

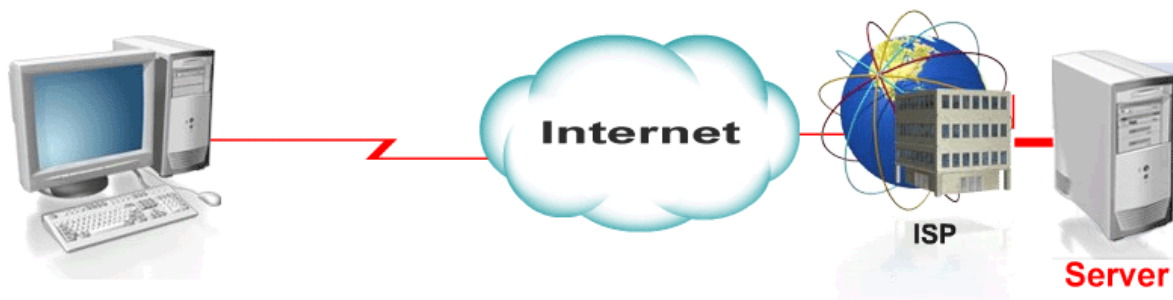
Client - Server

The Client (*The browser*):

- request a Web page
- retrieve (all of) it
- render it

The Server:

- Stores html, media, image etc. files
- Connected to the WWW
- Waits for requests from browsers
- Locates and sends a resource on request



Client-side scripts

- Validate user input
 - Reduce requests needed to be passed to server
 - Access browser
 - Enhance Web pages with HTML (HTML5) / CSS / JavaScript

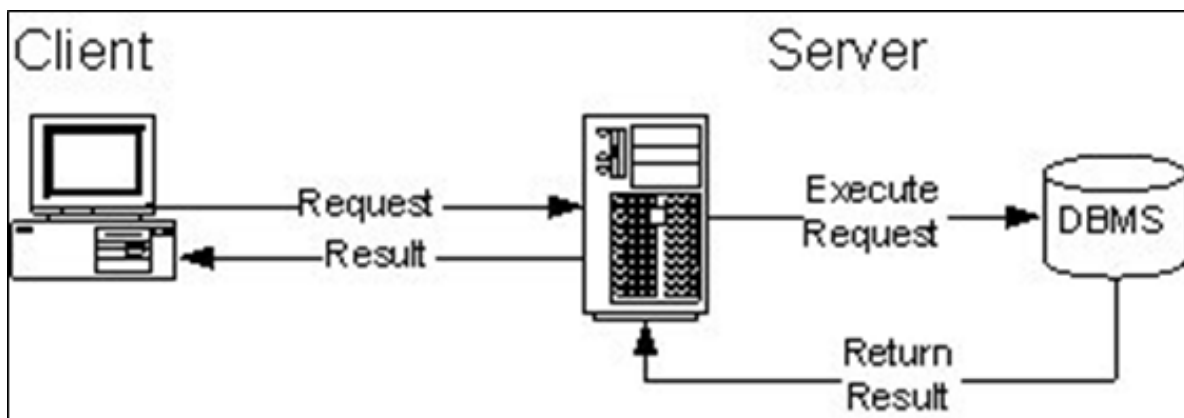
Web Server

Responds to client requests by providing resources

URL (Uniform Resource Locator)

Can access Database Management System (DBMS)

- e.g MySQL - a popular choice of database for use in web applications,



Server-side scripts

- Executed on server
- Generate custom response for clients
- Wide range of programmatic capabilities
- Access to server-side software that extends server functionality

PHP

PHP: Hypertext Preprocessor

Server-side scripting language

Open source

Free

Script runs on server to produce html

.php files

www.php.net

A PHP script is executed on the server

The plain HTML result is sent back to the browser.

A PHP script can be placed anywhere in the document.

PHP code is executed on the server

- generating HTML which is then sent to the client.

The client would receive the results of running that script, but would not know what the underlying code was.

What Can PHP Do?

