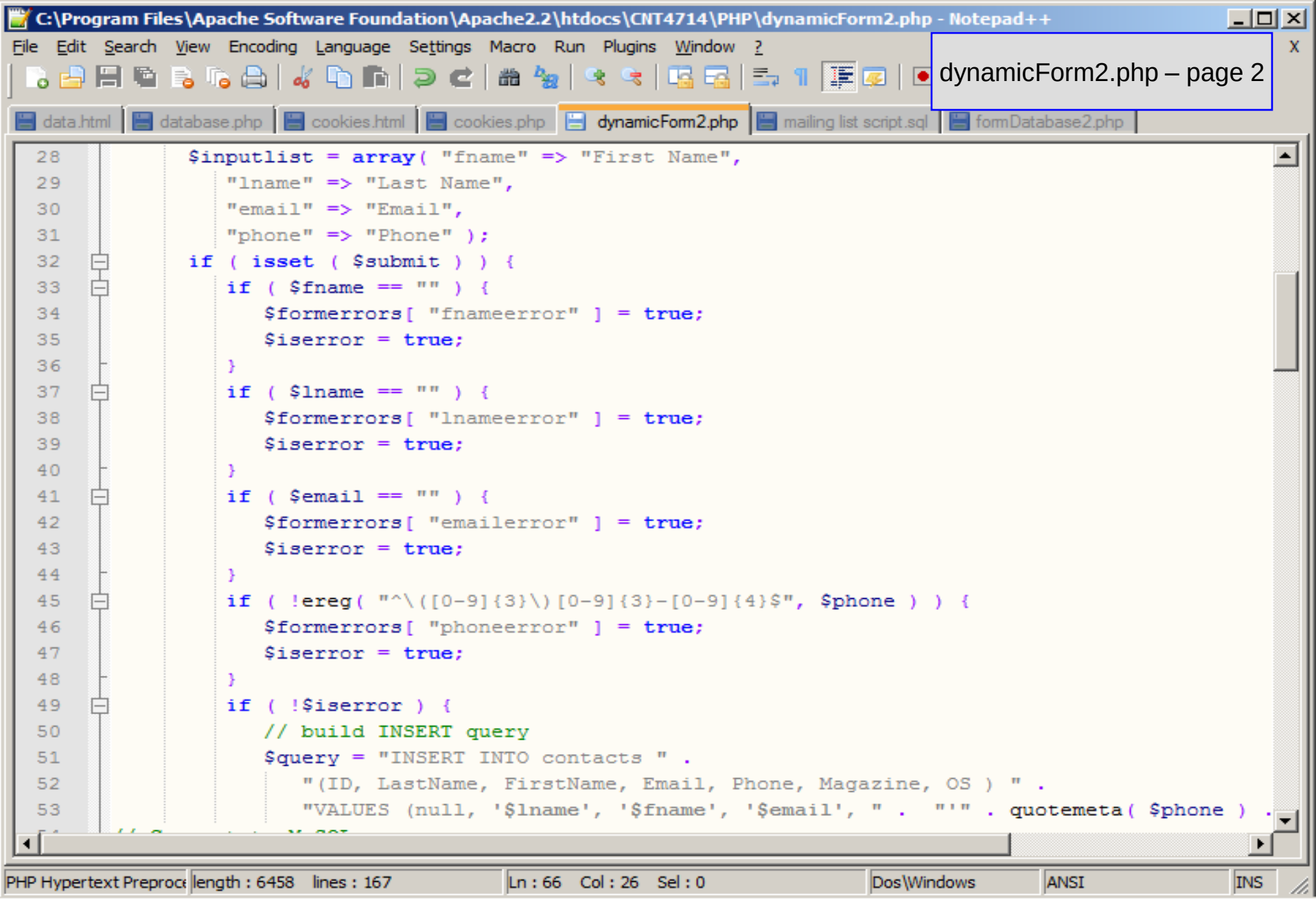
File Edit Search View Encoding Language Settings Macro Run Plugins Window ?

