

COP 4610L: Applications in the Enterprise Fall 2006

Introduction to PHP – Part 2

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Checking Your PHP Set-up

- Once you get your web server (Apache) and PHP installed, the simplest way to test your installation is to create a PHP file and execute it.

- Create a PHP file containing the following single line:

```
<?php  phpinfo( )  ?>
```

- Save this file in the `htdocs` folder in Apache (there will already be some files in this folder).
- Start the Apache server running and then access the PHP file through the browser with the following url:

<http://localhost:8081/info.php>




Basic Configuration of PHP - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address <http://localhost:8081/info.php>

Google Search 7 blocked Check AutoLink AutoFill Options

PHP Version 5.1.2



System	Windows NT UCF-14431AD1E49 5.1 build 2600
Build Date	Jan 11 2006 16:35:21
Configure Command	cmd /c "php --enable-snapshot-build --with-gd=shared"
Server API	Apache 2.0 Handler
Virtual Directory Support	enabled
Configuration File (php.ini) Path	E:\PHP\php.ini
PHP API	20041225
PHP Extension	20050922
Zend Extension	220051025
Debug Build	no
Thread Safety	enabled
Zend Memory Manager	enabled
IPv6 Support	enabled
Registered PHP Streams	php, file, http, ftp, compress.zlib
Registered Stream Socket Transports	tcp, udp
Registered Stream Filters	convert.iconv.*, string.rot13, string.toupper, string.tolower, string.strip_tags, convert.*, zlib.*

Done Local intranet

Execution should produce a long list of items that begins similar to the one shown.



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>.



```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">

<!-- password.html -->
<!-- XHTML form sent to password.php for verification -->

<html xmlns = "http://www.w3.org/1999/xhtml">
  <head>
    <title>Verifying a username and a password.</title>
    <style type = "text/css">
      td { background-color: #DDDDDD }
    </style>
  </head>
  <body style = "font-family: arial">
    <p style = "font-size: 18pt">
      <font color=red><B> Welcome to the COP 4610 High Security WebPage </B></font><HR>
    <p style = "font-size: 13pt">
      Type in your username and password below.
      <br />
      <span style = "color: #0000FF; font-size: 10pt;
        font-weight: bold">
        Note that password will be sent as plain text - encryption not used in this application
      </span>
    </p>
```



```
<!-- post form data to password.php -->
<form action = "password.php" method = "post">
  <br />
  <table border = "3" cellspacing = "3" style = "height: 90px; width: 150px;
  font-size: 10pt" cellpadding = "1">
    <tr>
      <td colspan = "3"> <strong>Username:</strong> </td>
    </tr>
    <tr>
      <td colspan = "3"> <input size = "40" name = "USERNAME"
      style = "height: 22px; width: 115px" /> </td>
    </tr>
    <tr>
      <td colspan = "3"> <strong>Password:</strong> </td>
    </tr>
    <tr>
      <td colspan = "3"> <input size = "40" name = "PASSWORD"
      style = "height: 22px; width: 115px" type = "password" /> <br/></td>
    </tr>
    <tr>
      <td colspan = "1">
        <input type = "submit" name = "Enter" value = "Enter" style = "height: 23px;
        width: 47px" /> </td>
      <td colspan = "2"> <input type = "submit" name = "NewUser" value = "New User"
      style = "height: 23px" />
      </td>
    </tr>
  </table> </form> <HR> </body> </html>
```



```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
<!-- password.php -->
<!-- Searching a database for usernames and passwords. -->

<html xmlns = "http://www.w3.org/1999/xhtml">
  <head>
    <?php
      extract( $_POST );
      // check if user has left USERNAME or PASSWORD field blank
      if ( !$USERNAME || !$PASSWORD ) {
        fieldsBlank();
        die();
      }
      // check if the New User button was clicked
      if ( isset( $NewUser ) ) {
        // open password.txt for writing using append mode
        if ( !( $file = fopen( "password.txt", "a" ) ) ) {

          // print error message and terminate script
          // execution if file cannot be opened
          print( "<title>Error</title></head><body>
            Could not open password file
            </body></html>" );
          die();
        }
      }
    }
  }

```



```
// write username and password to file and call function userAdded
fputs( $file, "$USERNAME,$PASSWORD\n" );
userAdded( $USERNAME );
}
else {

// if a new user is not being added, open file
// for reading
if ( !( $file = fopen( "password.txt", "r" ) ) ) {
    print( "<title>Error</title></head>
        <body>Could not open password file
        </body></html>" );
    die();
}

$userVerified = 0;

// read each line in file and check username and password
while ( !feof( $file ) && !$userVerified ) {

    // read line from file
    $line = fgets( $file, 255 );

    // remove newline character from end of line
    $line = chop( $line );

    // split username and password using comma delimited string
    $field = split( ",", $line, 2 );
```




```
// verify username
if ( $USERNAME == $field[ 0 ] ) {
    $userVerified = 1;

    // call function checkPassword to verify user's password
    if ( checkPassword( $PASSWORD, $field ) == true )
        accessGranted( $USERNAME );
    else
        wrongPassword();
}
}

// close text file
fclose( $file );

// call function accessDenied if username has not been verified
if ( !$userVerified )
    accessDenied();
}

// verify user password and return a boolean
function checkPassword( $userpassword, $filedata )
{
    if ( $userpassword == $filedata[ 1 ] )
        return true;
    else
        return false;
}
```



```
// print a message indicating the user has been added
function userAdded( $name ) {
    print( "<title>Thank You</title></head>
        <body style = \"font-family: arial;
        font-size: 1em; color: blue\">
        <strong>You have been added
        to the user list, $name. Please remember your password.
        <br />Enjoy the site.</strong>" );
}

// print a message indicating permission has been granted
function accessGranted( $name ) {
    print( "<title>Thank You</title></head>
        <body style = \"font-family: arial;
        font-size: 1em; color: blue\">
        <strong>Permission has been
        granted, $name. <br />
        Enjoy the site.</strong>" );
}

// print a message indicating password is invalid
function wrongPassword() {
    print( "<title>Access Denied</title></head>
        <body style = \"font-family: arial;
        font-size: 1em; color: red\">
        <strong>You entered an invalid
        password.<br />Access has
        been denied.</strong>" );
}
```



```
// print a message indicating access has been denied
function accessDenied() {
    print( "<title>Access Denied</title></head>
    <body style = \"font-family: arial;
    font-size: 1em; color: red\">
    <strong>
    You were denied access to this server.
    <br /></strong>" );
}

// 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: 1em; color: red\">
    <strong>
    Please fill in all form fields.
    <br /></strong>" );
}
?>
</body>
</html>
```

