Introduction to PHP

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Dept. of Computer Science
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Introduction to PHP

Learning Objectives

- In this lecture , we will learn more details about "PHP: Hypertext Preprocessor".
- Discussing the advantage and importance of PHP.
- Familiar with PHP language and its basic data structure.

PHP

- PHP is a server scripting language, and a powerful tool for making dynamic and interactive Web pages.
- PHP 7 is the latest stable release.
- PHP is an acronym for "PHP: Hypertext Preprocessor"
- PHP scripts are executed on the server
- 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"

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

PHP Installation

- **Install XAMPP in your PC or server.**
- XAMPP is the most popular PHP development environment
- Apache + MariaDB(Mysql) + PHP + Perl
- Basic PHP Syntax

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

- Save the file as **HelloWorld.php** in htdocs in Apache XAMPP.
- Start the server and browse http://localhost/HelloWorld.php in the browser. (We will see details in the Lab class.)

PHP Script

- A PHP script can be placed anywhere in the document.
- A PHP script starts with <?php and ends with ?>
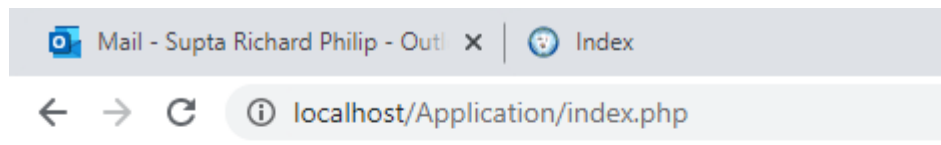- keywords (e.g. if, else, while, echo, etc.), classes, functions, and user-defined functions are not case-sensitive.

Run in Browser

- Start the server and browse
  http://localhost/Application/index.php in the browser. (We will
  see details in the Lab class.)

PHP Syntax

Comments

- ```php
  <?php
  // This is a single-line comment
  # This is also a single-line comment
  ?>
  ```
- ```php
  <?php
  /*
  This is a multiple-lines comment block
  that spans over multiple
  lines
  */
  ?>
  ```

PHP Syntax

- In PHP, a variable starts with the $ sign, followed by the name of the variable.
- Variable names are case-sensitive ($age and $AGE are two different variables).
- ```php
  <?php
  $txt = "Hello world!";
  $x = 5;
  $y = 10.5;
  echo "I love " . $txt . "!";
  echo $x + $y;
  ?>
  ```

PHP Data Types

Boolean and Array

- PHP supports the following data types: String, Integer, Float (floating point numbers - also called double), Boolean, Array, Object, NULL.
- A Boolean represents two possible states: TRUE or FALSE.
  > $x = true;
  > $y = false;
- 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
<?php
$cars = array("Volvo","BMW","Toyota");
var_dump($cars);
?>
```

PHP Data Types

PHP Object

- An object is a data type which stores data and information on how to process that data.
- In PHP, an object must be explicitly declared.
-
```php
<?php
class Car {
    function Car() {
        $this->model = "VW";
    }
}

// create an object
$herbie = new Car();

// show object properties
echo $herbie->model;
?>
```

PHP Loop

The PHP while Loop and do...while Loop

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

  while($x <= 5) {
      echo "The number is: $x <br>";
      $x++;
  }
  ?>
  ```
- ```php
  <?php
  $x = 1;

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

PHP for and foreach Loop

- The foreach loop works only on arrays, and is used to loop through each key/value pair in an array.

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

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

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

PHP conditional Statement

- Conditional statements are used to perform different actions based on different conditions.

```php
<?php
$a =20;
$b = 30;
if ($a > $b) {
    echo "a is bigger than b";
} elseif ($a == $b) {
    echo "a is equal to b";
} else {
    echo "a is smaller than b";
}
?>
```

PHP conditional Statement

Switch

- HTTP stands for Hyper Text Transfer Protocol The switch statement is used to perform different actions based on different conditions.

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

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

PHP Functions

- PHP has more than 1000 built-in functions, and in addition you can create your own custom functions.

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```php
<?php
function addNumbers(int $a, int $b) {
    return $a + $b;
}
echo addNumbers(5, 5);
?>
```

PHP - Classes and Objects

-
```php
<?php
class Fruit {
  // Properties
  public $name;
  // Methods
  function set_name($name) {
    $this->name = $name;
  }
  function get_name() {
    return $this->name;
  }
}
$apple = new Fruit();
$apple->set_name('Apple');

echo $apple->get_name();
?>
```

Books

- **W3Schools Online Web Tutorials; URL: http://www.w3schools.com**
- **PHP Documentation; URL: http://www.php.net/docs.php**
- **Sams Teach Yourself Ajax JavaScript and PHP All in One; Phil Ballard and Michael Moncur; Sams Publishing; 2010**
- **JavaScript Phrasebook; Christian Wenz; Sams Publishing; 2007**
- **PHP and MySQL Web Development, 4/E; Luke Welling and Laura Thomson; Addison-Wesley Professional; 2009**
- **JavaScript for Programmers Paul J. Deitel and Harvey M. Deitel; Prentice Hall; 2009**
- **Beginning PHP5, Apache, and MySQL Web Development; Elizabeth Naramore, Jason Gerner, Yann Le Scouarnec, Jeremy Stolz and Michael K. Glass; Wiley Publishing; 2005**
- **XML in a Nutshell, 3/E; Elliotte Rusty Harold and W. Scott Means; O'Reilly Media; 2004**

References

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2. https://developer.mozilla.org/enUS/docs/Web/HTTP/Status
3. https://www.w3schools.com/html/html_intro.asp
4. https://www.w3schools.com/html/html_xhtml.asp