DIY Tutorial Challenges (Prep for Assignment 3)

This week you will start with a simple web page with an elegant layout and exercise the skills you have developed during the first two weeks of class. **The starting template is the same as for Assignment 3.**

Learning outcomes are:
Understand the two of the most fundamental "computational thinking" concepts of objects (representation), and functions (processing).
We also will practice interacting with the DOM through JavaScript code.
Below are the challenges.
Open the project in your Sublime editor, and your off!

Challenges:
1. Give the 'article' element an id in the html file, so that you can access it (from css or JavaScript).
2. Now in your JavaScript file main.js, use the DOM (through the built-in object 'document' , and it's method getElementById()) to get the article element, and store it in a variable.
3. Set the innerHTML property of the article element to some text - whatever - just give yourself a welcome to your web page!
4. Write a function named 'foo ' that takes two numbers as arguments, prints a console message saying you are in the function, and returns the difference between them.
5. Create two variables, 'x', and 'y', and assign numbers to them.
6. Use the variables and the value returned by calling the 'foo' function on them to consturct a sentence printed in your article element. The sentence should read something like: "The difference between 7 and 100 is 93"
   - Hint: if you don't want to overwrite the text already in your article element, put a line break (
) at the end of your previous welcome message, then use '+=' to add the new text.
7. Create a new function "multi" that takes 2 numbers as arguments, and returns an object with 3 properties, "sum", "difference" and "product", assigned to the values for the sum, the difference, and the product of the function arguments.
8. Create a variable, and use it to store the result of calling the multi function

9. Add 3 sentences to the innerHTML of the article element presenting the differnt properties of the object returned by your call the multi.
10. Create two variables with names 'point1' and point2', and assign them to objects that have two properties, 'x' and 'y', giving 'x' and 'y' different values for each of the points.
11. Create a new function called 'pointsum', that expects two points as input arguments (that is, two objects each with an 'x' and a 'y' property). The function should return an a new point object that is the sum of the two input points.
12. As before, add sentence to your article that expresses the results of calling your function.
    ○ Hint: JSON is a built-in object that has a stringify method that "pretty prints" objects provided as an argument. Use JSON.stringify() to print the result of the call to your pointsum function.

Reflection / discusssion

- What is the basic anatomy of a function?
- What is the basic anatomy of an object ?
- What would an object look like that has a function as a property?
- How would you call a function that is a property of an object?

Bonus Round 1
Style the article element text using the style font property!

Bonus Round 2
You don't **have** to create all your html elements in the HTML document. You can create them **dynamically** with JavaScript:

var myElmt = document.createElement(arg) // arg is the tag for **any** html element

then you can use appendChild() to add it as a child to any other element. Can you dynamically add a paragraph to your article?
Create it, add innHTML to it (the text of your paragraph) and then append it to your article!