//3let a//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 afuncnd 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?
   sampleArray[sampleArray.length - 1]

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

PROMINEO TECH

Screenshots of Code:

Promineo > Week3 > Coding Assignment > JS functions.js > ...

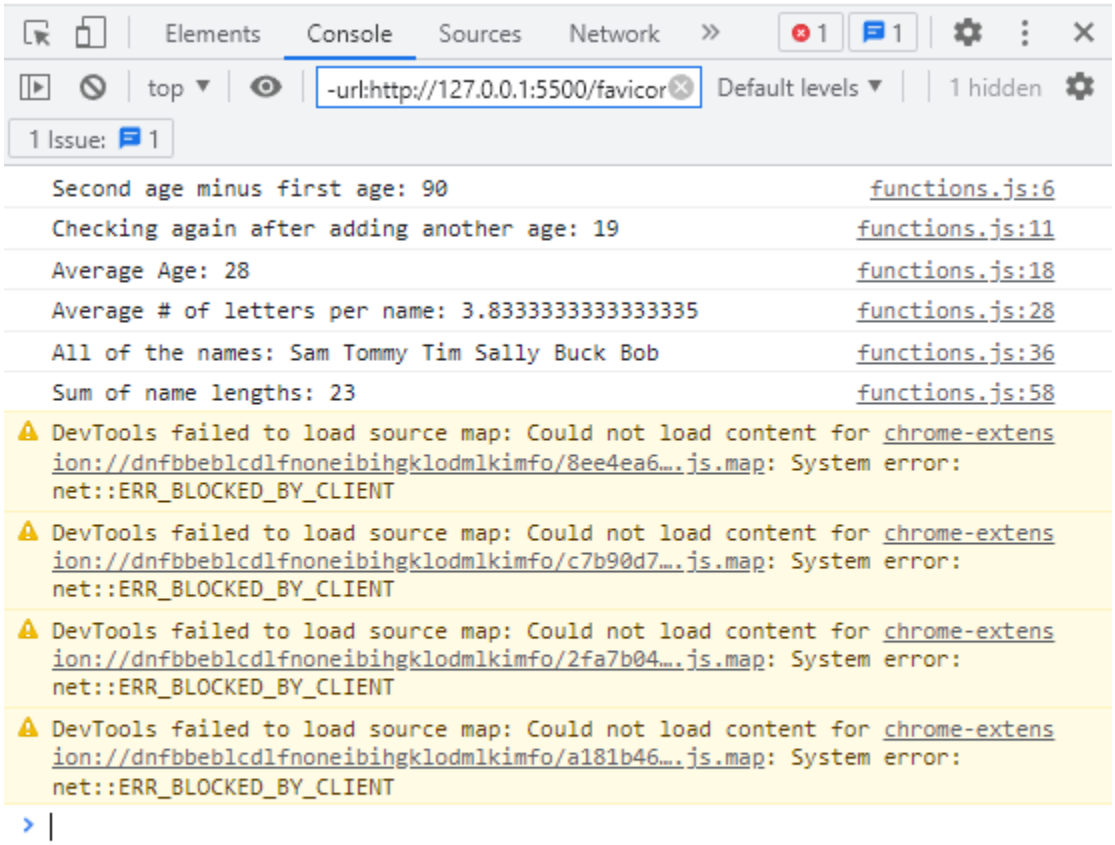
```
1   //initial declaration of the age array
2   let ages = [3, 9, 23, 64, 2, 8, 28, 93]
3
4   //1a. We print the value of the first age subtracted from the second age
5   let subtraction = (ages[ages.length-1] - ages[0])
6   console.log("Second age minus first age: " + subtraction)
7
8   //1b. We add an additional age to the array, and check again to make sure it is dynamic
9   ages.push(22)
10  subtraction = (ages[ages.length-1] - ages[0])
11  console.log("Checking again after adding another age: " + subtraction)
12
13  //1c. We use a loop to cycle through all of the ages, printing out the average, or mean value at the end
14  let sumOfAllAges = 0
15  for (let age of ages) {
16      sumOfAllAges += age
17  }
18  console.log("Average Age: " + sumOfAllAges / ages.length)
19
20  //initial declaration of second array
21  let names = ["Sam", "Tommy", "Tim", "Sally", "Buck", "Bob"]
22
23  //2a. Calculating the average number of letters per name
24  let sumOfAllLetters = 0
25  for (let name of names) {
26      sumOfAllLetters += name.length
27  }
28  console.log("Average # of letters per name: " + sumOfAllLetters / names.length)
29
30  //2b. Concatenating all of the names to one string
31
32  let allNames = ""
33  for(let name of names) {
34      allNames += (name + " ")
35  }
36  console.log("All of the names: " + allNames)
```

PROMINEO TECH

```
37
38  //3. Finding the last instance in an array
39
40  let sampleArray = []
41  sampleArray[sampleArray.length - 1]
42
43  //4. Finding the first instance in an array
44  let sampleArray2 = []
45  sampleArray2[0]
46
47  //5. Creating an array of the numerical lengths of the names from before
48  let nameLengths = []
49  for(let name of names) {
50      nameLengths.push(name.length)
51  }
52
53  //6. Logging the sum of the previous array to the console
54  let sumOfNameLengths = 0
55  for(let nameLength of nameLengths) {
56      sumOfNameLengths += nameLength
57  }
58  console.log("Sum of name lengths: " + sumOfNameLengths)
59
60  //7. A function to concatenate a single word as many times as you want
61  function concatHowMany(word, n) {
62      let toReturn = ""
63      for(let i = 0; i < n; i++) {
64          toReturn += word
65      }
66      return toReturn
67  }
68
69  //8. A function that returns a full name with 2 name values
70  function fullName(firstName, lastName) {
71      return (firstName + " " + lastName)
72  }
73
74  //9. Returns true if the sum of an array is over 100
75  function isSumOverAHundred(array) {
76      let sum = 0
77      for(let instance of array) {
78          sum += instance
79      }
80      return(sum > 100)
81  }
82
```


```
83  //10. Returns the average value of an array
84  function averageOfArray(array) {
85      let sum = 0
86      for(let instance of array) {
87          sum += instance
88      }
89      return(sum / array.length)
90  }
91
92  //11. Compares 2 arrays and returns true if the average of the first is greater than the avg of the second
93  function arrayCompare(array1, array2) {
94      let sum1 = 0
95      for(let instance of array1) {
96          sum1 += instance
97      }
98
99      let sum2 = 0
100     for(let instance of array2) {
101         sum2 += instance
102     }
103
104     return((sum1 / array1.length-1) > (sum2 / array2.length-1))
105 }
106
107 //12. Will return true if isHotOuside is true and moneyInPocket is greater than 10.50
108 function willBuyDrink(isHotOutside, moneyInPocket) {
109     return(moneyInPocket > 10.5 && isHotOutside == true)
110 }
111
112 //13. Returns how many values in an array are odd numbers
113 function howManyEvensAndOdds(array) {
114     let sumOfOdds = 0
115     for(let instance of array) {
116         if(instance % 2 != 0) {
117             sumOfOdds++
118         }
119     }
120     return sumOfOdds
121 }
```

Screenshots of Running Application:



URL to GitHub Repository:

https://github.com/Adam5200/Week-3-Coding-Assignment