

# PHP Programming

WEEK 6-8

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## What is PHP?

- PHP is an acronym for "PHP: Hypertext Preprocessor"
- PHP is a widely-used, open source scripting language
- PHP scripts are executed on the server
- PHP is free to download and use

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## What is a PHP File?

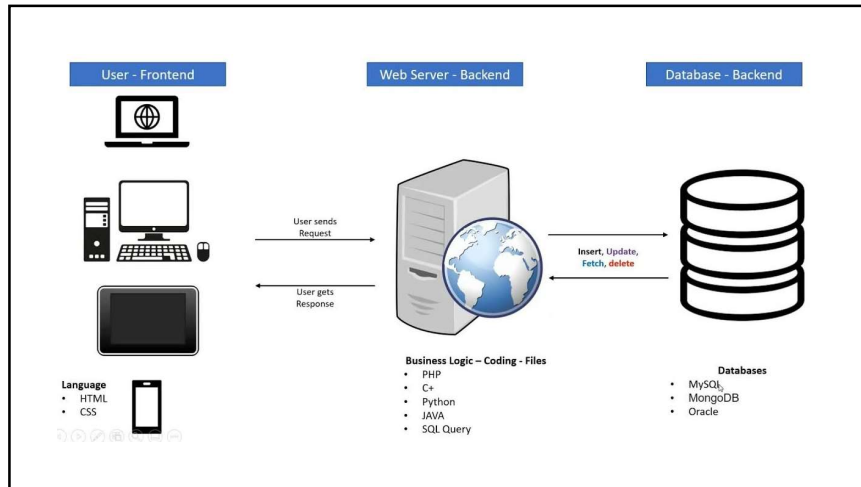
- PHP files can contain text, HTML, CSS, JavaScript, and PHP code
- PHP code is executed on the server, and the result is returned to the browser as plain HTML
- PHP files have extension ".php"

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## 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 send and receive cookies
- PHP can add, delete, modify data in your database
- PHP can be used to control user-access
- PHP can encrypt data

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## PHP Installation

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### What Do I Need?

- To start using PHP, you can:
  - Find a web host with PHP and MySQL support
  - Install a web server on your own PC, and then install PHP and MySQL
  - Or (next page)

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### Download and Install

- **XAMPP**
  - a cross-platform web server that is free and open-source.
  - short form for Cross-Platform, Apache, MySQL, PHP, and Perl.
  - a popular cross-platform web server that allows programmers to write and test their code on a local webserver.
- **WAMP**
  - an acronym that stands for Windows, Apache, MySQL, and PHP.
  - acts like a virtual server on your computer.

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## Basic PHP Syntax

- A PHP script can be placed anywhere in the document.
- A PHP script starts with `<?php` and ends with `?>`

```
<?php
    // PHP code goes here
?>
```

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- The default file extension for PHP files is ".php".
- A PHP file normally contains HTML tags, and some PHP scripting code.

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## Example

```
<!DOCTYPE html>
<html>
<body>

<h1>My first PHP page</h1>

<?php
echo "Hello World!";
?>

</body>
</html>
```

- Note: PHP statements end with a semicolon (;).

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## Comments in PHP

- A comment in PHP code is a line that is not executed as a part of the program.
- Its only purpose is to be read by someone who is looking at the code.
- Comments can be used to:
  - Let others understand your code
  - Remind yourself of what you did - Most programmers have experienced coming back to their own work a year or two later and having to re-figure out what they did. Comments can remind you of what you were thinking when you wrote the code

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## Example

```
<!DOCTYPE html>
<html>
<body>

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

# This is also a single-line comment
?>

</body>
</html>
```

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## PHP Variables

- Variables are "containers" for storing information.
- In PHP, a variable starts with the \$ sign, followed by the name of the variable:

```
<?php
$txt = "Hello world!";
$x = 5;
$y = 10.5;

?>
```

- Note: When you assign a text value to a variable, put quotes around the value.
- Note: Unlike other programming languages, PHP has no command for declaring a variable. It is created the moment you first assign a value to it.

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## 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!

