Backend Development

PHP Basics

Outline

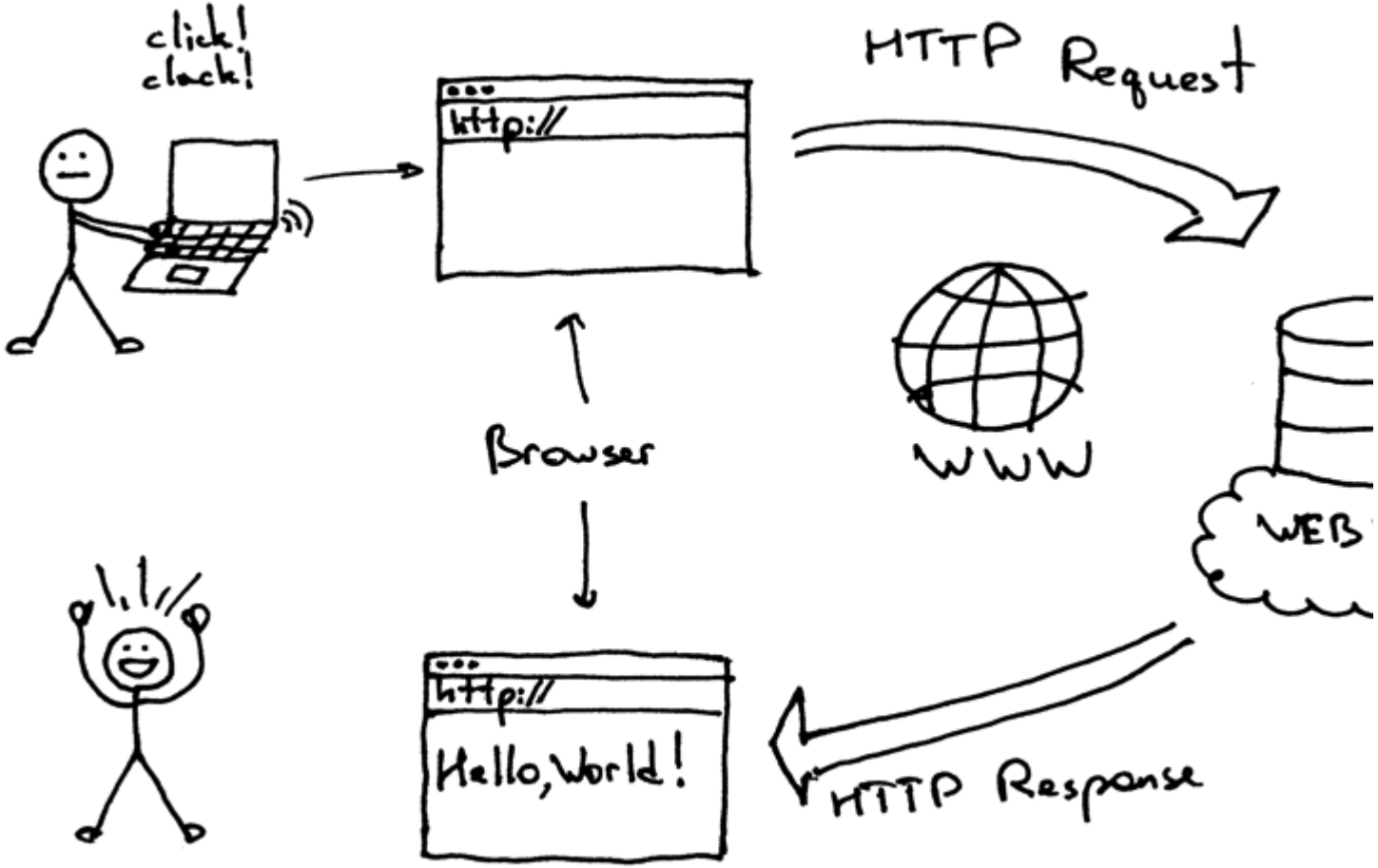
- PHP History
- Why PHP
- What Do We Need
- Installation
- PHP Overview (Variables, Constants, Flow control, ...)

