Week 4 Tutorial Challenges

Again we start with a simple web page with an elegent layout.

Learning outcomes are:
Variable scope (the difference between variables declared inside function and those declared outside funcitons)
Creating strings for setting colors, and styling htmls elements

Below are the challenges.
Pair up (**I highly recommend different pairs than last week**), open the project in your Sublime editor, and your off!

Overview First will add a click counter to the header panel of the web page. Then we'll add a slider to the aside panel that will change the header panel background coler between black and white (and shades of grey in between).

Challenges:

Counting clicks on an element

1. In your javascript file, get the header element and save it in a variable.
2. Create a variable that we will use as a counter and initialize it to 0.
3. add an event listener on the header element to listen for mouse clicks it gets. As the second argument to addEventListener, create a function that
    - increases the click count,
    - changes the text in the header element to read something like "OK, I have now received X clicks" (where X is the click count).
    - Now make it lie: have it print out 100 times the number of actual clicks it has received.
    - Now we'll break our code: Move your declaration and initialization of your counter so that it is inside the callback function.
      Now how does the counting work when you click in your browser? Why? It is *very* important to understand what is happenning and why (discuss with your partner, or ask if you are not sure.)
    - Move the declaration back to a location where it funcitons properly for this task.

4. Now in your index.html file, add a slider to the aside element.
5. Set attributes min, max (don't foget to quote the values)
   check your slider - how does it move?
6. Now set the step attribute to .01
   Now how does it move?

7. In your javascript file, get the slider from the DOM and save it in a variable.
    - Create an event listener for the 'change' event that prints a message to the console. How does that work for you?
    - Change the event it listens for to 'input'. How does that change the behavior?
8. Have your slider 'click' listener callback print a message to the console with the slider value (the 'value' attribute of the slider).
9. In your slider callback function, set the style.backgroundColor of the header element to be black (when the slider is 0), white (when the slider is 1), and shades of grey for values in between. Use the rgb() method of specifying the color.
    - hint: "rgb(255,255,255)" would specify white
    - another hint: you have to use integers (e.g. 45) for the color values. Floats (eg 45.3) won't work.
    - yet another hint: 'Math' is a predefined object with lots of handy methods. One of them is 'floor' that takes a floating point number and returns the integer part.
      Thus Math.floor(3.1416) is equal to 3.

Reflection / discusssion

- What is the "scope" of slider.value? Currently we refer to it inside a listener attached to the slider itself. Could we access it inside the header mouse click listener? Why/Why not?

Bonus Round

Create 2 radio buttons on the nav for selecting between 'Option1' and 'Option2'

- note: giving the two radio button element the same value for the 'name' attribute is all you need to do to make sure only one button is selected at a time.
- Give each radio button a listener for the 'change' event with a callback function that does something ridiculous to some aspect of your web page. (For example, you could switch the background images between the body and the aside; you could change the behavior of the slider; etc….)

Reflection

What kind of app would you like to make with skills you expect to acquire in this course?

What might you use sliders to do in that app?

What might you use radio buttons to do in that app?

Can you imagine roughly what your code would look like for using these interface elements in your app?