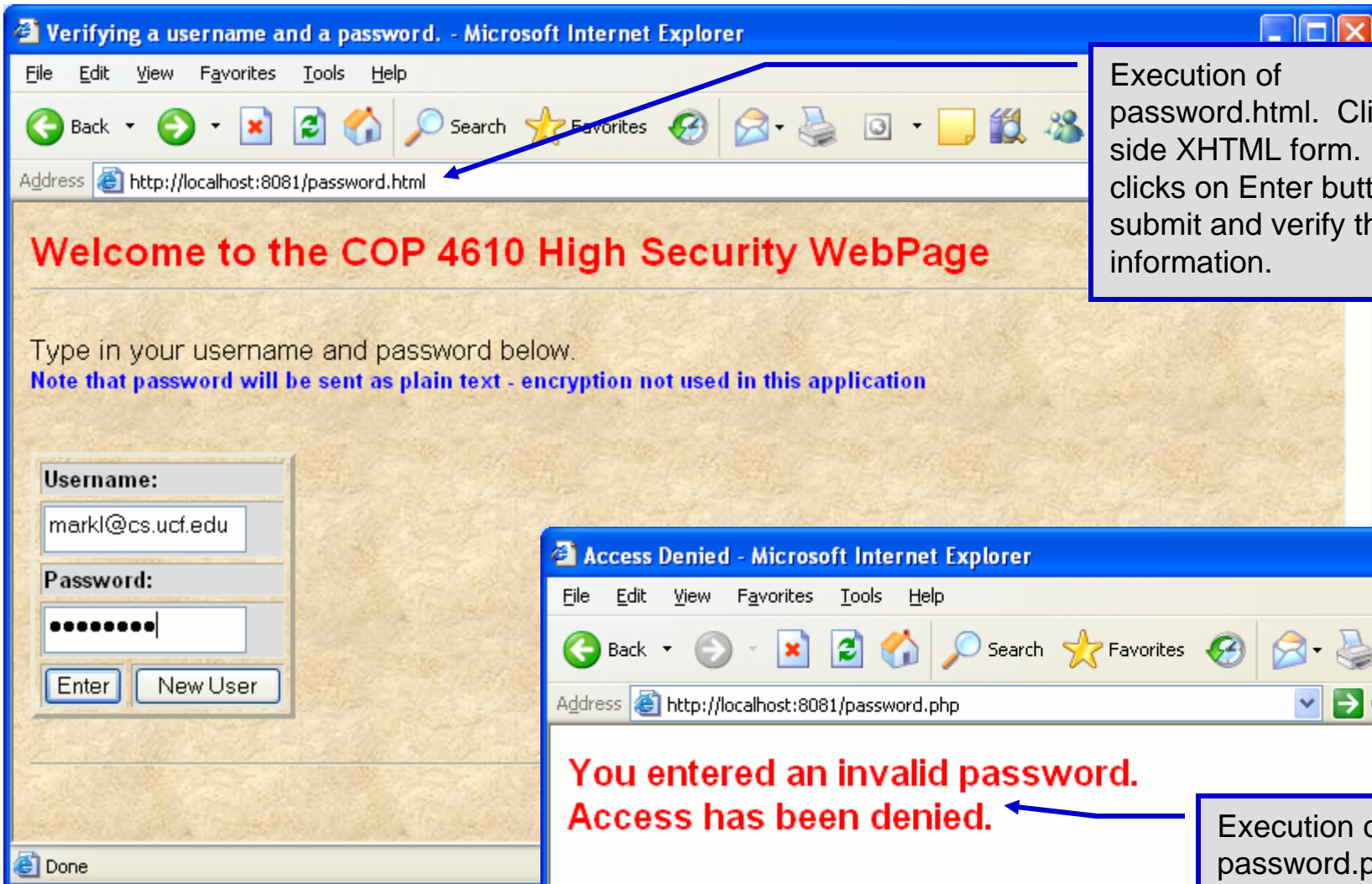


The image displays two overlapping windows from Microsoft Internet Explorer. The top window, titled "Verifying a username and a password. - Microsoft Internet Explorer", shows a web page with the URL "http://localhost:8081/password.html". The page content includes a red heading "Welcome to the COP 4610 High Security WebPage", a text prompt "Type in your username and password below.", a blue note "Note that password will be sent as plain text - encryption not used in this application", and a form with "Username:" and "Password:" labels, two input fields, and "Enter" and "New User" buttons. A blue arrow points from the "New User" button to a text box on the right. The bottom window, titled "Thank You - Microsoft Internet Explorer", shows the URL "http://localhost:8081/password.php" and a blue message: "You have been added to the user list, Mark Llewellyn. Please remember your password. Enjoy the site." A blue arrow points from this message to another text box on the right. Both windows have a standard menu bar (File, Edit, View, Favorites, Tools, Help) and a toolbar with icons for Back, Forward, Stop, Home, Search, Favorites, Refresh, Print, and other functions.

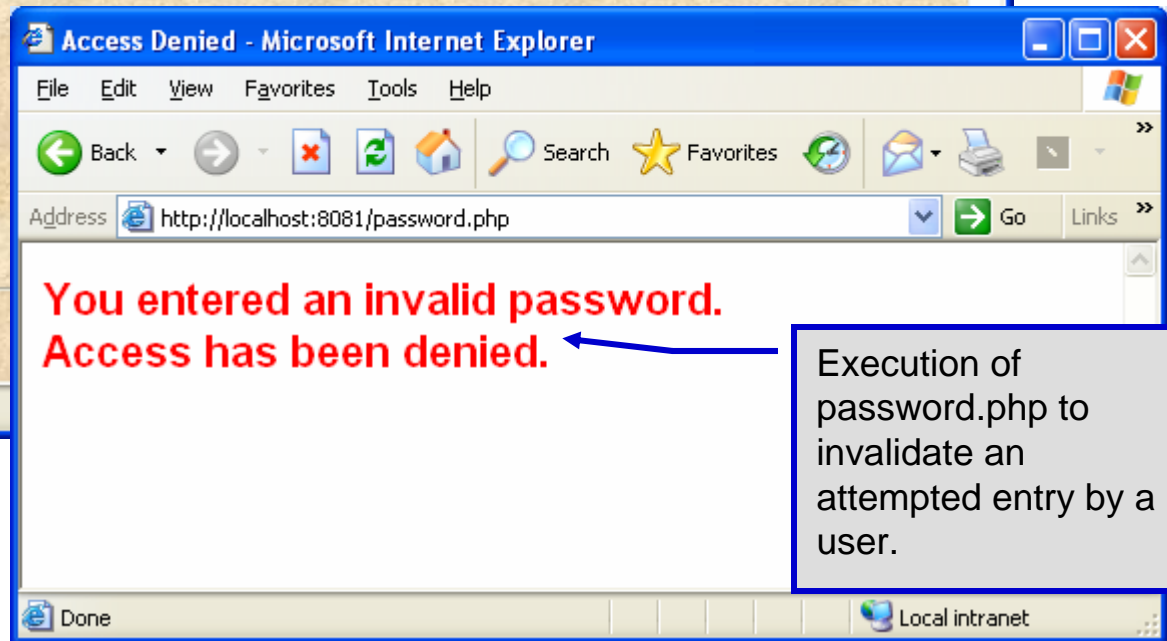
Execution of password.html. Client-side XHTML form. User clicks on New User button to enter their information.

Execution of password.php to enter a new user.





Execution of password.html. Client-side XHTML form. User clicks on Enter button to submit and verify their information.

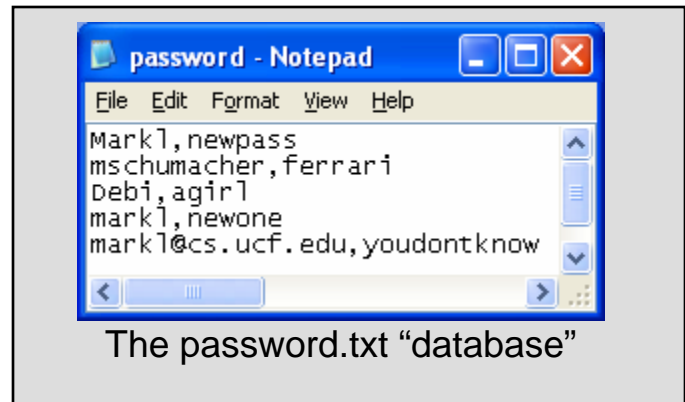


Execution of password.php to invalidate an attempted entry by a user.



