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?

   array[array.length-1]

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

   array[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.
   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:

```
// Create an array called ages that contains the following values: 3, 9, 23, 64, 2, 8, 28, 93.

// Add a new age to your array and repeat the step above to ensure it is dynamic (works for arrays of different lengths).
// Use a loop to iterate through the array and calculate the average age. Print the result to the console.

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

// Programmatically subtract the value of the first element in the array from the value in the last element of the array (do not
// reference the last element, find it programmatically, ages[7] - ages[0] is not allowed). Print the result to the console.

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

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

ages.push(44);

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

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

function avgAge(ages) {
    let total = ages.reduce((accumulator, currentValue) => accumulator + currentValue, 0);
    return total / ages.length;
}

console.log(avgAge(ages));

// Create an array called names that contains the following values:
//  'Sam', 'Tommy', 'Tim', 'Sally', 'Buck', 'Bob'.

let names = ["Sam", "Tommy", "Tim", "Sally", "Buck", "Bob"];

// Use a loop to iterate through the array and calculate the average
// number of letters per name. Print the result to the console.
let lettersPerName = names.map(function(element) {
    return element.length;
})
console.log(lettersPerName);

function avgLengths(lettersPerName) {
    let total = lettersPerName.reduce((accumulator, currentValue) => accumulator + currentValue, 0);
    return total / lettersPerName.length;
}
```

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```
46  console.log(avgLengths(lettersPerName));
47
48  // Use a loop to iterate through the array again and concatenate
49  // all the names together, separated by spaces, and print the result to the console.
50
51  console.log(names.join(', '));
52
53  // How do you access the last element of any array?
54  // array[array.length-1];
55
56  //How do you access the first element of any array?
57  // array[0];
58
59  // Create a new array called nameLengths. Write a loop to iterate
60  // over the previously created names array and add the length of each
61  // name to the nameLengths array. For example: namesArray = ["Kelly", "Sam", "Kate"] given this array
62  // name Lengths = [5, 3, 4] create this new array
63  let nameLengths = names.map(function(element){
64      return element.length;
65  })
66  console.log(nameLengths)
67
68  // Write a loop to iterate over the nameLengths
69  // array and calculate the sum of all the elements in the array.
70  // Print the result to the console.
71  function sumOfElements(array) {
72      let total = array.reduce((accumulator, currentValue) => accumulator + currentValue, 0);
73      return total;
74  }
75  console.log(sumOfElements(nameLengths));
76
77  // Write a function that takes two parameters, word and n, as arguments
78  // and returns the word concatenated to itself n number of times.
79  // (i.e. if I pass in 'Hello' and 3, I would expect the function to
80  // return 'HelloHelloHello').
81
82
83  function wordRepeat(word, n) {
84      let repetition = "";
85      while(n > 0) {
86          repetition += word;
87          n--;
88      }
89      return repetition;
90  }
```

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```
91  console.log(wordRepeat("Zac", 10));
92
93  // Write a function that takes two parameters, firstName and lastName,
94  // and returns a full name (the full name should be the first and the
95  // last name separated by a space).
96  function fullName(firstName, lastName) {
97      let firstLastName = firstName + " " + lastName;
98      return firstLastName;
99  }
100 console.log(fullName("Sam", "Iam"));
101
102 // Write a function that takes an array of numbers
103 // and returns true if the sum of all the numbers in the
104 // array is greater than 100.
105 function trueIfOver100(array) {
106     let total = array.reduce((accumulator, currentValue) => accumulator + currentValue, 0);
107     if(total > 100) {
108         return true;
109     }
110 }
111 let brother = [1, 2, 4, 8, 16, 32];
112 let sister = [1, 50, 20, 14, 16];
113 console.log(trueIfOver100(brother));
114 console.log(trueIfOver100(sister));
115
116 // Write a function that takes an
117 // array of numbers and returns the average of
118 // all the elements in the array
119 function arrayAvg (array) {
120     let total = array.reduce((accumulator, currentValue) => accumulator + currentValue, 0);
121     return total / array.length;
122 }
123 console.log(arrayAvg(brother));
124 console.log(arrayAvg(sister));
125
```

```
// 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.
function arrayAverageComp(array1, array2) {
    let array1Total = array1.reduce((accumulator, currentValue) => accumulator + currentValue, 0);
    let array2Total = array2.reduce((accumulator, currentValue) => accumulator + currentValue, 0);
    let array1Avg = array1Total / array1.length;
    let array2Avg = array2Total / array2.length;
    if(array1Avg > array2Avg) {
        return true;
    } else {
        return false;
    }
}
console.log(arrayAverageComp(brother, sister));
console.log(arrayAverageComp(sister, brother));

// 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.

function willBuyDrink(isHotOutside, moneyInPocket) {
    if(isHotOutside && (moneyInPocket > 10.50)) {
        return true;
    } else {
        return false;
    }
}
```

```
function howMuchPizza(array) {
    let hungryKid = array.filter(item => (item.hungry === true && item.adult === false)).length;
    let hungryAdult = array.filter(item => (item.adult === true && item.hungry === true)).length;
    let numberOfPizzas = Math.ceil(((hungryKid * 2) + (hungryAdult * 3)) / 8);
    return "You need to buy " + numberOfPizzas +" pizzas to feed this group."
}

let hungryFamily = [
    { name: "Dad",
      hungry: true,
      adult: true
    },
    { name: "Mom",
      hungry: false,
      adult: true
      },
    { name: "Robby",
      hungry: true,
      adult: false},
      {name: "HennyPenny",
       hungry: true,
        adult: false},
    { name: "Vivi",
      hungry: true,
      adult: false},
      {name: "Teddy",
       hungry: true,
       adult: false},
    { name: "Grandpa",
      hungry: true,
     adult: true}
]
```

```
201
202  let kidsParty = [
203      { name: "Kid1", hungry: true, adult: false},
204    { name: "Kid2", hungry: false, adult: false},
205    { name: "Kid3", hungry: true, adult: false},
206    {name: "Kid4", hungry: true, adult: false},
207    { name: "Kid5", hungry: true, adult: false},
208   { name: "Kid6", hungry: true, adult: false},
209   { name: "Kid7", hungry: true, adult: false},
210   {name: "Parent1", hungry: true, adult: true},
211   { name: "Parent2", hungry: true, adult: true},
212   { name: "Parent3", hungry: true, adult: true},
213   { name: "Parent4", hungry: true, adult: true},
214   { name: "Parent5", hungry: true, adult: true},
215  { name: "Parent6", hungry: true, adult: true},
216  { name: "Parent7", hungry: true, adult: true}
217  ]
218  console.log(howMuchPizza(hungryFamily));
219  console.log(howMuchPizza(kidsParty));
```

Screenshots of Running Application:

```
90                                                    project.js:11
41                                                    project.js:18
30.444444444444443                                    project.js:28
▶ (6) [3, 5, 3, 5, 4, 3]                              project.js:40
3.8333333333333335                                    project.js:46
Sam, Tommy, Tim, Sally, Buck, Bob                     project.js:51
▶ (6) [3, 5, 3, 5, 4, 3]                              project.js:66
23                                                    project.js:75
ZacZacZacZacZacZacZacZacZac                           project.js:91
Sam Iam                                               project.js:100
undefined                                             project.js:113
true                                                  project.js:114
10.5                                                  project.js:123
20.2                                                  project.js:124
false                                                 project.js:140
true                                                  project.js:141
You need to buy 2 pizzas to feed this group.          project.js:239
You need to buy 5 pizzas to feed this group.          project.js:240
>
```

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URL to GitHub Repository:https://github.com/arliemaria/week3codingassignment.git