

Web Programming with PHP

MVMUA

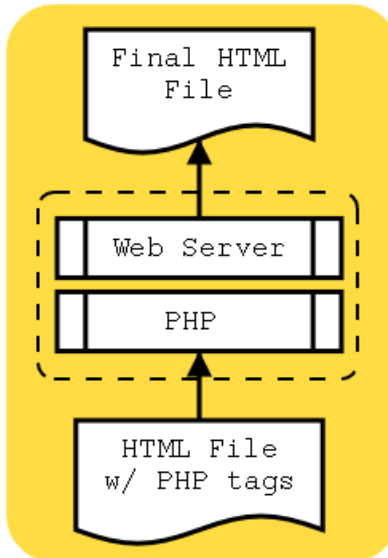
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David Sklar <tech-talks at sklar.com>

<http://www.sklar.com/>

PHP is a Server-side language

Even though it is embedded in HTML files much like the client-side Javascript language, PHP is server-side and all PHP tags will be replaced by the server before anything is sent to the web browser.



So if the HTML file contains:

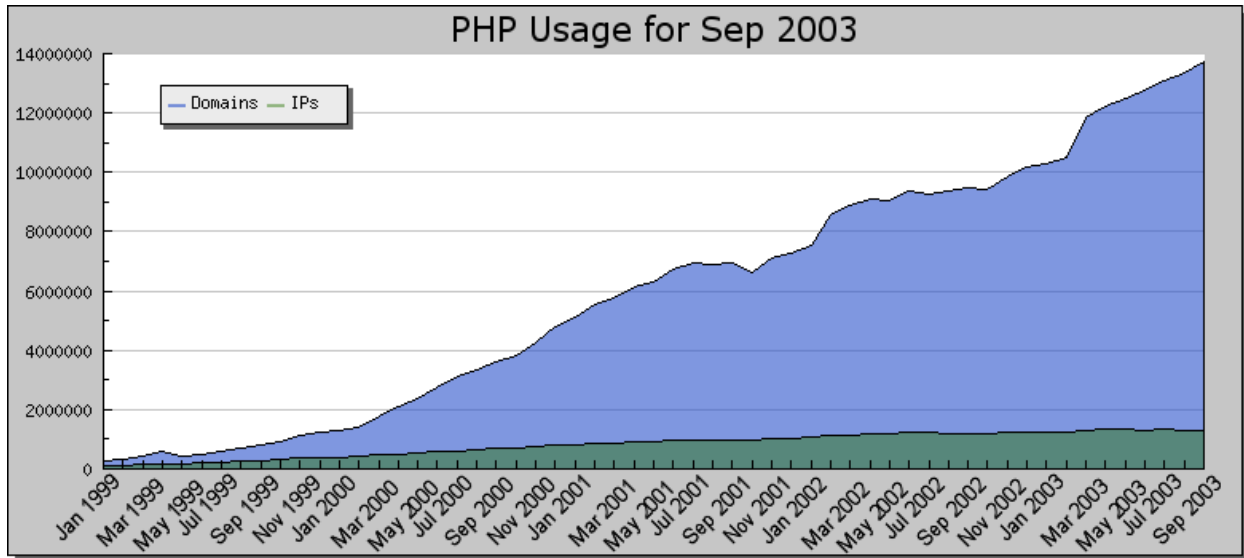
```
<html>
<?php echo "Hello World"?>
</html>
```

What the end user would see with a "view source" in the browser would be:

```
<html>
Hello World
</html>
```

September 2003 Netcraft Report

- o 43,144,374 Domains queried
- o 13,717,527 Domains. 1,310,849 IP addresses
- o PHP installed on 32% of all domains