dynamicForm2.php – page 2

data.html | database.php | cookies.html | cookies.php | dynamicForm2.php | mailing list script.sql | formDatabase2.php

```
$inputlist = array( "fname" => "First Name",
   "lname" => "Last Name",
   "email" => "Email",
   "phone" => "Phone" );
if ( isset ( $submit ) ) {
   if ( $fname == "" ) {
      $formerrors[ "fnameerror" ] = true;
      $iserror = true;
   }
   if ( $lname == "" ) {
      $formerrors[ "lnameerror" ] = true;
      $iserror = true;
   }
   if ( $email == "" ) {
      $formerrors[ "emailerror" ] = true;
      $iserror = true;
   }
   if ( !ereg( "^\([0-9]{3}\)[0-9]{3}-[0-9]{4}$", $phone ) ) {
      $formerrors[ "phoneerror" ] = true;
      $iserror = true;
   }
   if ( !$iserror ) {
      // build INSERT query
      $query = "INSERT INTO contacts " .
         "(ID, LastName, FirstName, Email, Phone, Magazine, OS ) " .
         "VALUES (null, '$lname', '$fname', '$email', " .  "'" . quotemeta( $phone ) .
```

PHP Hypertext Preproce | length : 6458 lines : 167 | Ln : 66 Col : 26 Sel : 0 | Dos\Windows | ANSI | INS



C:\Program Files\Apache Software Foundation\Apache2.2\htdocs\CNT4714\PHP\dynamicForm2.php - Notepad++

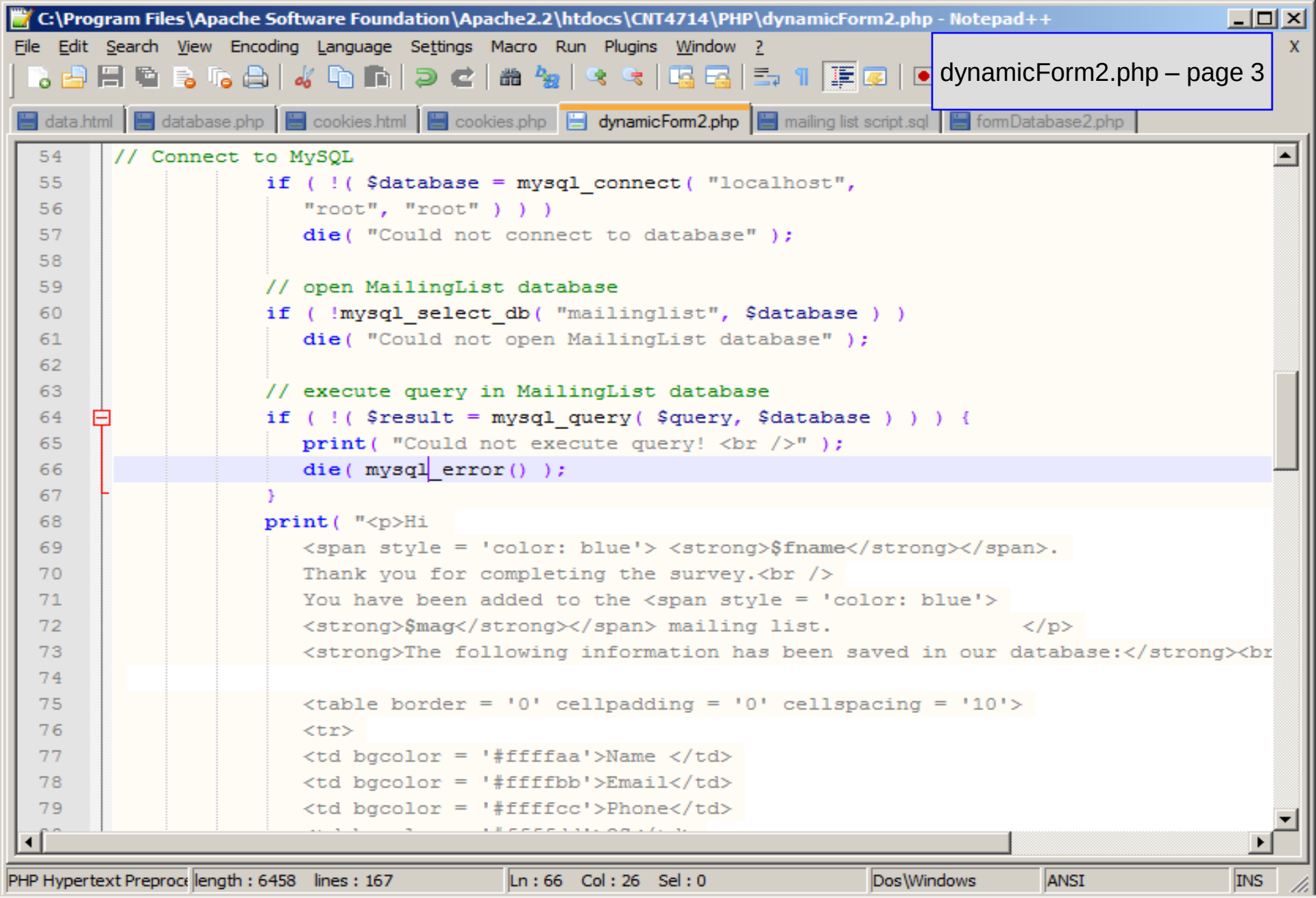
File Edit Search View Encoding Language Settings Macro Run Plugins Window ?

