CS355 Web Technologies

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Lecture 8 - PHP 1

Introduction to PHP

- PHP stands for Hypertext Preprocessor.
- PHP is an open-source server-side scripting language that is embedded in HTML.
- PHP scripts are executed on the server.
- PHP is used to manage dynamic content, databases, session tracking, build entire e- commerce sites, … etc.
- PHP supports many databases (MySQL, Informix, Oracle, Sybase, Microsoft SQL Server, ….) and many protocols such as POP3, IMAP, LDAP, … etc.

PHP Common Uses

- PHP can perform system functions
- PHP can handle forms, i.e. collect data from files, save data to a file, send data through email, and return data to the user.
- PHP allows add, delete, and modify database elements.
- PHP can set cookies and access cookies’ variables.
- PHP can restrict users to access specific web pages.
- PHP can encrypt data.

PHP Features

- Simplicity
- Efficiency
- Security
- Flexibility
- Familiarity

PHP Tags Types

1. Canonical PHP tags (most popular PHP tag style):

   <?php …*PHP code* ?>

2. Short-open tags (Standard Generalized Markup Language-style):

   <? …*PHP code* ?>

3. Script tags:

   <script language="php"> …*PHP code* </script>

PHP Variable Types

- All variables in PHP are started with a leading dollar sign($).
- Variables don’t need (but can be) declared before assigning values to it.
- Declared variables should have default values.
- PHP automatically convert data types when necessary.

PHP Variable Declaration

Syntax:

```
    $variablename = value;
```

Example:

```
    <?php
        $st_number=18;
        $course_name="Web Technologies";
    ?>
```

PHP Variable Scope

- 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:
  - Global
  - local
  - static

PHP Global Variable Scope

- A variable declared outside a function has a global scope and can only be accessed outside that function.

Example:

```
<?php
    $var = 10; // global declaration
    function Test() {
    echo "<p>var inside this function is: $var</p>";
    // using var inside this function will generate an error
    }
    Test();
    echo "<p>var outside this function is: $var</p>";
?>
```

//echo is used to display the output of parameters that are passed to it.

PHP Local Variable Scope

- A variable declared inside a function has a local scope and can only be accessed inside that function.

Example:

```
<?php
    function Test() {
    $var = 10; // local declaration
    echo "<p>var inside this function is: $var</p>";
    }
    Test();
    echo "<p>var outside this function is: $var</p>";
    // using var outside this function will generate an error
?>
```

Access PHP Global Variables

To access a global variable from inside a function, the global keyword is used before the function variables.

Example:

```
<?php
    $x = 10; $y = 20;
    function Test() {
    global $x, $y;
    $x = $x+$y;
    }
    Test();
    echo $x;
?>
```

// output 30

PHP Static Variable

- When a function execution is finished, its local variables are initialized.
- If the local variables values are needed for further processes after execution, the static keyword is used to declare the local variables.

Example:

```
<?php
     function Test()
      { static $x = 0;
         $x=$x+3;
         echo $x;
       }
     Test();
     Test();
     Test();
?>
//Output: 3 6 9
```

PHP Data Types

- PHP has eight data types that are used to declare variables: Integer, Float/Double, Boolean, String, Array, Object, Null, Resource.
- The first four are simple types, and the next two (arrays and objects) are compound.
- The compound types can consist of other arbitrary values of arbitrary type, whereas the simple types can't.

PHP Integer Data Type

- Integers are allowed in decimal (base 10), binary (base 2), octal (base 8), or hexadecimal (base 16) format.
- Decimal format is the default.
- Binary integers are specified with a leading 0b.
- Octal integers are specified with a leading 0o.
- Hexadecimal have a leading 0x.

PHP Integer Data Type – Example 1

```
notation.php //default notation is the decimal

<?php

    $var1 = 31; $var2 = 0o31; $var3 = 0x31;

    echo "$var1\n$var2\n$var3";

?>
```

```
//Output:

31

25

49
```

PHP Integer Data Type

- In PHP, if an integer value is bigger than the maximum value allowed for integers, the integer becomes a float number.
- Floating point numbers have greater boundaries.
- In 32bit system, an integer value size is four bytes, and the maximum integer value is 2147483647.

PHP Integer Data Type – Example 2

boundary.php

```
<?php
    $var = PHP_INT_MAX;
    echo var_dump($var);
    $var++;
    echo var_dump($var);
?>
```

Output: int(2147483647) float(2147483648)

Notes on Example 2

- A maximum integer value is assigned to the variable $var.
- The variable $var is increased by one.
- Internally, the variable $var becomes a floating-point value.
- The PHP var_dump() function returns the data type and value.

PHP Float/Double Data Type

- Floating point numbers in PHP are larger than integers and they can have a decimal point.
- Floating point syntaxes formats:

```
<?php
    $w = 3.245;
    $x = 3.2e3;
    $y = 3E-10;
    $z = 1264275425335735;
    var_dump($w); var_dump($x); var_dump($y); var_dump($z);
?>
```

PHP Float/Double Data Type

- The $z variable is assigned a large number, so it is automatically converted to float type.
- Output: float(3.245) float(3200) float(3.0E-10)

float(1264275425340000)