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.

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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

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Screenshots of Code:

week3.js > ...

```
// 1.  Create an array called ages that contains the following
//          values: 3, 9, 23, 64, 2, 8, 28, 93.
const ages = new Array(3, 9, 23, 64, 2, 8, 28, 93);
console.log(ages);

//      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.
console.log("Difference between last & first elements of ages array: " + (ages[ages.length-1]-ages[0]));

//      b.  Add a new age to your array and repeat the step above to
//              ensure it is dynamic (works for arrays of different lengths).
const newages = new Array(3, 9, 23, 64, 2, 8, 28, 93,103);
console.log(newages);


//      c.  Use a loop to iterate through the array and calculate the
//              average age. Print the result to the console.
console.log("Difference between last & first elements of newages array: " + (newages[newages.length-1]-newages[0]));

// 2.  Create an array called names that contains the following
//          values: 'Sam', 'Tommy', 'Tim', 'Sally', 'Buck', 'Bob'.
const names = new Array("Sam", "Tommy", "Tim", "Sally", "Buck", "Bob");
console.log(names);

//      a.  Use a loop to iterate through the array
//          and calculate the average number of letters per name.
//          Print the result to the console.
var average = 0;
var sum = 0;

for (var index = 0; index < names.length; index++) {
    sum += names[index].length;
}
result = sum/names.length;
console.log("The average number of letters per name is: " + result);

```

```
//      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.
var newString = "";
for (var index = 0; index < names.length; index++) {
    newString += names[index] + " ";
}
console.log("The concatenated string of names is: " + newString);


// 3.  How do you access the last element of any array?
console.log("The last element of names is: " + names[names.length-1]);

// 4.  How do you access the first element of any array?
console.log("The first element of names is: " + names[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.

const nameLengths = [];
for (var index = 0; index < names.length; index++) {
    nameLengths[index] = names[index].length;
}
console.log("The nameLengths array: " + nameLengths);

// 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.
var sum = 0;
for (num of nameLengths) {
    sum += num;
}
console.log("The sum of all elements in nameLengths is: " + sum);

// Call to 7.
console.log("Result from call to function numConcat(Hello, 3): " + numConcat("Hello", 3));
console.log("Result from call to function numConcat(Goodbye, 5): " + numConcat("Goodbye", 5));
console.log("Result from call to function numConcat(Adios, 8): " + numConcat("Adios", 8));

```

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// Call to 8.  createFullName(p1,p2)
console.log("Result from call to function createFullName:  " + createFullName("Mickey", "Mouse"));

// Call to 9.  sumAnArray(arrayName)

console.log("Result from call to function sumAnArray(ages):  " + sumAnArray(ages));
console.log("Result from call to function sumAnArray(newages):  " + sumAnArray(newages));

// Call to 10, returnAverageOfNumbers(arrayName)

console.log("Result from call to function returnAverageOfNumbers(ages): " + returnAverageOfNumbers(ages));
console.log("Result from call to function returnAverageOfNumbers(newages): " + returnAverageOfNumbers(newages));

// Call to 11, isGreaterThan(newages,ages)

console.log("Result of isGreaterThan! Is the average of numbers in newages greater than in ages: " + isGreaterThan(newages,

// Call to 12, willBuyDrink (isHotOutside, moneyInPocket)

console.log("Result from call to function willBuyDrink (true, 20.00):  " + willBuyDrink (true, 20.00));
console.log("Result from call to function willBuyDrink (false, 20.00):  " + willBuyDrink (false, 20.00));
console.log("Result from call to function willBuyDrink (true, 10.00):  " + willBuyDrink (true, 10.00));

// Call to 13,  Write Own Function Here!!!!!

console.log("Results from reverseString: " + reverseString("Hello"));
console.log("Results from my reverseString: " + reverseString("Goodbye"));
console.log("Results from my reverseString: " + reverseString("madam Im adam"));
console.log("Results from my reverseString: " + reverseString("tacocat"));
```

```

// 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').

function numConcat(word, number) {
    var result = "";
    for (var index = 0; index < number; index++) {
        result += word;
    }
    return result;
}

// 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).
function createFullName(firstName, lastName) {
    return firstName + " " + lastName;    // The function returns the product of p1 and p2
  }


// 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.

function sumAnArray (newArray) {
    var sum = 0;
    for (number of newArray) {
        sum += number;
    }
    return sum;
}

// 10.  Write a function that takes an array of numbers
//      and returns the average of all the elements in the array.

function returnAverageOfNumbers(newArray) {
    var sum = 0;
    for (number of newArray) {
        sum += number;
    }
    return sum/newArray.length;
}
```

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```
}

// 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.

function isGreaterThan (arrayOne, arrayTwo) {
    let sum1 = returnAverageOfNumbers(arrayOne);
    let sum2 = returnAverageOfNumbers(arrayTwo);
    let result = (sum1 > sum2);
    return result;
}

// 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.

function willBuyDrink (isHotOutside, moneyInPocket) {
    return ((isHotOutside) && (moneyInPocket > 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.

//
// I wrote this function to reverse a string.  I created it to have fun!
// in addition, I love palindromes!
//
function reverseString(name) {
    var reverse = "";
    for (var index = name.length-1; index >=0; index--) {
        reverse += name[index];
    }
    return reverse;
}
```

```

//
// calculateDiscountedPrice(originalPrice)
//
// Calculate the discount for a particular price.
//  IF PRICE > $4000 --> the discount is 20%
//           > $3000 --> the discount is 15%
//           > $2000 --> the discount is 10%
//           ELSE discount is 5%.

function calculateDiscountedPrice(price) {
    if (price > 4000) {
        return price - (price * .20);
    } else if (price > 3000) {
        return price - (price * .15);
    } else if (price > 2000) {
        return price - (price * .10);
    } else {
        return price - (price * .05);
    }
}

```

Screenshots of Running Application: