

## Introduction to PHP (Hypertext PreProcessor, HyperText Processor)

### Part 1 of 3

#### References

- Chapter 8 Introduction to Server-Side Development with PHP of the Text Book Entitled Fundamentals of Web Development, by Randy Connolly and Ricardo Hoar
- PHP 5.6.26, Sept. 16, 2016; PHP 5.6.14 Released Oct. 1, 2015; PHP 5.6.1 Released Oct. 2, 2014, <http://php.net/>
- PPH Documentation, <http://php.net/urlhowto.php>
- PHP Language Reference, <http://php.net/manual/en/langref.php>
  - Basic Syntax
  - Data Types
  - Variables
  - Constants
  - Expressions
  - Operators
  - Control Structure
  - Include Files
  - Classes and Objects
  - Namespaces
  - Exceptions
  - Predefined Variables

#### Basic Syntax

##### PHP Tags

<? .... ?>      shorthand version of <?php ....?>  
<script language = "php">  
....  
</script>

##### PHP Comments: three types of Comments

/\*    \*/      Multiple-line comment, Block comment  
//      End-of-line comment, One line comment at the end of the statement  
#      Single-line comment, at the beginning of the line

##### PHP Data Types

- Boolean      // true, false
- Integer      // whole numbers
- Float      // Decimal numbers
- String      // Letters, characters
- Array      // A collection of data of various data types

- Object // Instances of classes

## Variables

- Case sensitive
- Loosely types
- Always start with the **\$ symbol** before the variable name
- Examples
  - \$count = 42;
  - \$id = 1234;
  - \$artist1 = "Picasso";
  - \$artist2 = "Raphael";
  - \$php5 = 'version';
  - \$os = "Microsoft Windows Prof 7";
  - \$this\_int = 50; // Standard decimal notation
  - \$that\_int = 062; // Octal number
  - \$my\_int = 0x32; //Hexadecimal

## Variable Manipulation

```
<?php
    $sum = 10 + 2;           //12
    echo($sum);
    $sum = $sum + 5;         //17
    echo "$sum = " . $sum;
    $sum = sum % 2;          //1
    $answer = 5;
    $answer += 2;
    $answer *= 2;
    $answer ++;
    $answer --;
?>
```

## String Escape Sequences (Escape Characters) in PHP

Escape String	Meaning
\n	New line
\t	Horizontal tab
\\	Back slash character
\\$	\$ character
\'	Single quote
\"	Double quote
\###	ASCII character (octal)
\x##	ASCII character (hexadecimal)

## Constants

- Typically defined near the top of PHP file via the **define()** function
- Examples

```
<?php
# uppercase for constants – programming convention
define("DATABASE_LOCAL", "localhost");
define("DATABASE_NAME", "ArtStore");
define("DATABASE_USER", "Fred");
define("DATABASE_PASSWD", "F5^7%ad");
....
...
$db = new mysqli(DATABASE_LOCAL, DATABASE_NAME, DATABASE_USER,
DATABASE_NAME);
?>
```

## Control Structures

- if .. else
- switch .. case
- while, do while
- for

## Include Files

- include "somefile.php"
- include\_once "somefile.php"
- require "somefile.php"
- require\_once "somefile.php"

## Reference to Include File PHP Scripts Examples

```
include "files.php";           // http://php.net/manual/en/function.include.php
include_once "file.php";       // http://php.net/manual/en/function.include-once.php
require ('library.inc');        // http://php.net/manual/en/function.require.php
```

## Functions

- PHP Built-in
  - echo() //Output to HTML
  - define() // Define constants
  - printf() // Formatted output
- User Defined
  - Syntax: function, return
  - Calling a function
  - Parameters
    - Passing by values
    - Passing by reference

- Variable scopes

Example:

```

/*
 * This function returns nicely formatted System Time string using the current
 * System time.
 */
function getTime(){
    return date("H:1:s");
}

/* This function outputs the footer menu
 *
 */
function outputFooterMenu() {
    echo '<div id="footer">';
    echo '<a href=#>Home </a> | <a href=#Product</a> | ';
    echo '<a href=#>About us </a> | <a href=#Contact us</a>';
    echo '<div>';
}

```

**Example: variable-manip.hph**, <http://www.etcs.ipfw.edu/~lin/CPET499-ITC250/Lin-php-examples/variable-manip.php>

```

<? php
    $answer = 10;
    echo(++$answer)." ";
    echo "$answer<BR>";
    $answer += 10;
    echo ($answer++)." ";
    echo $answer; ?
    unset($answer);      //destroy the variable
?>

<?php
    %thankyou_string = "Thank you ";
    %thankyou_string = thankyou_string . "for your comments!";
    // String concatenation operator period .
?>

```

### Predefined Variables

- \$Superglobals // Bulit-in variables that are always available in all scopes
- \$GLOBALS // All variables available in global scope
- \$\_SERVER // Server and execution environment info
- \$\_GET // HTTP GET variables
- \$\_POST // HTTP POST variables

- `$_FILES` // HTTP file upload variables
- `$_REQUEST` // HTTP request variables
- `$_SESSION` // Session variables
- `$_ENV` // Environment variables
- `$_COOKIE` // HTTP cookies
- `$php_errormsg`
- `$HTTP_RAW_POST_DATA` // Raw POST data
- `$http_response_header` // HTTP response headers
- `$argc` // The number of arguments passed to script
- `$argv` // Array arguments passed to script

### PHP Functions Reference

- `echo()`
- `unset()` // Destroy variables
- `func_get_args()` // get function arguments
- `func_num_args()` // get function argument count

### String Manipulation Functions

- `strcmp()` // string comparison, case sensitive
- `strcasecmp()` // string comparison, non case sensitive
- `substr()` // the sub string
- `strlen()` // The number of chars in the string
- `strpos()` // The character position
- `chop()` // Remove all white spaces from its ends
- `trim()` // remove all white spaces from both ends
- `strtolower()` // covert to lower case characters
- `strtoupper()` // convert to upper case characters

### Arithmetic Functions

- `floor()`, `ceil()`, `round()`, `srand()`, `rand()`, `abs()`, `min()`, `max()`

### Output Functions

- `print()`
- `printf()` // formatted output

### PHP Functions

- `func_get_args()` // <http://us3.php.net/manual/en/function.func-get-args.php>
- `func_num_args()`

Example: `func_arguments.php`, [http://www.etcs.ipfw.edu/~lin/CPET499-ITC250/Lin-php-examples/func\\_arguments.php](http://www.etcs.ipfw.edu/~lin/CPET499-ITC250/Lin-php-examples/func_arguments.php)

`<!DOCTYPE html>`

`<!--func_arguments.php - A trivial example to illustrate a php document -->`

`<html lang = "en">`

```
<head>
  <title> funct_arguments.php </title>
<meta charset = "utf-8" />
</head>
<body>
<?php
  function func_dynamic() {
    echo "ITC 250/CPET 499 Web Systems: ".func_num_args(). "Number of arguments.<br>";
    $args = func_get_args();
    for($i = 0; $i < count($args); $i++){
      echo "Passed arguments: {args[$i]} <br>";
    }
  }
  func_dynamic(5, 4, 3, 2, 1,0 );
?>
</body>
</html>
```