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.
- 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.
- Before you go any further in these notes you must configure PHP to access MySQL databases. Beginning with PHP 5, MySQL is not enabled by default in PHP, nor is the MySQL library bundled with PHP.
 - Versions of MySQL greater than 4.1.0 use MySQLi extensions.
 - Versions of MySQL less than 4.1.0 use MySQL extensions.

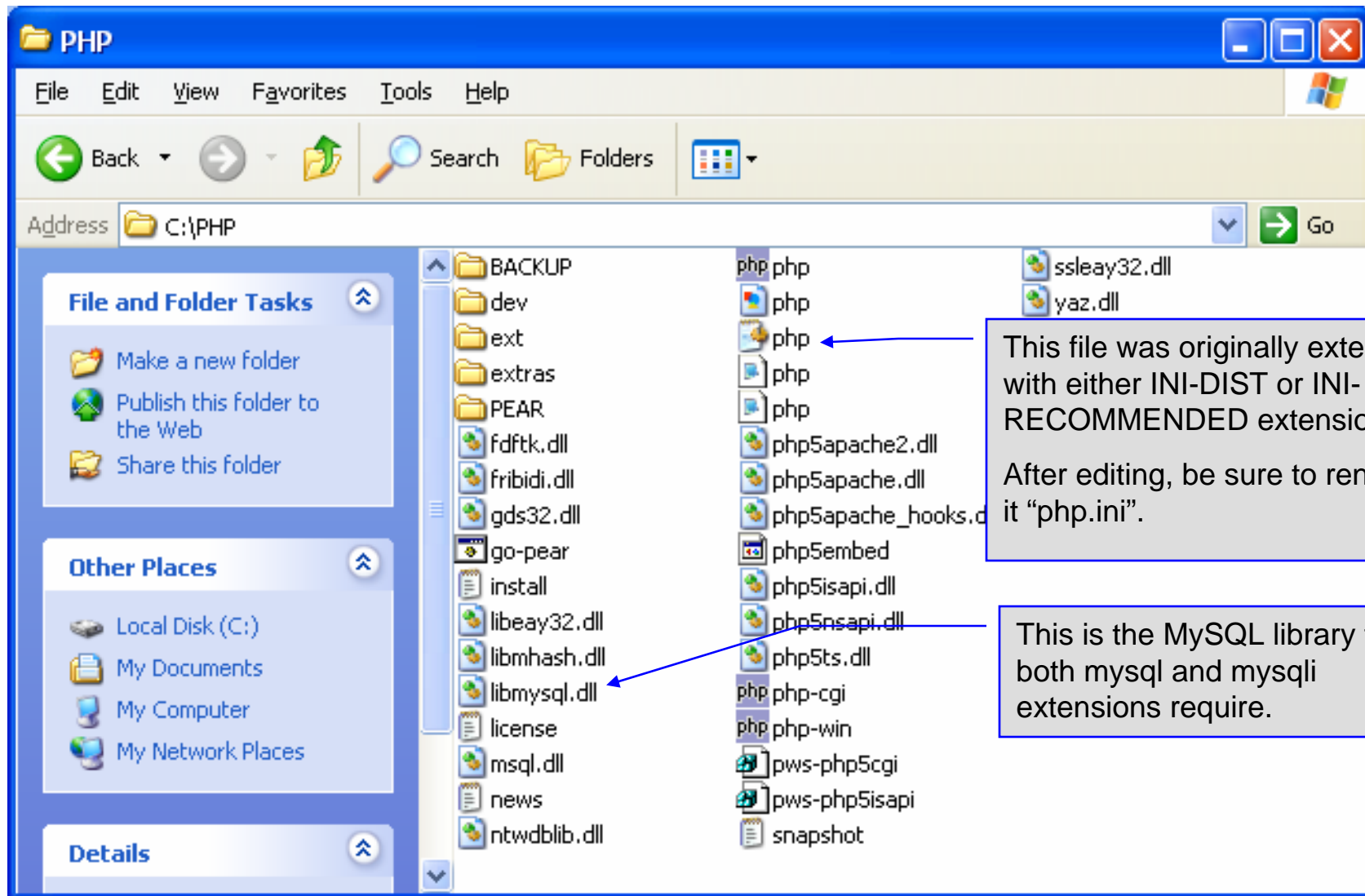


PHP and Database Connectivity (cont.)

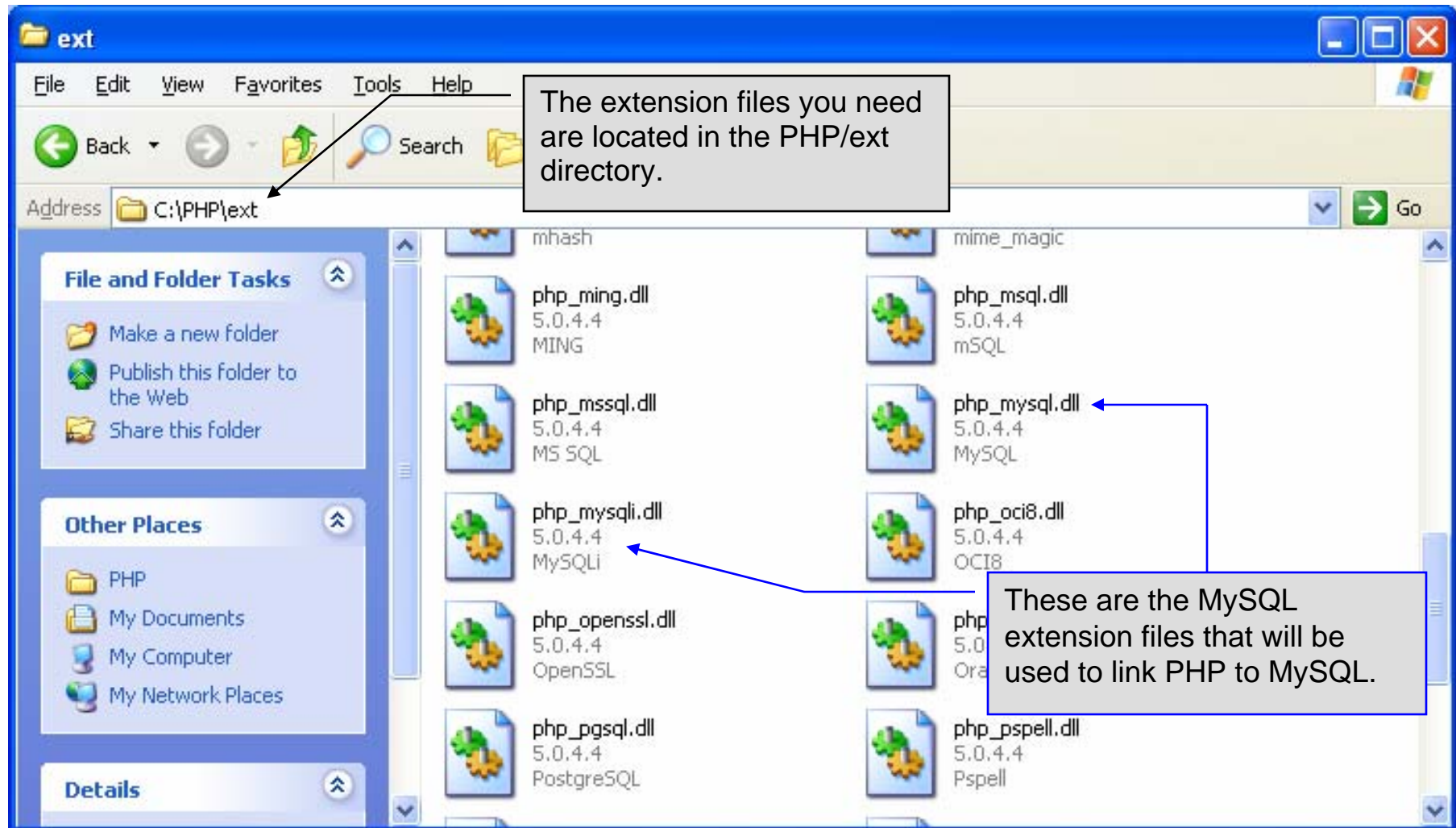
- You need to do **two** things to get PHP to recognize MySQL:
 1. Set the Path statement to include C: /php (you should have already done this!) This enables the runtime environment to access the `libmysql.dll` and/or `libmysqlcli.dll` files in the PHP directory.
 2. Edit the `php.ini` file to enable the extension `php_mysql.dll` (and/or extension `php_mysqlcli.dll`). To accomplish this search down through this file until you find the extensions (probably about 1/2 of the way through the file). They are all currently commented out (each line begins with a `;`), simply remove the semicolon in from of the correct extension names. Be sure to rename the file `php.ini` if you haven't already done so. (See next page for example.)



