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.

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.

3. How do you access the last element of any array? **Use something like *namesArray[namesArray.length -1]***

4. How do you access the first element of any array? **Use something like *namesArray[0]***

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.

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.

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’).

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).

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.

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

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.

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.

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

Screenshots of Code:

```
1   // 1a. and 1b.
 1  let ages = [3, 9, 23, 64, 2, 8, 28, 100];
 2  let lastMinusFirst = (ages[ages.length -1] - ages[0]);
 3  console.log("1a.&1b. lastMinusFirst is: " + lastMinusFirst);
 4
 5  // 1c.
 6  let total = 0;
 7  let averageAge = 0;
 8  for (age of ages){
 9          total += age;}
10  averageAge = total / ages.length;
11  console.log ("1c. Average of all ages in the ages array is: " + (averageAge));
12
13  // 2a. Find Average Num of Letters per Name
14  let names = ['Sam', 'Tommy', 'Tim', 'Sally', 'Buck', 'Bob'];
15  let nameLength = 0;
16  let averageLength = 0;
17  for (name of names){
18          nameLength += name.length;
19          averageLength = nameLength / names.length;
20  }
21  console.log("2a. Average Number of Letters per name is: " + averageLength);
22
23  // 2b. Concat all names together with spaces
24  namesList = "";
25  for (name of names){
26          namesList += (name + " ");
27  }
28  console.log("2b. List of Names is: " + namesList);
29
30  // 5.
31  let nameLengths = [];
32  for (x = 0; x < names.length; x++){
33          nameLengths[x] = names[x].length;
34  }
35  console.log("5. nameLengths array is: " + nameLengths);
36
37  // 6.
38  let sumOfLengths = 0;
39  for (lengths of nameLengths){
40          sumOfLengths += lengths;
41  }
42  console.log("6. sumOfLengths is: " + sumOfLengths);
43
44  // 7.
45  function concatWord(word, n){
46          let answer = "";
Assignment.js
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45 function concatWord(word, n){
44         let answer = "";
43         while (n > 0){
42                 answer += word;
41                 n--;
40         }
39         return answer;
38 }
37 console.log("7. Concat n times and output: " + concatWord("Beetlejuice", 3));
36
35 // 8.
34 function fullNameMaker(firstName, lastName){
33         return (firstName + " " + lastName);
32 }
31 console.log("8. Full Name is: " + fullNameMaker("Brendan", "Eich"));
30
29 // 9.
28 function sumMoreThanOneHundred(numbersArray){
27         let total = 0;
26         for (x of numbersArray){
25                 total += x;
24         }
23         if (total > 100){
22                 return true;
21         }
20         else{
19                 return false;
18         }
17 }
16 console.log("9. More than 100?: " + sumMoreThanOneHundred([25,25,25,26]));
15
14
13 // 10.
12 function averageOfElements(numbersArray){
11         let total = 0;
10         for (x of numbersArray){
 9                 total += x;
 8         }
 7         return (total / numbersArray.length);
 6 }
 5 console.log("10. averageofElements: " + averageOfElements([50,100,223,3313,30]));
 4
 3 // 11.
 2 function firstAvgMoreThanSecond(numbersArrayOne, numbersArrayTwo){
 1         let totalOne = 0;
91         for (x of numbersArrayOne){
 1                 totalOne += x;
Assignment.js
```
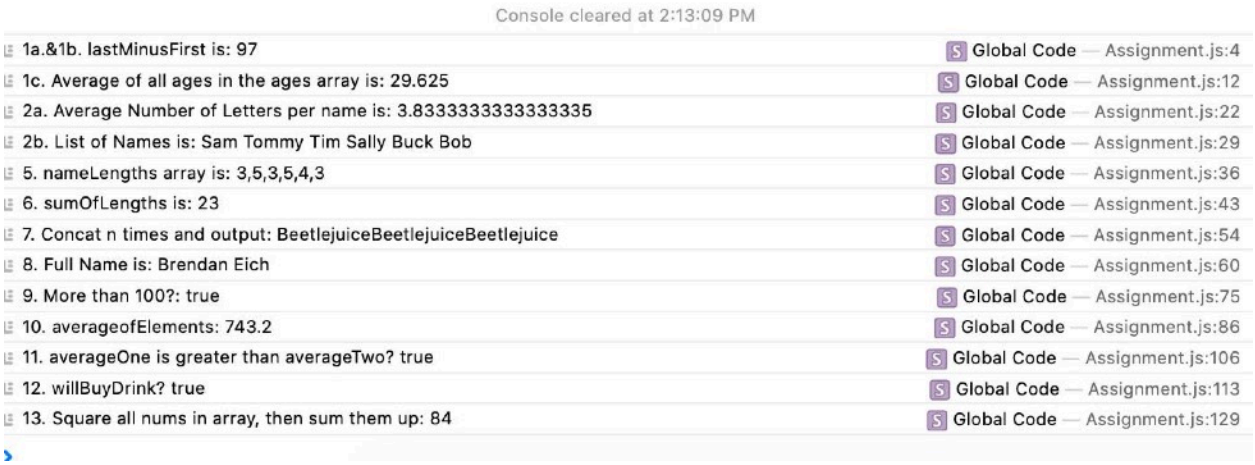


```
36          }
35          return (total / numbersArray.length);
34  }
33  console.log("10. averageofElements: " + averageOfElements([50,100,223,3313,30]));
32
31  // 11.
30  function firstAvgMoreThanSecond(numbersArrayOne, numbersArrayTwo){
29          let totalOne = 0;
28          for (x of numbersArrayOne){
27                  totalOne += x;
26          }
25          let averageOne = totalOne / numbersArrayOne.length;
24
23          let totalTwo = 0;
22          for (x of numbersArrayTwo){
21                  totalTwo += x;
20          }
19          let averageTwo = totalTwo / numbersArrayTwo.length;
18
17          if (averageOne > averageTwo){
16                  return true;
15          }
14  }
13  console.log("11. averageOne is greater than averageTwo? " + firstAvgMoreThanSecond([1,3,5],[0,3,5]));
12
11  //12.
10  function willBuyDrink(isHotOutside, moneyInPocket){
 9          if (isHotOutside && (moneyInPocket > 10.50)){
 8                  return true;}
 7  }
 6  console.log("12. willBuyDrink? " + willBuyDrink(true,100));
 5
 4  //13. My own function. SquareSum takes an array of numbers as input.
 3  // It then squares each number, then sums all the results togeter.
 2  // I wrote this to demonstrate how functions work, and how to work
 1  // with arrays and loops.
119
 1  function SquareSum(arrayofNumbers){
 2          let subTotal = 0;
 3          let answer = 0;
 4          for (x of arrayofNumbers){
 5                  subTotal = x*x;
 6                  answer +=subTotal;
 7          }
 8          return answer;
 9  }
10  console.log("13. Square all nums in array, then sum them up: " + SquareSum([2,4,8]));
Assignment.js
```

Screenshots of Running Application:



URL to GitHub Repository: https://github.com/blentz100/Week3