What is back-end development?

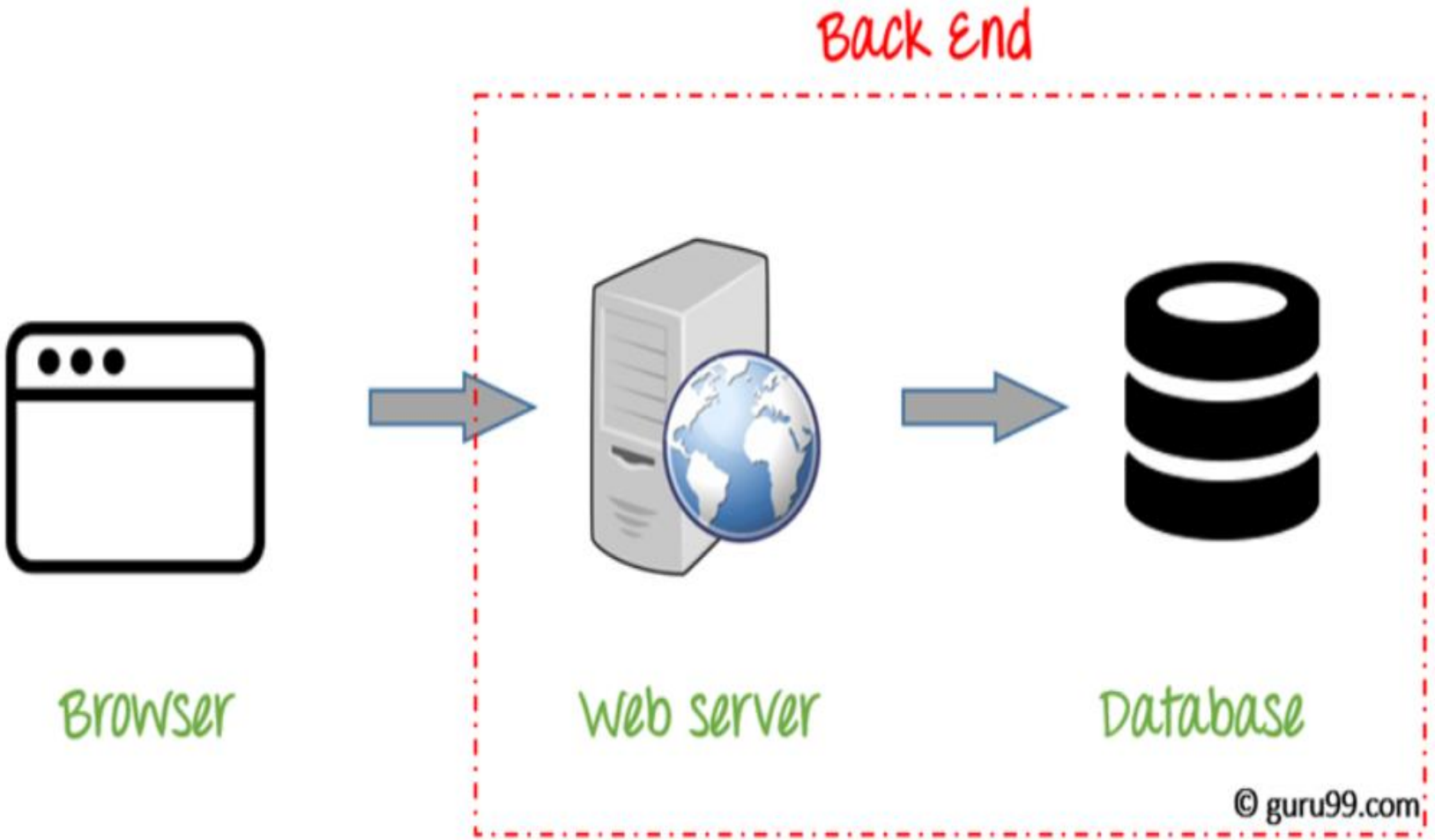
Back-end development means working on server-side software, which focuses on everything you can't see on a website. Back-end developers ensure the website performs correctly, focusing on databases, back-end logic, application programming interface (APIs), architecture, and servers. They use code that helps browsers communicate with databases, store, understand, and delete data.

