

General rules

1. This test is **open book**. You may consult the class notes, the recordings of the lectures, your programs, the textbook, and the Internet. But you must cite any sources you consult.

Sources consulted:

2. You may use up to 1 hour 15 minutes for this exam (including any time you spend consulting sources). If you have a documented disability, you may spend additional time.

Reason for turning in after 1:45pm EDT Thursday, October 8:

3. You must submit this exam via Canvas. You may (1) print the exam, write on it, then scan or photograph it, or (2) write the answers on paper, then scan/photograph them, or (3) enter the answers into a computer file using Word or something similar, including pictures, then export the file as PDF. I prefer PDF, but JPEG is also acceptable. You may submit multiple pages either by multiple submissions or (preferably) as a single ZIP file.
4. You must sign this note (either scan this page or write it on your test:

I have not spoken with other people about this exam, and I will not speak with others who are still taking the exam. I have only used the allowed amount of time on the exam.

Signature: _____

1 Basics

- (a) What web browser do you usually use? _____
- (b) Is the browser a web server or a web client? _____
- (c) What is the protocol we usually place in URLs? _____
- (d) Show an HTML tag that has exactly two attributes. It must be a valid tag and it must have valid attributes.
- (e) Is it valid to embed a `` within a `<td>`? _____

2 CGI-bin

- (a) When a web server running on Unix receives a request, how does it discover that the request refers to a program to run, not a file to return?
- (b) A CGI-bin program running in Unix might be a script written in Perl, Python, or some other scripting language. How does the server discover which language processor to invoke?
- (c) A CGI-bin program must generate the response to the request. What are the **two** components of that response?
- (d) What is a good method for debugging a CGI-bin program? (There are several reasonable answers).

3 Navigating the DOM

This question refers to <http://www.cs.uky.edu/~raphael/courses/CS316/examples/example.11.html>. You should try out your solutions using the Developer Tools console. You may not use XPath or jQuery for this question.

- (a) Write a JavaScript expression using the DOM that results in the `<h1>` node.

- (b) Given that the variable `h` has as its value that `<h1>` node, write a JavaScript expression that uses `h` and evaluates to the `fugiat nulla` text. You may use the `nextSibling` property of `h`.
- (c) Write an XPath expression that evaluates to the `` element. (There are many correct approaches.)
- (d) Given that the variable `elt` has as its value some node in the DOM, write a JavaScript expression that evaluates to the grandparent of that node, if it exists.

4 CSS

This question also refers to

<http://www.cs.uky.edu/~raphael/courses/CS316/examples/example.11.html>.

- (a) Write JavaScript that uses `h` from the previous question and turns the content, `Put the mouse here!`, into green with a background of yellow. Do not use jQuery. You might need multiple statements.
- (b) What CSS could you put in the `<head>` section to place a 1px solid blue border around the entire body and set its default font to Helvetica?
- (c) What CSS could you put in the `<head>` section so that all elements with class `"strange"` have padding 2px, background color yellow, and a bottom border 3px solid brown?
- (d) I can place CSS on a `` element in three ways. In what order does the browser search these three for a particular presentation attribute such as color?

5 jQuery

This question can refer to

<http://www.cs.uky.edu/~raphael/courses/CS316/examples/example.15.html>, but it applies in general to any web page.

- (a) Write a jQuery expression that returns all `<p>` nodes.

- (b) Write a single jQuery statement that changes the content of all `<div>` nodes to the string `"sorry!"` in boldface.

- (c) Write a JavaScript function `pumpkin()` that takes a node of the DOM, converts it to a jQuery object, then uses jQuery to set its background color to orange.

- (d) Write a jQuery statement that applies `pumpkin()` to all nodes that belong to class `"pre"`, passing the node itself to `pumpkin()`. You might use the `each()` method for jQuery objects.

- (e) Write a jQuery statement that changes the font size of the second `<h1>` element to 100px over the course of 1 second.