



Week 3: Coding Assignment

URL to GitHub Repository:

https://github.com/LopezAbner/Week-03-Arrays_and_Functions/tree/main/Week-03-Coding-Assignment

URL to Your Coding Assignment Video:

https://youtu.be/xNL_Yhz-ya0

Instructions:

- In Visual Studio Code, write the code that accomplishes the objectives listed below and ensures that the code compiles and runs as directed.
- Create a new repository on GitHub for this week's assignments and push this document, with your project code, to the repository.
- Include the URLs for this week's repository and video where instructed.
- Submit this document as a .PDF file in the LMS.

Coding Steps:

All questions must be printed to your Browser's console:

1. Create an array called ages that contains the following values: 3, 9, 23, 64, 2, 8, 28, 93.

```
let ages = [3, 9, 23, 64, 2, 8, 28, 93];  
console.log(ages);
```

- 1a. 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!

```
console.log(ages[ages.length-1] - ages[0]);
```

- 1b. Add a new age to your array and repeat the step above to ensure it is dynamic. (works for arrays of different lengths).

```
ages.push(38);
```



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```
console.log(ages[ages.length-1] - ages[0]);
```

- 1c. Use a loop to iterate through the array and calculate the average age.

```
let totalSum = 0
for (let i = 0; i < ages.length; i++)
  totalSum = totalSum + ages[i];
}
console.log(totalSum / ages.length);
```

2. Create an array called names that contains the following values: 'Sam', 'Tommy', 'Tim', 'Sally', 'Buck', 'Bob'.
- 2a. Use a loop to iterate through the array and calculate the average number of letters per name.

```
let names = ['Sam', 'Tommy', 'Tim', 'Sally', 'Buck', 'Bob'];
let totalLetters = names.reduce(function (sum, name) {
  return sum + name.length;
}, 0);
let averageLetterLength = (totalLetters / names.length);
console.log(averageLetterLength);
```

- 2b. Use a loop to iterate through the array again and concatenate all the names together, separated by spaces.

```
let concatenated = names[0]
for (let i = 0; i < names.length; i++) {
  concatenated = concatenated.concat(" ", names[i]);
}
console.log(concatenated);
```

3. How do you access the last element of any array?
ANSWER: You can access it with the `var[var.length-1]` property.
4. How do you access the first element of any array?
ANSWER: By using the `[]` operator with index 0. For example: `var[0]`;



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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

```
let nameLengths = [];  
for (let i = 0; i < names.length; i++) {  
  nameLengths[i] = names[i].length;  
}  
console.log(nameLengths);
```

6. Write a loop to iterate over the `nameLengths` array and calculate the sum of all the elements in the array.

```
let sum = 0  
for (let i = 0; i < nameLengths.length; i++) {  
  sum = sum + nameLengths[i];  
}  
console.log(sum);
```

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 concatenatedWord (word, n) {  
  return word.repeat(n);  
}  
console.log(concatenatedWord ("hola", 5));
```

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 fullName (firstName, lastName) {
```



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```
return firstName + " " + lastName;  
}  
console.log(fullName ("Abner", "Lopez"));
```

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.

```
let array1 = [30, 30, 30];  
let array2 = [30, 40, 50];  
let grandSum = 0  
  
function isSumGreater100 (array) {  
  for (let i = 0; i < array.length; i++) {  
    grandSum = grandSum + array[i];  
  } if (grandSum > 100) {  
    return true;  
  } else {  
    return false;  
  }  
}  
console.log(isSumGreater100 (array2));
```

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

```
let total = 0  
  
function totalAverage (arr) {  
  for (let i = 0; i < arr.length; i++) {  
    total = total + arr[i];  
  }  
  return total / arr.length;  
}
```



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```
}  
console.log(totalAverage(array1));
```

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 isAverageGreater(arr1, arr2) {  
  if (totalAverage(arr1) > totalAverage(arr2)) {  
    return true;  
  } else {  
    return false;  
  }  
}  
console.log(isAverageGreater(array1, array2));
```

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) {  
  if (isHotOutside == true && moneyInPocket > 10.50) {  
    return true;  
  } else {  
    return false;  
  }  
}  
console.log(willBuyDrink(true, 12));
```

13. Create a function of your own that solves a problem.
- In comments, write what the function does and why you created it.

```
// This function takes 2 parameters (boolean and array) to determine if a student is eligible  
to graduate or not, and will print out the result based on if the student completed his
```



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assignments and if their average test score was 70 or greater using the array `allTestScore` and the `totalAverage` function declared previously above.

```
let allTestScores = [60, 80, 65, 75, 85];

function willGraduate (isHomeworkDone, testScoresAverage) {
  if (isHomeworkDone == true && totalAverage(testScoresAverage) >= 70) {
    console.log("Congrats! You will graduate!");
  } else {
    console.log("Sorry... You will not be able to graduate.")
  }
}

willGraduate(true, allTestScores);
```

Video Steps:

- Create a video, up to five minutes max, showing and explaining how your project works with an emphasis on the portions you contributed.
- This video should be done using screen share and voice over.
- This can easily be done using Zoom, although you don't have to use Zoom, it's just what we recommend.
 - You can create a new meeting, start screen sharing, and start recording.
 - This will create a video recording on your computer.
- This should then be uploaded to a publicly accessible site, such as YouTube.
 - Ensure the link you share is **PUBLIC** or **UNLISTED**!
 - If it is not accessible by your grader, your project will be graded based on what they can access.