Introduction to PHP

1. What is PHP?

PHP (Hypertext Preprocessor) is a widely-used open-source scripting language designed for web development. Originally created by Rasmus Lerdorf in 1994, PHP now powers over 79% of all websites whose server-side programming language we know. PHP is a server-side scripting language, meaning that it is executed on the server and generates HTML, which is then sent to the client's browser.

2. Setting Up PHP

To start using PHP, you need access to a server environment where PHP is installed. This can be set up locally on your computer using software like XAMPP, which includes Apache (web server), MySQL (database), and PHP itself. Alternatively, many web hosting providers offer PHP support as part of their hosting packages.

Once PHP is set up:

- **Create a PHP File:** PHP code is typically written in files with a `.php` extension.
- **Embedding PHP:** PHP code is enclosed within `<?php ... ?>` tags. Anything outside these tags is treated as HTML and sent directly to the browser.

3. PHP Syntax Basics

Variables and Data Types

In PHP, variables are used to store data values. A variable starts with a dollar sign (`$`), followed by the name of the variable. PHP supports several primitive data types:

- **Integers:** Whole numbers without decimal points.
- **Floats (Floating Point Numbers or Doubles):** Numbers with decimal points.
- **Strings:** Sequence of characters enclosed in single or double quotes.
- **Booleans:** Represents true or false.
- **Arrays:** Stores multiple values in a single variable.
- **Objects:** Instances of user-defined classes.
- **NULL:** Represents a variable with no value.

Example:

```php
<?php
    $name = "John Doe"; // String
    $age = 30;          // Integer
    $isStudent = true;  // Boolean
    $price = 19.99;     // Float
?>
```

Operators

PHP supports a variety of operators:

- **Arithmetic Operators:** `+`, `-`, `*`, `/`, `%`
- **Assignment Operators:** `=`, `+=`, `-=` etc.
- **Comparison Operators:** `==`, `!=`, `>`, `<`, `>=`, `<=`
- **Logical Operators:** `&&`, `||`, `!`

Example:

```php
<?php
    $a = 10;
    $b = 20;
    $c = $a + $b; // Addition
    $d = $a > $b; // Comparison
?>
```

Control Structures

Control structures allow you to control the flow of your PHP scripts:

- **Conditional Statements:** Execute different actions based on different conditions using `if`, `else`, `elseif`.

Example:

```
<?php
     $age = 18;
     if ($age >= 18) {
          echo "You are an adult.";
     } else {
          echo "You are a minor.";
     }
?>
```

- **Loops:** Execute a block of code repeatedly using `for`, `while`, `do-while`, `foreach`.

Example:

```
<?php
     for ($i = 0; $i < 5; $i++) {
          echo "Iteration: $i <br>";
     }
     $numbers = array(10, 20, 30);
     foreach ($numbers as $number) {
          echo "Number: $number <br>";
     }
?>
```

Functions

Functions in PHP allow you to encapsulate code into reusable blocks:

```
<?php
     function greet($name) {
          return "Hello, $name!";
     }

     echo greet("Alice"); // Outputs: Hello, Alice!
?>
```

Built-in Functions - PHP provides a rich set of built-in functions for various tasks, like manipulating strings, working with arrays, handling files, etc.

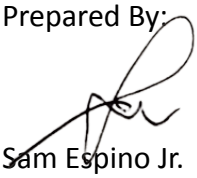
Understanding PHP syntax basics is crucial for building dynamic web applications. In this section, you've learned about variables, data types, operators, control structures, and functions. Practice these concepts to become comfortable with PHP programming.

Machine Problem 1

Based on the existing algorithms and flowchart, create a code using PHP as language.

1. Finding the factorial of a number. The factorial of a non-negative integer n is the product of all positive integers less than or equal to n.
2. Checking if a given number is a prime number. A prime number is a natural number greater than 1 that has no positive divisors other than 1 and itself. 5 is a prime number because its only divisors are 1 and 5.
3. Finding the maximum number from 3 numbers inputted by the user. Display the maximum number.

Prepared By:



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