

## General rules

1. This test is **closed book**. You may not consult the class notes, the recordings of the lectures, your programs, the textbook, or the Internet.
2. You may use up to 75 minutes for this exam . If you have a documented disability, you may spend additional time as agreed upon in your official letter of accommodation.
3. You must sign this note:

I have not spoken with other people about this exam, and I will not speak with others who have not finished the exam.

Signature: \_\_\_\_\_

## 1 Basics

- (a) Is Firefox (1) a **web server**, (2) a **web client**, or (3) a **web protocol**? (Circle (1), (2), or (3).)
- (b) Consider this URL: `https://www.cs.uky.edu/~abcd123/somewhere/file.php`. What is the DNS name of the server for that URL? \_\_\_\_\_
- (c) In the MultiLab, what is the **full path name** of the file that the URL above specifies? You may use the tilde abbreviation (`~`) to refer to a home directory.
- (d) In the MultiLab, the file that the URL above specifies has permissions 664 (in octal). Does our Apache web server respond to the URL above by (1) sending the file, (2) running the file as a program and sending its output, or (3) immediately logging an error? (Circle (1), (2), or (3).)
- (e) Is it valid HTML to embed a `<form>` region within a `<tr>` region? (Circle **yes** or **no**).

## 2 HTML

- (a) Name three tags that are required in a properly formatted HTML file.
- (b) Name an attribute that is required in an `<img>` tag.

- (c) I want to put a black box around a `<span>` element. Without putting any content in the `<head>` region or using any JavaScript, how can I do that? Be specific: What do I place in the file and where do I place it?
- (d) I wish to force the content of a region started by `<div id=howdy>` to be formatted in the Arial font. Without adding attributes to the start tag or using JavaScript, how can I do that? Be specific: What do I place in the file and where do I place it?
- (e) What is the purpose of an `integrity` attribute in a `<script>` region?

### 3 Navigating the DOM

- (a) Write a JavaScript expression using the DOM that selects the second `<pre>` element in an HTML page. Do not assume the existence of any attributes on that tag. Do not use jQuery. There are several correct answers.
- (b) Given that the JavaScript variable `myElt` has as its value that `<pre>` element, write a JavaScript statement **that uses** `myElt` and changes the font color of that element to red. Do not use jQuery.
- (c) Write a JavaScript expression using the DOM that selects all the `<p>` elements that have class `myClass`. Do not use jQuery.

## 4 CSS and jQuery

- (a) Write CSS that you could place in the `<style>` region to put a 6px dotted green border around each `<li>` region.
- (b) Write CSS that you could place in the `<style>` region to make the background color *lightblue* and the font weight *bold* in each region whose classes include `myClass`.
- (c) Write a single JavaScript statement that uses jQuery has exactly the same effect (color and font weight for each region whose classes include `myClass`).
- (d) Write a single JavaScript statement (optionally using jQuery) that causes the size of the font in those same regions to become 30px when the mouse moves into that region (the event is called "mouseenter").
- (e) Same as above (size becoming 30px on mouseenter) but animated to take 2.5 seconds.

## 5 Organization

- (a) **Read this question entirely before starting.** In class, Dr. Finkel uses a desktop computer to demonstrate examples. Draw a picture with rectangles depicting the desktop computer, the server's computer, and the MySQL server's computer. Inside those rectangles place circles (shape unimportant) depicting the web server, the SQL server, the browser, and a running CGI program. Place the following numbers in the picture in the right places.

- 1 Apache2
- 2 Firefox
- 3 PHP
- 4 mysql server program
- 5 the front end
- 6 the back end
- 7 where JavaScript runs
- 8 where SQL queries are generated

Do not put any labels in the picture other than the numbers.

- (b) If I have a database table called `mytable`, what SQL query returns all the fields of all the entries in that table?
- (c) Why are AJAX calls sometimes preferable to `<form>` submits?
- (d) Show a call to the built-in JavaScript function that accomplishes AJAX to invoke `echo.cgi` using the GET method and providing `parameter1` with value `Hello, world!`. You may assume that the CGI program is in the same directory as the invoking web page. The code may ignore the result.