PHP and Database Connectivity (cont.)



PHP and Database Connectivity (cont.)



PHP and Database Connectivity (cont.)

```
php - Notepad
File Edit Format View Help
; Windows Extensions
; Note that ODBC support is built in, so no dll is needed for it.
; Note that many DLL files are located in the extensions/ (PHP 4) ext/ (PHP 5)
; extension folders as well as the separate PECL DLL download (PHP 5).
; Be sure to appropriately set the extension_dir directive.

;extension=php_mbstring.dll
;extension=php_bz2.dll
;extension=php_curl.dll
;extension=php_dba.dll
;extension=php_base.dll
;extension=php_exif.dll
;extension=php_fdf.dll
;extension=php_filepro.dll
;extension=php_gd2.dll
;extension=php_gettext.dll
;extension=php_ifx.dll
;extension=php_imap.dll
;extension=php_interbase.dll
;extension=php_ldap.dll
;extension=php_mcrypt.dll
;extension=php_mhash.dll
;extension=php_mime_magic.dll
;extension=php_ming.dll
;extension=php_mssql.dll
;extension=php_mysql.dll
;activated 4/12/2006, MJL
extension=php_mysql.dll
;## activated 4/12/2005, MJL
extension=php_mysqli.dll
;extension=php_oci8.dll
;extension=php_openssl.dll
;extension=php_oracle.dll
;extension=php_pgsql.dll
;extension=php_sfmop.dll
;extension=php_snmp.dll
;extension=php_sockets.dll
;extension=php_sqlite.dll
;extension=php_sybase_ct.dll
;extension=php_tidy.dll
```

These two extensions are no longer commented out. At loadtime, these extensions will now be included in the PHP environment, provided that the file php.ini is set.

Note: The php_mysqli.dll extension may not appear in this list in your php.ini file. If this is the case, simply add this line. The mysql.dll extension should already be included.



Basic Configuration of PHP - Microsoft Internet Explorer

Address: http://localhost:8081/info.php

libXML support	active
libXML Version	2.6.22
libXML streams	enabled

mysql

MySQL Support	enabled
Active Persistent Links	0
Active Links	0
Client API version	4.1.7

Directive	Local Value	Master Value
mysql.allow_persistent	On	On
mysql.connect_timeout	60	60
mysql.default_host	no value	no value
mysql.default_password	no value	no value
mysql.default_port	no value	no value
mysql.default_socket	no value	no value
mysql.default_user	no value	no value
mysql.max_links	Unlimited	Unlimited
mysql.max_persistent	Unlimited	Unlimited
mysql.trace_mode	Off	Off

mysqli

Mysqli Support	enabled
Client API version	4.1.7
MYSQLI_SOCKET	/tmp/mysql.sock

Directive	Local Value	Master Value
mysqli.default_host	no value	no value
mysqli.default_port	3306	3306
mysqli.default_pw	no value	no value
mysqli.default_socket	no value	no value
mysqli.default_user	no value	no value
mysqli.max_links	Unlimited	Unlimited
mysqli.reconnect	Off	Off

Once you get PHP configured for MySQL you can verify that the php.ini file was properly read and the MySQL extensions are loaded by running the info.php script and looking for these entries.



PHP and Database Connectivity (cont.)

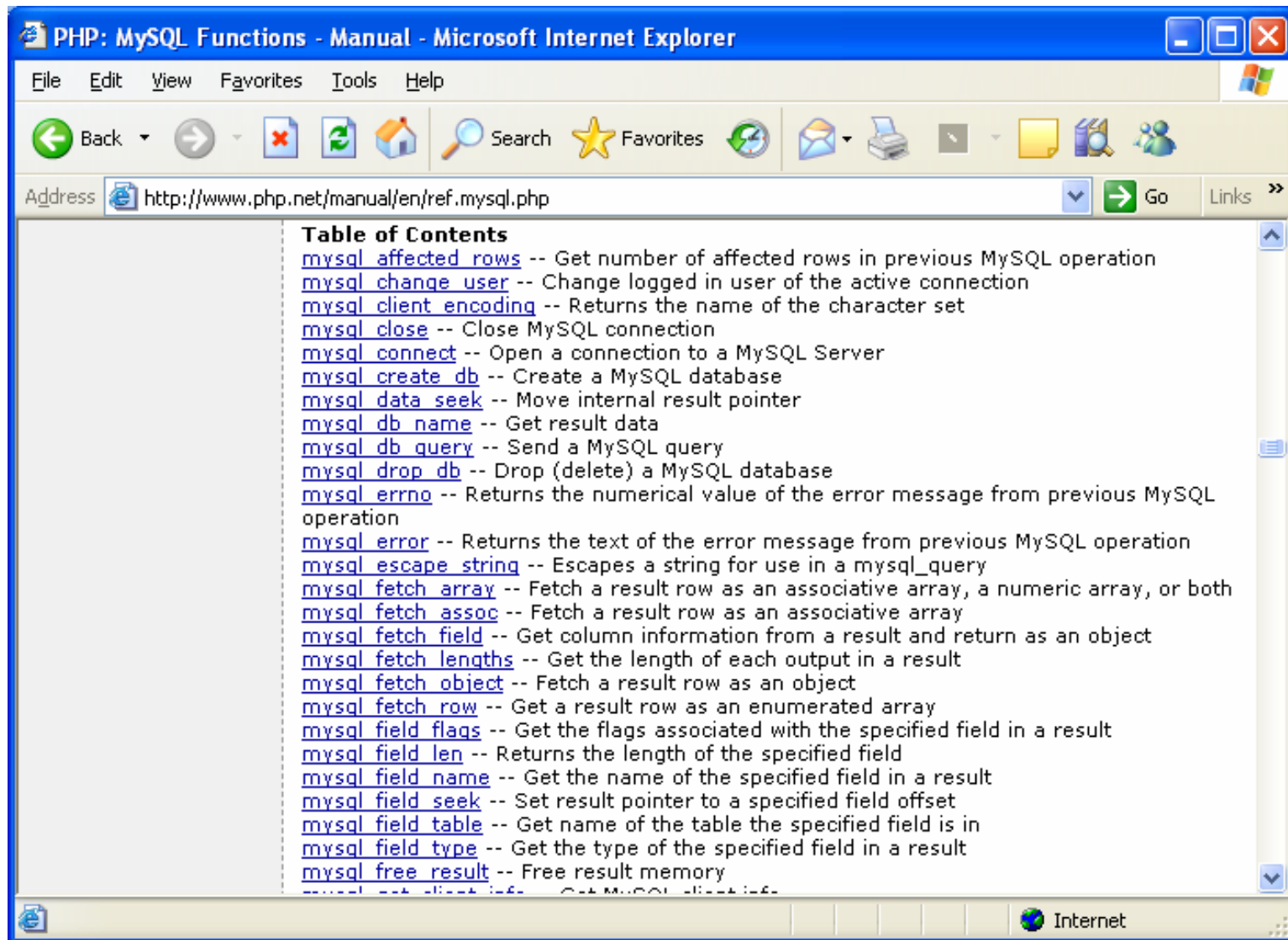
- PHP contains a fairly extensive set of commands that can be used to access and manipulate MySQL databases.
- A very brief listing of some of these commands appears on the next page.
- For a complete listing see:

