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

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:

Week3CodingAssignment.js

Week3CodingAssignment.js × index.html

Users > andrewallmeyer > Week3CodingAssignment.js > isTruelfGreater

```
1   //1.
2   var ages = [3, 9, 23, 64, 2, 8, 28, 93];
3   //console.log(ages);
4
5   //a)
6   console.log((ages[ages.length-1]) - ages[0]);
7
8   //b)
9   ages.push(76);
10  //console.log(ages);
11  console.log((ages[ages.length-1]) - ages[0]);
12
13  //c)
14  var sumOfYears = 0;
15  var numberOfAges = ages.length;
16  for (i = 0; i < numberOfAges; i++) {
17      sumOfYears += ages[i];
18  }
19  /* console.log(sumOfYears);
20  console.log(numberOfAges);
21  console.log(ages); */
22  console.log('The average age is '+ sumOfYears/numberOfAges);
23  //=============================================================================================
24
25  //2.
26  let names = ['Sam', 'Tommy', 'Tim', 'Sally', 'Buck', 'Bob'];
27  //console.log(names);
28  //a)
29  let totalLetters = 0;
30  let namesLength = names.map(function(name) {
31      return name.length;
32  });
33  for(i = 0; i < names.length; i++) {
34      totalLetters += names[i].length;
35  }
36  //console.log(totalLetters);
37  //console.log(names.length);
38  console.log('The average number of letters per name is '+ (totalLetters/names.length));
39
40  //b)
41  allNames = '';
42  for( i = 0; i < names.length; i++) {
43      allNames += names[i] +' ';
44  }
45  console.log(allNames);
46  //=============================================================================================
47
48  //3.
49  console.log(names[names.length -1]);
50  //=============================================================================================
```

```
//4.
console.log(names[0]);
//=============================================================================================

//5.
let nameLengths = [];
for( i = 0; i < names.length; i++) {
    nameLengths += names[i].length;
}
console.log(nameLengths);
//=============================================================================================

//6.
let sumOfNameLengths = 0
for( i = 0; i < nameLengths.length; i++) {
    sumOfNameLengths = sumOfNameLengths + names[i].length;
}
console.log(sumOfNameLengths);
//=============================================================================================

//7.
function repeatName(word, n) {
    let thisWord = '';
    for(let i = 0; i < n; i++) {
        thisWord += word;
    }
    return thisWord;
}
console.log(repeatName('Drew', 6));
//=============================================================================================

//8.
function giveFullName(firstName, lastName) {
    return firstName + ' ' + lastName;
}
console.log(giveFullName('Drew', 'Allmeyer'));
//=============================================================================================

//9.
var numberOfAges = ages.length;
function isGreaterThan100() {
    for (i = 0; i < numberOfAges; i++) {
        sumOfYears += ages[i];
        return sumOfYears > 100;
    }
}
console.log(isGreaterThan100());
//=============================================================================================
```

