

Advanced Web Development and Web Scraping
Spring 2020
Exam I Practice

Format: the exam will be completed on pen and paper and will involve web development coding questions similar to the homeworks and to the practice problems below. You may bring 1 page of notes (front and back) to the exam. The use of computers will not be allowed.

Outline

- I. HTML - You should be able to create / modify the following elements:**
 - a. Headings (h1, h2, ...)
 - b. Paragraphs
 - c. Span
 - d. Div
 - e. Forms and inputs (checkboxes, textboxes, numeric inputs, submit button, and reset button)
 - f. Buttons (using the button tag)
 - g. Links
 - h. Tables (including table rows, table headers, and table data elements)

- II. Cascading Style Sheets (CSS) – you should be able to add or modify the following styles, using *inline styles* or an *internal style sheet*.**
 - a. Font color
 - b. Background color
 - c. Display (inline, block, inline-block)
 - d. Position (static, fixed, absolute, relative) and location (left, right, top, bottom)
 - e. Width
 - f. Height
 - g. Border
 - h. Hover pseudo-class
 - i. Properties which are provided for you (e.g., set the *font-family* property of all paragraphs to *courier*)
 - j. For internal style sheets, styles applied to one or more elements, elements with classes, elements with ids, and descendent selectors

- III. Javascript**
 - a. Variables, arrays, objects, for loops, if, else if, else, functions
 - b. Get an element or elements by id, tag name, or class
 - c. Change an element's innerHTML
 - d. Set the element's inline style
 - e. Change an element's class

IV. JQuery

- a. Get an element or elements by id, tag name, or class
- b. Set an element's onclick property
- c. Change an element's inner HTML or text
- d. Change an element's inline style (using the `css` function)
- e. Check if an element has a class
- f. Add or remove an element's class
- g. Run code when the page is *ready*

Practice Problems

1. Using CSS, make the following changes to the web page:
<https://gdancik.github.io/CSC-301/data/notes/tags.html>
 - a. Change the color of the header to magenta
 - b. When a user hovers over a link, change the background color to blue and the text color to white.
2. Create 2 side-by-side tables using the appropriate HTML and CSS. Hint: each table is inside of a *div*.

Table 1

1	2	3
4	5	6

Table 2

A	B	C
D	E	F

3. Consider the following JavaScript array containing the last 3 Academy Award Winners for Best Picture:

```
winners = [ {movie: 'The Shape of Water', year: 2017},  
             {movie: 'Green Book', year: 2018},  
             {movie: 'Parasite', year: 2019}  
];
```

Generate a table in JavaScript where the first column contains the year and the second column contains the movie name.

4. Create two numeric input boxes side by side, with an Add and Reset button. Using plain JavaScript, when a text box gets focus (which triggers the *onfocus* event), change the background color to pink. When it loses focus (which triggers the *onblur* event), change

the background color back to white. When the user clicks add, the sum of the numbers is displayed in the form “The sum of **3** and **4** is **7**”. The Reset button should reset both inputs, and the user should be prompted to enter valid numbers if the user clicks “Add” when numbers have not been entered.

5. Repeat question (4), but use jQuery instead of plain JavaScript. Note that in jQuery the *onfocus* and *onblur* events can be set using the *focus()* and *blur()* functions, respectively. Note that the color changes should apply to the numeric inputs only, which are specified using `input[type= numeric]`. In order to get the value of an input using jQuery, the `val()` method should be called. For example, the following code gets the value of the input with an id of *num*: `('#num').val()`.
6. Modify both (4) and (5) to remove the Add and Reset buttons. Now the output displaying the sum updates automatically as the user types, which is captured through the *onkeyup* event (which is set by the *keyup()* function in jQuery). Note that the sum should only be displayed if both inputs are valid.