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

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



Portion of `mysql.dll` Extension



PHP: MySQL Functions - Manual - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Refresh Home Search Favorites

Address <http://www.php.net/manual/en/ref.mysql.php> Go Links

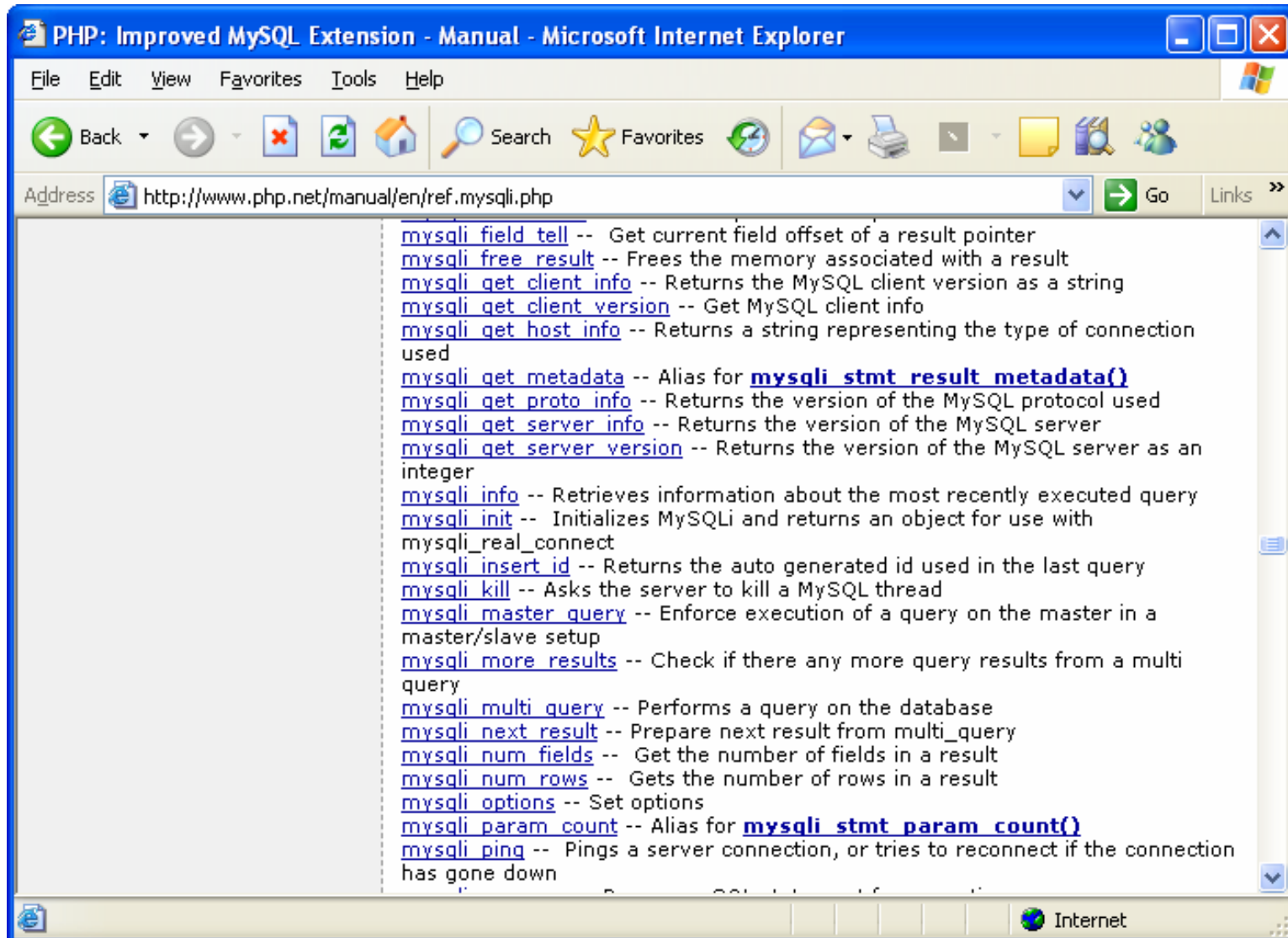
Table of Contents

- [mysql_affected_rows](#) -- Get number of affected rows in previous MySQL operation
- [mysql_change_user](#) -- Change logged in user of the active connection
- [mysql_client_encoding](#) -- Returns the name of the character set
- [mysql_close](#) -- Close MySQL connection
- [mysql_connect](#) -- Open a connection to a MySQL Server
- [mysql_create_db](#) -- Create a MySQL database
- [mysql_data_seek](#) -- Move internal result pointer
- [mysql_db_name](#) -- Get result data
- [mysql_db_query](#) -- Send a MySQL query
- [mysql_drop_db](#) -- Drop (delete) a MySQL database
- [mysql_errno](#) -- Returns the numerical value of the error message from previous MySQL operation
- [mysql_error](#) -- Returns the text of the error message from previous MySQL operation
- [mysql_escape_string](#) -- Escapes a string for use in a `mysql_query`
- [mysql_fetch_array](#) -- Fetch a result row as an associative array, a numeric array, or both
- [mysql_fetch_assoc](#) -- Fetch a result row as an associative array
- [mysql_fetch_field](#) -- Get column information from a result and return as an object
- [mysql_fetch_lengths](#) -- Get the length of each output in a result
- [mysql_fetch_object](#) -- Fetch a result row as an object
- [mysql_fetch_row](#) -- Get a result row as an enumerated array
- [mysql_field_flags](#) -- Get the flags associated with the specified field in a result
- [mysql_field_len](#) -- Returns the length of the specified field
- [mysql_field_name](#) -- Get the name of the specified field in a result
- [mysql_field_seek](#) -- Set result pointer to a specified field offset
- [mysql_field_table](#) -- Get name of the table the specified field is in
- [mysql_field_type](#) -- Get the type of the specified field in a result
- [mysql_free_result](#) -- Free result memory
- [mysql_get_client_info](#) -- Get MySQL client info

Internet



Portion of `mysqli.dll` Extension



The screenshot shows a Microsoft Internet Explorer browser window titled "PHP: Improved MySQL Extension - Manual - Microsoft Internet Explorer". The address bar displays the URL "http://www.php.net/manual/en/ref.mysqli.php". The main content area lists various `mysqli` functions with their descriptions:

- [mysqli_field_tell](#) -- Get current field offset of a result pointer
- [mysqli_free_result](#) -- Frees the memory associated with a result
- [mysqli_get_client_info](#) -- Returns the MySQL client version as a string
- [mysqli_get_client_version](#) -- Get MySQL client info
- [mysqli_get_host_info](#) -- Returns a string representing the type of connection used
- [mysqli_get_metadata](#) -- Alias for [mysqli_stmt_result_metadata\(\)](#)
- [mysqli_get_proto_info](#) -- Returns the version of the MySQL protocol used
- [mysqli_get_server_info](#) -- Returns the version of the MySQL server
- [mysqli_get_server_version](#) -- Returns the version of the MySQL server as an integer
- [mysqli_info](#) -- Retrieves information about the most recently executed query
- [mysqli_init](#) -- Initializes MySQLi and returns an object for use with `mysqli_real_connect`
- [mysqli_insert_id](#) -- Returns the auto generated id used in the last query
- [mysqli_kill](#) -- Asks the server to kill a MySQL thread
- [mysqli_master_query](#) -- Enforce execution of a query on the master in a master/slave setup
- [mysqli_more_results](#) -- Check if there any more query results from a multi query
- [mysqli_multi_query](#) -- Performs a query on the database
- [mysqli_next_result](#) -- Prepare next result from `multi_query`
- [mysqli_num_fields](#) -- Get the number of fields in a result
- [mysqli_num_rows](#) -- Gets the number of rows in a result
- [mysqli_options](#) -- Set options
- [mysqli_param_count](#) -- Alias for [mysqli_stmt_param_count\(\)](#)
- [mysqli_ping](#) -- Pings a server connection, or tries to reconnect if the connection has gone down



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.



data.html
Client side

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
<!-- data.html -->
<!-- Querying a MySQL Database From a PHP Script -->

<html xmlns = "http://www.w3.org/1999/xhtml">
  <head>   <title>Sample Database Query From PHP</title>  </head>
  <body style = "background-color: #545454" background=image1.jpg >
    <h2 style = "font-family: arial color: blue"> Querying a MySQL database from a PHP Script. </h2>
    <form method = "post" action = "database.php">
      <p>Select a field to display:
        <!-- add a select box containing options for SELECT query -->
        <select name = "select">
          <option selected = "selected">*</option>
          <option>bikename</option>
          <option>size</option>
          <option>color</option>
          <option>cost</option>
          <option>purchased</option>
          <option>mileage</option>
        </select>
      </p>
      <input type = "submit" value = "Send Query" style = "background-color: blue;
        color: yellow; font-weight: bold" />
    </form>
  </body> </html>
```



```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
<!-- database.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: #4A766E" background=image1.jpg link=blue vlink=blue>
  <?php
```

```
extract( $_POST );
```

```
// build SELECT query
$query = "SELECT " . $select . " FROM bikes";
```

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

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.



```
// query bikedb database
if ( !( $result = mysql_query( $database, $query ) ) ) {
    print( "Could not execute query! <br />" );
    die( mysql_error() );
}
?>
```

```
<h3 style = "color: blue">
```

```
Database Search Results</h3>
```

```
<table border = "1" cellpadding = "3" cellspacing = "3"
style = "background-color: #00FFFF"> <!-- ADD8E6 -->
```

```
<?php
```

```
    // fetch meta-data
```

```
    $metadata = mysqli_fetch_fields( $result);
```

```
    print("<tr>");
```

```
    for ($i=0; $i<count($metadata); $i++){
```

```
        print("<td>");
```

```
        printf("%s", $metadata[$i]->name);
```

```
        print("</td>");
```

```
    }
```

```
    print("</tr>");
```

Get metadata for
the query

Display metadata in the
top row of the table



```
// fetch each record in result set
for ( $counter = 0;
    $row = mysql_fetch_row( $result );
    $counter++ ){
    // build table to display results
    print( "<tr>" );
    foreach ( $row as $key => $value )
        print( "<td>$value</td>" );
    print( "</tr>" );
}
mysql_close( $database );
?>
</table>
<br />Your search yielded <strong>
    <?php print( "$counter" ) ?> results.<br /><br /></strong>
<h5>Please email comments to
    <a href = "mailto:markl@cs.ucf.edu">
        markl@cs.ucf.edu
    </a>
</h5>
</body></html>
```



Execution of data.html – Client side

Sample Database Query From PHP - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Refresh Home Search Favorites Home Go Links

Address <http://localhost:8081/data.html> Go Links

Querying a MySQL database from a PHP Script.

Select a field to display:

Send Query

- * (selected)
- bikename
- size
- color
- cost
- purchased
- mileage

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.

Done Local intranet



Execution of database.php – Server side

bikename	size	color	cost	purchased	mileage
Colnago Dream Rabobank	60	blue/orange	5500	2002-07-27	4300
Bianchi Evolution 3	58	celeste	4800	2003-11-16	2000
Eddy Merckx Molteni	58	orange	5100	2004-08-12	0
Eddy Merckx Domo	58	blue/black	5300	2004-02-02	0
Battaglin Carrera	60	red/white	4000	2001-03-14	11200
Gianni Motta Personal	59	red/green	4400	2000-05-01	8700
Gios Torino Super	60	blue	2000	1998-11-08	9000
Schwinn Paramount P14	60	blue	1800	1992-03-01	200
Bianchi Corse Evo 4	58	celeste	5700	2004-12-22	300
Colnago Superissimo	59	red	3800	1996-03-01	13000
Liquigas Bianchi FG Lite	59	celeste/blue/gr	5600	2005-06-27	0

Results of query **SELECT * FROM bikes**. Display indicates that 10 rows were included in the result.



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.



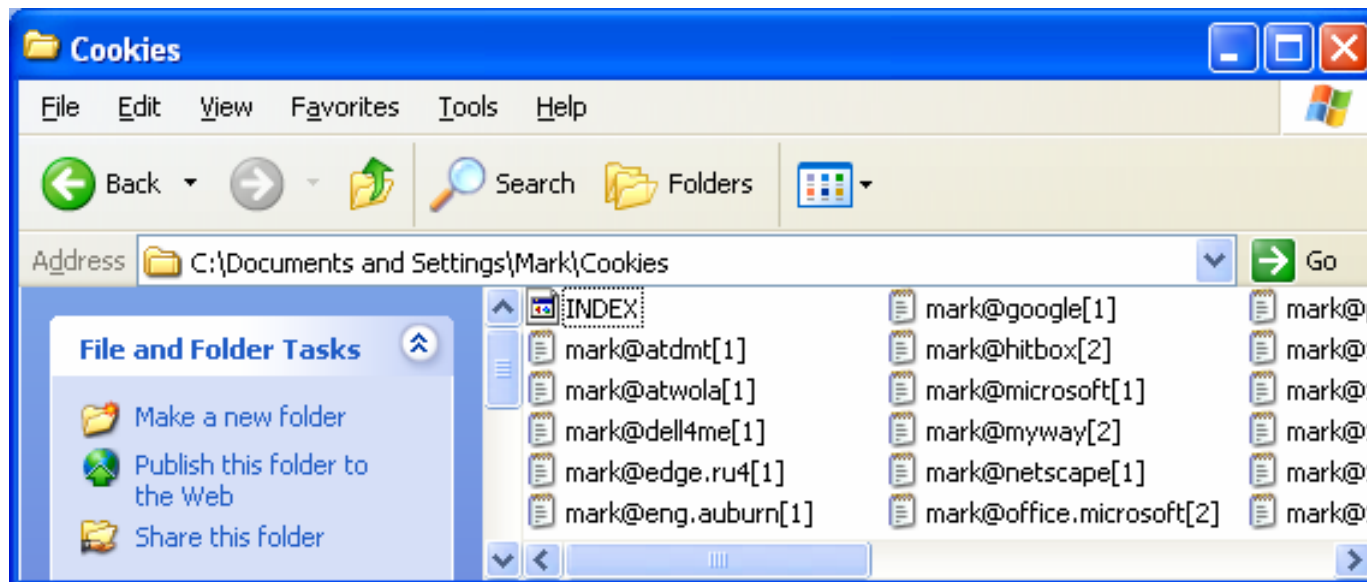
Cookies (cont.)

- 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 43.



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.



