



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? **arrayName[arrayName.length - 1]**
4. How do you access the first element of any array? **arrayName[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 and Screenshots of Running Application:

Intro To JavaScript Labs

```
ArraysAndFunctions.js -- Promineo
git > Week-3 > JS ArraysAndFunctions.js M X
1 console.log("Week 3 Coding Assignment");
2
3
4 var ages = [ 3, 9, 23, 64, 2, 8, 28, 93];
5
6 var firstNumber = ages[0];
7 var lastNumber = ages[ages.length - 1];
8 console.log(lastNumber - firstNumber);
9
```

The default interactive shell is now zsh.
To update your account to use zsh, please run `chsh -s /bin/zsh`.
For more details, please visit <https://support.apple.com/kb/HT208050>.
Rachel's-MacBook-Pro:Promineo rachelpartington\$

Caption



Intro To JavaScript Labs

The screenshot shows a dark-themed instance of Visual Studio Code. In the Explorer sidebar, there are several projects and files listed under the 'PROMINEO' section, including 'Week 3.html', 'JS ArraysAndFunction...', 'Week 3.html', 'JS code.js', 'index.html', and 'JS test.js'. The main editor tab is titled 'ArraysAndFunctions.js — Promineo' and contains the following code:

```
2
3
4 var ages = [ 3, 9, 23, 64, 2, 8, 28, 93, 111];
5
6 var firstNumber = ages[0];
7 var lastNumber = ages[ages.length - 1];
8 console.log(lastNumber - firstNumber);
9
```

Below the editor, the terminal window shows the message: "The default interactive shell is now zsh. To update your account to use zsh, please run `chsh -s /bin/zsh`. For more details, please visit <https://support.apple.com/kb/HT208050>. Rachels-MacBook-Pro:Promineo rachelpartington\$".

Intro To JavaScript

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```
14 var
15 cons
16 //problem 1c.
17 var sum = 0;
18 for (i = 0; i < ages.length; i++) {
19     sum = sum + ages[i];
20     //sum += ages[i]; alternative shorter code//
21 }
22
23 console.log(sum / ages.length);
24 //below is alternative coding to output context of the value
25 //console.log(`the average value is: ${sum / ages.length}`);
26
27
28 // Problem 2 Create an array called names that contains the foll
29 // P2a Use a loop to iterate through the array and calculate the
```

Below the editor, the terminal window shows the message: "The default interactive shell is now zsh. To update your account to use zsh, please run `chsh -s /bin/zsh`. For more details, please visit <https://support.apple.com/kb/HT208050>. Rachels-MacBook-Pro:Promineo rachelpartington\$".

Intro To JavaScript

The screenshot shows a dark-themed version of VS Code. The left sidebar has sections for 'OPEN EDITORS' (Week 3.html, JS ArraysAndFunctions.js), 'PROMINEO' (2, CODE, git/Week-3), and files like JS code.js, index.html, and test.js. The main editor window displays a JavaScript file named 'ArraysAndFunctions.js'. The code calculates the average length of names in an array and concatenates them into a single string. The terminal at the bottom shows a zsh update message.

```
git > Week-3 > JS ArraysAndFunctions.js > ...
25 //console.log( the average value is: ${sum / ages.length} );
26
27
28 // Problem 2 Create an array called names that contains the following names:
29 // P2a Use a loop to iterate through the array and calculate the sum of all name lengths
30 // P2b Use a loop to iterate through the array again and concatenate all names into a single string
31
32 let names = ["Sam", "Tommy", "Tim", "Sally", "Buck", "Bob"];
33 let sumNameLengths = 0;
34 for (i = 0; i < names.length; i++) {
35     sumNameLengths += names[i].length;
36 }
37
38 console.log(sumNameLengths / names.length);
39
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

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Intro To JavaScript

This screenshot shows a light-themed version of VS Code. The interface is similar to the dark theme, with the same sidebar structure and file list. The main editor window shows the same 'ArraysAndFunctions.js' code. The terminal at the bottom shows the same zsh update message.

```
git > Week-3 > JS ArraysAndFunctions.js > ...
32 let names = ["Sam", "Tommy", "Tim", "Sally", "Buck", "Bob"];
33 let sumNameLengths = 0;
34 for (i = 0; i < names.length; i++) {
35     sumNameLengths += names[i].length;
36 }
37
38 console.log(sumNameLengths / names.length);
39
40 // P2b Use a loop to iterate through the array again and concatenate all names into a single string
41 let allNames = "";
42 for (i = 0; i < names.length; i++) {
43     allNames = allNames + " " + names[i];
44 }
45
46 console.log(allNames);
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

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PROMINEO TECH

Intro To JavaScript

