Intro to JavaScript Week 3 Coding Assignment

Points possible: 75

URL to Your GitHub Repository:

https://github.com/RKMellinger/Promineo/tree/main/Week-03-Arrays_and_Functions/coding_assignment_week3

URL to Your Coding Assignment Video:

https://youtu.be/JYCRhU5a_-M

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:

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```
//Question 1
console.log("Create an array called ages ");
let ages = [3, 9, 23, 64, 2, 8, 28, 93];
console.log(ages);
// Question 1a
console.log(
  "\n" +
    "Programmatically subtract the value of the first element in the array from the value in the last element"
);
console.log(ages);
console.log(ages[0] - ages[ages.length - 1]);
// Question 1b
console.log(
  "\n" +
    "Add a new age to your array and repeat the step above to ensure it is dynamic"
);
ages.push(19);
console.log(ages);
console.log(ages[0] - ages[ages.length - 1]);
// Question 1 c
console.log(
  "\n" + "Use a loop to iterate through the array and calculate the average age"
);
function ageAvg(array1) {
  let avg = 0;
  for (let i = 0; i < array1.length; i++) {
    avg += array1[i];
  }
  return avg / array1.length;
}
console.log(ageAvg(ages));

// Question 2
console.log("\nCreate an array called names ");
let names = ["Sam", "Tommy", "Tim", "Sally", "Buck", "Bob"];
console.log(names);
//
// Question 2a
console.log(
  "\n" +
    "Use a loop to iterate through the array and calculate the average number of letters per name. Print the result to the console."
);
let sum1 = 0;
console.log(names.length);
names.forEach(function (name) {
  sum1 += name.length;
});
console.log(sum1 / names.length);
//
//
// Question 2b
console.log(
  "\n" +
    "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."
);
let letter1 = "";
for (i = 0; i < names.length; i++) {
  letter1 += names[i] + " ";
}
console.log(letter1);
// Question 3
console.log("\nHow do you access the last element of any array?");
console.log(
  "  A: arrayName[arrayName.length-1], call the array then using '.length' then minus 1 to account for the 0 start of the array."
);
//question 4
console.log("\n" + "How do you access the first element of any array?");
console.log(
  "  A: arrayName[0] will reference the first position of the array before and after sorting as 0 is always first."
);
// Question 5
console.log(
  "\n" +
    "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."
);
console.log(names);
let namesLengths = [];
names.forEach(function (name) {
  namesLengths.push(name.length);
});
console.log(namesLengths);
// Question 6
console.log(
  "\n" +
    "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."
);
function sumNames(namesLengths) {
  let sum = 0;
  for (let i = 0; i < namesLengths.length; i++) {
    sum += namesLengths[i];
  }
  return sum;
}
console.log(sumNames(namesLengths));

// Question 7
console.log(
  "\n" +
```

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```
console.log(sumNames(namesLengths));

// Question 7
console.log(
  "\n" +
    "Write a function that takes two parameters, word and n, as arguments and returns the word concatenated to itself n number of times."
);

function concatWords(word, n) {
  let x = "";
  for (let i = 0; i < n; i++) {
    x += word;
  }
  console.log(x);
}
concatWords("happy", 5);

// Question 8
console.log(
  "\n" +
    "Write a function that takes two parameters, firstName and lastName, and returns a full name"
);
function fullName(firstName, lastName) {
  console.log(firstName + " " + lastName);
}
fullName("John", "Wayne");
// Question 9
console.log(
  "\n" +
    "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."
);
let numArray = [1, 6, 3, 26, 13];
//
console.log("'false' numArray " + numArray); //confirming arrays
console.log("'True' ages array " + ages);
//
function booArray(numbers) {
  let total = 0;
  for (let i = 0; i < numbers.length; i++) {
    total += numbers[i];

  console.log(total); //total current value
  }  return total > 100;
}
//
console.log(booArray(numArray));
console.log(booArray(ages));
// Question 10
console.log("\n"+
  "Write a function that takes an array of numbers and returns the average of all the elements in the array."
```

```
console.log(avgArray(numArray))
// Question 11
console.log("\n"+
  "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 arrayCompare(arrayX, arrayY){
  console.log(avgArray(arrayX) > avgArray(arrayY))
}
arrayCompare(ages, numArray)
arrayCompare(numArray, ages)
// Question 12
console.log("\n"+
  "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 == "Yes" && moneyInPocket > 10.50){
      console.log(true)
  } else
  console.log(false)
}
willBuyDrink("Yes", 12.20)
willBuyDrink('No', 100.00)
// Question 13
console.log("\n"+"Create a function of your own that solves a problem. In comments, write what the function does and why you created it.");
function needAColdOne(needADrink, DrinkingAge, week3Complete){
if(needADrink == true && DrinkingAge >= 21 && week3Complete == "Yes"){
  console.log("PARTY!!!")
} else{
  console.log("Keep studying, you got this...")
}
}
needAColdOne(true, 42, "Yes")
// The function evaluates if I feel I need a drink, are of proper age, and have completed the week 3 coding assignment, as all of the conditions are met, the program says I should go party.. :D
```

Screenshots of Running Application:

```
Create an array called ages
▸ (8) [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
▸ (8) [3, 9, 23, 64, 2, 8, 28, 93]
-90

Add a new age to your array and repeat the step above to ensure it is dynamic
▸ (9) [3, 9, 23, 64, 2, 8, 28, 93, 19]
-16

Use a loop to iterate through the array and calculate the average age
27.666666666666668

Create an array called names
▸ (6) ['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.
6
3.8333333333333335

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.
Sam Tommy Tim Sally Buck Bob

How do you access the last element of any array?
  A: arrayName[arrayName.length-1], call the array then using '.length' then minus 1 to account for the 0 start of the array.

How do you access the first element of any array?
  A: arrayName[0] will reference the first position of the array before and after sorting as 0 is always first.

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) ['Sam', 'Tommy', 'Tim', 'Sally', 'Buck', 'Bob']
▸ (6) [3, 5, 3, 5, 4, 3]

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.
23

Write a function that takes two parameters, word and n, as arguments and returns the word concatenated to itself n number of times.
happyhappyhappyhappyhappy

Write a function that takes two parameters, firstName and lastName, and returns a full name
John Wayne
```

```
John Wayne                                                                                   ind
                                                                                             ind
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.
'false' numArray 1,6,3,26,13                                                                 ind
'True' ages array 3,9,23,64,2,8,28,93,19                                                     ind
1                                                                                            ind
7                                                                                            ind
10                                                                                           ind
36                                                                                           ind
49                                                                                           ind
false                                                                                        ind
3                                                                                            ind
12                                                                                           ind
35                                                                                           ind
99                                                                                           ind
101                                                                                          ind
109                                                                                          ind
137                                                                                          ind
230                                                                                          ind
249                                                                                          ind
true                                                                                         ind
                                                                                             ind
Write a function that takes an array of numbers and returns the average of all the elements in the array.
27.666666666666668                                                                           ind
9.8                                                                                          ind
                                                                                             ind
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
true                                                                                         ind
false                                                                                        ind
                                                                                             ind
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.
true                                                                                         ind
false                                                                                        ind
                                                                                             ind
Create a function of your own that solves a problem. In comments, write what the function does and why you created it.
PARTY!!!                                                                                     ind
```