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## Output Variables

- The PHP echo statement is often used to output data to the screen.

```
<?php
$txt = "TUPVisayas";
echo "I love $txt!";

?>
or
<?php
$txt = " TUPVisayas ";
echo "I love " . $txt . "!";

?>
```

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## PHP Variables Scope

- In PHP, variables can be declared anywhere in the script.
- The scope of a variable is the part of the script where the variable can be referenced/used.
- PHP has three different variable scopes:
  - local
  - global
  - static

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## Global Scope

- A variable declared **outside** a function has a GLOBAL SCOPE and can only be accessed outside a function:

```
<?php
    $x = 5; // global scope

    function myTest() {
        // using x inside this function will generate an error
        echo "<p>Variable x inside function is: $x</p>";
    }
    myTest();

    echo "<p>Variable x outside function is: $x</p>";

?>
```

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## Local Scope

- A variable declared **within** a function has a LOCAL SCOPE and can only be accessed within that function:

```
<?php
    function myTest() {
        $x = 5; // local scope
        echo "<p>Variable x inside function is: $x</p>";
    }
    myTest();

    // using x outside the function will generate an error
    echo "<p>Variable x outside function is: $x</p>";

?>
```

You can have local variables with the same name in different functions, because local variables are only recognized by the function in which they are declared.

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## PHP echo and print Statements

- With PHP, there are two basic ways to get output: **echo** and **print**.
- **echo** and **print** are more or less the same. They are both used to output data to the screen.

<pre>&lt;?php \$txt1 = "Learn PHP"; \$txt2 = "TUPVisayas"; \$x = 5; \$y = 4;  echo "&lt;h2&gt;" . \$txt1 . "&lt;/h2&gt;"; echo "Study PHP at " . \$txt2 . "&lt;br&gt;"; echo \$x + \$y;  ?&gt;</pre>	<pre>&lt;?php \$txt1 = "Learn PHP"; \$txt2 = "TUPVisayas"; \$x = 5; \$y = 4;  print "&lt;h2&gt;" . \$txt1 . "&lt;/h2&gt;"; print "Study PHP at " . \$txt2 . "&lt;br&gt;"; print \$x + \$y;  ?&gt;</pre>
--	---

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## PHP Data Types

- Variables can store data of different types, and different data types can do different things.
- PHP supports the following data types:
  - String
  - Integer
  - Float (floating point numbers - also called double)
  - Boolean
  - Array
  - Object
  - NULL
  - Resource

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## PHP String

- A string is a sequence of characters, like "Hello world!".
- A string can be any text inside quotes. You can use single or double quotes:

```
<?php
$x = "Hello world!";
$y = 'Hello world!';

echo $x;
echo "<br>";
echo $y;
?>
```

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## PHP Integer

- An integer data type is a non-decimal number between -2,147,483,648 and 2,147,483,647.
- Rules for integers:
  - An integer must have at least one digit
  - An integer must not have a decimal point
  - An integer can be either positive or negative
  - Integers can be specified in: decimal (base 10), hexadecimal (base 16), octal (base 8), or binary (base 2) notation

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## PHP Integer Example

- In the following example \$x is an integer. The PHP var\_dump() function returns the data type and value:

```
<?php
$x = 5985;
var_dump($x);
?>
```

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## PHP Float

- A float (floating point number) is a number with a decimal point or a number in exponential form.
- In the following example \$x is a float. The PHP var\_dump() function returns the data type and value:

```
<?php
$x = 10.365;
var_dump($x);
?>
```

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## PHP Boolean

- A Boolean represents two possible states: TRUE or FALSE.

```
$x = true;
$y = false;
```

- Booleans are often used in conditional testing.

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## PHP Array

- An array stores multiple values in one single variable.
- In the following example \$cars is an array. The PHP var\_dump() function returns the data type and value:

```
<?php
$cars = array("Volvo", "BMW", "Toyota");
var_dump($cars);
?>
```

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## PHP Object

- Classes and objects are the two main aspects of object-oriented programming.
- A class is a template for objects, and an object is an instance of a class.

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## PHP NULL Value

- Null is a special data type which can have only one value: NULL.
- A variable of data type NULL is a variable that has no value assigned to it.
- If a variable is created without a value, it is automatically assigned a value of NULL.
- Variables can also be emptied by setting the value to NULL:

```
<?php
$x = "Hello world!";
$x = null;
var_dump($x);
?>
```

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## PHP Resource

- The special resource type is not an actual data type. It is the storing of a reference to functions and resources external to PHP.
- A common example of using the resource data type is a database call.

