**CMSC122**

**Grader Use Only:**

|  |  |  |
| --- | --- | --- |
| #1 |  | (22) |
| #2 |  | (18) |
| #3 |  | (30) |
| #4 |  | (30) |
| **Total** |  | (100) |

**Summer 2015**

**Final Exam**

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

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

**General Rules (Read):**

* This exam is a closed-book and closed-notes exam.
* Total point value is 100 points.
* Please use a pencil to complete the exam.
* For those questions requiring JavaScript code just provide what should appear in between the <script> and </script> tags.
* **WRITE NEATLY**. If we cannot understand your answer, we will not grade it (i.e., 0 credit).

**Problem 1**

Circle the correct answer(s).

1. (1 pt) Which of the following is considered an **invalid** variable name in JavaScript?

a) age b**)**  WAT

c) do d) ELEn

1. ­­­­­­­­­­­­­­(1 pt) In JavaScript infinite loops are not possible with **while** loops.

a) true b) false

1. (1 pt) A return statement ends a function.

a) true b) false

1. (1 pt) In JavaScript a function can return only strings.

a) true b) false

1. (1 pt) The JavaScript alert function allows us to find problems with our JavaScript code.

a) true b) false

1. (1 pt) We can use the % operator to determine whether a number is divisible by three.

a) true b) false

1. (1 pt) NaN stands for Not-A-Number.

a) true b) false

1. (1 pt) A call to the prompt function returns a string.

a) true b) false

1. (1 pt) Local variables always have 0 as their initial value.

a) true b) false

1. (1 pt) The alert and prompt functions represent the same function.

a) true b) false

1. (1 pt) === (three =) is more strict than == (two =).

a) true b) false

1. (1 pt) A JavaScript program can only have one function.

a) true b) false

1. (1 pt) We can use null as the value for a variable.

a) true b) false

1. (1 pt) A global variable has 0 as its initial value.

a) true b) false

1. (1 pt) We should avoid using global variables.

a) true b) false

1. (1 pt) Java is another name for the JavaScript programming language.

a) true b) false

1. (1 pt) Which value is returned when we call the following function?

**function work() {**

**var y = 20;**

**}**

1. (1 pt) Which of the following is considered an event in JavaScript?
   1. Generating a random number
   2. Loading a web page
   3. An infinite loop
2. (4 pts) Complete the following assignment so x is initialized with a random value between 1 (inclusive) and 6 (inclusive).

var x =

**Problem 2**

Write a function that has the following prototype: **function lateMessage(minutesLate)** The function returns a string based on the **minutesLate** value. The message to return will be:

“ontime” → if **minutesLate** is 0

“almost ontime” → if **minutesLate** is greater than or equal to 1 and less than or equal to 5

“officially late” → for any other value

For this problem:

* You do not need to write pseudocode.
* You do not need to use meaningful variable names.
* You only need to write the function (no need for main, <script>, <body>, etc.).
* The function does not read any data (i.e., it may not have any prompt statements).
* The function does not print any data (i.e., it may not have document.writeln or alert).

**Problem 3**

Write a JavaScript function which has the following prototype: **function computeCeiling(data)**. The function will return a new array with the ceiling of the elements in the **data** array. The original array (data) should not be modified. For example, the following code fragment will display 3,7,10 in the alert box.

var a = [2.5, 6.8, 9.3];

alert(computeCeiling(a));

For this problem:

* You do not need to write pseudocode.
* You may not modify the array parameter.
* You only need to write the function (no need for main, <script>, <body>, etc.).
* The function does not read any data (i.e., it may not have any prompt statements).
* The function does not print any data (i.e., it may not have document.writeln or alert).
* The function must work for arrays of any length.
* Use the Math.ceil function to compute ceiling values (e.g., Math.ceil(2.5) 🡪 3)

**Problem 4**

For this problem you will implement two functions: main() and printEvens(). These functions allow us to print a table of even values between 2 and a limit provided by the user. We have provided the form below; you just need to use it during the implementation of the functions.

**<body onload="main()">**

**<form>**

**Limit: <input type="text" id="limit">**

**<input type="button" id="printEvensButton" value="Print Even Values Table"><br>**

**<div id="toShowResults"></div>**

**</form>**

**<script>**

**function main() {**

**/\* You must implement \*/**

**}**

**function printEvens() {**

**/\* You must implement \*/**

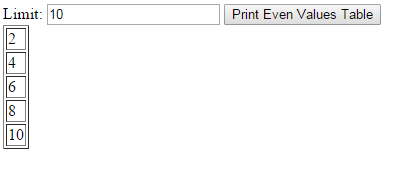
**}**

**</script>**

**</body>**

For this problem:

* You do not need to write pseudocode.
* You only need to define the body of the main and printEvens functions.
* The main function will define code that will allow the execution of the printEvens function when we click on the button.
* The printEvens function will generate a table of even values between 2 and the limit provided by the user. This table will be displayed in the <div></div> associated with the id “toShowResults”.
* The following is an example of running the program with 10 as the limit:



**PAGE FOR YOUR CODE**