



Intro to JavaScript Week 3 Coding Assignment — Lisa Smith

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. [I] Create a new repository on GitHub for this week's assignments and [II] push this document, with your JavaScript project code, to the repository. [III] 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.
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.

URL to GitHub Repository: <https://github.com/sw-dev-lisa-s-nh/JavaScript-Week3>



Screenshots of Code:

```
js week3.js > ...
1 // 1. Create an array called ages that contains the following
2 //   values: 3, 9, 23, 64, 2, 8, 28, 93.
3 const ages = new Array(3, 9, 23, 64, 2, 8, 28, 93);
4 console.log(ages);
5
6 //   a. Programmatically subtract the value of the first element
7 //       in the array from the value in the last element of the
8 //       array (do not use numbers to reference the last element,
9 //       find it programmatically, ages[7] - ages[0] is not allowed).
10 //       Print the result to the console.
11 console.log("Difference between last & first elements of ages array: " + (ages[ages.length-1]-ages[0]));
12
13 //   b. Add a new age to your array and repeat the step above to
14 //       ensure it is dynamic (works for arrays of different lengths).
15 const newages = new Array(3, 9, 23, 64, 2, 8, 28, 93,103);
16 console.log(newages);
17
18
19 //   c. Use a loop to iterate through the array and calculate the
20 //       average age. Print the result to the console.
21 console.log("Difference between last & first elements of newages array: " + (newages[newages.length-1]-newages[0]));
22
23 // 2. Create an array called names that contains the following
24 //   values: 'Sam', 'Tommy', 'Tim', 'Sally', 'Buck', 'Bob'.
25 const names = new Array("Sam", "Tommy", "Tim", "Sally", "Buck", "Bob");
26 console.log(names);
27
28 //   a. Use a loop to iterate through the array
29 //       and calculate the average number of letters per name.
30 //       Print the result to the console.
31 var average = 0;
32 var sum = 0;
33
34 for (var index = 0; index < names.length; index++) {
35   sum += names[index].length;
36 }
37 result = sum/names.length;
38 console.log("The average number of letters per name is: " + result);
39
40
```

```
41 //   b. Use a loop to iterate through the array again
42 //       and concatenate all the names together, separated by spaces,
43 //       and print the result to the console.
44 var newString = "";
45 for (var index = 0; index < names.length; index++) {
46   newString += names[index] + " ";
47 }
48 console.log("The concatenated string of names is: " + newString);
49
50
51 // 3. How do you access the last element of any array?
52 console.log("The last element of names is: " + names[names.length-1]);
53
54 // 4. How do you access the first element of any array?
55 console.log("The first element of names is: " + names[0]);
56
57 // 5. Create a new array called nameLengths.
58 //     Write a loop to iterate over the previously created names array
59 //     and add the length of each name to the nameLengths array.
60
61 const nameLengths = [];
62 for (var index = 0; index < names.length; index++) {
63   nameLengths[index] = names[index].length;
64 }
65 console.log("The nameLengths array: " + nameLengths);
66
67 // 6. Write a loop to iterate over the nameLengths array
68 //     and calculate the sum of all the elements in the array.
69 //     Print the result to the console.
70 var sum = 0;
71 for (num of nameLengths) {
72   sum += num;
73 }
74 console.log("The sum of all elements in nameLengths is: " + sum);
75
76 // Call to 7.
77 console.log("Result from call to function numConcat(Hello, 3): " + numConcat("Hello", 3));
78 console.log("Result from call to function numConcat(Goodbye, 5): " + numConcat("Goodbye", 5));
79 console.log("Result from call to function numConcat(Adios, 8): " + numConcat("Adios", 8));
80
```