```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
```

```
<!-- cookies.html -->
```

```
<!-- Writing a Cookie -->
```

```
<html xmlns = "http://www.w3.org/1999/xhtml">
  <head> <title>Writing a cookie to the client computer</title> </head>
```

```
  <body style = "font-family: arial, sans-serif;
  background-color: #856363" background=image1.jpg>
  <h2>Click Write Cookie to save your cookie data.</h2>
```

```
  <form method = "post" action = "cookies.php" style = "font-size: 10pt"
    background-color: #856363">
    <strong>Name:</strong><br />
    <input type = "text" name = "NAME" /><br />
    <strong>Height:</strong><br />
    <input type = "text" name = "HEIGHT" /><br />
    <strong>Favorite Color:</strong><br />
    <input type = "text" name = "COLOR" /><br />
    <p>
      <input type = "submit" value = "Write Cookie" style = "background-color: #0000FF;
      color: yellow; font-weight: bold" /></p>
  </form>
</body> </html>
```



```

<?php
// cookies.php
// Program to write a cookie to a client's machine
extract( $_POST );
// write each form field's value to a cookie and set the
// cookie's expiration date
setcookie( "Name", $NAME, time() + 60 * 60 * 24 * 5 );
setcookie( "Height", $HEIGHT, time() + 60 * 60 * 24 * 5 );
setcookie( "Color", $COLOR, time() + 60 * 60 * 24 * 5 );
?>

```

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.

```

<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">

```

```

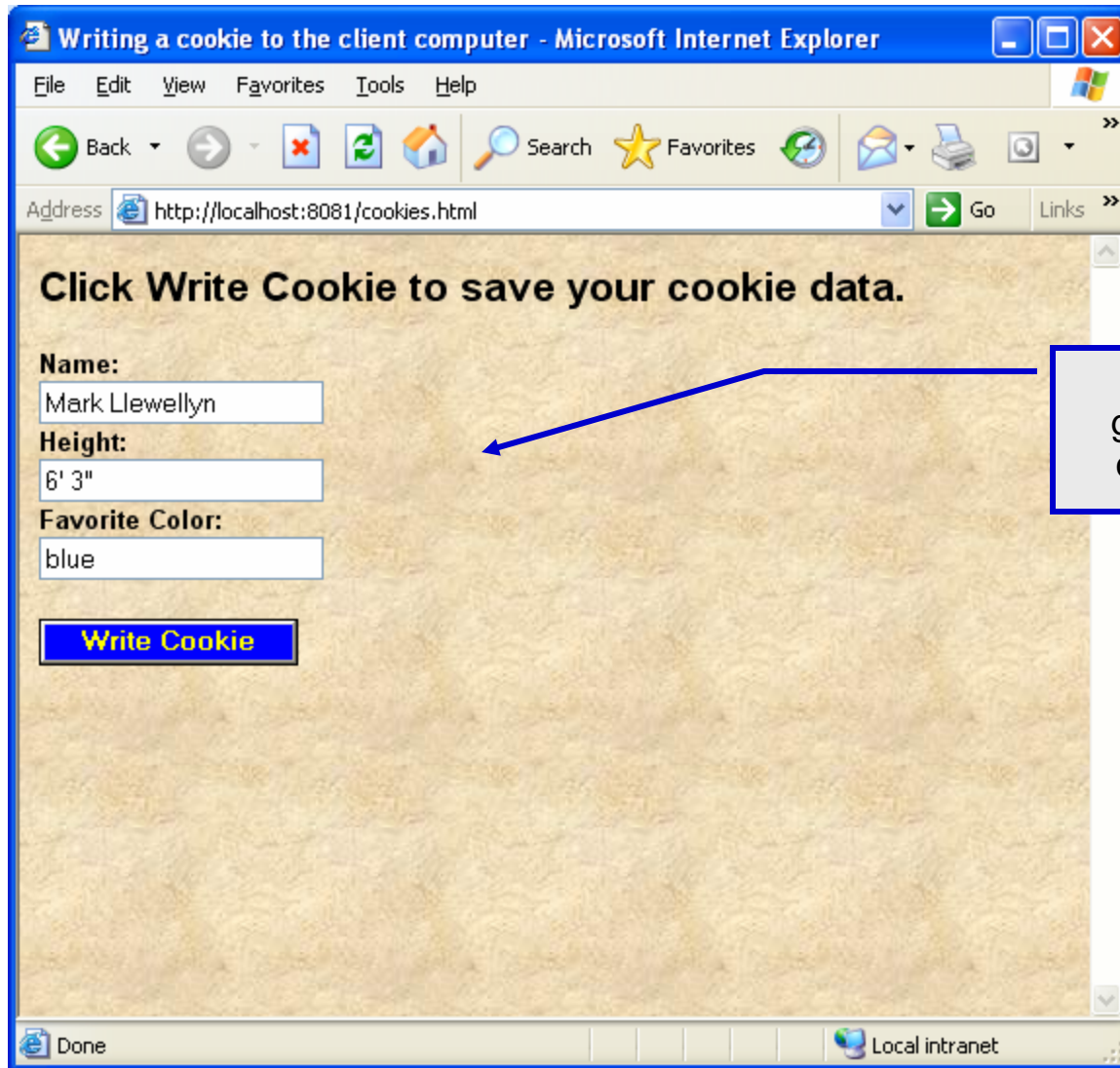
<html xmlns = "http://www.w3.org/1999/xhtml">
<head> <title>Cookie Saved</title> </head>
<body style = "font-family: arial, sans-serif", background=image1.jpg">
<p><b>The cookie has been set with the following data:</b></p>
<!-- print each form field's value -->
<br /><span style = "color: blue">Name:</span>
<?php print( $NAME ) ?><br />
<span style = "color: blue">Height:</span>
<?php print( $HEIGHT ) ?><br />
<span style = "color: blue">Favorite Color:</span>
<span style = "color: <?php print( "$COLOR\">$COLOR" ) ?>
</span><br />
<p>Click <a href = "readCookies.php">here</a> to read the saved cookie.</p>
</body> </html>

```

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.



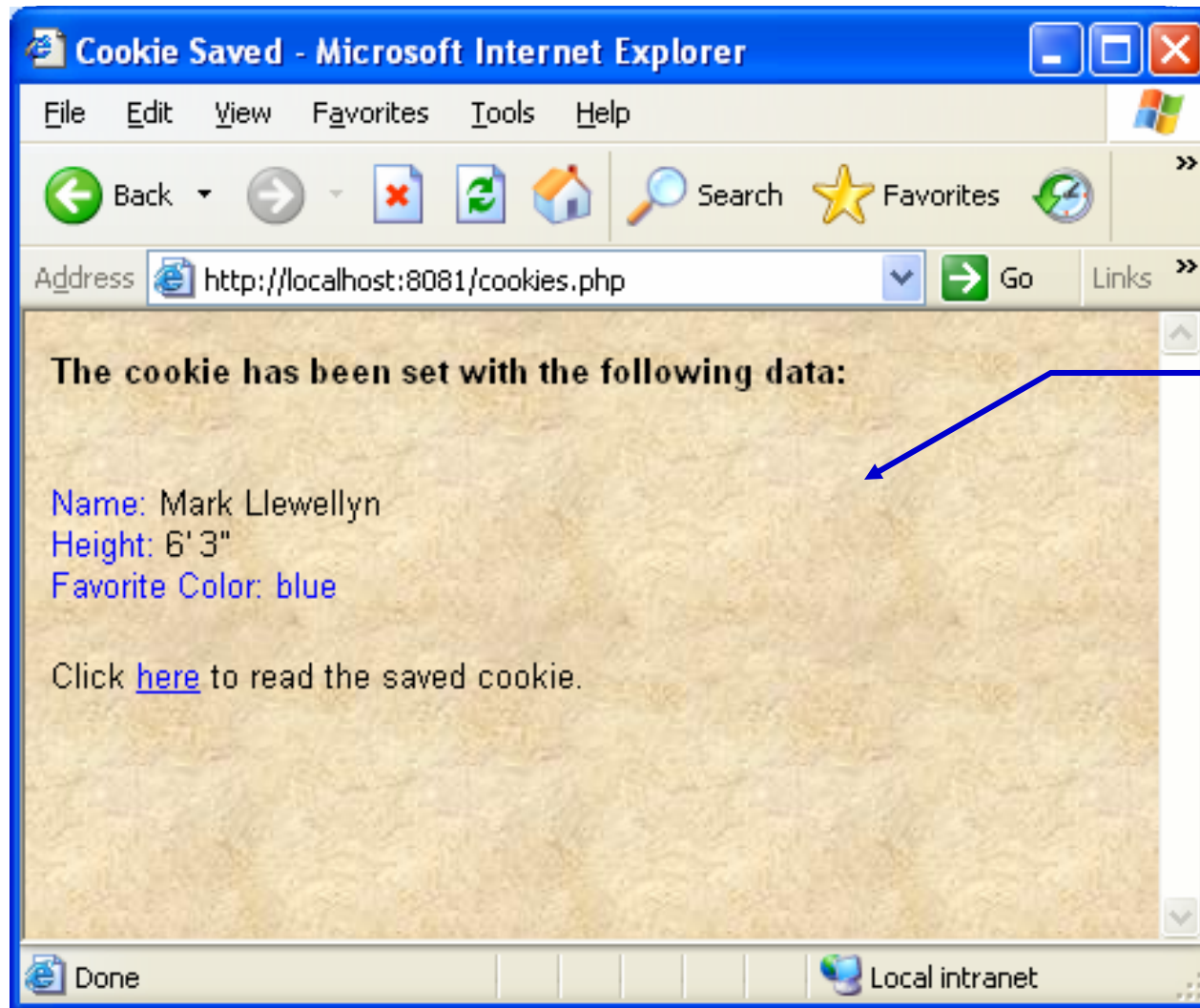
Cookies (cont.)



HTML form
generated by
cookies.html



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.