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## PHP String Functions

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### strlen() - Return the Length of a String

- The PHP `strlen()` function returns the length of a string.

```
<?php
echo strlen("Hello world!"); // outputs 12
?>
```

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## str\_word\_count() - Count Words in a String

- The PHP `str_word_count()` function counts the number of words in a string.

```
<?php
echo str_word_count("Hello world!"); // outputs 2
?>
```

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## strrev() - Reverse a String

- The PHP `strrev()` function reverses a string.

```
<?php
echo strrev("Hello world!"); // outputs !dlrow olleH
?>
```

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## strpos() - Search For a Text Within a String

- The PHP `strpos()` function searches for a specific text within a string.
- If a match is found, the function returns the character position of the first match. If no match is found, it will return FALSE.

```
<?php
echo strpos("Hello world!", "world"); // outputs 6
?>
```

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## str\_replace() - Replace Text Within a String

- The PHP `str_replace()` function replaces some characters with some other characters in a string.

```
<?php
echo str_replace("world", "Dolly", "Hello world!");
// outputs Hello Dolly!
?>
```

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## PHP Numbers

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## PHP Numbers

- One thing to notice about PHP is that it provides automatic data type conversion.
- So, if you assign an integer value to a variable, the type of that variable will automatically be an integer. Then, if you assign a string to the same variable, the type will change to a string.
- This automatic conversion can sometimes break your code.

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## PHP Integers

- 2, 256, -256, 10358, -179567 are all integers.
- An integer data type is a non-decimal number between -2147483648 and 2147483647 in 32 bit systems
- and between -9223372036854775808 and 9223372036854775807 in 64 bit systems
- A value greater (or lower) than this, will be stored as float, because it exceeds the limit of an integer

**Note:** Another important thing to know is that even if  $4 * 2.5$  is 10, the result is stored as float, because one of the operands is a float (2.5).

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## PHP Integers

- Here are some rules for integers:
  - An integer must have at least one digit
  - An integer must NOT have a decimal point
  - An integer can be either positive or negative
  - Integers can be specified in three formats: decimal (10-based), hexadecimal (16-based - prefixed with 0x) or octal (8-based - prefixed with 0)

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## PHP Integers

- PHP has the following predefined constants for integers:
  - PHP\_INT\_MAX - The largest integer supported
  - PHP\_INT\_MIN - The smallest integer supported
  - PHP\_INT\_SIZE - The size of an integer in bytes
- PHP has the following functions to check if the type of a variable is integer:
  - is\_int()
  - is\_integer() - alias of is\_int()
  - is\_long() - alias of is\_int()

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## Example

- Check if the type of a variable is integer:

```
<?php
$x = 5985;
var_dump(is_int($x));

$x = 59.85;
var_dump(is_int($x));
?>
```

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## PHP Floats

- A float is a number with a decimal point or a number in exponential form.
- 2.0, 256.4, 10.358, 7.64E+5, 5.56E-5 are all floats.
- The float data type can commonly store a value up to 1.7976931348623E+308 (platform dependent), and have a maximum precision of 14 digits.

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## PHP Floats

- PHP has the following predefined constants for floats (from PHP 7.2):
  - PHP\_FLOAT\_MAX - The largest representable floating point number
  - PHP\_FLOAT\_MIN - The smallest representable positive floating point number
  - PHP\_FLOAT\_DIG - The number of decimal digits that can be rounded into a float and back without precision loss
  - PHP\_FLOAT\_EPSILON - The smallest representable positive number x, so that  $x + 1.0 \neq 1.0$
- PHP has the following functions to check if the type of a variable is float:
  - is\_float()
  - is\_double() - alias of is\_float()

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## Example

- Check if the type of a variable is float:

```
<?php
$x = 10.365;
var_dump(is_float($x));
?>
```

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## PHP Infinity

- A numeric value that is larger than PHP\_FLOAT\_MAX is considered infinite.
- PHP has the following functions to check if a numeric value is finite or infinite:
  - is\_finite()
  - is\_infinite()
- However, the PHP var\_dump() function returns the data type and value:

```
<?php
$x = 1.9e411;
var_dump($x);
?>
```

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## PHP NaN

- NaN stands for Not a Number.
- NaN is used for impossible mathematical operations.
- PHP has the following functions to check if a value is not a number:
  - is\_nan()

```
<?php
$x = acos(8);
var_dump($x);
?>
```