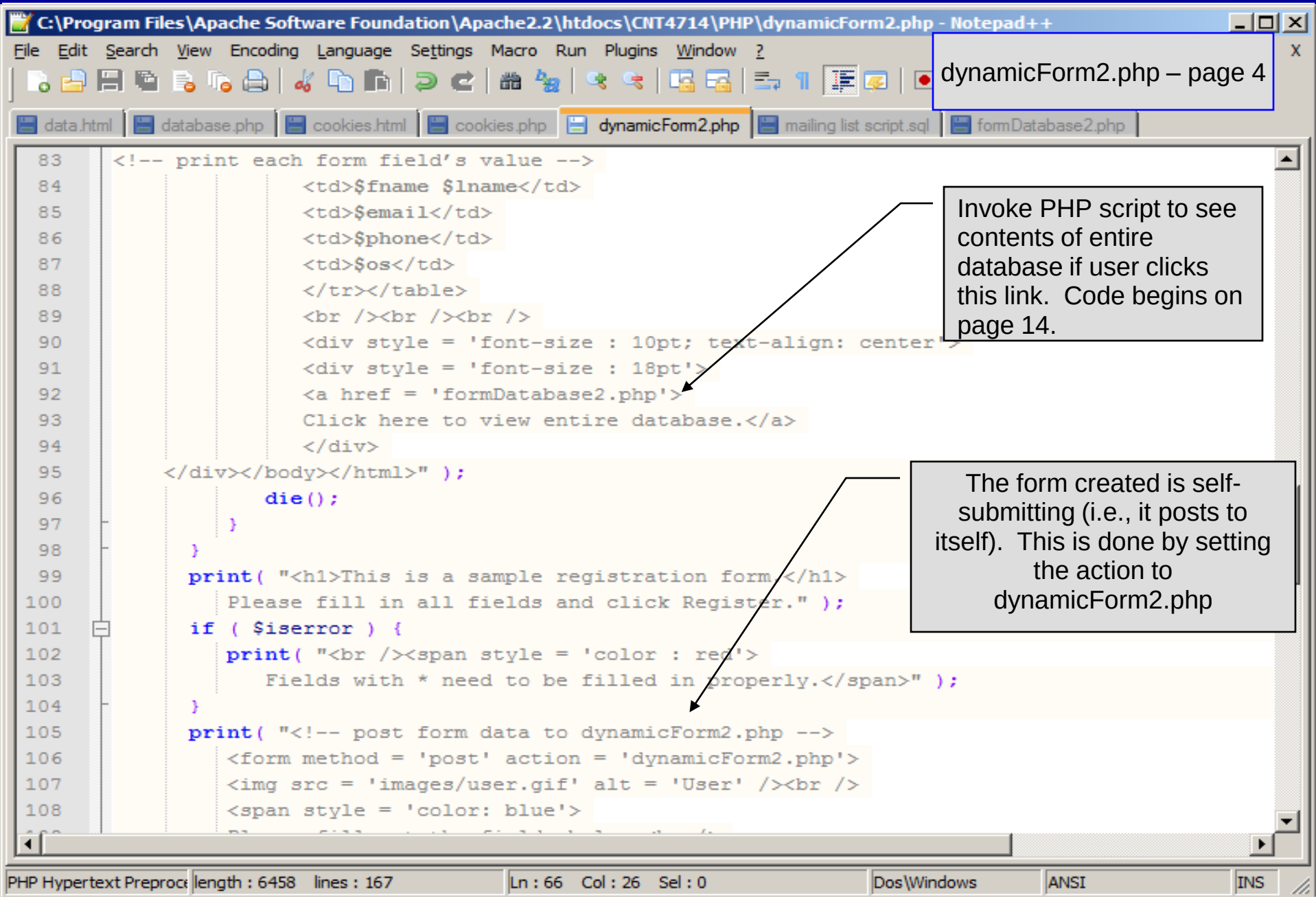
dynamicForm2.php – page 3

data.html | database.php | cookies.html | cookies.php | dynamicForm2.php | mailing list script.sql | formDatabase2.php

```
// Connect to MySQL
            if ( !( $database = mysql_connect( "localhost",
               "root", "root" ) ) )
               die( "Could not connect to database" );

            // open MailingList database
            if ( !mysql_select_db( "mailinglist", $database ) )
               die( "Could not open MailingList database" );

            // execute query in MailingList database
            if ( !( $result = mysql_query( $query, $database ) ) ) {
               print( "Could not execute query! <br />" );
               die( mysql_error() );
            }
            print( "<p>Hi
               <span style = 'color: blue'> <strong>$fname</strong></span>.
               Thank you for completing the survey.<br />
               You have been added to the <span style = 'color: blue'>
               <strong>$mag</strong></span> mailing list.                </p>
               <strong>The following information has been saved in our database:</strong><br

               <table border = '0' cellpadding = '0' cellspacing = '10'>
               <tr>
               <td bgcolor = '#ffffaa'>Name </td>
               <td bgcolor = '#ffffbb'>Email</td>
               <td bgcolor = '#ffffcc'>Phone</td>
```

PHP Hypertext Preproce | length : 6458 lines : 167 | Ln : 66 Col : 26 Sel : 0 | Dos\Windows | ANSI | INS




C:\Program Files\Apache Software Foundation\Apache2.2\htdocs\CNT4714\PHP\dynamicForm2.php - Notepad++
File Edit Search View Encoding Language Settings Macro Run Plugins Window ?
dynamicForm2.php – page 4
data.html database.php cookies.html cookies.php dynamicForm2.php mailing list script.sql formDatabase2.php
<!-- print each form field's value -->
<td>$fname $lname</td>
<td>$email</td>
<td>$phone</td>
<td>$os</td>
</tr></table>

Click here to view entire database.

</body></html>");
die();
}
}
print("<h1>This is a sample registration form.</h1>
Please fill in all fields and click Register.");
if ($iserror) {
print("
Fields with * need to be filled in properly.");
}
print("<!-- post form data to dynamicForm2.php -->
<form method = 'post' action = 'dynamicForm2.php'>

Invoke PHP script to see contents of entire database if user clicks this link. Code begins on page 14.
The form created is self-submitting (i.e., it posts to itself). This is done by setting the action to dynamicForm2.php
PHP Hypertext Preproc length : 6458 lines : 167
Ln : 66 Col : 26 Sel : 0
Dos\Windows
ANSI
INS

C:\Program Files\Apache Software Foundation\Apache2.2\htdocs\CNT4714\PHP\dynamicForm2.php - Notepad++

File Edit Search View Encoding Language Settings Macro Run Plugins Window ?

