Intro to JavaScript Week 3 Coding Assignment

Points possible: 70

Category	Criteria	% of Grade
Functionality	Does the code work?	25
Organization	Is the code clean and organized? Proper use of white space, syntax, and consistency are utilized. Names and comments are concise and clear.	25
Creativity	Student solved the problems presented in the assignment using creativity and out of the box thinking.	25
Completeness	All requirements of the assignment are complete.	25

Instructions: In VS Code, or an IDE of your choice, write the code that accomplishes the objectives listed below. Ensure that the code compiles and runs as directed. Take screenshots of the code and of the running program (make sure to get screenshots of all required functionality) and paste them in this document where instructed below. Create a new repository on GitHub for this week's assignments and push this document, with your JavaScript project code, to the repository. Add the URL for this week's repository to this document where instructed and submit this document to your instructor when complete.

Coding Steps:

1. Create an array called ages that contains the following values: 3, 9, 23, 64, 2, 8, 28, 93.
    a. Programmatically subtract the value of the first element in the array from the value in the last element of the array (do not use numbers to reference the last element, find it programmatically, ages[7] – ages[0] is not allowed). Print the result to the console.

b. Add a new age to your array and repeat the step above to ensure it is dynamic (works for arrays of different lengths).

c. Use a loop to iterate through the array and calculate the average age. Print the result to the console.

```
// 1

const ages = [3, 9, 23, 64, 2, 8, 28, 93];

// 1-a
// subtract the the first element in the array from the last
console.log(ages[ages.length - 1] - ages[0]);
console.log(ages.length);


// 1-b
// add a new age to your array

ages.push(27);
console.log(ages[ages.length - 1] - ages[0]);
console.log(ages.length);


// 1-c
// use a loop to iterate through the array and calculate the average age

console.log(ages); // prints current array

let someOfAges = 0
for(let i = 0; i < ages.length; i++){
    someOfAges += ages[i];
}
console.log(someOfAges / ages.length); // calculates average age
```

```
Hello                                          Week3-CodingAssignment.js:1
90                                             Week3-CodingAssignment.js:9
8                                              Week3-CodingAssignment.js:10
24                                             Week3-CodingAssignment.js:17
9                                              Week3-CodingAssignment.js:18
▶ (9) [3, 9, 23, 64, 2, 8, 28, 93, 27]         Week3-CodingAssignment.js:24
28.555555555555557                             Week3-CodingAssignment.js:30
```

2. Create an array called names that contains the following values: ‘Sam’, ‘Tommy’, ‘Tim’, ‘Sally’, ‘Buck’, ‘Bob’.

a. Use a loop to iterate through the array and calculate the average number of letters per name. Print the result to the console.

b. Use a loop to iterate through the array again and concatenate all the names together, separated by spaces, and print the result to the console.

```
33  // 2
34
35  let names = ["Sam", "Tommy", "Tim", "Sally", "Buck", "Bob"];
36
37
38  // 2-a
39  // for loop
40  // iterate through the array
41  // calculate the average number of letters per name
42
43  let averageLetters = 0;
44  for(let i = 0; i < names.length; i++){
45      console.log(names[i].length); // prints average letters
46  }
47
48
49  // 2-b
50  // concatenate all the names together separated by spaces
51
52  const namesWithSpaces = names.join(" ");
53  console.log(namesWithSpaces); // prints all names separated by spaces
54
```

```
3                                   Week3-CodingAssignment.js:45
5                                   Week3-CodingAssignment.js:45
3                                   Week3-CodingAssignment.js:45
5                                   Week3-CodingAssignment.js:45
4                                   Week3-CodingAssignment.js:45
3                                   Week3-CodingAssignment.js:45
Sam Tommy Tim Sally Buck Bob        Week3-CodingAssignment.js:53
```

3. How do you access the last element of any array?

```
56  // 3
57  // Q: How do you access the last element of any array?
58  // ANSWER: you can access the last element in an array by using array.length - 1
59  // let lastElement = array[array.length - 1];
60
```

4. How do you access the first element of any array?

```
62  // 4
63  // Q: How do you access the first element of any array?
64  // ANSWER: you can access the first element in an array by using array[0]
65  // let firstElement = array[0];
66
```