On a team, back-end developers collaborate with front-end developers, product managers, principal architects, and website testers to build the structure of a website or mobile app. Back-end developers must be familiar with many kinds of tools and frameworks, including languages such as PHP, Python, Java. They make sure the back-end performs quickly and responsively to front-end user requests.

Web Page Life Cycle



Back-End Development



What is PHP?

- PHP is a recursive acronym for "PHP: Hypertext Preprocessor".
- PHP is a server side scripting language that is embedded in HTML. It is used to manage dynamic content, databases, session tracking, even build entire e-commerce sites.
- PHP Syntax is C-Like.

Why PHP?

Web Server Support
Error Reporting
Performance
Security
Platform Independent
Features of PHP
Open Source

Syntax

```php
<?php
// Code Here
?>
```

PHP Comments

```php
<?php
// This is a single-line comment

# This is also a single-line comment


/*
Multi lines
Comments
*/

?>
```

PHP Variables

```php
<?php
$txt = "Hello world!";     //String
$x = 5;    //Integer
$y = 10.5;    //Float
?>
```

Rules for PHP variables

A variable starts with the $ sign, followed by the name of the variable

A variable name must start with a letter or the underscore character

A variable name cannot start with a number

A variable name can only contain alpha-numeric characters and underscores (A-z, 0-9, and _)

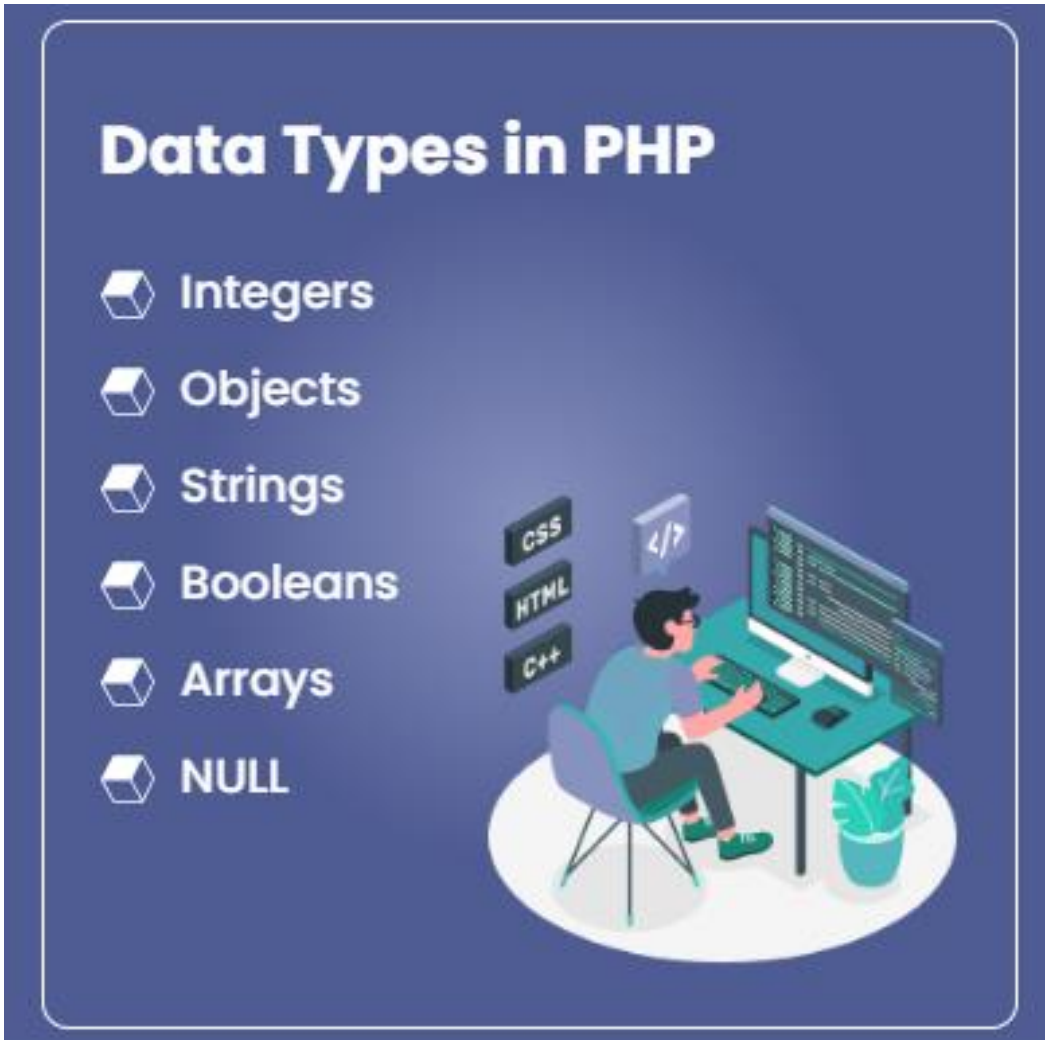
Variable names are case-sensitive ($age and $AGE are two different variables)

