Assignment 1 – HTML, CSS, Javascript  
COS318 – Web Programming

For this first assignment, you will be creating a basic HTML page that contains CSS and javascript. It certainly won’t be fancy looking. That’s fine, but it might have superheroes.

1. **(20 Points) HTML and CSS**
   1. Your page should contain a big block of text. It is easiest to just copy and paste it from somewhere. I like superheroes. It could be something about superheroes.
   2. The web page should have some background color of your choice, and a font of a different color. It would be neat if the colors corresponded to the superhero text (if you did the superhero text that is, otherwise whatever colors that look good to you)
2. **(20 Points) Div tags**
   1. Your page must have at least three different div tags, all different colors.
      1. The first should be positioned so that it doesn’t move when the page scrolls.
      2. The second should be positioned on top of the text from step 1. Neither should be too big though; I want to read about superheroes.
      3. The last div can be whatever and wherever you want, but put a picture inside it.
3. **(10 Points) External Link**
   1. Somewhere in the text from step 1, add a link to some website that relates to the text in some way, perhaps to a trailer for a good movie about superheroes?
4. **(30 Points) Javascript**
   1. Add a textarea and a button to the page. Clicking this button will parse the text in the textarea as JSON.
      1. If the text isn’t valid JSON, display an error on the page. (remember rule 2)
      2. If the JSON contains the following keys, use the values to change things about the page. (remember these are case-sensitive)
         1. color: Set the color of the text of the page to this value.
         2. backgroundColor: Set the background color of the page to this value.
         3. link: This value will be an object with two keys, href and displayText. Use href to change the link destination from your external link (step 3 of the assignment) and displayText to change the displayed text for your external link.
5. **(20 Points)** Code style, formatting, completeness, and quality.

Stretch Levels

If you already have a lot of experience with HTML and CSS or you just like superheroes as much as me, try to complete these stretch levels for a reputation bonus. If you try for the stretch levels, make sure to type it in the comments on Moodle so I don’t miss it.

**Hawkeye Level**

Make the background of the page two colors instead of one. The left half one color and the right half a different color. The block of text from step 1 should still cover the full page from left to right. No using background images for this either. Do it with block elements. Your json should use backgroundColorLeft and backgroundColorRight instead of backgroundColor.

**Iron Man Level**

Add a button in the lower right corner that moves the color dividing line from Hawkeye level to a random position. I.e. it starts at a 50% split, but each time you click it the % split will change, perhaps to 10%, 30%, or even 85%. Random numbers!

**Thor Level**

In Iron Man level you made the vertical split be randomly changeable. Now made the transition happen smoothly over 1 second. Don’t forget, no external libraries. Also, no javascript loops allowed! Use CSS.

The Rules

1. **New Rule:** No inline styles or inline javascript.
2. **New Rule:** Error messages must be “in-page” i.e. no pop-ups or alerts.
3. **New Rule:** Any resources not created by you (images, javascript libraries, etc.) must be referenced using a CDN or URL, not directly included in your assignment submission.