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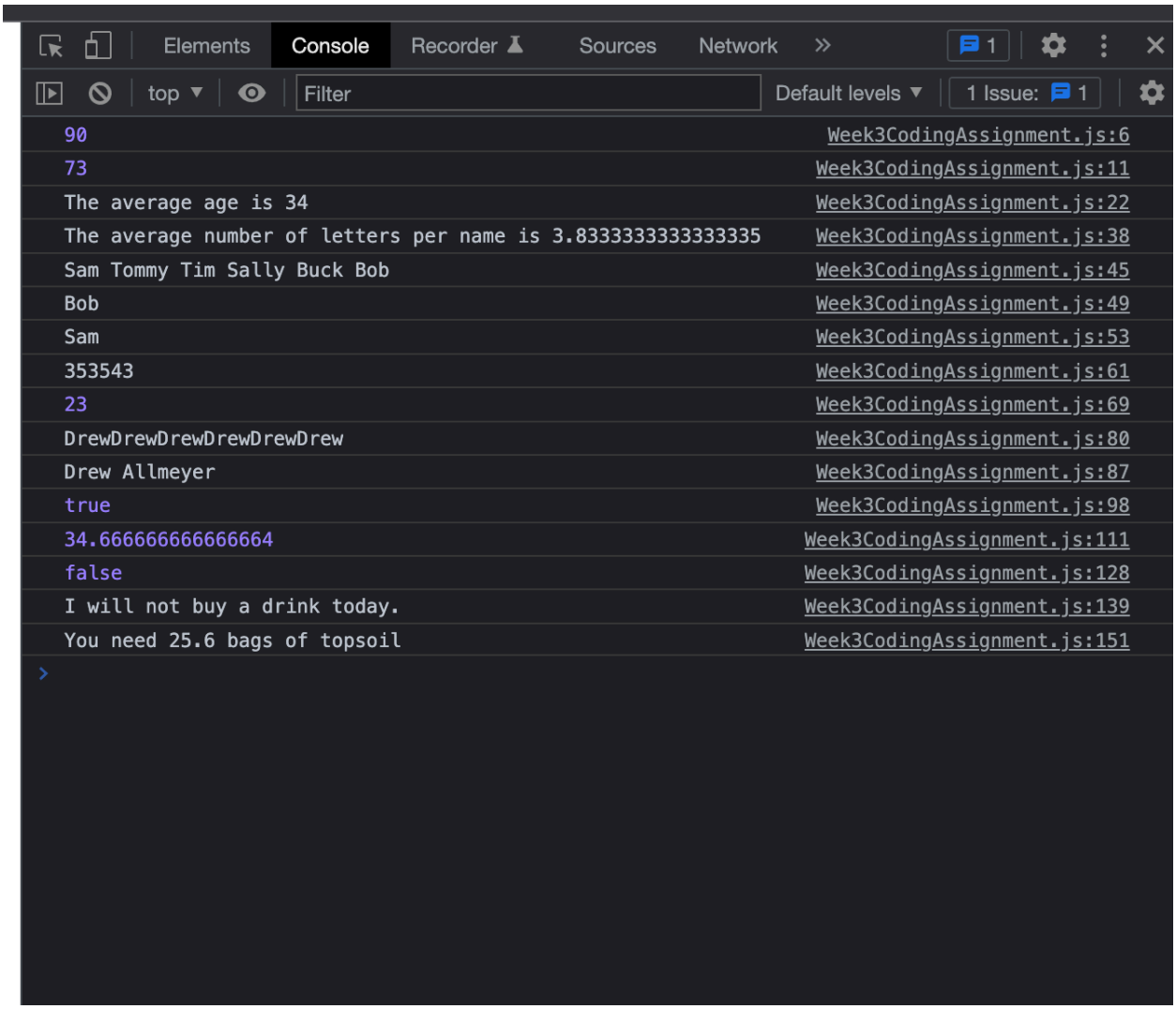
```
100
101 //10.
102 function averageOfAges() {
103     for (i = 0; i < numberOfAges; i++) {
104         sumOfYears += ages[i];
105         //let value = sumOfYears/numberOfAges;
106         //console.log(value);
107         // the same math from 1c above, when wrapped in this function, is returning a different value than
        the original operation  O_o  inputs are the same.   306/9=34
108         return sumOfYears/numberOfAges;
109     }
110 }
111 console.log(averageOfAges());
112 //=============================================================================================
113
114 //11.
115 let array1 = [27, 16, 42, 35, 2];
116 let array2 = [17, 84, 5, 9, 28, 46, 32, 27, 16, 39, 37, 30, 18, 15, 8];
117 let avarray1 = (array1.reduce(function(accumulator, currentValue) {
118     return (accumulator + currentValue);
119 })/array1.length);
120 //console.log(avarray1);
121 let avarray2 = (array2.reduce(function(accumulator, currentValue) {
122     return (accumulator + currentValue);
123 })/array2.length);
124 //console.log(avarray2);
125 function isTrueIfGreater(average1, average2) {
126     return average1 > average2
127 }
128 console.log(isTrueIfGreater(avarray1, avarray2));
129 //=============================================================================================
130
131 //12.
132 function willBuyDrink(isHotOutside, moneyInPocket) {
133     if (isHotOutside == true && moneyInPocket > 10.50) {
134         return true;
135     }
136 }
137 if (willBuyDrink(true, 7.99)) {
138     console.log('I will buy a drink.');
139 } else (console.log('I will not buy a drink today.'));
140 //=============================================================================================
141
142 //13.
143 // I have a garden bed and want to calculate how many bags of dirt i should buy to fill it.
144 // the function will calculate the volume and then determine the number of bags required.
145 // measures are in feet
146
147 function needBagsOfDirt(gardenLength, gardenWidth, bagOfDirt) {
148     let gardenVolume = gardenLength * gardenWidth
149     return gardenVolume/bagOfDirt
150 }
151 console.log('You need ' + needBagsOfDirt(8, 4, 1.25) + ' bags of topsoil');
152 //=============================================================================================
```

Screenshots of Running Application:



URL to GitHub Repository:

https://github.com/Allmeyer646/Week3Assignment/blob/main/Week3CodingAssignment.js