Remember that PHP variable names are case-sensitive!

PHP echo Statement

```
<?php
echo "<h2>PHP is Fun!</h2>";
echo "Hello world!<br>";
echo "I'm about to learn PHP!<br>";
echo "This ", "string ", "was ", "made ", "with
multiple parameters.";
?>
```

PHP Data Types



More Details about data types

https://www.w3schools.com/php/php_datatypes.asp

PHP String Functions

```php
echo strlen("Hello world!"); // outputs 12
echo str_word_count("Hello world!"); // outputs 2
echo strrev("Hello world!"); // outputs !dlrow olleH
echo strpos("Hello world!", "world"); // outputs 6
echo str_replace("world", "Dolly", "Hello world!"); //
outputs Hello Dolly!
```

Complete string reference

https://www.w3schools.com/php/php_ref_string.asp

PHP Numbers

```
$x = 5985;
var_dump(is_int($x));
```

is_int()

- is_float()
- is_double() // alias of is_float()

is_numeric()

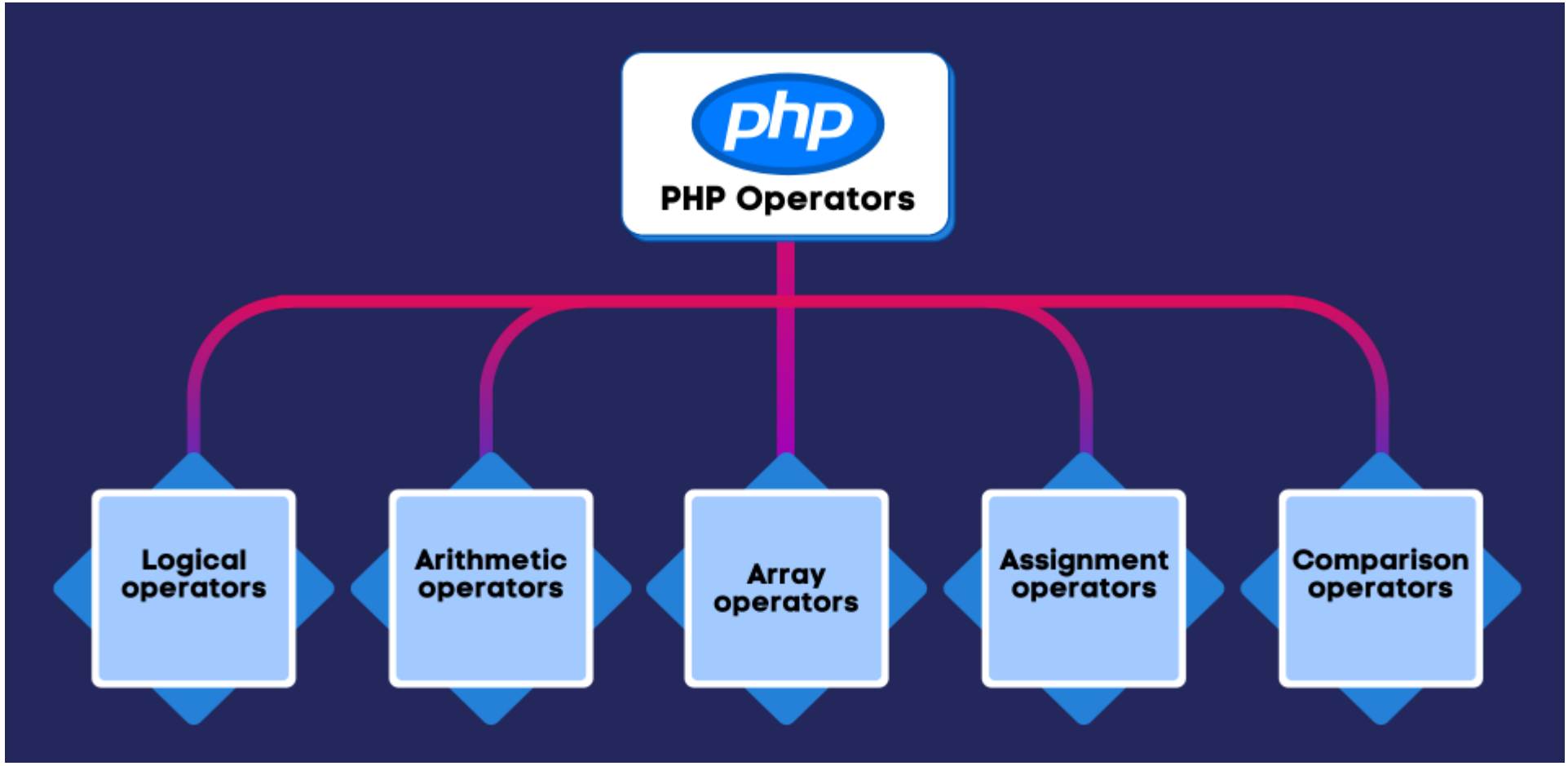
Casting

```php
<?php
// Cast float to int
$x = 23465.768;
$int_cast = (int)$x;
echo $int_cast;

echo "<br>";

// Cast string to int
$x = "23465.768";
$int_cast = (int)$x;
echo $int_cast;
?>
```

PHP Constants

```php
<?php
define("GREETING", "Welcome to W3Schools.com!", true);
echo greeting;
?>
```

PHP Operators



https://www.w3schools.com/php/php_operators.asp

Dates

Date function

https://www.w3schools.com/php/func_date_date.asp

Strtotime function

https://www.php.net/manual/en/function.strtotime.php

4 Ways To Display PHP Variables in HTML

Use delimiters

```
<?php
$first = "foo";
?>
 <p><?php echo $first; ?></p>
```

formatted print

```
$val = "123";
printf("<p>PAD WITH DOTS %'.10d</p>", $val);
```

