1. TERMS

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| **TERM** | **DEFINITION** |
| Variable Interpolation | Adding variables in between a string data, PHP will parse the interpolated variables and replace the variable with its value while processing the string data. |
| R | Array Function performed in reverse |
| K | Array function in key ascending order |
| Destructive functions | Do not maintain the key value |
| fwrite (STDOUT, ‘’ ”); | Command/call to provide an output response (space after STDOUT) |
| fgets(STDIN); | Command/call to get input from the user |
| STDIN | User input |
| STOUT | Output response (similar to echo function |
| var\_dump($argc); | ARG Count – contains count of all arguments |
| var\_dump($argv); | ARG Value - contains an array of all values passed to PHP |
| exit | Ends the argument or loop |
| die | Same as exit |
| array\_search | Searches array for a given value and returns the first key if successful, return the index of the array |
| Mixed | Mixed data type in an array search |
| mixed array\_search ( mixed $needle , array $haystack [, bool $strict = false ] ) | [, – indicates the search parameter is optional  $strict – looks for data exactly as entered (===) |
| Index [0] | If an index is 0, conditionals will interpret/default to false – use strict |
| Explode/implode | Functions to convert strings to arrays & vice versa |
| Functions | Definitions start with the function keyword, followed by the name of the function, the arguments it accepts, then a block of code to be executed.  function add($a, $b)  {  return $a + $b;  }  echo add(5, 4);  (output = 9) |
| [*substr()*](http://php.net/manual/en/function.substr.php) |  |
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1. PHP Basics
   1. Store data outside the client’s site
   2. Does not run in the browser
   3. Created in 1994
   4. Interactive shell – good for debugging, temp code (similar to console log)
   5. Float numbers = decimal numbers
   6. Integers = whole numbers
   7. “Echo” – used to output/show values
   8. $variable name; - declares a variable
   9. var\_dump(Svariable name); - provides more detail about the variable, similar to console.log & debugging
   10. Control-C = returns to the php prompt
   11. var\_dump((bool) “variable”); - converts the variable string to a boolean value & displays the change (var\_dump)(called casting operation)
   12. Empty strings & 0 – return a false Boolean
   13. Interpolation requires double quotes “ , otherwise will interpret as written
   14. Curly braces used inside strings to designate a value established to a variable i.e php > echo "{$firstName}\_{$lastName}";
   15. Literal string – not assigned to a specific variable
   16. heredoc – allows multiline strings, followed by >>> i.e.

$limerick = <<<POEM

There was a young man of Japan

Whose limericks never would scan.

When asked why this was,

He replied "It's because

I always try to fit as many syllables into the last line as ever I possibly can.

POEM;

lesson example:

Joe Blow

123 Any Street

line: php> echo “{$firstName} {$lastName)\n{$address}”;

Constants:

* values that will not change,(like API), recommended to use variables if the value will change
* Interpolation will not work with constants, will need to use concatenation
* Good practice: identify constants by using all caps, i.e. define('SIDES\_OF\_DICE', 6);
* PHP\_EOL – starts a new line in the command line, same as “\n”, but compatible command for linux, windows & mac

Arrays:

* $arrayName = [variable1, 2, 3, etc];
* print\_r($arrayName); - displays the array, limited info
* var\_dump($arrayName); - displays the array & data types (int, Boolean, string, etc)
* Associative array can be a both keys & values i.e.:

php > $name = array('first' => 'John', 'last' => 'Doe');

* Same syntax as JS to access contents of arrays: (similar to JS objects)

php > echo $person[‘firstName’];

OR:

var\_dump($person);

OR:

Echo $person[‘firstName];

* Multi-dimensional arrays – seen commonly in retrieving database values

php > $people =[[‘name’ => ‘David’], [‘name’ =>‘Zach’]];

Differences between PHP & JS:

* ‘$’ – for variable names
* arrays can do more
* more built in functions
* single & double quotes are different (string interpolation – evaluating the values inside the string)
* concatenation is different
* numbers are 2 different types
* JS is in the browser, PHP is back-end language that runs on the server
* PHP syntax is more strict, command will not run without “;”
* Can cast to different data types in PHP
* PHP requires echo in the interactive shell to view or display data
* Assignment by reference

Review & questions:

* Associative array syntax
* Iterating through an associative array
* How to test/run PHP

