



# University of Maryland College Park

## Dept of Computer Science

### CMSC389N Summer 2016

### Midterm I

Last Name (PRINT): \_\_\_\_\_

First Name (PRINT): \_\_\_\_\_

University Directory ID (e.g., umcpturtle)\_\_\_\_\_

I pledge on my honor that I have not given or received any unauthorized assistance on this examination.

Your signature: \_\_\_\_\_

#### Instructions

- This exam is a closed-book and closed-notes exam.
- Total point value is 200 points.
- The exam is a 50 minutes exam.
- Please use a pencil to complete the exam.
- WRITE NEATLY.
- **You don't need to use meaningful variable names; however, we expect good indentation.**

#### Grader Use Only

#1	Problem #1 (HTML/CSS/ PHP Language)	(60)	
#2	Problem #2 (PHP Coding)	(55)	
#3	Problem #3 (PHP Coding)	(85)	
<b>Total</b>	Total	(200)	



## **Problem #1, (HTML/CSS/PHP Language)**

1. (3 pts) Using the <img> tag define a image entry where the image name is city.jpg and the message “College Park” will appear when the image cannot be displayed.
2. (3 pts) Define a CSS rule that associates the color yellow with links that have been visited.
3. (3 pts) Define a CSS rule that associates with paragraphs the color yellow and the size 3 em.
4. (3 pts) What is HTTP?
5. (3 pts) Provide an example of what is possible by using server side includes.
6. (3 pts) In HTML what is the difference between an inline element and a block element?
7. (3 pts) Name one difference between PHP’s echo and print.
8. (3 pts) Which of the following are VALID variable names (will not cause an error during script execution) in PHP? Circle the valid ones.
  - a. \$age\_55
  - b. \$LOCATION
  - c. Area
  - d. window\_position\$
9. (3 pts) Using PHP define a constant called MAX\_LENGTH that has a value of 200.
10. (3 pts) What takes place when a file included using require\_once is not found?
11. (3 pts) Name three PHP superglobals seen in class.

12. (3 pts) We have defined a PHP function as follows:

```
function process() { echo "hello"; }
```

Which of the following are VALID ways to call the function?

- a. Process();
- b. process();
- c. PROcess();
- d. None of the above.

13. (24 pts) Define a PHP class call **App** that represents a web app. The specifications for the class are:

- a. The class has two instance variables called **\$name** and **\$id**.
- b. A static variable named **\$downloaded** that keeps track of the number of times the app has been downloaded.
- c. A constructor that initializes an **App** object. It has a name and id number as parameters.
- d. A toString method that prints the name and id associated with an App object. See the output below for format information.
- e. A download() method that increases the number of downloaded apps.
- f. A getDownloaded method that returns the number of downloaded apps.

Below we have provided a main() function (and expected output) that relies on the class you are expected to write.

#### main function

```
function main() {  
    $acc = new App("MapApp", 2);  
    echo $acc;  
    $acc->download();  
    $acc->download();  
    echo "<br>Downloaded: ".$acc->getDownloaded();  
}
```

#### Output

```
Name: MapApp, Id: 2  
Downloaded: 2
```

**WRITE YOUR CLASS ON THE NEXT PAGE**

**PAGE FOR YOUR CODE**

## Problem #2, (PHP Coding)

Write a PHP function called **generate\_table** that has the following specifications:

1. Two parameters
  - a. `$data` → Associative array that maps strings to integers.
  - b. `$header` → string
2. The function will generate HTML representing an HTML table.
3. The `$header` represents a header (displayed using `<h1></h1>`) that will appear before the table.
4. The default value for the `$header` parameter is “Generic Table”.
5. If the `$data` array has not been set, the function will just return a header (displayed using `<h1></h1>`) with the message “Empty Table”.
6. The following is an example of calling the function you will write. This is just an example and your function should work for other arrays and header values.

### Calls

```
$data = array("John" => 50000, "Mary" => 60000, "Mike" => 35000);  
echo generate_table($data, "Salary Table");  
echo generate_table($data);
```

### Output (Displayed by browser)

## Salary Table

John	\$50000
Mary	\$60000
Mike	\$35000

## Generic Table

John	\$50000
Mary	\$60000
Mike	\$35000

**WRITE YOUR FUNCTION ON THE NEXT PAGE**

**PAGE FOR YOUR CODE**

## Problem #3, (PHP Coding)

Write a PHP script that generates a form that computes the sum or product of values provided via a form. For this problem:

1. Define a header called “Calculator” using `<h1></h1>`.
2. Define two text fields that allow us to enter two numbers. The text “Value1: “ and “Value2:” should appear to the left of each text field. The default values for each text field will be 2 and 3, respectively.
3. Two submit buttons named “sum” and “product” will allow us to trigger the appropriate computation. The result will be displayed below the buttons after the message “Result:”.
4. When the form is initially processed the value after “Result:” will be “None”.
5. The name of the script is `compute.php`.
6. Your script must be a self-referencing script. You may not add any other script file.
7. You must use a heredoc in order to generate the form.
8. Use the `get` method to submit your form.
9. The “`support.php`” file has the **`generatePage`** function that takes the body of an HTML document and generates a complete document. This is the same function presented in class. Use it to generate the final document that will be displayed. For example, if `$body` has the HTML body, you will call the function as follows: `echo generatePage($body);`
10. An example of the form is provided below.

### Before Selecting Any Buttons

## Calculator

Value1:  Value2:

Result: None

### After Pressing sum Button (not showing when we select product)

## Calculator

Value1:  Value2:

Result: 5

**WRITE YOUR SCRIPT ON THE NEXT PAGE**

```
<?php  
require_once("support.php");
```



**EXTRA PAGE IN CASE YOU NEED IT**