**Introduction to PHP (Hypertxet PreProcessor, HyperText Processor)**

**Part 2**

**PHP Arrays and Superglobals**

**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; <http://php.net/>
* 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>

**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

**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

**PHP Arrays,** [**http://php.net/manual/en/language.types.array.php**](http://php.net/manual/en/language.types.array.php)

An [array](http://php.net/manual/en/language.types.array.php) in PHP is actually an ordered map. A map is a type that associates values to keys. This type is optimized for several different uses; it can be treated as an array, list (vector), hash table (an implementation of a map), dictionary, collection, stack, queue, and probably more. As [array](http://php.net/manual/en/language.types.array.php) values can be other [array](http://php.net/manual/en/language.types.array.php)s, trees and multidimensional [array](http://php.net/manual/en/language.types.array.php)s are also possible.

**Array Applications**

* Using an array as a List
  + A group of images
* Using an array as a Sortable Table
  + Data Table (row, column): Catalog of Pet (pet\_name, ower\_name, weight, animal, etc)
  + Database Tables (row, column)
* Using an array as a Lookup Table
  + Cryptogram generator
* Web database applications

**Array,** [**http://php.net/manual/en/function.array.php**](http://php.net/manual/en/function.array.php)

**Definition of Array**

* A data structure that allows the programmer to collect a number of related elements together under a single variable.

**PHP Arrays**

* Called “Associated Arrays”
* An ordered map which associates each value in the array with a key.
* PHP arrays are like vector, hash table, dictionary, and list collection.
* Can be used like collection classes in other languages

**Arrays Key (index)**

* Must be either integers or strings, and need not be in sequential
* The default array index starts at 0, 1, 2,.. n

**Array Values**

* Not restricted to integers and strings
* They can be any object, type, or primitive data supported in PHP

**Array Manipulations and Functions (Array Functions,** [**http://php.net/manual/en/ref.array.php**](http://php.net/manual/en/ref.array.php)**)**

* Declaration of an array (just name of array)
* Define an array (with values)
* Accessing and editing the array (read values)
* Adding and Deleting Elements
* Swapping keys and values
* Merging array elements
* Sorting
* Determining whether keys and values exist
* Searching the array
* Other Array Functions
  + Returning an indexed array
  + Reverse ordering
  + Search array for a value

**Defining and Accessing an Array**

**$days = array(); // Declare an array**

**$days = array(“Mon”, “Tue”, “Wed”, “Thu”, “Fri”, “Sat”, “Sun”); // Define the contents**

**$days = [“Mon”, “Tue”, “Wed”, “Thu”, “Fri”, “Sat”, “Sun”]; // Alternate syntax**

**Or**

**$day = array();**

**$days[0] = “Mon”,**

**$days[1] = “Tue”,**

**$days[2] = “Wed”,**

**Or assigning keys explicitly to array elements**

**$days = array (1 => “Mon”, 2 =>”Tue”, 3 =>”Wed”, 4 =>”Thu”, 5 => “Fri”, 6=>”Sat”, 7 =>Sun”);**

**# keys are 1, 2, .., 7**

**# values are “Mon”, “Tue”, …**

**Array with strings as keys and integer numbers as values**

**$salesForecast = array(“Mon” => 100, “Tue” => 200, “Wed” => 40, “Thu” => 100, “Fri” => 200, “Sat” => 250, “Sun” => 350);**

**# Keys are “Mon”, “Tue”, etc**

**# Values are 100, 200, etc**

**echo $salesForecast[“Sun”]; // Output 350**

**Multidimensional Arrays**

**$month = array**

**(**

**array(“Mon”, “Tue”, “Wed”, “Thu”, “Fri”, “Sat”, “Sun”),**

**array(“Mon”, “Tue”, “Wed”, “Thu”, “Fri”, “Sat”, “Sun”),**

**array(“Mon”, “Tue”, “Wed”, “Thu”, “Fri”, “Sat”, “Sun”),  
array(“Mon”, “Tue”, “Wed”, “Thu”, “Fri”, “Sat”, “Sun”)**

**)**

**echo $month[0][3]; // Output Thu**

**echo $month[3][3]; // Output Thu**

**echo $month(3][6]; // Output Sun**

**Shopping Cart Example**

**$cart = array();**

**$cart[] =array(“id” => 37, “title” => “Burial at Orans”, quantity => 1);**

**$cart[] =array(“id” => 345, “title” => “The Death of Marat”, quantity => 1);**

**$cart[] =array(“id” => 63, “title” => “Starry Night”, quantity => 1);**

**echo $cart[2][“title”]; // Outputs Starry night**

**Iteration through an Array**

* **for, while, do while – only good for those arrays with sequential integers as index**
* **For arrays without sequential index (associative arrays)**
  + **Need to use count() function to know the number of elements (length) in an array, then use for, while, etc**
  + **foreach loop**

**Examples**

**foreach ($salesForecast as $value){**

**echo $value . “<br>”;**

**}**

**foreach ($salesForecast as key => $value){**

**echo “day” . $key . “=” . $value . “<br>”;**

**}**

**Array Functions,** [**http://php.net/manual/en/ref.array.php**](http://php.net/manual/en/ref.array.php)

* **array\_keys($someArray); // Return all the keys or a subset of the keys of the given array**
* **array\_values($someArray); // Return all the values of an array**
* **array\_rand($someArray, $num =1); // Pick or select a random element in an array**
* **array\_reverse($someArray); // Return an array with elements in reverse order**
* **array\_walk($someArray, $callBack, $optionalParam); // Apply a user supplied function to every member (element) of an array**
* **in\_array($needle, $haystack); // Check if a value exist in an array; $needle – value, $haystack - array**
* **shuffle($someArray); // Shuffle an array**

**Predefined Superglobals,** [**http://php.net/manual/en/language.variables.superglobals.php**](http://php.net/manual/en/language.variables.superglobals.php)

Superglobals // Bulit-in variables that are always available in all scopes

* $GLOBALS // All variables available in global scope (array containing info about the

request and the server)

* $\_SERVER // Server and execution environment info
* $\_GET // HTTP GET variables (array of query string data passed to the server via

the URL)

* $\_POST // HTTP POST variables (array of query string data passed to the server

via the HTTP header)

* $\_FILES // HTTP file upload variables (array of file items uploaded to the server)
* $\_REQUEST // HTTP request variables (array containing the contents of $\_GET,

$\_POST, and $\_COOKIE)

* $\_SESSION // Session variables (array contains session data)
* $\_ENV // Environment variables (array) of a server
* $\_COOKIEs // Array of Cookie data passed to page via HTTP request

**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**
* **strops() // 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()**

**Ouput Functions**

* **print()**
* **printf() // formatted output**

**PHP Functions**

* func\_get\_args() // <http://us3.php.net/manual/en/function.func-get-args.php>
* func\_num\_args()

<!DOCTYPE html>

<!—funct\_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 );

?>

</body>

</html>