$php filename.php (in the vagrant folder command line)

filename.php (in browser – if file is saved to the public directory

* Weird symbols in the shell
* Multi-dimensional array
* Difference between object & assoc array – objects are not data structures, assoc arrays are
  1. PHP inside HTML
* Identify at the top of the HTML doc, above the <!DOCTYPE html> line
* The code is run on the server, output is sent to the browser – code will not be displayed in the browser console
* <?php – php open tag
* ?> - php closing tag

**Data Types:**

* booleans => true, false
* float => decimal numbers , i.e. 2.0, 3.14, -5.3
* integers => whole numbers: i.e. 1, 2, -5, 0
* strings => characters in single or double quotes
* arrays => [1, 2, 3, 4]
* associative\_arrays = [‘first\_name => ‘Ryan, ‘last\_name’ => ‘Orsinger’];
* define (“PI”, 3.141);

**Operators**

* The only job for . in PHP is to concatenate the string

$name .= “ Bobberson (concatenating the new variable name)

* Post Incrementing will not show the change on the first return, will do a second echo return to see the change

php > echo $a++;

10

php > echo $a;

11

* Cannot parse together <, >, or =
  + WRONG

php > echo 1 < 2 < 0.5;

Parse error: syntax error, unexpected '<' in php shell code on line 1

* + RIGHT

php > echo (1 < 2) < 0.5;

php > echo true;

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* If statements same as JS

$username = ‘ryano’;

$password = “awesomepassword”;

if($username == ‘ryano’ && $password == “awesome”

**Front End vs Back-End**

Data Control Structures

I/O Streams

EXAMPLES:

1. Write the ouput

Fwrite(STDOUT, “What is your name? “);

1. Get Input from user:

$firstName = trim (fgets(STDIN); (*Removes the white space)*

if($firstName ===’admin’) {

echo “Here are the nuclear launch codes: 12345” . PHP\_EOL;

} else {

echo “No launch codes for you! . PHP\_EOL;

}

1. Output the user’s name:

fwrite(STDOUT, “Hello $firstName\n”);

* 1. Command Line ArgumentS
     + Begin PHP file defining the number of arguments

if ($argc ===3) {

echo 'please pass the min and max for the game' . PHP\_EOL;

echo PHP\_EOL;

echo "Usage: " . PHP\_EOL;

echo " php high\_low.php <min> <max>" . PHP\_EOL;

exit;

}

* + - Define the argument number in the specific variable

$min = $argv[1];

$max = $argv[2];

* 1. Control Structures II
* Similar to javascript
  + 1. Foreach with keys
  1. Array Functions
     1. Sorting
     2. Searching
     3. Push/Pop

PHP LIBRARY EXERCISE - INSTRUCTOR NOTES:

7/25/2017 [10:41]

If you want an automated set of tests to check your functions in library.php , do the following:

1. Save a copy of libraryTests.php to your `~/vagrant-lamp/exercises/` folder.

2. Run `vagrant ssh` to connect your terminal window into your Vagrant VM server.

3. Once inside your vagrant VM, do `cd exercises`.

4. Run `ls -la` and confirm that the downloaded `libraryTest.php` and your own `library.php` files exist in this folder.

5. Type `phpunit libraryTest.php` to run the automated tests.

Automated Test Walkthru):

TDD = test driven development

define('LIBRARY\_FILE', \_\_DIR\_\_ . '/library.php'); --update with the file name for future test assessments

* Used as a pretest
* Ensures the function exists (Assertion)
* Ensures the function returns the correct data type (i.e. boolean returns true or false)

EXAMPLE:

$this->assertTrue(

function\_exists('isEven'),

"Expected isEven() function to be present."

);

1. Reading/writing Files

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| **COMMAND** | **DEFINITION /NOTES** | **EXAMPLE** |
| $filename | Identifies the specific resource  Ensure in the same folder path or that menu path is identified | 'cities.txt'; |
| $handle | abstract reference to a resource | $handle = fopen($filename, 'r'); |
| 'r' | read the file/resource |
| filesize($filename) | * Returns the number of bytes(characters long) as filesize; * Best practice to include the number of characters, without it specified it will read the entire file, reads the designated number starting at beginning of file * Must be included in the specified order of handle, filesize & filename | $contents = fread($handle, filesize($filename)); |
| $contents = trim($contents); | Eliminate whitespace, use for best practice |  |
| echo $contents; | Display file contents |  |
| $contentsArray = explode("\n", $contents); | Instructs the content to be displayed with a delimiter of new line ("\n") |  |
| print\_r($contentsArray); |  |  |
| fclose($handle); | Required to instruct code to close after data collected (releases memory used to keep it open?) |  |
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