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```
80
81 // Call to 8. createFullName(p1,p2)
82 console.log("Result from call to function createFullName: " + createFullName("Mickey", "Mouse"));
83
84 // Call to 9. sumAnArray(arrayName)
85
86 console.log("Result from call to function sumAnArray(ages): " + sumAnArray(ages));
87 console.log("Result from call to function sumAnArray(newages): " + sumAnArray(newages));
88
89 // Call to 10. returnAverageOfNumbers(arrayName)
90
91 console.log("Result from call to function returnAverageOfNumbers(ages): " + returnAverageOfNumbers(ages));
92 console.log("Result from call to function returnAverageOfNumbers(newages): " + returnAverageOfNumbers(newages));
93
94 // Call to 11. isGreaterThan(newages,ages)
95
96 console.log("Result of isGreaterThan! Is the average of numbers in newages greater than in ages: " + isGreaterThan(newages,
97
98 // Call to 12. willBuyDrink (isHotOutside, moneyInPocket)
99
100 console.log("Result from call to function willBuyDrink (true, 20.00): " + willBuyDrink (true, 20.00));
101 console.log("Result from call to function willBuyDrink (false, 20.00): " + willBuyDrink (false, 20.00));
102 console.log("Result from call to function willBuyDrink (true, 10.00): " + willBuyDrink (true, 10.00));
103
104 // Call to 13. Write Own Function Here!!!!
105
106 console.log("Results from reverseString: " + reverseString("Hello"));
107 console.log("Results from my reverseString: " + reverseString("Goodbye"));
108 console.log("Results from my reverseString: " + reverseString("madam Im adam"));
109 console.log("Results from my reverseString: " + reverseString("tacocat"));
110
111
112
113 // 7. Write a function that takes two parameters, word and n, as arguments
114 // and returns the word concatenated to itself n number of times.
115 // (i.e. if I pass in 'Hello' and 3, I would expect the function to
116 // return 'HelloHelloHello').
117
118 function numConcat(word, number) {
119     var result = "";
120     for (var index = 0; index < number; index++) {
121         result += word;
122     }
123     return result;
124 }
125
126 // 8. Write a function that takes two parameters, firstName and lastName,
127 // and returns a full name (the full name should be the first
128 // and the last name separated by a space).
129 function createFullName(firstName, lastName) {
130     return firstName + " " + lastName; // The function returns the product of p1 and p2
131 }
132
133
134 // 9. Write a function that takes an array of numbers
135 // and returns true if the sum of all the numbers in the array is greater than 100.
136
137 function sumAnArray (newArray) {
138     var sum = 0;
139     for (number of newArray) {
140         sum += number;
141     }
142     return sum;
143 }
144
145 // 10. Write a function that takes an array of numbers
146 // and returns the average of all the elements in the array.
147
148 function returnAverageOfNumbers(newArray) {
149     var sum = 0;
150     for (number of newArray) {
151         sum += number;
152     }
153     return sum/newArray.length;
154 }
155
```



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```
154 }
155
156 // 11. Write a function that takes two arrays of numbers
157 // and returns true if the average of the elements in the
158 // first array is greater than the average of the elements in the second array.
159
160 function isGreaterThan (arrayOne, arrayTwo) {
161     let sum1 = returnAverageOfNumbers(arrayOne);
162     let sum2 = returnAverageOfNumbers(arrayTwo);
163     let result = (sum1 > sum2);
164     return result;
165 }
166
167 // 12. Write a function called willBuyDrink that takes a
168 // boolean isHotOutside, and a number moneyInPocket,
169 // and returns true if it is hot outside and if moneyInPocket is greater than 10.50.
170
171 function willBuyDrink (isHotOutside, moneyInPocket) {
172     return ((isHotOutside) && (moneyInPocket > 10.50));
173 }
174
175 // 13. Create a function of your own that solves a problem.
176 // In comments, write what the function does and why you created it.
177
178 //
179 // I wrote this function to reverse a string. I created it to have fun!
180 // in addition, I love palindromes!
181 //
182 function reverseString(name) {
183     var reverse = "";
184     for (var index = name.length-1; index >=0; index--) {
185         reverse += name[index];
186     }
187     return reverse;
188 }
189
190
191
192
193
194
195
196
197
198 //
199 // calculateDiscountedPrice(originalPrice)
200 //
201 //
202 // Calculate the discount for a particular price.
203 // IF PRICE > $4000 --> the discount is 20%
204 // > $3000 --> the discount is 15%
205 // > $2000 --> the discount is 10%
206 // ELSE discount is 5%.
207
208 function calculateDiscountedPrice(price) {
209     if (price > 4000) {
210         return price - (price * .20);
211     } else if (price > 3000) {
212         return price - (price * .15);
213     } else if (price > 2000) {
214         return price - (price * .10);
215     } else {
216         return price - (price * .05);
217     }
218 }
219
```



Screenshots of Running Application:

Desktop/FESDBootcamp/JavaScript-Week3/week3.html

Document Document

Elements Console Sources Network Timelines

☐ Preserve Log ☐ Emulate User Gesture **All** Evaluations Errors Warnings Logs

Console cleared at 8:40:17 PM

[3, 9, 23, 64, 2, 8, 28, 93] (8)	Global Code — week3.js:4
Difference between last & first elements of ages array: 90	Global Code — week3.js:11
[3, 9, 23, 64, 2, 8, 28, 93, 103] (9)	Global Code — week3.js:16
Difference between last & first elements of newages array: 100	Global Code — week3.js:21
["Sam", "Tommy", "Tim", "Sally", "Buck", "Bob"] (6)	Global Code — week3.js:26
The average number of letters per name is: 3.8333333333333335	Global Code — week3.js:38
The concatenated string of names is: Sam Tommy Tim Sally Buck Bob	Global Code — week3.js:48
The last element of names is: Bob	Global Code — week3.js:52
The first element of names is: Sam	Global Code — week3.js:55
The nameLengths array: 3,5,3,5,4,3	Global Code — week3.js:65
The sum of all elements in nameLengths is: 23	Global Code — week3.js:74
Result from call to function numConcat(Hello, 3): HelloHelloHello	Global Code — week3.js:77
Result from call to function numConcat(Goodbye, 5): GoodbyeGoodbyeGoodbyeGoodbyeGoodbye	Global Code — week3.js:78
Result from call to function numConcat(Adios, 8): AdiosAdiosAdiosAdiosAdiosAdiosAdiosAdios	Global Code — week3.js:79
Result from call to function createFullName: Mickey Mouse	Global Code — week3.js:82
Result from call to function sumAnArray(ages): 230	Global Code — week3.js:86
Result from call to function sumAnArray(newages): 333	Global Code — week3.js:87
Result from call to function returnAverageOfNumbers(ages): 28.75	Global Code — week3.js:91
Result from call to function returnAverageOfNumbers(newages): 37	Global Code — week3.js:92
Result of isGreaterThan! Is the average of numbers in newages greater than in ages: true	Global Code — week3.js:96
Result from call to function willBuyDrink (true, 20.00): true	Global Code — week3.js:100
Result from call to function willBuyDrink (false, 20.00): false	Global Code — week3.js:101
Result from call to function willBuyDrink (true, 10.00): false	Global Code — week3.js:102
Results from reverseString: olleH	Global Code — week3.js:105
Results from my reverseString: eybdooG	Global Code — week3.js:106
Results from my reverseString: mada ml madam	Global Code — week3.js:107
Results from my reverseString: tacocat	Global Code — week3.js:108
Original Price is: 4000. New Price: 3400	Global Code — week3.js:112
Original Price is: 3000. New Price: 2700	Global Code — week3.js:113
Original Price is: 2000. New Price: 1900	Global Code — week3.js:114
Original Price is: 1000. New Price: 950	Global Code — week3.js:115