Source: Netcraft

August 2003 Apache Module Report

- o 7,705,536 Apache Servers surveyed
- o 4,028,942 (52.29%) PHP
- o 2,382,063 (30.91%) OpenSSL
- o 2,305,879 (29.92%) mod_ssl
- o 1,693,807 (21.98%) Frontpage
- o 1,520,160 (19.73%) mod_perl
- o 396,190 (5.14%) DAV
- o 353,222 (4.58%) mod_throttle
- o 296,228 (3.84%) mod_jk
- o 264,732 (3.44%) mod_log_bytes
- o 259,171 (3.36%) mod_bwlimited
- o 237,822 (3.09%) mod_fastcgi
- o 205,158 (2.66%) AuthMySQL

Source: SecuritySpace.com

Some Notable PHP Users

- o Yahoo!
- o BlackPlanet.Com, AsianAvenue.Com, MiGente.Com
- o U. of Oklahoma SINAPSE
- o US: Defense, Commerce, National Weather Service, Census Bureau
- o States: Arkansas, Rhode Island, Utah, Iowa
- o Mexico: Presidential Internet System

Operating Systems

- o UNIX (all variants)
- o Win32 (NT/W95/W98/W2000)
- o QNX
- o MacOS (WebTen)
- o OSX
- o OS/2
- o BeOS
- o OS/390 (experimental)
- o AS/400 (experimental)

Server Interfaces

- o Apache module (UNIX,Win32)
- o CGI/FastCGI
- o thttpd
- o fhttpd
- o phttpd
- o ISAPI (IIS, Zeus)
- o NSAPI (Netscape iPlanet)
- o Java servlet
- o AOLServer
- o Roxen/Caudium module
- o SRM (Script Running Machine)
- o Apache 2.0 module (Experimental)
- o Tux (experimental)
- o pi3web (experimental)

Variables and Expressions

```
<?php
    $age = 15;
    $name = "Robertson Davies";
    $gpa = 3.14;
    $age = $age + 1;
?>
```

Arrays

```
<?php
    $states[0] = 'Delaware';
    $states[1] = 'Pennsylvania';
    $matrix[5][7] = 12.7;
    $capitals['DE'] = 'Dover';
    $capitals['PA'] = 'Harrisburg';
?>
```

Functions and Control Structures

```
<?php
    $len = strlen($input);
    phpinfo();
    while($not_done) { ... }
    for($i = 0; $i < 10; $i++) { ... }
?>
```


Output

```
<?php
    print "Hello World\n";
    printf("%.2f", $price);
    print<<<END
<input type="submit" value="$val">
END;
?>
```

Syntax and switching modes

```
<?php if(strpos($_SERVER['HTTP_USER_AGENT'], "MSIE")) { ?>  
<b>You are using Internet Explorer</b>  
<?php } else { ?>  
<b>You are not using Internet Explorer</b>  
<?php } ?>
```

Output:

```
You are not using Internet Explorer
```

Handling form variables

Submitted variables are in arrays: `$_GET`, `$_POST`, `$_COOKIE`, `$_REQUEST`

```
<?php
if (isset($_POST['submit'])) {
    print 'Hello, ' . $_POST['name'];
} else {
    print<<<HTML
<form method="POST" action="$_SERVER[PHP_SELF]">
    Your name: <input type="text" name="name"> <br>
<input type="submit" name="submit">
</form>
HTML;
} ?>
```

Output:

Your name:

C-Like Syntax

```
<?php
for ($loop = -5; $loop < 5; $loop++) {
    if ($i < 0) {
        echo "-";
    } elseif ($i > 0) {
        echo "+";
    }
    echo "$loop<BR>\n";
}

while(--$loop) {
    switch($i % 2) {
        case 0:
            echo "Even<BR>\n";
            break;
        case 1:
            echo "Odd<BR>\n";
            break;
    }
}
?>
```

Numbers (integers and real)

```
<?php
    $a = 1234;   $b = 0777;
    $c = 0xff;  $d = 1.25;
    echo "$a $b $c $d<br />\n";
?>
```

Output:

```
1234 511 255 1.25
```

Dynamic Typing

- o Don't have to declare types
- o Automatic conversion done

```
<?php
    echo 5 + "1.5" + "10e2";
?>
```