5. Create a new array called nameLengths. Write a loop to iterate over the previously created names array and add the length of each name to the nameLengths array. For example:

   namesArray = ["Kelly", "Sam", "Kate"] //given this array

   nameLengths = [5, 3, 4] //create this new array

```
68  // 5
69  // Create a new array called nameLengths.
70  // Write a loop to iterate over the previously created names array
71  // and add the length of each name to the nameLengths array.
72
73  let nameLengths = [];
74  for(let i = 0; i < names.length; i++){
75      nameLengths.push(names[i].length);
76  }
77
78  console.log(nameLengths); // logs new array
79
```

```
▶ (6) [3, 5, 3, 5, 4, 3]                    Week3-CodingAssignment.js:78
```

6. Write a loop to iterate over the nameLengths array and calculate the sum of all the elements in the array. Print the result to the console.

```
81  // 6
82  // for loop
83  // uses a loop to iterate over the nameLengths array
84  let sumLengths = 0;
85  for(let i = 0; i < nameLengths.length; i++){
86      sumLengths += nameLengths[i];  // calculates the sum of all the elements in the array
87  }
88  console.log(sumLengths);
89
```

```
23                                          Week3-CodingAssignment.js:88
```

7. Write a function that takes two parameters, word and n, as arguments and returns the word concatenated to itself n number of times. (i.e. if I pass in ‘Hello’ and 3, I would expect the function to return ‘HelloHelloHello’).

```
// 7
// function that takes two parameters, word and n, as arguments and repeates word n number of times
// for Loop

function repeat(word,n) { // function that takes two parameters, word and n, as arguments
    var output = "";
    for(var i = 0; i < n; i++) {
        output += word
    }
    return output;
}
console.log(repeat("Hello", 3)) // prints result
```

```
HelloHelloHello                                    Week3-CodingAssignment.js:102
```

8. Write a function that takes two parameters, firstName and lastName, and returns a full name (the full name should be the first and the last name separated by a space).

```
// 8
// function that takes two parameters, firstName and lastName, and returns a full name

function makeFullName(firstName, lastName){
    console.log(firstName + " " + lastName);
}

makeFullName("Reynolds", "Sharp"); // runs function and prints full name
```

```
Reynolds Sharp                                     Week3-CodingAssignment.js:109
```

9. Write a function that takes an array of numbers and returns true if the sum of all the numbers in the array is greater than 100.

```
// 9
// function that takes an array of numbers
// returns true if the sum of all the numbers in the array is greater than 100

function testOneHundred(myArr) {
    let sumOfNumbers = 0;
    for(let i = 0; i < myArr.length; i++){
        sumOfNumbers += myArr[i];  // calculates the sum of all the elements in the array
    }
    console.log(sumOfNumbers);

    return (sumOfNumbers > 100)
// returns true if sum of all the numbers in the array is greater than 100
}
console.log(testOneHundred([50, 40, 25]));  // takes an array of numbers and prints
```

```
true                                               Week3-CodingAssignment.js:129
```

10. Write a function that takes an array of numbers and returns the average of all the elements in the array.

```
132  // 10
133  // function that takes an array of numbers
134  // returns the average of all the elements in the array
135
136  function findAverage(myNewArr) {
137      let sumNumbers = 0;
138          for(let i = 0; i < myNewArr.length; i++){
139              sumNumbers += myNewArr[i];  // calculates the sum of all the elements in the array
140          }
141      return (sumNumbers / myNewArr.length); // retruns average
142  }
143
144  console.log(findAverage([10, 50, 100]));
```

```
53.333333333333336                    Week3-CodingAssignment.js:144
```

11. Write a function that takes two arrays of numbers and returns true if the average of the elements in the first array is greater than the average of the elements in the second array.

```
146  // 11
147  // function that takes two arrays of numbers and returns true
148  // if the average of the elements in the first array is
149  // greater than the average of the elements in the second array.
150
151  function findNewAverage(myFirstArray, mySecondArray) {
152      let sumOne = 0;
153          for(let i = 0; i < myFirstArray.length; i++){
154              sumOne += myFirstArray[i];  // calculates the sum of all the first elements in the array
155      }
156      let sumTwo = 0;
157          for(let i = 0; i < mySecondArray.length; i++){
158              sumTwo += mySecondArray[i];  // calculates the sum of all the second elements in the array
159      }
160  return (sumOne / myFirstArray.length) > (sumTwo / mySecondArray.length); // retruns true if 1 greater than 2
161  }
162
163  console.log(findNewAverage([10, 50, 11000],[36, 75, 2000]));
```

```
true                                  Week3-CodingAssignment.js:163
```