```
//Problem 5
/*Create a new array called nameLengths. Write a loop to iterate
namesArray = ["Kelly", "Sam", "Kate"] //given this array
nameLengths = [5, 3, 4] //create this new array*/
var nameLengths = names.map(function(element){
    return element.length;
});
console.log(nameLengths);
//This problem is nearly identical to the example in the Interme
```

The default interactive shell is now zsh.
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Rachel's-MacBook-Pro:Promineo rachelpartington\$

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

bash + □ ^ ×

Week 3 Coding Assignment
108
37.88888888888888
3.8333333333333335
Sam Tommy Tim Sally Buck Bob
▶ (6) [3, 5, 3, 5, 4, 3]

Elements Console Sources
top Filter

OUTLINE
TIMELINE

arraysAndFunctions.js — Promineo

```
//Problem 6
//Write a loop to iterate over the nameLengths array and calculate
//the total length of all the names.
let total = nameLengths.reduce(function(accumulator, currentValue){
    return accumulator + currentValue;
});
console.log(total);
//initially wrote this as let sum, but had already declared sum
```

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Rachel's-MacBook-Pro:Promineo rachelpartington\$

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

bash + □ ^ ×

Week 3 Coding Assignment
108
37.88888888888888
3.8333333333333335
Sam Tommy Tim Sally Buck Bob
▶ (6) [3, 5, 3, 5, 4, 3]

Elements Console Sources
top Filter

OUTLINE
TIMELINE

arraysAndFunctions.js — Promineo



Intro To JavaScript

The screenshot shows a Visual Studio Code (VS Code) interface. The title bar indicates the file is 'ArraysAndFunctions.js' in the 'Promineo' workspace. The Explorer sidebar on the left shows a project structure under 'PROMINEO' with 'git/Week-3' selected, containing files like 'Week 3.html', 'JS ArraysAndFunction...', 'JS code.js', 'index.html', and 'JS test.js'. The main editor area displays a JavaScript code snippet:

```
//Problem 7  
//Write a function that takes two parameters, word and n, as arguments.  
  
function wordRepeat( word, n ){  
    let string = "";  
    for (i = 0; i < n; i++){  
        string += word;  
    }  
    return string;  
}  
  
let newString = wordRepeat("DOG", 5);  
console.log(newString);
```

The bottom status bar shows the terminal is active, and a message from the system says: 'The default interactive shell is now zsh. To update your account to use zsh, please run `chsh -s /bin/zsh`. For more details, please visit https://support.apple.com/kb/HT208050.' The terminal also shows the command 'Rachels-MacBook-Pro:Promineo rachelpartington\$'.

Caption



Intro To JavaScript

```
ArraysAndFunctions.js — Promineo
git > Week-3 > JS ArraysAndFunctions.js M X
84
85 //Problem 8
86 //Write a function that takes two parameters, firstName and lastName
87
88 function createFullName(firstName, lastName){
89     return firstName + " " + lastName;
90 }
91 console.log(createFullName("Eleanor", "Roosevelt"));
92

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
bash + ⌂

The default interactive shell is now zsh.
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Rachel's-MacBook-Pro:Promineo rachelpartington$
```

Week 3 Coding Assignment
108
37.88888888888886
3.8333333333333335
Sam Tommy Tim Sally Buck Bob
↳ (6) [3, 5, 3, 5, 4, 3]
23
DOGDODGODGODGODG
Eleanor Roosevelt

Week 3 Coding Assignment
108
37.88888888888886
3.8333333333333335
Sam Tommy Tim Sally Buck Bob
↳ (6) [3, 5, 3, 5, 4, 3]
23
DOGDODGODGODGODG
Eleanor Roosevelt

Caption