```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
```

```
<!-- readCookies.php -->
<!-- Program to read cookies from the client's computer -->
```

```
<html xmlns = "http://www.w3.org/1999/xhtml">
<head><title>Read Cookies</title></head>
```

```
<body style = "font-family: arial, sans-serif" background=image1.jpg>
<p>
<strong> The following data is saved in a cookie on your computer.
</strong>
</p>
<table border = "5" cellspacing = "0" cellpadding = "10">
```

```
<?php
// iterate through array $_COOKIE and print
// name and value of each cookie
foreach ( $_COOKIE as $key => $value )
    print( "<tr>
        <td bgcolor=\"#F0E68C\">$key</td>
        <td bgcolor=\"#FFA500\">$value</td>
        </tr>" );
?>
</table>
</body> </html>
```

←
Superglobal array
holding cookie.



Cookies (cont.)



Output from the readCookies.php script.



engine	1	1
last_modified	0	0
xbithack	0	0

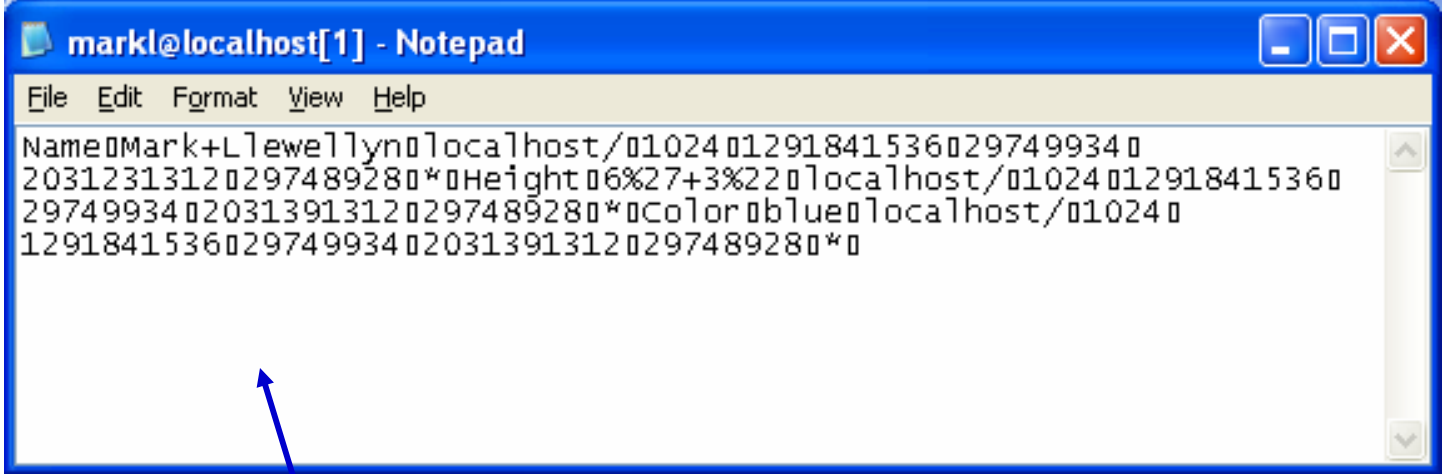
Apache Environment

Variable	Value
HTTP_ACCEPT	*/*
HTTP_ACCEPT_LANGUAGE	en-us
HTTP_ACCEPT_ENCODING	gzip, deflate
HTTP_USER_AGENT	Mozilla/4.0 (compatible; MSIE 6.0; Windows NT 5.1; SV1)
HTTP_HOST	localhost:8081
HTTP_CONNECTION	Keep-Alive
HTTP_COOKIE	Name=Mark+Llewellyn; Height=6%5C%27+3%5C%22; Color=blue
PATH	E:\WINDOWS\system32;E:\WINDOWS;E:\WINDOWS\System32\Wbem;E:\Program Files\Common Files\Adobe\AGL;E:\Program Files\Common Files\Roxio Shared\DLLShared;E:\Program Files\SSH Communications Security\SSH Secure Shell;E:\Program Files\Java\jdk1.5.0_06\bin;E:\PHP
SystemRoot	E:\WINDOWS
COMSPEC	E:\WINDOWS\system32\cmd.exe
PATHEXT	.COM;.EXE;.BAT;.CMD;.VBS;.VBE;.JS;.JSE;.WSF;.WSH
WINDIR	E:\WINDOWS
SERVER_SIGNATURE	<address>Apache/2.0.55 (Win32) PHP/5.1.2 Server at localhost Port 8081</address>
SERVER_SOFTWARE	Apache/2.0.55 (Win32) PHP/5.1.2
SERVER_NAME	localhost
SERVER_ADDR	127.0.0.1

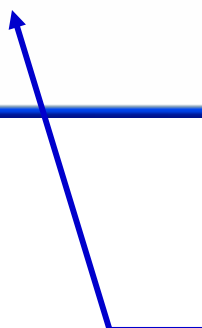
Contents of the cookie stored on the client machine.



Cookies (cont.)



```
markl@localhost[1] - Notepad
File Edit Format View Help
Name\Mark+Llewellyn\localhost\01024\01291841536\029749934\
2031231312\0297489280*\0Height\06%27+3%22\localhost\01024\01291841536\
29749934\02031391312\0297489280*\0Color\0blue\localhost\01024\
1291841536\029749934\02031391312\0297489280*\0
```



Actual text file holding cookie data for the cookie that was created in this example.