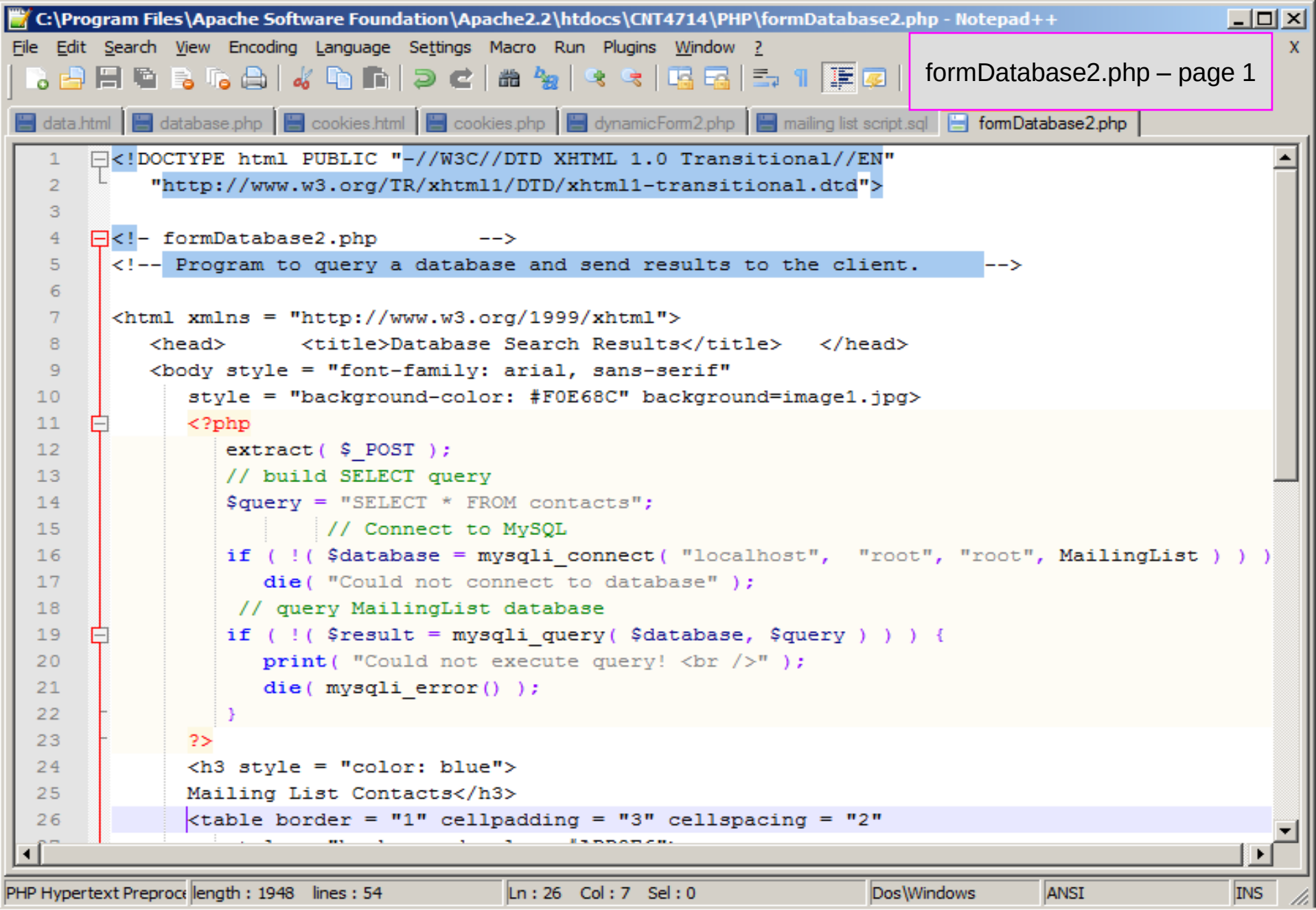
dynamicForm2.php – page 5

data.html | database.php | cookies.html | cookies.php | dynamicForm2.php | mailing list script.sql | formDatabase2.php

```
102   it( "<br /><span style = 'color : red'>
103   fields with * need to be filled in properly.</span>" );
104
105    "<!-- post form data to dynamicForm2.php -->
106   m method = 'post' action = 'dynamicForm2.php'>
107   src = 'images/user.gif' alt = 'User' /><br />
108   n style = 'color: blue'>
109   se fill out the fields below.<br />
110   an>
111   te four text boxes for user input -->" );
112   ( $inputlist as $inputname => $inputalt ) {
113   uttext = $inputalt[ $inputname ];
114
115   it( "<img src = 'images/$inputname.gif'
116   lt = '$inputalt' /><input type = 'text'  name = '$inputname' value = '" . $$inputname . "'
117   $formerrors[ ( $inputname )."error" ] == true )
118   rint( "<span style = 'color : red'>*</span>" );
119   it( "<br />" );
120
121    "<span style = 'font-size : 10pt" );
122   formerrors[ "phoneerror" ] )  print( "; color
123    "'>Must be in the form (555)555-5555
124   an><br /><br />
125   src = 'images/downloads.gif'
126    = 'Publications' /><br />
127   n style = 'color: blue'>
```

The $$variable notation specifies variable variables. PHP permits the use of variable variables to allow developers to reference variables dynamically.
The expression $$variable could also be written as ${$variable} for added clarity.

PHP Hypertext Preproc | length : 6458 lines : 167 | Ln : 66 Col : 26 Sel : 0 | Dos\Windows | ANSI | INS


C:\Program Files\Apache Software Foundation\Apache2.2\htdocs\CNT4714\PHP\formDatabase2.php - Notepad++
File Edit Search View Encoding Language Settings Macro Run Plugins Window ?
formDatabase2.php – page 1
data.html database.php cookies.html cookies.php dynamicForm2.php mailing list script.sql formDatabase2.php
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
<!- formDatabase2.php -->
<!-- Program to query a database and send results to the client. -->
<html xmlns = "http://www.w3.org/1999/xhtml">
<head> <title>Database Search Results</title> </head>
<body style = "font-family: arial, sans-serif"
style = "background-color: #F0E68C" background=image1.jpg>
<?php
extract($_POST);
// build SELECT query
$query = "SELECT * FROM contacts";
// Connect to MySQL
if (!($database = mysqli_connect("localhost", "root", "root", MailingList)))
die("Could not connect to database");
// query MailingList database
if (!($result = mysqli_query($database, $query))) {
print("Could not execute query!
");
die(mysqli_error());
}
?>
<h3 style = "color: blue">
Mailing List Contacts</h3>
<table border = "1" cellpadding = "3" cellspacing = "2"
PHP Hypertext Preproc length : 1948 lines : 54 Ln : 26 Col : 7 Sel : 0 Dos\Windows ANSI INS