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## PHP Numerical Strings

- The PHP `is_numeric()` function can be used to find whether a variable is numeric.
- The function returns true if the variable is a number or a numeric string, false otherwise.

```
<?php
$x = 5985;
var_dump(is_numeric($x));

$x = "5985";
var_dump(is_numeric($x));

$x = "59.85" + 100;
var_dump(is_numeric($x));

$x = "Hello";
var_dump(is_numeric($x));
?>
```

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## PHP Casting Strings and Floats to Integers

- Sometimes you need to cast a numerical value into another data type.
- The `(int)`, `(integer)`, or `intval()` function are often used to convert a value to an integer.

```
<?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;
?>
```

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## PHP Math

PHP has a set of math functions that allows you to perform mathematical tasks on numbers.

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## PHP pi() Function

- The `pi()` function returns the value of PI:

```
<?php
echo(pi()); // returns 3.1415926535898
?>
```

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## PHP min() and max() Functions

- The `min()` and `max()` functions can be used to find the lowest or highest value in a list of arguments:

```
<?php
echo(min(0, 150, 30, 20, -8, -200)); // returns -200
echo(max(0, 150, 30, 20, -8, -200)); // returns 150
?>
```

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## PHP abs() Function

- The **abs()** function returns the absolute (positive) value of a number:

```
<?php
echo(abs(-6.7)); // returns 6.7
?>
```

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## PHP sqrt() Function

- The **sqrt()** function returns the square root of a number:

```
<?php
echo(sqrt(64)); // returns 8
?>
```

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## PHP round() Function

- The **round()** function rounds a floating-point number to its nearest integer:

```
<?php
echo(round(0.60)); // returns 1
echo(round(0.49)); // returns 0
?>
```

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## Random Numbers

- The **rand()** function generates a random number:

```
<?php
echo(rand());
?>
```

- To get more control over the random number, you can add the optional min and max parameters to specify the lowest integer and the highest integer to be returned.

```
<?php
echo(rand(10, 100));
?>
```

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## PHP Constants

- Constants are like variables except that once they are defined they cannot be changed or undefined.
- A constant is an identifier (name) for a simple value. The value cannot be changed during the script.
- A valid constant name starts with a letter or underscore (no \$ sign before the constant name).

**Note:** Unlike variables, constants are automatically global across the entire script.

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## Create a PHP Constant

- To create a constant, use the define() function.
- Syntax

```
define(name, value, case-insensitive)
```

- Parameters:
  - name: Specifies the name of the constant
  - value: Specifies the value of the constant
  - case-insensitive: Specifies whether the constant name should be case-insensitive. Default is false

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## Example

- Create a constant with a case-sensitive name:

```
<?php
define("GREETING", "Welcome to TUPVisayas!");
echo GREETING;
?>
```

- Create a constant with a case-insensitive name:

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

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## PHP Constant Arrays

- In PHP7, you can create an Array constant using the define() function.

```
<?php
define("cars", [
    "Alfa Romeo",
    "BMW",
    "Toyota"
]);
echo cars[0];
?>
```

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## Constants are Global

- Constants are automatically global and can be used across the entire script.

```
<?php
define("GREETING", "Welcome to TUPVisayas!");

function myTest() {
    echo GREETING;
}

myTest();
?>
```

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## PHP Operators

- Operators are used to perform operations on variables and values.
- PHP divides the operators in the following groups:
  - Arithmetic operators
  - Assignment operators
  - Comparison operators
  - Increment/Decrement operators
  - Logical operators
  - String operators
  - Array operators
  - Conditional assignment operators

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## PHP Arithmetic Operators

- The PHP arithmetic operators are used with numeric values to perform common arithmetical operations, such as addition, subtraction, multiplication etc.

Operator	Name	Example	Result
+	Addition	\$x + \$y	Sum of \$x and \$y
-	Subtraction	\$x - \$y	Difference of \$x and \$y
*	Multiplication	\$x * \$y	Product of \$x and \$y
/	Division	\$x / \$y	Quotient of \$x and \$y
%	Modulus	\$x % \$y	Remainder of \$x divided by \$y
**	Exponentiation	\$x ** \$y	Result of raising \$x to the \$y'th power

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## PHP Assignment Operators

- The PHP assignment operators are used with numeric values to write a value to a variable.
- The basic assignment operator in PHP is "=". It means that the left operand gets set to the value of the assignment expression on the right.