Output:

```
1006.5
```

Indexed and Associative Arrays

```
<?php
    $a[0] = 1;
    $a[1] = "foo";
    $a[] = 1.57;
    $catch_it['cat'] = "mouse";
    $catch_it['dog'] = "cat";
?>
```

Manipulating

- o Sorting: `sort()`, `rsort()`, `krsort()`, `usort()`, `array_multisort()`
- o Traversal: `reset()`, `end()`, `next()`, `each()`, `current()`, `key()`, `array_walk()`
- o Advanced: `array_diff()`, `array_intersect()`, `array_merge()`, `array_merge_recursive()`, `array_slice()`, `array_splice()` and lots more...

Typical User Defined Function

```
<?php
function log_err($user, $type="error") {
    print "User $user: $problem.\n";
}
?>
```

Default values

```
<?php
function head($title="Default Title") {?>
    <HTML><HEAD><TITLE>
        <? echo $title ?>
    </TITLE></HEAD><BODY><?
}

head();
?>
```

Class Definition

```
<?php
class Cart {
    var $items;
    function add_item($artnr, $num) {
        $this->items[$artnr] += $num;
    }
}
?>
```

Inheriting a class with a Constructor

```
<?php
class NamedCart extends Cart {
    var $owner;
    function NamedCart($name) {
        $this->owner = $name;
    }
}
?>
```


Invocation

```
<?php
    $cart = new NamedCart("PenguinGear");
    $cart->add_item(170923, 2);
?>
```

Static Method calls

```
<?php
    class Widget {
        function report() {
            echo "Widget reporting for duty.";
        }
    }

    Widget::report();
?>
```

Format time with strftime():

```
<?php print strftime('A b e: day j of %Y'); ?>
```

Output:

```
Monday Oct 20: day 293 of 2003
```

Find dates with strtotime():

```
<?php $t = strtotime('now + 3 weeks');  
print strftime('%c',$t); ?>
```

Output:

```
Mon Nov 10 15:21:01 2003
```

substr

```
<?php
  $str = "Fast String Manipulation";
  echo substr($str,0,4) . substr($str,-9);
?>
```

Output:

Fastipulation

explode

```
<?php
$a = explode(":", "This:string:has:delimiters.");
while (list(,$value) = each($a)) {
    if (strcmp($value, "has") == 0) {
        echo "had ";
    } else echo $value." ";
}
?>
```

Output:

This string had delimiters.

Perl Compatible Regexes

```
<?php
    if (preg_match('/^\d{5}(-\d{4})?$/',
        $_POST['zip'])) {
?>

<?php
    $text = "Hello, /Alice/. How are you?";
    print preg_replace('{/[^\s]+/}', '<b>\1</b>',
        $text);
?>
```

Output:

Hello, Alice. How are you?

readfile()

```
<?php readfile("/etc/issue")?>
```

Output:

```
Red Hat Linux release 9 (Shrike)
Kernel \r on an \m
```

file_get_contents()

```
<?php
    $contents = file_get_contents("/etc/issue");
    $contents = trim($contents, "\n");
    echo nl2br($contents);
?>
```

Output:

```
Red Hat Linux release 9 (Shrike)
Kernel \r on an \m
```

Reading from a file

```
<?php
    $file = fopen("sample.txt", "r");
    while (!feof($file)) {
        echo fgets($file), "<BR>";
    }
?>
```

Reading from a URL

```
<?php $file = fopen("http://www.php.net/file.txt", "r"); ?>
```

Writing to a file

```
<?php
    $file = fopen("agent.log", "a");
    fputs($file, $_HTTP_USER_AGENT."\n");
?>
```

PHP code that talks to databases generally connect to the database, select a database, send a query and process through the results.

```
<?php
mysql_pconnect("db.server.com", "user", "pwd");
mysql_select_db("products");
$result = mysql_query("SELECT * FROM details");
if ($result) {
    echo "<TABLE>\n";
    echo "<TR><TH>Name</TH><TH>Info</TH></TR>\n";
    while ($a = mysql_fetch_array($result)) {
        echo "<TR><TD>$a[name]</TD><TD>$a[info]</TD></TR>";
    }
    echo "</TABLE>";
} else {
    echo "<P>Nothing to see here.";
}
?>
```