- PHP can generate dynamic page content
- PHP can create, open, read, write, delete, and close files on the server
- PHP can collect Form data
- PHP can add, delete, modify data in your database
- PHP can be used to control user-access
- PHP can encrypt data

Introduction:

Hello World

echo used to output text onto a web page:

```

<html>
<body>
  <h1> PHP Example (This is HTML ) </h1>

  <?php
    echo "Hello World (This is PHP) ";
  ?>
</body>
</html>

```

To execute the PHP code:

A php file **MUST** be run on a Web Server

- e.g Xampp

Note the Server Address – for example :

- localhost/..... /HelloWorld.php

Server Address (URL)

If it is run on the Client only :

- PHP code will NOT be executed
- Will ONLY view HTML

PHP

PHP is a scripting language (as is Javascript)

PHP is Loosely typed language (similar to Javascript)

- Variable automatically converted to correct data type when to fit assigned value

Variables and Types

Variables start with a \$ symbol followed by a letter or underscore and other alpha_numeric characters – no spaces

```
$color = "purple";
```

PHP IS Case –Sensitive for Variable Names:

```

<?php
  $color = "red";
  echo "My car is " . $color . "<br>";
  echo "My house is " . $COLOR . "<br>";
  echo "My boat is " . $coLOR . "<br>";
?>

```

\$COLOR and \$coLOR are DIFFERENT variables – they have NOT been declared – so will NOT be displayed

Operators

Arithmetic

+ - * / % ++ --

Assignment

= += -= *= /= %= .=

Comparison

== != <> > < >= <=

Logical

&& || !

PHP String Operations

. - concatenate ...a full-stop !!

All of these will output : My name is Brian Shields

```
<?php
echo "My name is " . " Brian Shields ";
// join two text strings

$name = "Brian";
echo "My name is " . $name . " Shields";
// join two text strings and variable (text string)

$name = "Shields";
echo "My name is " . $name . " " . $name;
// join a text string and two variables (text strings) - also need to add a space
character

$fullname = $name . " " . $name;
// create a variable (text string) from two other text strings
echo "My name is " . $fullname;

$text = "My name is " . $name . " " . $name;
// create a variable (text string) which contains all text - including variables
echo $text;
?>
```

Other Functions

```
str_word_count
//counts the number of words in a string
strtoupper
//convert string to UPPER CASE
str_shuffle
//shuffles a string
str_replace
//Replace all occurrences of the search string with the replacement string
```

Other Functions cont...

```
<?php

$name = "Fred";
$sname = "Smith";

$str = $name . " " . $sname;
echo "The string is : " . $str;
echo "<br/>";

$num_words = str_word_count($str);
echo "Word Count of the string is : " . "$num_words";
echo "<br/>";

$upper_word = strtoupper("$sname");
echo "Surname upper case is: " . "$upper_word";
echo "<br/>";

$shuffled_name = str_shuffle("$sname");
echo "The shuffled surname is : " . $shuffled_name;
echo $str;
echo "<br/>";

$str_new = str_replace("Fred", "Mary", $str);
echo "Fred has been replaced by Mary and the new string is : " . $str_new;
echo "<br/>";
?>
```

Selection

If

```
if (condition)
    code to be executed if condition is true;
```

if ... else

```
if (condition)
    code to be executed if condition is true;
else
    code to be executed if condition is false;
```

if ... elseif ... else

```
if (condition)
    code to be executed if condition is true;
elseif (condition)
    code to be executed if condition is true;
else
    code to be executed if condition is false;
```

Switch

```
switch (n)
{
case label1:
    code to be executed if n=label1;
    break;
case label2:
    code to be executed if n=label2;
    break;
default:
    code to be executed if n is different from both label1 and label2;
}
```

Iteration

While

```
while (condition)
{
    code to be executed;
}
```

do ... while

```
do
{
    code to be executed;
}
while (condition);
```

for

```
for (init; condition; increment)
{
    code to be executed;
}
```

foreach

```
foreach ($array as $value)
{
    code to be executed;
}
```

Arrays

Numeric

```
$cars=array("Saab","Volvo","BMW","Toyota");
$cars[0]="Saab";
$cars[1]="Volvo";
```

Associative - each ID key is associated with a value

```
$ages = array("Peter"=>32, "Quagmire"=>30, "Joe"=>34);
$ages['Peter'] = "32";
$ages['Quagmire'] = "30";
```

Functions

script automatically executes when a page is loaded except if it is in a function

```
function functionName()
{
    code to be executed;
}
```

function can be called from anywhere in page

```
<?php
function writeFullName()
{
    echo "Brian Shields";
}
echo "My name is ";
writeFullName();
?>
```

Output: My name is Brian Shields

Parameters

```
<?php
function writeNames($fname)
{
    echo $fname . " Smith.<br />";
}
echo "My name is ";
writeNames("Fred");
echo "My sister's name is ";
writeNames("Jean");
echo "My brother's name is ";
writeNames("John");
?>
```

Output:
My name is Fred Smith
My sister's name is Jean Smith
My brother's name is John Smith

Return Value

```
<?php
function add($x,$y)
{
    $total=$x+$y;
    return $total;
}
//Note the use of String Concatenation
echo "1 + 16 = " . add(1,16);
?>
```

Output: 1 + 16 = 17