```
ArraysAndFunctions.js — Promineo
git > Week-3 > JS ArraysAndFunctions.js M X
94
95 //Problem 9
96 //Write a function that takes an array of numbers and returns true if the sum of all the numbers is greater than 100, false otherwise
97
98 function isSumGreaterThan(numbers){
99     let sum = numbers.reduce(function(accumulator, currentValue){
100         return accumulator + currentValue;
101     });
102     if (sum > 100){
103         return true;
104     } else {
105         return false;
106     }
107 }
108 console.log(isSumGreaterThan(ages));
109

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
bash + ⌂

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Rachel's-MacBook-Pro:Promineo rachelpartington$
```

Week 3 Coding Assignment
108
37.88888888888886
3.8333333333333335
Sam Tommy Tim Sally Buck Bob
↳ (6) [3, 5, 3, 5, 4, 3]
23
DOGDODGODGODGODG
Eleanor Roosevelt
true



PROMINEO TECH

Intro To JavaScript

The screenshot shows a VS Code interface with the title "ArraysAndFunctions.js — Promineo". The Explorer sidebar shows a project structure under "PROMINEO" with files like "Week 3.html", "JS ArraysAndFunctions.js", "2", "CODE", and "git/Week-3". The "git/Week-3" folder contains "JS ArraysAndFunctions.js" which is currently open in the editor. The code implements a function to calculate the average of an array of numbers. The terminal at the bottom shows a zsh shell with some test output.

```
//Problem 10
//Write a function that takes an array of numbers and returns the average.

function averageOfNumbers(numArray){
    let sum = 0;
    numArray.forEach(function(element) {
        sum += element;
    });
    return sum / numArray.length;
}

console.log(averageOfNumbers(ages));
```

The default interactive shell is now zsh.
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```
//Problem 11
//Write a function that takes two arrays of numbers and returns true if the average of the first array is greater than the average of the second array.

function isAverageGreaterThan(firstParameter, secondParameter){
    let averageFirst = averageOfNumbers(firstParameter);
    let averageSecond = averageOfNumbers(secondParameter);
    if (averageFirst > averageSecond) return true;
    return false;
}

let isGreater = isAverageGreaterThan(nameLengths, ages);
console.log(isGreater);

console.log(isAverageGreaterThan(ages, nameLengths));
console.log(isAverageGreaterThan(ages, ages));
```

The default interactive shell is now zsh.
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Rachel's-MacBook-Pro:Promineo rachelpartington\$

Caption



A screenshot of the Visual Studio Code (VS Code) interface. The title bar says "ArraysAndFunctions.js — Promineo". The left sidebar shows an "EXPLORER" view with "OPEN EDITORS" containing "Week 3.html" and "JS ArraysAndFunctions.js M". Under "PROMINEO", there are sections for "2", "CODE", and "git/Week-3", with "JS ArraysAndFunctions.js M" selected. The main editor area displays the following JavaScript code:

```
//Problem 12
//Write a function called willBuyDrink that takes a boolean isHotOutside
//and a number moneyInPocket and returns a boolean.

function willBuyDrink(isHotOutside, moneyInPocket){
    return (isHotOutside && moneyInPocket > 10.50);
}

console.log("willBuyDrink: " + willBuyDrink(true, 10.51));
console.log(willBuyDrink(false, 10.51));
console.log(willBuyDrink(true, 10.50));
console.log(willBuyDrink(false, 10.50));
```

The bottom right corner of the editor shows a terminal window with the message: "The default interactive shell is now zsh. To update your account to use zsh, please run `chsh -s /bin/zsh`. For more details, please visit https://support.apple.com/kb/HT208050. Rachels-MacBook-Pro:Promineo rachelpartington\$".

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```
//Create a function of your own that solves a problem. In comments.
/*This function returns the lowest value found in the number
array passed to this function.*/

function returnLeast(numArray){
    let lowest = numArray[0];
    numArray.forEach(function(element){
        if (element < lowest)
            lowest = element;
    });
    return lowest;
}

console.log(returnLeast(ages));
```

The bottom right corner of the editor shows a terminal window with the message: "The default interactive shell is now zsh. To update your account to use zsh, please run `chsh -s /bin/zsh`. For more details, please visit https://support.apple.com/kb/HT208050. Rachels-MacBook-Pro:Promineo rachelpartington\$".



PROMINEO TECH

URL to GitHub Repository:

<https://github.com/partingtonra/Week-3>