SQL

- Adabas D, Empress, IBM DB2, Informix, Ingres, Interbase, Frontbase, mSQL, MS SQL Server, MySQL, ODBC, Ovrimos, Oracle (OCI7,OCI8), PostgreSQL, Raima Velocis, Solid, Sybase, DB++

Others

- dBase, filePro (read-only), dbm (ndbm, gdbm, Berkeley db)

You can add headers to the HTTP response in PHP using the `header()` function.

Redirection

```
<?php
header('Location: http://www.php.net/');
?>
```

Setting a Session Cookie

```
<?php setcookie('user','david'); ?>
```

Setting a Persistent Cookie

```
<?php setcookie('user','david',  
                mktime(12,0,0,11,22,2003)); ?>
```

Reading a Cookie

```
<?php echo $_COOKIE['user']; ?>
```

Deleting the Cookies

```
<?php setcookie('user',''); ?>
```

```
<? setcookie('user','',  
            mktime(12,0,0,11,22,1970)); ?>
```

Other Optional Paramters

Path, Domain, and Secure parameters can also be set to restrict a cookie to a certain path, domain or in the case of the Secure parameter, limit the cookie to only be set if the request came in over an SSL connection.

To deal with multibyte characters and encodings (such as Japanese and Korean) you may use the mbstring extension.

What does Mbstring provide?

- o Support for ASCII, JIS, Shift-JIS, EUC-(JP|CN|TW|KR), UTF8, Big5, CP866, CP936, CP1251, Koi8r encodings
- o Replacement for many of PHP's standard string handling functions.
- o Multibyte regular expressions
- o Transparent encoding handlers via PHP's output handling mechanism

The mcrypt extension lets you encrypt and decrypt data with many popular algorithms: Blowfish, DES, IDEA, Twofish, WAKE, and many others.

```
<?php
$key = 'Is this the potato farm?'
$s   = 'The account balance is $2000';
$alg = MCRYPT_BLOWFISH;
$mode = MCRYPT_MODE_CBC;
$iv = mcrypt_create_iv(mcrypt_get_iv_size($alg,$mode),
                       MCRYPT_DEV_URANDOM);
$ct = mcrypt_encrypt($alg, $key, $s, $mode, $iv);
$pt = mcrypt_decrypt($alg, $key, $ct, $mode, $iv);
?>
```

- o GD (GIF, JPEG, PNG, WBMP)
- o LDAP
- o SNMP
- o IMAP (POP, NNTP)
- o FTP
- o MCAL
- o IMSP
- o IPTC
- o BC/GMP (arbitrary precision math)
- o Hyperwave
- o XML parser
- o PDF generation
- o FDF (PDF forms)
- o System V Semaphores and Shared memory
- o DCOM (Win32 only)
- o Java Connectivity
- o mnogosearch (udmsearch support)
- o Cybermut
- o Iconv
- o Satellite
- o Curl
- o gettext (GNU internationalization)
- o zlib (compressed IO)
- o Charset/text conversion (UTF-8, Cyrillic, Hebrew)
- o Browser capabilities extension
- o EXIF
- o SWF (Flash)
- o ASPELL/PSPELL
- o MCRYPT
- o Cybercash
- o Recode
- o Readline
- o XSLT (Sablotron, libxslt, Xalan)
- o WDDX
- o NIS
- o YAZ (Z39.50 client)
- o Payflow Pro

- o CCVS (Credit Card Verification System)
- o Fribidi
- o Ncurses
- o Muscat

PHP Home Page: <http://www.php.net>

Manual: <http://www.php.net/manual>

Tutorial: <http://www.php.net/tut.php>

Books: <http://www.php.net/books.php>

Code Library: <http://pear.php.net>

More Info: <http://www.sklar.com>

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