*C:\Program Files\Apache Software Foundation\Apache2.2\htdocs\CNT4714\PHP\formDatabase2.php - Notepad++

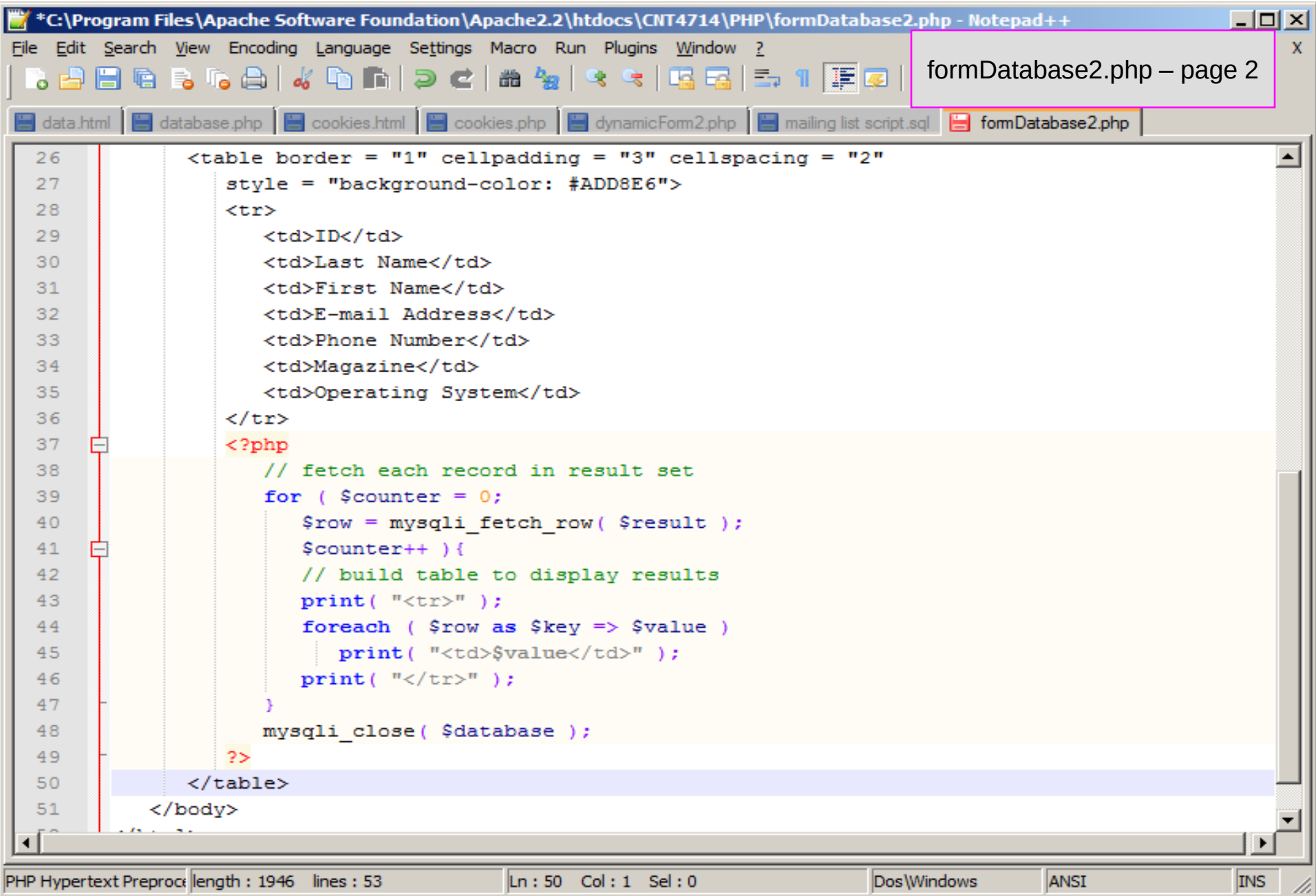
File Edit Search View Encoding Language Settings Macro Run Plugins Window ?

