

PHP Cheat Sheet

Hello World

```
<?php
echo 'Hello, World!';
```

PHP Tags

Tag	Description
<?php	Standard opening tag
<?= \$foo	Short echo tag
<?	Short opening tag (discouraged)
?>	Standard closing tag

Variables

```
$greeting = 'Hello, World!';
echo $greeting; // Hello, World!
```

Constants

```
const CONSTANT = 'value';
define('RUNTIME_CONSTANT', CONSTANT);

echo CONSTANT; // value
echo RUNTIME_CONSTANT; // value
```

Strings

```
$name = 'World';
echo 'Hello, $name!'; // Hello, $name!
echo "Hello, $name!"; // Hello, World!
echo "Hello, {$name}!"; // Hello, World!

echo <<<END
This is a multi-line string
in HEREDOC syntax (with interpolation).
END;

echo <<<'END'
This is a multi-line string
in NOWDOC syntax (without interpolation).
END;
```

Integers

Example	Value
28	28
10_000 (PHP 7.4)	10000
-28	-28
012	10 (octal)
0x0A	10 (hexadecimal)
0b1010	10 (binary)

FLOATS

Example	Value
1.234	1.234
-1.2	-1.2
1.2e3	1200 (scientific notation)
7E-3	0.007 (scientific notation)

Arrays

```
$array = [1, 2, 3];
$array[] = 4;
$array[4] = 5;
```

FUNCTIONS

```
function foo(int $a, int $b = 5): int
{
    return $a + $b;
}
foo(1, 2); // 3
foo(1); // 6
```

Named Parameters (PHP 8.0)

```
function foo(string $a, string $b): string
{
    return $a . $b;
}
foo(b: 'World!', a: 'Hello, '); // Hello, World!
```

Anonymous Functions (Closures)

```
$y = 3;
$foo = function(int $x) use ($y): int {
    return $x + $y;
};
$foo(1); // 4
```

Arrow Functions (PHP 7.4)

```
$y = 3;
$foo = fn(int $x): int => $x + $y;
$foo(1); // 4
```

Generators

```
function generate(): iterable
{
    yield 1;
    yield 2;
}

foreach (generate() as $value) {
    echo $value;
}
```

Comments

```
// This is a one line C++ style comment
# This is a one line shell-style comment
/* This is a
   multi-line comment */

/**
 * This is a PHPDoc docblock
 * @param string[] $bar
 * @return void
 */
function foo(array $bar): void
{}
```

Atomic / Built-in Types

Type	Description
null	NULL (no value)
bool	Boolean (true or false)
int	Integer
float	Floating point number
string	String
array	Array
object (PHP 7.1)	Object
resource	Reference to an external resource
callable	Callback function
void (PHP 7.1)	Function does not return a value
never (PHP 8.1)	Function never terminates
false (PHP 8.0)	false
true (PHP 8.2)	true

Composite Types & Type Aliases

Type	Description
?string (PHP 7.1)	Nullable type: string or null
string bool (PHP 8.0)	Union type: string or bool
Foo&Bar (PHP 8.1)	Intersection type: Foo and Bar
(A&B) null (PHP 8.2)	Disjunctive Normal Form (DNF)
iterable (PHP 7.1)	array or Traversable
mixed (PHP 8.0)	Any type

If/Else

```
if ($a > $b) {
    echo "a is greater than b";
} elseif ($a == $b) {
    echo "a is equal to b";
} else {
    echo "a is less than b";
}
```

While

```
while ($i < 10) {
    echo $i++;
}
```

Do/While

```
do {
    echo $i++;
} while ($i < 10);
```

For

```
for ($i = 0; $i < 10; $i++) {
    echo $i;
}
```

Foreach

```
foreach ($array as $value) {
    echo $value;
}

foreach ($array as $key => $value) {
    echo "$key: $value";
}
```

Switch

```
switch ($i) {
    case 0:
    case 1:
        echo "i equals 0 or 1";
        break;
    default:
        echo "i is not equal to 0 or 1";
}
```

Match (PHP 8.0)

```
$foo = match ($i) {
    0 => "i is 0",
    1, 2 => "i is 1 or 2",
    default => "i is not 0, 1 or 2",
};
```

