

Advanced Web Development and Web Scraping
Spring 2022
Assignment #4 – Web Frameworks

Note: To receive credit for the assignment, either show your instructor the assignment during class or create a *zip* file of your webpages, and submit the *zip* file through Blackboard. I will look at your code and evaluate it by copying/pasting your code into Glitch.

1. The jQuery and Bootstrap tutorials on w3schools are great references for learning more about these frameworks. However for this assignment the following tutorials are the most relevant (not collected):
 - a. Bootstrap5
 - i. https://www.w3schools.com/bootstrap5/bootstrap_grid_basic.php
 - ii. https://www.w3schools.com/bootstrap5/bootstrap_buttons.php
 - b. jQuery
 - i. https://www.w3schools.com/jquery/jquery_selectors.asp
 - ii. https://www.w3schools.com/jquery/jquery_css.asp
 - iii. https://www.w3schools.com/jquery/jquery_dom_set.asp (top only)
 - iv. https://www.w3schools.com/jquery/html_attr.asp
 - v. https://www.w3schools.com/jquery/jquery_css_classes.asp
2. Use **Bootstrap** and the appropriate *col-sm-** attributes to create a page with 3 rows that consist of 2, 3, and 1 columns (see screenshot below), by modifying the *buttons.html* file. All buttons have a “btn btn-danger” style. Use **jQuery** so that clicking on a button will change its style to “btn btn-success”, and clicking the button again will change it back to “btn btn-danger”. In order to do this, the jQuery methods *hasClass*, *addClass*, and *removeClass* will be useful.



(after clicking on the middle button)



3. Specify the **jQuery** code that will do the following on the page below (Note: test your code by running it in the JavaScript console; your jQuery code will work because Wikipedia uses jQuery, so jQuery is loaded).

https://en.wikipedia.org/wiki/Eastern_Connecticut_State_University

- a. Change the color of all links (all `<a>` elements) to red
- b. Add appropriate events so that when a user hovers over any element, that element (and none of its parents) are highlighted. An element should also be highlighted when moving from a child to one of its parents. Your code for this will be very similar to one of the examples covered in class, but your selector should select *all* elements.
- c. Change the style of the *h1* heading at the top of the page as follows:
 - i. Set the font color to white and the background color to black
 - ii. Set the position to *sticky* and its position 0 pixels from the top of the page. An element with a *sticky* position will scroll until it reaches the position specified by its css (such as 0 px from the top), and then will be fixed.
 - iii. Set the z-index to 1000, so that the heading does not get covered by other elements. (If two elements overlap, then the element with the larger z-index appears on top).

Note that you can set multiple CSS properties simultaneously by passing an *object* of CSS property values to the jQuery `css` function (although you can also call `css` multiple times). For example, the code below would set the font color and border of all *divs* on the page:

```
$('div').css({'color':'red', 'border': '1px solid black'})
```

4. Add **jQuery** statements to the `$(document).ready()` function in the `links.html` page to do the following:
 - a. Change the color of the h1 header to red (or another color)
 - b. When the mouse enters (*mouseenter* event) a link element (an `<a>` tag), the web address is displayed in the div with id = "url" and the display of this div is set to "block"; when the mouse moves away from the link (*mouseout* event), the div with id "url" is hidden.