Use the PHP short tag

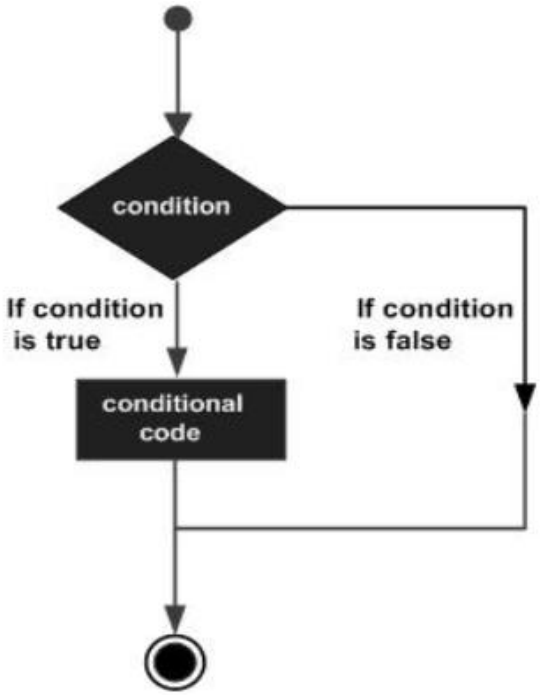
```
<?php
$var = "foo";
?>

<p><?=$var?></p>
```

echo an entire string of HTML

```
<?php
$first = "foo";
$second = "bar";
echo "<p>$first $second</p>";
```

PHP if...else...elseif Statements

```php
<?php
$t = date("H");

if ($t < 20) {
  echo "Have a good day!";
}
?>
```



else

```php
<?php
$t = date("H");

if ($t < 20) {
  echo "Have a good day!";
} else {
  echo "Have a good night!";
}
?>
```

elseif

```php
<?php
$t = date("H");

if ($t < "10") {
  echo "Have a good morning!";
} elseif ($t < "20") {
  echo "Have a good day!";
} else {
  echo "Have a good night!";
}
?>
```

switch

```php
<?php
$favcolor = "red";

switch ($favcolor) {
  case "red":
    echo "Your favorite color is red!";
    break;
  case "blue":
    echo "Your favorite color is blue!";
    break;
  case "green":
    echo "Your favorite color is green!";
    break;
  default:
    echo "Your favorite color is neither red, blue, nor
green!";
}
?>
```

While Loops

```php
<?php
$x = 1;

while($x <= 5) {
  echo "The number is: $x <br>";
  $x++;
}
?>
```

Do while

```php
<?php
$x = 20;

do {
  echo "The number is: $x <br>";
  $x++;
} while ($x <= 5);
?>
```

for

```php
<?php
for ($x = 0; $x <= 10; $x++) {
  echo "The number is: $x <br>";
}
?>
```

For each

```php
<?php
$colors = array("red", "green", "blue", "yellow");

foreach ($colors as $value) {
  echo "$value <br>";
}
?>
```

Break and Continue

```php
<?php
for ($x = 0; $x < 10; $x++) {
  if ($x == 4) {
    continue;
  }
  echo "The number is: $x <br>";
}
?>
```

Functions

```php
<?php
function writeMsg() {
  echo "Hello world!";
}

writeMsg(); // call the function
?>
```

Function Arguments

```php
<?php
function familyName($fname) {
  echo "$fname Refsnes.<br>";
}

familyName("Jani");
familyName("Hege");
```

return

```php
<?php declare(strict_types=1); // strict requirement

function addNumbers(int $a, int $b) {
  return $a + $b;
}
echo addNumbers(5, "5 days");
// since strict is NOT enabled "5 days" is changed to
int(5), and it will return 10
?>
```

Arrays

```php
<?php
$cars = array("Volvo", "BMW", "Toyota");
echo "I like " . $cars[0] . ", " . $cars[1] . " and
" . $cars[2] . ".";
?>
```

Indexed Arrays

```php
<?php
$cars = array("Volvo", "BMW", "Toyota");
echo "I like " . $cars[0] . ", " . $cars[1] . " and
" . $cars[2] . ".";
?>
```

Complete reference
https://www.w3schools.com/php/php_ref_array.asp

Associative Arrays

```php
<?php
$age = array("Peter"=>"35", "Ben"=>"37", "Joe"=>"43");
echo "Peter is " . $age['Peter'] . " years old.";
?>
```