Assignment	Same as...	Description
x = y	x = y	The left operand gets set to the value of the expression on the right
x += y	x = x + y	Addition
x -= y	x = x - y	Subtraction
x *= y	x = x * y	Multiplication
x /= y	x = x / y	Division
x %= y	x = x % y	Modulus

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## PHP Comparison Operators

- The PHP comparison operators are used to compare two values (number or string):

Operator	Name	Example	Result
==	Equal	\$x == \$y	Returns true if \$x is equal to \$y
===	Identical	\$x === \$y	Returns true if \$x is equal to \$y, and they are of the same type
!=	Not equal	\$x != \$y	Returns true if \$x is not equal to \$y
<>	Not equal	\$x <> \$y	Returns true if \$x is not equal to \$y
!==	Not identical	\$x !== \$y	Returns true if \$x is not equal to \$y, or they are not of the same type
>	Greater than	\$x > \$y	Returns true if \$x is greater than \$y
<	Less than	\$x < \$y	Returns true if \$x is less than \$y
>=	Greater than or equal to	\$x >= \$y	Returns true if \$x is greater than or equal to \$y
<=	Less than or equal to	\$x <= \$y	Returns true if \$x is less than or equal to \$y
<=>	Spaceship	\$x <=> \$y	Returns an integer less than, equal to, or greater than zero, depending on if \$x is less than, equal to, or greater than \$y. Introduced in PHP 7.

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## PHP Increment / Decrement Operators

- The PHP increment operators are used to increment a variable's value.
- The PHP decrement operators are used to decrement a variable's value.

Operator	Name	Description
++\$x	Pre-increment	Increments \$x by one, then returns \$x
\$x++	Post-increment	Returns \$x, then increments \$x by one
--\$x	Pre-decrement	Decrements \$x by one, then returns \$x
\$x--	Post-decrement	Returns \$x, then decrements \$x by one

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## PHP Logical Operators

- The PHP logical operators are used to combine conditional statements.

Operator	Name	Example	Result
and	And	\$x and \$y	True if both \$x and \$y are true
or	Or	\$x or \$y	True if either \$x or \$y is true
xor	Xor	\$x xor \$y	True if either \$x or \$y is true, but not both
&&	And	\$x && \$y	True if both \$x and \$y are true
	Or	\$x    \$y	True if either \$x or \$y is true
!	Not	!\$x	True if \$x is not true

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## PHP String Operators

- PHP has two operators that are specially designed for strings.

Operator	Name	Example	Result
.	Concatenation	\$txt1 . \$txt2	Concatenation of \$txt1 and \$txt2
.=	Concatenation assignment	\$txt1 .= \$txt2	Appends \$txt2 to \$txt1

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## PHP Array Operators

- The PHP array operators are used to compare arrays.

Operator	Name	Example	Result
+	Union	<code>\$x + \$y</code>	Union of <code>\$x</code> and <code>\$y</code>
<code>==</code>	Equality	<code>\$x == \$y</code>	Returns true if <code>\$x</code> and <code>\$y</code> have the same key/value pairs
<code>===</code>	Identity	<code>\$x === \$y</code>	Returns true if <code>\$x</code> and <code>\$y</code> have the same key/value pairs in the same order and of the same types
<code>!=</code>	Inequality	<code>\$x != \$y</code>	Returns true if <code>\$x</code> is not equal to <code>\$y</code>
<code>&lt;&gt;</code>	Inequality	<code>\$x &lt;&gt; \$y</code>	Returns true if <code>\$x</code> is not equal to <code>\$y</code>
<code>!==</code>	Non-identity	<code>\$x !== \$y</code>	Returns true if <code>\$x</code> is not identical to <code>\$y</code>

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## PHP Conditional Assignment Operators

- The PHP conditional assignment operators are used to set a value depending on conditions:

Operator	Name	Example	Result
<code>?:</code>	Ternary	<code>\$x = expr1 ? expr2 : expr3</code>	Returns the value of <code>\$x</code> . The value of <code>\$x</code> is <code>expr2</code> if <code>expr1</code> = TRUE. The value of <code>\$x</code> is <code>expr3</code> if <code>expr1</code> = FALSE
<code>??</code>	Null coalescing	<code>\$x = expr1 ?? expr2</code>	Returns the value of <code>\$x</code> . The value of <code>\$x</code> is <code>expr1</code> if <code>expr1</code> exists, and is not NULL. If <code>expr1</code> does not exist, or is NULL, the value of <code>\$x</code> is <code>expr2</code> . Introduced in PHP 7

