

Homework #1 – JavaScript

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Design approach:

After reading the requirement carefully, I decided to make a HTML page with a simple interface where user can input numbers, and one button to execute them and show the result in the same page in the following steps:

- 1- Create a HTML page with the input/output elements
- 2- Write a function in JavaScript that will show what's in the input field somewhere in the page using DOM manipulation.
- 3- Write a JavaScript code that will calculate the average, total number of integers that are larger than the average.
- 4- Integrate codes in one HTML page.
- 5- Enhance the interface using CSS.

Implementation details:

- 1- Building an HTML page with the required elements (input field, button) and assign an ID for the input field, and call a function I named it `compute` when user click the button.

```
<p>Enter numbers separated by a space:
<input type="text" id="numbers">
<button onclick="compute()">Compute</button>
```

- 2- Extracting the input values from the input field called “numbers” to an array using the built-in function in JavaScript called `split`

```
var entries = document.getElementById("numbers").value;
var res = entries.split(" ");
```

- 3- Getting the length of the array

```
var arrayLength = res.length;
```

- 4- In the previous step, the function `split` will convert the entered numbers into an array of strings of numbers, this causes a problem doing arithmetic operations, so we have to use the JavaScript built-in function called `parseInt` to convert the type of each element “number” from a string type to an integer, using a for loop

```
for (var i = 0; i < arrayLength; i++) {  
    res[i] = parseInt(res[i], 10);  
}
```

- 5- Now we got the array as an integer values, we start the computation by calculating the sum of the numbers, divide that by length of the array using `array.length` property to get the average using another for-loop.
- 6- Implement another for-loop to calculate how many numbers are larger than the average number.
- 7- Enhance the code by adding the autofocus pointer to the input field, and make hitting Enter on the keyboard act like a click on the “Compute” button.

Citation:

- HTML elements, DOM manipulation, CSS styling, JavaScript <http://www.w3schools.com>
- HTML standards <http://www.w3.org/>
- Convert comma separated to an array in JavaScript, and other stuff <http://stackoverflow.com/>
- Converting array of strings to an array of integers https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/parseInt

Conclusion:

- W3school.com is amazing!
- JavaScript can manipulate CSS too!
- I have to be careful to the data types.

To Fix:

- If last input is a space will cause an extra element in the array and error in calculating.
- Check if not empty.

Questions:

- Can I use the split method of JavaScript to generate an integer array directly instead of a string array?