Enumerations (PHP 8.1)

```
enum Suit {
    case Hearts;
    case Diamonds;
    case Clubs;
    case Spades;
}
```

```
$suit = Suit::Hearts;
$suit->name; // Hearts
```

Backed Enumerations (PHP 8.1)

```
enum Suit: string {
    case Hearts = '♥';
    case Diamonds = '♦';
    case Clubs = '♣';
    case Spades = '♠';
}
```

```
$hearts = Suit::from('♥');
$hearts->value; // '♥'
```

Language Constructs

Construct	Description
echo \$string	Output one or more strings
print \$string	Output a string and return 1
unset(\$var)	Destroy the specified variable(s)
isset(\$var)	Determine if a variable is set
empty(\$var)	Determine if a variable is empty
die()	Output a message and terminate
exit()	Output a message and terminate
include <file>	Include and evaluate a file or throw a warning if it fails
require <file>	Include and evaluate a file or throw an error if it fails
include_once <file>	Include and evaluate a file once only or throw a warning if it fails
require_once <file>	Include and evaluate a file once only or throw an error if it fails

Object-Oriented Programming

```
interface FooInterface
{
    public function baz(): string;
}

class Foo extends Bar implements FooInterface
{
    private string $bar;

    public const string BAZ = 'Hello, ';

    public function __construct(string $bar)
    {
        $this->bar = $bar;
    }

    public function baz(): string
    {
        return self::BAZ . $this->bar;
    }
}

$foo = new Foo("World!");
echo $foo->baz(); // Hello, World!
echo Foo::BAZ; // Hello,
```

Class Keywords

Keyword	Description
abstract	Cannot be instantiated
final	Cannot be extended
extends	Extends another class
implements	Implements an interface
readonly (PHP 8.2)	All properties are read-only

Method keywords

Keyword	Description
static	Can be called statically, cannot access <code>\$this</code>
abstract	Must be implemented by subclasses
final	Subclasses cannot override

Property Keywords

Keyword	Description
static	Can be accessed statically
readonly (PHP 8.1)	Can only be set in the constructor

Method/Property/Constant Visibility

Keyword	Accessible from
public	Anywhere
protected	The current class and subclasses
private	The current class only

Constructor Property Promotion (8.0)

```
class Foo
{
    public function __construct(private string $bar)
    {}
}
```

Property Hooks (PHP 8.4)

```
class Foo
{
    public string $name {
        // (string $value) can be omitted
        set (string $value) {
            $this->name = strtolower($value);
        }
        // Short (closure-style) syntax
        get => ucfirst($this->name);
    }
}
```

Asymmetric Visibility (PHP 8.4)

```
class Foo
{
    public private(set) string $bar = 'baz';
}

$foo = new Foo();
echo $foo->bar; // baz
$foo->bar = 'Foobar'; // Error
```

Calling Methods/Properties/Constants

Syntax	Calls <code>foo()</code> on...
<code>\$foo->foo()</code>	The object referenced by <code>\$foo</code>
<code>\$this->foo()</code>	The current object (<code>\$this</code>)
<code>Foo::foo()</code>	The class <code>Foo</code>
<code>self::foo()</code>	The current class
<code>parent::foo()</code>	The parent (extended) class
<code>static::foo()</code>	The called class

Namespacing and Importing

```
namespace Foo\Bar;

use Foo\Baz as BazAlias;
use Foo\Baz\{Qux, Quux};
use function strlen;
use const PHP_EOL;
```

Exceptions

```
try {
    throw new Exception('Something went wrong');
} catch (Exception $e) {
    // Code that runs when an exception is thrown
} finally {
    // Code that will always run
}
```

Traits

```
trait FooTrait
{
    public function baz(): string { ... }
}
class Foo
{
    use FooTrait;
}
```

Attributes (PHP 8.0)

```
#[Attribute(flags: Attribute::TARGET_CLASS)]
class MyClassAttribute
{}
```

Arithmetic Operators

Operator	Description
+	Addition
-	Subtraction
*	Multiplication
/	Division
%	Modulus
**	Exponentiation

Comparison Operators

Operator	Description
==	Equal (values are converted)
==>	Identical (values and types match)
!=	Not equal
<>	Not equal
!==	Not identical
<	Less than
>	Greater than
<=	Less than or equal to
>=	Greater than or equal to
<=>	Returns -1, 0, or 1 if the first value is less than, equal to, or greater than the second value