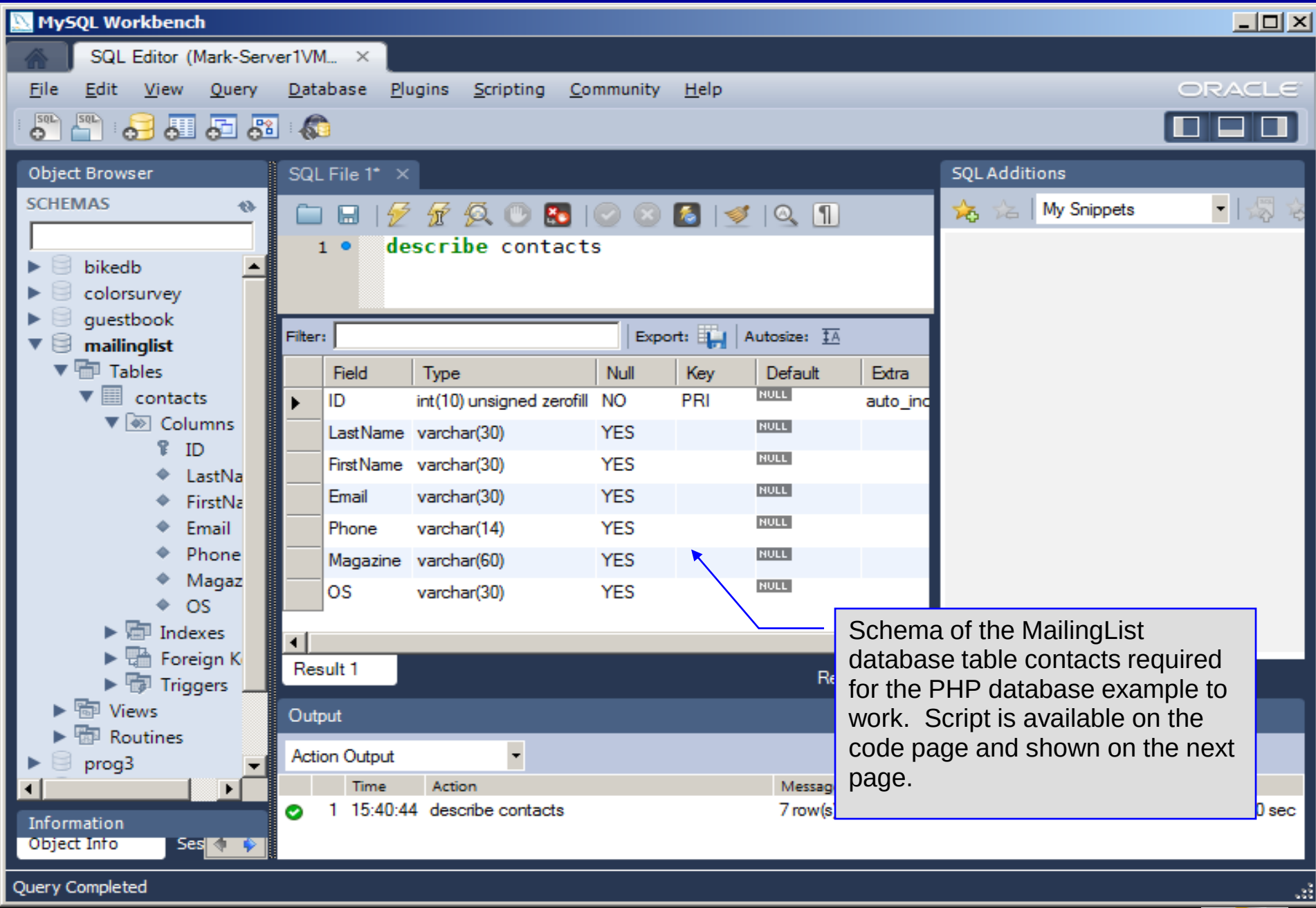
formDatabase2.php – page 2

data.html | database.php | cookies.html | cookies.php | dynamicForm2.php | mailing list script.sql | formDatabase2.php

