Intro to Programming Midterm

May 9th 2012

For this test you can assume there is a printLine() function. The printLine function takes a variable number of arguments separates them with spaces and displays them on the page followed by a newline character (just like the one from the homework assignments).

There are a total of 115 possible points on the test. Your grade will be out of 100 however, so there is possibility of earning up to 15 bonus points.

I recommend getting the ones you know first and coming back for the rest.

#1 (2 points)

Write Javascript code to store your first name and last name in separate variables. Then print them together with a space in between. If you don't know how to do this, just write your name below.

#2 (5 points)

What are the three primitive data types in Javascript?

#3 (5 points)

Describe what a variable is (in your own words) as if you were explaining it to someone who had never programmed before. Feel free to use an analogy if you wish.

#4 (4 points)

Circle the invalid variable identifiers and explain next to them why they are invalid. (i.e. "It is a reserved word.")

- switch

- hello

- class

- $

- test

- user-input

- INPUT

- 4th_try

#5 (5 points)

What does the following program output?

var num = "20";

printLine('The sum is: ' + num + 4);

#6 (3 points)

What values are falsey in Javascript?

#7 (2 points)

What is the purpose of the $(document).bind('ready')?

#8 (10 points)

A misguided n00b (someone who is new to programming) wrote the following code. Make it better by rewriting the code to use a function, and invoke it 3 times with the different values instead of using a for loop.

```
for (var i=0; i < 3; i++) {

        var studentName, grade;

        if (i == 0) {

                studentName = 'Jonathan';

                grade = 85;

        } else if (i == 1) {

                studentName = 'Sarah';

                grade = 68;

        } else if (i == 2) {

                studentName = 'Julia';

                grade = 94;

        }

        printLine( studentName + ' gets a ' + grade + '!' );

}
```

#9 (3 points)

What does the following Javascript code print?

```javascript
var who = 'Creative Circus students';

var what = 'love robots!';

function evil_stuff() {

        var who = 'Zero Wing';

        what = 'All your base are belong to us!!!';

}

evil_stuff();

printLine( who );

printLine( what );
```

#10 (10 points)

Write a function called "countdown" that accepts a number and prints all of the numbers from that number down to zero, separated by commas and a space, all on one line. For example, countdown(5) should output 5, 4, 3, 2, 1, 0.

#11 (10 points)

Write a function called "countdownMultiple" that accepts two numbers and prints the countdown of the first number, but repeats it the second number of times. For example, countdownMultiple(4, 2) should output:

4, 3, 2, 1, 0

4, 3, 2, 1, 0

#12 (4 points)

Is the following expression true or false?

(false || !(10 == 5 * 3 - 1)) && (4 < 6) || null

#13 (7 points)

Describe the purpose of the following operators and expressions in Javascript:

!

;

=

==

++

-=

return

#14 (10 points)

Draw the DOM tree that corresponds to the following HTML on the back of this page. Use <tagName> to represent an element, and just write the text for a text node.

<html>

<head>

    <title>Intro to Programming Midterm</title>

</head>

<body>

    <h1>Hello, world!</h1>

</body>

</html>

#15 (6 points)

Modify your tree above to reflect the result after the following Javascript has been run. You can just add any new elements, and draw an X through any elements that are deleted.

var world = document.getElementById('world');

var classText = document.createTextNode('class');

var classTextWrapper = document.createElement('strong');

classTextWrapper.appendChild(classText);

document.body.firstChild.removeChild(world);

document.body.firstChild.appendChild(classTextWrapper);

#16 (6 points)

Write Javascript code that prompts the user to enter a number. If the number is invalid, print a message to the user, otherwise print the number to two decimal places. *Note: You **do not** need to ask the user for another number if the first one they entered is invalid.*

#17 (2 points)

In the HTML and jQuery snippet below, what is the purpose of "event.preventDefault()"?

Creative Circus

<script>

var cc_link = $('#cc_link');

cc_link.bind('click', function(event) {

     printLine('You clicked the link!');

     event.preventDefault();

});

</script>

#18 (10 points)

Write a function called randomNumber that accepts a number and returns a random integer between 0 and that number.

#19 (10 points)

Write another function called randomNumberInRange that accepts two numbers and returns a random integer between the first number and the second number.

#20 (1 point)

Write a Javascript comment (either single line style, or multi-line style) that tells me which homework assignment (and part A or part B) gave you the most trouble so far.