Bitwise Operators

Operator	Description
&	And
	Or (inclusive)
^	Xor (exclusive)
~	Not
<<	Shift left
>>	Shift right

Assignment Operators

Operator	Description
=	Assign
+=	Add and assign
-=	Subtract and assign
*=	Multiply and assign
/=	Divide and assign
%=	Modulus and assign
**=	Exponent and assign
&=	Bitwise and and assign
=	Bitwise or and assign
^=	Bitwise xor and assign
<<=	Bitwise shift left and assign
>>=	Bitwise shift right and assign

Incrementing/Decrementing Operators

Operator	Description
++\$a	Increments \$a by one, then returns \$a
\$a++	Returns \$a, then increments \$a by one
--\$a	Decrements \$a by one, then returns \$a
\$a--	Returns \$a, then decrements \$a by one

Logical Operators

Operator	Description
and	And
or	Or
xor	Exclusive or
!	Not
&&	And
	Or

String Operators

Operator	Description
.	Concatenate
.=	Concatenate and assign

Other Operators

Operator	Description
\$a ? \$b : \$c	Ternary operator: return \$b if \$a is true, otherwise return \$c
\$a ?: \$b	Short ternary: return \$a if \$a is true, otherwise return \$b
\$a ?? \$b	Null coalescing: return \$a if \$a is not null, otherwise return \$b
\$a ??= \$b	Null coalescing assignment: assign \$b to \$a if \$a is null
\$a?->b	Nullsafe: return \$a->b if \$a is not null, otherwise return null
\$a = &\$b	Assign \$b by reference to \$a
@	Suppress errors in the following expression
instanceof	Returns true if the left operand is an instance of the right operand

Command Line Interface (CLI)

Command	Description
php <file>	Parse and execute <file>
php -l <file>	Syntax check <file>
php -r <code>	Run PHP <code> without using script tags
php -a	Run an interactive shell
php -S <addr>:<port>	Start built-in web server
php -S <addr>:<port> -t <dir>	Start built-in web server and specify document root
php -m	Show loaded modules
php -i	Show configuration information
php -v	Show PHP version
php -h	Show help

String Functions

Function	Description
<code>strlen(\$string)</code>	Return length of <code>\$string</code>
<code>str_replace(\$search, \$replace, \$subject)</code>	Replace <code>\$search</code> with <code>\$replace</code> in <code>\$subject</code>
<code>strstr(\$haystack, \$needle)</code>	Return part of <code>\$haystack</code> after <code>\$needle</code>
<code>substr(\$string, \$start, \$length)</code>	Return part of <code>\$string</code> starting at <code>\$start</code>
<code>strtolower(\$string)</code>	Return <code>\$string</code> in lowercase
<code>strtoupper(\$string)</code>	Return <code>\$string</code> in uppercase
<code>trim(\$string)</code>	Return <code>\$string</code> with whitespace trimmed
<code>ltrim(\$string)</code>	Return <code>\$string</code> with left whitespace trimmed
<code>rtrim(\$string)</code>	Return <code>\$string</code> with right whitespace trimmed
<code>explode(\$delimiter, \$string)</code>	Split <code>\$string</code> into an array by <code>\$delimiter</code>
<code>implode(\$glue, \$array)</code>	Join <code>\$array</code> into a string with <code>\$glue</code>
<code>str_repeat(\$string, \$multiplier)</code>	Repeat <code>\$string</code> <code>\$multiplier</code> times

Math Functions

Function	Description
<code>abs(\$num)</code>	Return absolute value of <code>\$num</code>
<code>round(\$num)</code>	Round <code>\$num</code> to the nearest integer
<code>ceil(\$num)</code>	Round <code>\$num</code> up
<code>floor(\$num)</code>	Round <code>\$num</code> down
<code>max(\$a, \$b)</code>	Return the greater of <code>\$a</code> and <code>\$b</code>
<code>min(\$a, \$b)</code>	Return the lesser of <code>\$a</code> and <code>\$b</code>
<code>pow(\$a, \$b)</code>	Return <code>\$a</code> raised to the power of <code>\$b</code>
<code>rand(\$min, \$max)</code>	Return a random number between <code>\$min</code> and <code>\$max</code>
<code>sqrt(\$num)</code>	Return square root of <code>\$num</code>