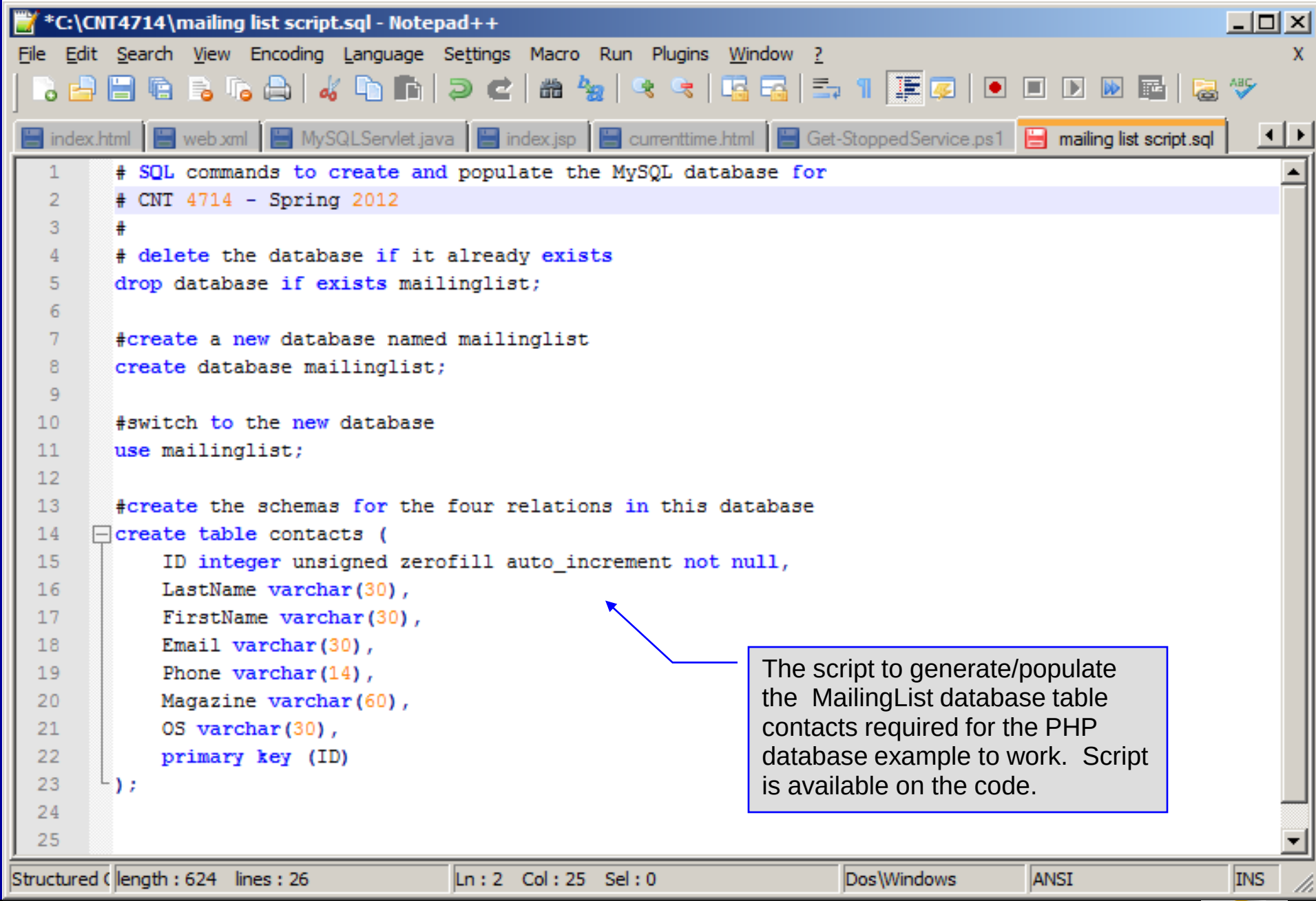
```
        <table border = "1" cellpadding = "3" cellspacing = "2"
            style = "background-color: #ADD8E6">
            <tr>
                <td>ID</td>
                <td>Last Name</td>
                <td>First Name</td>
                <td>E-mail Address</td>
                <td>Phone Number</td>
                <td>Magazine</td>
                <td>Operating System</td>
            </tr>
            <?php
                // fetch each record in result set
                for ( $counter = 0;
                    $row = mysqli_fetch_row( $result );
                    $counter++ ){
                    // build table to display results
                    print( "<tr>" );
                    foreach ( $row as $key => $value )
                        print( "<td>$value</td>" );
                    print( "</tr>" );
                }
                mysqli_close( $database );
            ?>
        </table>
    </body>
```

PHP Hypertext Preproc | length : 1946 lines : 53 | Ln : 50 Col : 1 Sel : 0 | Dos\Windows | ANSI | INS





Schema of the MailingList database table contacts required for the PHP database example to work. Script is available on the code page and shown on the next page.



The script to generate/populate the MailingList database table contacts required for the PHP database example to work. Script is available on the code.