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## PHP if...else...elseif Statements

- Conditional statements are used to perform different actions based on different conditions.
- In PHP we have the following conditional statements:
  - `if` statement - executes some code if one condition is true
  - `if...else` statement - executes some code if a condition is true and another code if that condition is false
  - `if...elseif...else` statement - executes different codes for more than two conditions
  - `switch` statement - selects one of many blocks of code to be executed

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## PHP - The if Statement

- The `if` statement executes some code if one condition is true.
- Syntax

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

- Example

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

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## PHP - The if...else Statement

- The **if...else** statement executes some code if a condition is true and another code if that condition is false.

- Syntax

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

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## Example

- Output "Have a good day!" if the current time is less than 20, and "Have a good night!" otherwise:

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

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

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## PHP - The if...elseif...else Statement

- The **if...elseif...else** statement executes different codes for more than two conditions.

- Syntax

```
if (condition) {
    code to be executed if this condition is true;
} elseif (condition) {
    code to be executed if first condition is false and this
    condition is true;
} else {
    code to be executed if all conditions are false;
}
```

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## Example

- Output "Have a good morning!" if the current time is less than 10, and "Have a good day!" if the current time is less than 20. Otherwise it will output "Have a good night!":

```
<?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!";
}
?>
```

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## PHP - The switch Statement

- The **switch** statement is used to perform different actions based on different conditions.
- Use the switch statement to **select one of many blocks of code to be executed**.

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## PHP - The switch Statement

### • Syntax

```
switch (n) {
  case Label1:
    code to be executed if n=Label1;
    break;
  case Label2:
    code to be executed if n=Label2;
    break;
  case Label3:
    code to be executed if n=Label3;
    break;
  ...
  default:
    code to be executed if n is different from all Labels;
}
```

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## Example

```
<?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!";
}
?>
```

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## PHP Loops

- Often when you write code, you want the same block of code to run over and over again a certain number of times.
- So, instead of adding several almost equal code-lines in a script, we can use loops.
- Loops are used to execute the same block of code again and again, as long as a certain condition is true.
- In PHP, we have the following loop types:
  - **while** - loops through a block of code as long as the specified condition is true
  - **do...while** - loops through a block of code once, and then repeats the loop as long as the specified condition is true
  - **for** - loops through a block of code a specified number of times
  - **foreach** - loops through a block of code for each element in an array

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## PHP while Loop

- The **while** loop - Loops through a block of code as long as the specified condition is true.
- Syntax

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

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## Examples

- The example below displays the numbers from 1 to 5:

```
<?php
$x = 1;

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

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## PHP do while Loop

- The **do...while** loop - Loops through a block of code once, and then repeats the loop as long as the specified condition is true.
- Syntax

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

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## Example

```
<?php
$x = 1;

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

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## PHP for Loop

- The **for** loop - Loops through a block of code a specified number of times.
- Syntax
 

```
for (init counter; test counter; increment/decrement counter) {
    code to be executed for each iteration;
}
```
- Parameters:
  - **init counter**: Initialize the loop counter value
  - **test counter**: Evaluated for each loop iteration. If it evaluates to TRUE, the loop continues. If it evaluates to FALSE, the loop ends.
  - **Increment/decrement counter**: Increases/decreases the loop counter value

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## Examples

- The example below displays the numbers from 0 to 10:

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

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## PHP foreach Loop

- The **foreach** loop - Loops through a block of code for each element in an array.
- Syntax
 

```
foreach ($array as $value) {
    code to be executed;
}
```
- For every loop iteration, the value of the current array element is assigned to \$value and the array pointer is moved by one, until it reaches the last array element.

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## Examples

- The following example will output the values of the given array (\$colors):

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

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

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## Example

- The following example will output both the keys and the values of the given array (\$age):

```
<?php
$age = array("Peter"=>"35", "Ben"=>"37", "Joe"=>"43");

foreach($age as $x => $val) {
    echo "$x = $val<br>";
}
?>
```

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## PHP Break

- The **break** statement can also be used to jump out of a loop.
- This example jumps out of the loop when x is equal to 4:

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

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## PHP Continue

- The **continue** statement breaks one iteration (in the loop), if a specified condition occurs, and continues with the next iteration in the loop.
- This example skips the value of 4:

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

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