

General rules

1. This test is **closed book**.
2. There are 5 questions.
3. You may use up to 2 hours for this exam. If you have a documented disability, you may spend additional time.
4. You must sign this note:

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

Signature: _____

1 Web programming

For each of the following fragments, indicate whether it is (a) plain JavaScript, (b) plain jQuery, (c) jCanvas, (d) DataTables, (e) React + Babel, (f) CSS, (g) PHP. You may simply write a letter in each answer line.

1. `$("#myPlace").drawArc(...)` _____
2. `document.querySelector("#myTable")` _____
3. `@font-face` _____
4. `$(".pre").fadeOut(3000)` _____
5. `if (isset($_REQUEST["category"])) ...` _____
6. `const myHeader = "<h1>Hello world</h1>"` _____
7. `@media only screen and (max-width: 700px)` _____
8. `$(".table").css("font-style", "bold")` _____
9. `something.render(<p>Lorem ipsum</p>, domElement)` _____
10. `theArray.forEach(function (elt) ...)` _____

2 HTTP and CSS

In the following, if you don't remember the exact syntax, invent a reasonable syntax for partial credit.

1. Show the CSS you would put in the `<style>` section so all `<td>` elements have a gray shadow, with the shadow to the right and above, 10px wide, blurred.
2. Show the CSS you would put in the `<style>` section so an `input` element on the page with `id="myElt"` becomes invisible when the cursor hovers over it.
3. Define the concept of **tooltip**.
4. What is the difference between a **box shadow** and a **text shadow**?
5. Name an automatic manipulation (there are several) that the HTML can specify on an `<input type="text">` element.

3 Bootstrap

1. What version of Bootstrap did we use in class? _____.
2. Does this version of Bootstrap require jQuery? _____.
3. What class should you add to an element so Bootstrap styles it like a button?
_____.
4. Show the classes you would put on a `<div>` element so that it generally occupies the first 11 of the 12 horizontal cells, but if the browser is at least large (lg), it skips 4 cells and then occupies 5 cells.
5. Name one Bootstrap feature that is "opt-in", that is, you only get this feature if the page executes explicit JavaScript code to enable it.

4 DataTables and jCanvas

1. DataTables and jCanvas rely on what underlying software? _____.
2. To apply jCanvas, you must (a) include PHP, (b) include *popper.js*, (c) refer to external CSS in the `<style>` section, (d) include Bootstrap, (e) have at least one `<canvas>` element, (f) have at least one `<svg>` element. Circle **all** the correct answers.
3. What method did the DataTables example in class use to acquire the information to put in the table? _____.
4. What is the purpose of the optional `render` component of a DataTables configuration?
5. Show the JavaScript that causes jCanvas to draw a black circle, without border, with radius 40px and centered at (100, 100) in a canvas element that has `id="myCanvas"`.

5 IndexedDB

- (a) Is the information in an IndexedDB database stored (a) on the web server, (b) in a mySql server, (c) on the browser's computer, (d) in the cloud? Circle the correct answer.
- (b) In your **fifth** programming assignment ("All you can munch"), if you access your web site from a computer you have never used before, what do you see for the number of accesses of the "snacks" menu item?
- (c) In your **third** programming assignment ("Even better munching"), if you access your web site from a computer you have never used before, what do you see for the number of accesses of the "snacks" menu item?
- (d) In an IndexedDB database, what must every entry in a table contain, at a minimum?
- (e) In the IndexedDB database we used in class, is the following a valid entry? (Circle **yes** or **no**; if no, explain why)
- ```
{ "key": 1000, "horse": "Man-o-War", "history": { "first": 1919,
"derby": ["never"] } }
```