Multidimensional Arrays

```
$cars = array (
  array("Volvo",22,18),
  array("BMW",15,13),
  array("Saab",5,2),
  array("Land Rover",17,15)
);

echo $cars[0][0].": In stock: ".$cars[0][1].", sold:
".$cars[0][2].".<br>";
echo $cars[1][0].": In stock: ".$cars[1][1].", sold:
".$cars[1][2].".<br>";
echo $cars[2][0].": In stock: ".$cars[2][1].", sold:
".$cars[2][2].".<br>";
echo $cars[3][0].": In stock: ".$cars[3][1].", sold:
".$cars[3][2].".<br>";
```

Superglobal - $GLOBALS

```php
<?php
$x = 75;
$y = 25;

function addition() {
  $GLOBALS['z'] = $GLOBALS['x'] + $GLOBALS['y'];
}

addition();
echo $z;
?>
```

Superglobal - $_SERVER

```php
<?php
echo $_SERVER['PHP_SELF'];
echo "<br>";
echo $_SERVER['SERVER_NAME'];
echo "<br>";
echo $_SERVER['HTTP_HOST'];
echo "<br>";
echo $_SERVER['HTTP_REFERER'];
echo "<br>";
echo $_SERVER['HTTP_USER_AGENT'];
echo "<br>";
echo $_SERVER['SCRIPT_NAME'];
?>
```

PHP $_REQUEST

```
<html>
<body>

<form method="post" action="<?php echo $_SERVER['PHP_SELF'];?>">
  Name: <input type="text" name="fname">
  <input type="submit">
</form>

<?php
if ($_SERVER["REQUEST_METHOD"] == "POST") {
  // collect value of input field
  $name = $_REQUEST['fname'];
  if (empty($name)) {
    echo "Name is empty";
  } else {
    echo $name;
  }
}
?>

</body>
</html>
```

Superglobal - $_POST

```php
<html>
<body>

<form method="post" action="<?php echo $_SERVER['PHP_SELF'];?>">
  Name: <input type="text" name="fname">
  <input type="submit">
</form>

<?php
if ($_SERVER["REQUEST_METHOD"] == "POST") {
  // collect value of input field
  $name = $_POST['fname'];
  if (empty($name)) {
    echo "Name is empty";
  } else {
    echo $name;
  }
}
?>

</body>
</html>
```

Superglobal - $_GET

```
<html>
<body>

<?php
echo "Study " . $_GET['subject'] . " at
" . $_GET['web'];
?>

</body>
</html>
```

Create/Retrieve a Cookie

```php
<?php
$cookie_name = "user";
$cookie_value = "John Doe";
setcookie($cookie_name, $cookie_value, time() +
(86400 * 30), "/"); // 86400 = 1 day
?>
<html>
<body>

<?php
if(!isset($_COOKIE[$cookie_name])) {
  echo "Cookie named '" . $cookie_name . "' is not set!";
} else {
  echo "Cookie '" . $cookie_name . "' is set!<br>";
  echo "Value is: " . $_COOKIE[$cookie_name];
}
?>

</body>
</html>
```

https://www.w3schools.com/php/php_cookies.asp

sessions

```php
<?php
// Start the session
session_start();
?>
<!DOCTYPE html>
<html>
<body>

<?php
// Set session variables
$_SESSION["favcolor"] = "green";
$_SESSION["favanimal"] = "cat";
echo "Session variables are set.";
?>

</body>
</html>
```

https://www.w3schools.com/php/php_sessions.asp

KOICA
Korea International Cooperation Agency

السويد
Sverige

ECTD
Egyptian Council
For Training & Development

التوظيف و العمل اللائق للمرأة

منظمة العمل الدولية

هيئة الأمم المتحدة للمرأة

المجلس القومي للمرأة
THE NATIONAL COUNCIL FOR WOMEN

Thank you

php