

Final Exam Practice Questions, CMSC122

These questions will help you prepare for the final exam. Solutions will not be provided; however, you are welcome to discuss your solutions with TAs and your instructor during office hours. **Do not use a computer when writing JavaScript programs; write your solution on paper, then verify your solutions with the computer.** That is the best way for you to prepare for the exam.

Miscellaneous

1. For each of the following problems define the HTML that goes in the <body></body> tags.
 - a) A table with the prices of articles in a store
 - b) A link to the web site: www.news.noreal.com
 - c) A numbered list with places you want to visit
 - d) A bullet list with activities you need to complete by the end of the week
 - e) An image that when selected takes you to the web site: www.news.notreal.com
2. How can you define the title of a web page to be “Summer Program”?
3. What is the HTML parser?
4. What is the JavaScript interpreter?
5. What JavaScript function do you use to generate the date?
6. What is a reserved word?
7. What is the difference between the prompt and confirm functions?
8. What is a syntax error?
9. What is a semantic error?
10. What is an infinite loop?
11. What is an event?
12. What is an event handler?
13. What is event-driven programming?
14. Name two mouse related event handler attributes.
15. Why do we want to avoid global variables?
16. What is the convention we want to follow for variable names?
17. The contents associated with a form can be sent using two methods: post and get. Describe each method, and describe pros/cons for each one.
18. What does document.getElementById allow us to do?
19. What is the DOM?
20. How are the DOM and JavaScript related?
21. What does NaN stands for?
22. Which colors are considered cool colors?
23. What is the color wheel?
24. What is a complementary color?
25. What is an analogous color?
26. Describe three major aspects associated with usability.
27. In the domain of usability, what does it mean to create predictable links?
28. What is an object?
29. Define an object and add two properties named age and personsName.
30. Define a for loop that prints all the properties of an object.
31. What is the Global Object in JavaScript?
32. What does the break statement allow us to do?

Forms

1. Define a text field using the <input> tag that allows us to enter the name of a person. The size of the field is 20 characters.
2. What function can you use to retrieve the value associated with an <input> element?
3. Define a button using the <input> tag that allows us to call a function named “validate()” when the button is clicked on.
4. What is the purpose of the “action” attribute in the <form> tag?
5. Define a complete form (what goes in <form></form>) that reads the name and age of a person and sends this information to a server program located at: <http://www.notreal.server/process.php> . You can assume the names to use for the form elements are “personsName” and “personsId”. Keep in mind that you need to include some information in the <form> tag.
6. Can you have more than one form in a web page?
7. Define JavaScript code that retrieves the values associated with two text fields that have as ids “personsAddress” and “personsPhone”.

Programming

1. Rewrite the following function using a switch statement instead of a cascading if statement.

```
function assignTeacher(age) {  
    var teacher;  
  
    if (age == 10)  
        teacher = "Mrs. Smith";  
    else if (age == 12)  
        teacher = "Mr. Peterson";  
    else if (age == 9 || age == 8)  
        teacher = "Mrs. Sanders";  
    else  
        teacher = "Mr. Roberts";  
  
    alert("You have been assigned to: " + teacher);  
}
```

2. Write a function that reads a number and prints the even numbers between 1 and the value provided.
3. Write a function named arraysEquals that has the following specifications:

Prototype: function arraysEquals(first, second)

Parameter: first and second are one-dimensional arrays of integers

Processing: the function returns true if the two arrays have the same corresponding values. For example:

[10, 20, 345] is equal to [10, 20, 345]
[10, 20, 345] is not equal to [20, 10, 345]
[10, 20, 345] is not equal to [10, 20]
[10, 20, 345] is not equal to []

4. Write a function named **computeLetterGrade** that has the following specifications:

Prototype: function computeLetterGrade(score)

Parameter: score is a numeric value

Processing: the function will return a string representing a letter grade according to the following cutoffs:

score is 90 or above → “A”
score is less than 90 but higher than or equal to 80 → “B”
score is less than 80 but higher than or equal to 70 → “C”
other → “O”

5. Write a function named **product** that has the following specifications:

Prototype: function product(data)

Parameter: data is a one-dimensional array of floating-point values

Processing: the function returns the product of the values in the array

6. Write a function named **increasingSequence** that has the following specifications:

Prototype: function increasingSequence(data)

Parameter: data is a one-dimensional array of integers

Processing: the function returns true if the array of integers represents an increasing sequence of values and false otherwise. For example, 10, 50, 187 is an increasing sequence whereas 10, 20, 4, 90, 100 is non-increasing.

7. Write a function named **linearize** that has the following specifications:

Prototype: function linearize(data)

Parameter: data is a two-dimensional array of strings

Processing: the function returns a one-dimensional array with all the elements in data. For example, if the two-dimensional array has the following values:

“Jose”, “Mary”

“Peter”

“Rose”, “Kathy”, “Jane”

the array returned by the function will be:

“Jose”, “Mary”, “Peter”, “Rose”, “Kathy”, “Jane”