Week 3: Coding Assignment

URL to GitHub Repository:

https://github.com/Fswilliams814/Promineo-week3

URL to Your Coding Assignment Video:

https://youtu.be/qycKiAfkP1w

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.
    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!

```
var ages = [3, 9, 23, 64, 2, 8, 28, 93];
console.log(ages);
console.log (ages[ages.length - 1] - ages[0]);
```

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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(55);
console.log(ages[ages.length - 1] - ages[0]);
```

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

```
var totalAge = 0;
for (var i = 0; i < ages.length - 1; i++){
   totalAge += ages[i];
}
var averageAge = totalAge / i;
console.log ([totalAge,i,averageAge]);
```

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.

```
var names = ['Sam', 'Tommy', 'Tim', 'Sally', 'Buck', 'Bob'];
console.log(names);
for (let i = 0; i < names.length; i++){
   console.log([names[i].length]);
}
```

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

```
for (let i = 0; i < names.length; i++){
   console.log(names.join(" "));
}
console.log(names.join(" "));// would do the same as above
//without the loop
```

3. How do you access the last element of any array?

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

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

```
console.log(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. For example:

   namesArray = ["Kelly", "Sam", "Kate"] //given this array
   nameLengths = [5, 3, 4] //create this new array

```
var nameLengths = []
for (let i = 0; i < names.length; i++){
   nameLengths.push(names[i].length);
```

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```
}
console.log(nameLengths);
```

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

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

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 homework (word, n){
return (word.repeat(n)); //when writing a function be sure to use return and
not console.log within the curly brackets
}
console.log(homework("Hello", 3));
```

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){
   return firstName + " " + lastName
}
```

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```
console.log(fullName("Fionna", "Williams")); //Be sure to enter a string for the inputs
```

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 numbers = [55, 105, 155, 205, 255, 305]

function compareSum(numbers){
   let sum = 0
for (let i = 0; i < numbers.length; i += 1) {
 sum += numbers[i];
   // initial: sum = 0
 // iteration 1: 0 + 1 => sum = 1
 // iteration 2: 1 + 4 => sum = 5
 // iteration 3: 5 + 0 => sum = 5
 // iteration 4: 5 + 9 => sum = 14
 // iteration 5: 14 + -3 => sum = 11
}
//return sum //output is 105
return sum

}
console.log (compareSum(numbers));
```

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

```
var numbers2 = [10, 15, 20, 25, 30, 35] // make sure the above array is
commented out so that the function below does not add them both together to
get the sum of the array.

function getsAverage(numbers2){
   let sum = 0
for (let i = 0; i < numbers2.length; i += 1) {
 sum += numbers2[i];
}
return sum/numbers2.length // 135/6
   //numbers2.length is the number of integers in the array
}
console.log(getsAverage(numbers2));
```

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 comparetwoArrays (numbers, numbers2){
   let sum1 = 0
   let sum2 = 0
   let average1 = 0
   let average2 = 0
   for (let i = 0; i < numbers.length && i < numbers2.length; i += 1){
       sum1 += numbers[i] ; // equals the sum of integers in numbers array
       sum2 += numbers2[i]; // equals the sum of integers in numbers2 array
       average1 = sum1/numbers.length; // 1080/6
       average2 = sum2/numbers2.length; // 135/6
   } return average1 > average2;
```

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```
}
console.log(comparetwoArrays(numbers, numbers2));
```

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.

```
let isHotOutside = true;
let moneyInPocket = 25;
function willBuyDrink(isHotOutside, moneyInPocket){
if (moneyInPocket > 10.50 && isHotOutside == true){
   return true
}else{
   return false
}
}
console.log(willBuyDrink(isHotOutside, moneyInPocket));
```

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

```
const nestedArray = [
   [1, 2, 3, 4, 5, 6], // = 21
   [2, 4, 6, 8, 10, 12], // = 42
   [3, 6, 9, 12, 15, 18], // = 63
   [4, 8, 12, 16, 20, 24], // = 84
   [5, 10, 15, 20, 25, 30], // = 105
];
console.log(nestedArray[3]) // testing to make sure that I created the nested
array correctly
function getsnestedArrayAverage() {
   for(var index1=0;index1<nestedArray.length;index1+=1) // loops through the
nested array to find the sum of each one
   {
   for(var index2=0;index2<6;index2++) // loops through the length of the
single arrays
   {
       var sumofnestedArray = nestedArray.map(getsAverage) // uses that
getsAverage function created on line 134 to get the average of each single
array
   }return sumofnestedArray;
   }
   }console.log(getsnestedArrayAverage()); //calls the function and logs it
to the console
```

Video Steps:

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- 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.