Array Functions

Function	Description
<code>count(\$array)</code>	Count elements in <code>\$array</code>
<code>sort(\$array)</code>	Sort <code>\$array</code>
<code>array_merge(\$array1, \$array2)</code>	Merge <code>\$array1</code> and <code>\$array2</code>
<code>array_map(\$callback, \$array)</code>	Apply <code>\$callback</code> to each element of <code>\$array</code>
<code>array_filter(\$array, \$callback)</code>	Return elements of <code>\$array</code> for which <code>\$callback</code> returns true
<code>array_find(\$array, \$callback) (PHP 8.4)</code>	Return first element of <code>\$array</code> for which <code>\$callback</code> returns true
<code>array_find_key(\$array, \$callback) (PHP 8.4)</code>	Return key of the first element for which <code>\$callback</code> returns true
<code>array_any(\$array, \$callback) (PHP 8.4)</code>	Return true if <code>\$callback</code> returns true for any element of <code>\$array</code>
<code>array_all(\$array, \$callback) (PHP 8.4)</code>	Return true if <code>\$callback</code> returns true for all elements of <code>\$array</code>
<code>array_reduce(\$array, \$callback, \$initial)</code>	Reduce <code>\$array</code> to a single value using <code>\$callback</code> starting with <code>\$initial</code>
<code>array_slice(\$array, \$offset, \$length)</code>	Return part of <code>\$array</code> starting at <code>\$offset</code> and continuing for <code>\$length</code> elements
<code>array_keys(\$array)</code>	Return an array of keys from <code>\$array</code>
<code>array_values(\$array)</code>	Return an array of values from <code>\$array</code>
<code>array_combine(\$keys, \$values)</code>	Return an array of key/value pairs from <code>\$keys</code> and <code>\$values</code>
<code>array_reverse(\$array)</code>	Return a reversed copy of <code>\$array</code>
<code>array_search(\$needle, \$haystack)</code>	Return the key of <code>\$needle</code> in <code>\$haystack</code>
<code>array_unique(\$array)</code>	Return a copy of <code>\$array</code> with duplicate values removed
<code>array_diff(\$array1, \$array2)</code>	Return elements of <code>\$array1</code> not in <code>\$array2</code>
<code>array_intersect(\$array1, \$array2)</code>	Return elements of <code>\$array1</code> also in <code>\$array2</code>

Filesystem Functions

Function	Description
<code>file_exists(\$filename)</code>	Return true if <code>\$filename</code> exists
<code>is_dir(\$filename)</code>	Return true if <code>\$filename</code> is a directory
<code>is_file(\$filename)</code>	Return true if <code>\$filename</code> is a regular file
<code>is_readable(\$filename)</code>	Return true if <code>\$filename</code> is readable
<code>is_writable(\$filename)</code>	Return true if <code>\$filename</code> is writable
<code>mkdir(\$pathname)</code>	Create directory named <code>\$pathname</code>
<code>rmdir(\$dirname)</code>	Remove directory named <code>\$dirname</code>
<code>unlink(\$filename)</code>	Remove file named <code>\$filename</code>
<code>file_get_contents(\$filename)</code>	Return contents of <code>\$filename</code>
<code>file_put_contents(\$filename, \$data)</code>	Write <code>\$data</code> to <code>\$filename</code>

php.ini Directives

Directive	Description
<code>date.timezone</code>	Set default timezone
<code>error_reporting</code>	Set error reporting level (e.g. E_ALL, E_ERROR)
<code>display_errors</code>	Whether to display errors (e.g. On or Off)
<code>error_log</code>	Set error log file (e.g. /var/log/php.log)
<code>xdebug.mode</code>	Mode (e.g. debug, develop, profile)
<code>xdebug.discover_client_host</code>	Enable Xdebug to discover client host automatically

Enable Xdebug Step Debugging

`XDEBUG_MODE=debug XDEBUG_SESSION=1 php <file>`

Or for web applications using a browser extension: [Firefox Helper](#) [Chrome Helper](#)