PHP Basics Quick Reference

Basic PHP Structure

```php
<?php
// PHP code goes here
echo "Hello, World!";
?>
```

PHP Tags

```php
<?php
// Standard opening tag - always use this

// Code here

// Closing tag is optional at end of file
?>
```

Variables

```php
// Variables start with $ symbol
$name = "John Doe";
$age = 25;
$price = 19.99;
$isActive = true;

// Variable names are case-sensitive
$userName = "alice";  // Different from $username
```

Data Types

```php
// String
$message = "Hello World";
$singleQuote = 'Also a string';

// Integer
$count = 42;
$negative = -10;

// Float (decimal)
$price = 29.99;
$pi = 3.14159;

// Boolean
$isTrue = true;
$isFalse = false;

// Array
$fruits = array("apple", "banana", "orange");
```

```php
$numbers = [1, 2, 3, 4, 5];  // PHP 5.4+ syntax
```

Output

```php
// Echo - can output multiple values
echo "Hello", " ", "World!";
echo "Age: " . $age;

// Print - returns 1, can only output one value
print "Hello World";
print "Name: " . $name;

// Printf - formatted output
printf("Price: $%.2f", $price);
```

String Operations

```php
$firstName = "John";
$lastName = "Doe";

// Concatenation with . (dot)
$fullName = $firstName . " " . $lastName;

// String interpolation (double quotes only)
$greeting = "Hello $firstName!";
$message = "Welcome $firstName $lastName";

// String functions
$length = strlen($message);         // String length
$upper = strtoupper($message);      // Uppercase
$lower = strtolower($message);      // Lowercase
```

Basic Operations

```php
// Arithmetic
$sum = 10 + 5;          // 15
$difference = 10 - 3;   // 7
$product = 4 * 6;       // 24
$quotient = 15 / 3;     // 5
$remainder = 17 % 5;    // 2

// Assignment operators
$x = 10;
$x += 5;  // $x = $x + 5 (now 15)
$x -= 3;  // $x = $x - 3 (now 12)
$x *= 2;  // $x = $x * 2 (now 24)

// Comparison
$isEqual = (5 == 5);          // true
$isIdentical = (5 === "5");   // false (different types)
$isGreater = (10 > 5);        // true
```

Control Structures

```php
// If statement
if ($age >= 18) {
    echo "Adult";
} else {
    echo "Minor";
}

// For loop
for ($i = 1; $i <= 5; $i++) {
    echo "Count: $i<br>";
}

// While loop
$count = 0;
while ($count < 3) {
    echo "Count: $count<br>";
    $count++;
}

// Foreach (for arrays)
$colors = ["red", "green", "blue"];
foreach ($colors as $color) {
    echo $color . "<br>";
}
```

Comments

```php
// Single line comment

# Another single line comment

/*
Multi-line comment
Can span multiple lines
*/

/**
 * Documentation comment
 * Used for function/class documentation
 */
```

Web-Specific Basics

```php
// Getting form data
$name = $_POST['name'];      // From POST form
$id = $_GET['id'];           // From URL parameters

// Including files
include 'header.php';        // Include file (warning if not found)
require 'config.php';        // Require file (fatal error if not found)
```

```php
// HTML in PHP
echo "<h1>Welcome to PHP</h1>";
echo "<p>Today is " . date('Y-m-d') . "</p>";
```