12. Write a function called willBuyDrink that takes a boolean isHotOutside, and a number moneyInPocket, and returns true if it is hot outside and if moneyInPocket is greater than 10.50.

```
// 12
// function that takes boolean isHotOutside and moneyInPocket
// returns true is it hot outside and moneyInPocket is > 10.50
function willBuyDrink(isHotOutside, moneyInPocket){
    return (moneyInPocket > 10.50 && isHotOutside);
}
console.log(willBuyDrink(true, 20.50));
```

```
true                                    Week3-CodingAssignment.js:171
```

13. Create a function of your own that solves a problem. In comments, write what the function does and why you created it.

```
// 13
// IDEA: RPG healthbar & accrued combat damage ->
// to determine player health after combat rounds of damage
// and if/when the character willDie

// damage, damageBonus, playerHealth

function willDie(damage, damageBonus, playerHealth){
    let i = 0;
    let accDmg = 0;
    do {
        accDmg += damage * damageBonus;
        console.log(playerHealth - accDmg);
        i++;
    } while (playerHealth > accDmg)
    if (playerHealth <= accDmg){
        return console.log("You have died");
    } else {
        return console.log("You are alive");
    }
}

willDie(5, 1.25, 30);
```

```
23.75                                   Week3-CodingAssignment.js:186
17.5                                    Week3-CodingAssignment.js:186
11.25                                   Week3-CodingAssignment.js:186
5                                       Week3-CodingAssignment.js:186
-1.25                                   Week3-CodingAssignment.js:186
You have died                           Week3-CodingAssignment.js:190
```

Screenshots of Code:

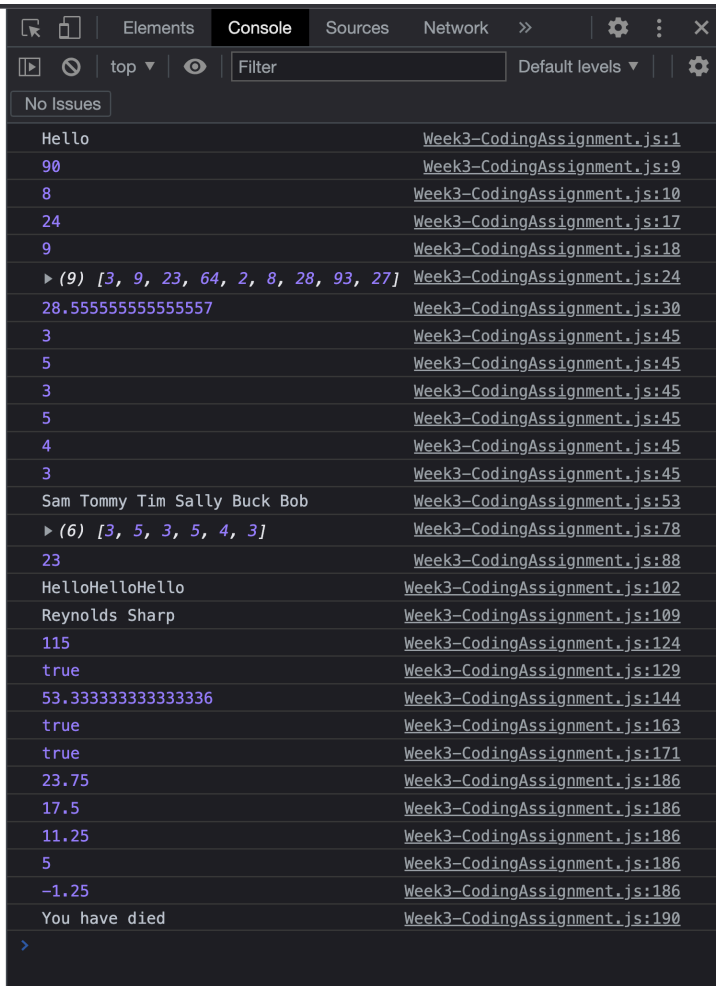
Users > sharpdesignco > Promineo > Week3 > Week3_Coding_Assignment > index.html > html

```
1   <!DOCTYPE html>
2   <html>
3       <head>
4           <meta charset="utf-8">
5           <meta http-equiv="X-UA-Compatible" content="IE=edge">
6           <title>Week 3 Coding Assignment</title>
7           <meta name="viewport" content="width=device-width, initial-scale=1">
8       </head>
9       <body>
10          <h1>Week 3 Coding Assignment</h1>
11
12          <!-- Uncomment the file you are working on -->
13
14
15          <script src="Week3-CodingAssignment.js"></script>
16
17
18      </body>
19  </html>
```

**JS Posted above*

Screenshots of Running Application:

Week 3 Coding Assignment



URL to GitHub Repository: https://github.com/Blackadder331/Week3-Coding-Assignment