Week 1 Assignment

DAY 1 ASSIGNMENT

Directions: Please answer the following questions on a VS-Code Editor page. Push up the code to a branch on GitHub called: week1-day1

Due: Tuesday by 11 PM CST

Problem #1: What should the following evaluations return?

```
2 == '2'
'he' == 'she'
2 === 2
'true' == true
true === true
'true' != true
'true' !== true
```

Problem #2: What are the three different ways you can declare a variable? And what is the differences between them?

Problem #3: Write a simple function for each type of these functions:

- First-Class Function
- Higher-Order Function
- Callback Function

Problem #4: What is the value of the console.log of "a", "b", and "c" shown in the code below?

```
const a = 'hi';
console.log(c);

const someFunction = (arg) => {
    const b = 'bye';

    if (arg) {
        const c = 'see ya!';
        console.log(a);
        console.log(b);
    }
}
```

Problem #5: Given the following data structure, write a for loop using:

```
const someArray = [1, 2, 3, 4, 5, 6, 7, 8, 9, 10];
```

- For statement
- For…of

The for loops should console.log out each of the values in order like this: e. g. 1, 2, 3, 4, 5, 6, 7, 8 …

Problem #6: Given the following data structure:

```
const someArray = [1, 2, 3, 4, 5];
```

- Use the concat() method to merge the two arrays to return: [1, 2, 3, 4, 5]
- Use the length property to return the length of the array
- Use the filter() method to filter out the element “3” and return: [1, 2, 4, 5]
- Use the find() method to find and return the value of 5.
- Use the slice() method to return back this array: [3, 4]
- Use the splice() method to return back this array: [1, 2, 5]
- Use the includes() method to return back TRUE when I pass in “4” into the includes method.
- Use the indexOf() method to return back the index of the element “2”
- Use the isArray() method to return back TRUE when I pass in the array
- Use the join() method to return back: “1, 2, 3, 4, 5”
- Use the map() method to return back a new array: [2, 4, 6, 8, 10]
- Use the pop() method to return back a new array: [1, 2, 3, 4]
- Use the push() method to return back a new array: [1, 2, 3, 4, 5, 6]
- Use the shift() method to return back a new array: [2, 3, 4, 5]
- Use the unshift() method to return back a new array: [0, 1, 2, 3, 4, 5]
- Sort this array [9, 1, 3, 5] to return from smallest to largest using the sort() method, should return: [1, 3, 5, 9]
- Use the reduce() method to return back the sum of all numbers in the array

Problem #7: Given the following data structure:

```
const someObject = {
    color: 'black'
}
```

- Use the assign() method to add a new key value pair of: name: ‘john doe’
- Use the dot notation to add a new key value pair of: age: 22
- Use the bracket notation to add a new key value pair of: address: ‘123 test address’
- Use the keys() method to return a array back of the keys: [“color”, “name”, “age”, “address”]
- Use the values() method to return a array back of the values: [“black”, “john doe”, “22”, “123 test address”]
- Use the for…in loop against this object to console.log each of the keys values.
  Your terminal should return:

```
// black
// john doe
// 22
// 123 test address
```

Problem #8: Given the following data structure:

```
const numbers = [
    {
        num: 1
    },
    {
        num: 2
    },
    {
        num: 3
    }
]
```

- Use either the for statement or for…of loop to console.log each of the keys. Values.
  Your terminal should return

```
// 1
// 2
// 3
```

Problem #9: Create a new Set() object

- **Add a new value of: 'john doe'**
- **Check if the value of 'john doe' exists**
- **Remove the value of 'john doe'**

Problem #10: Create a new Map() object

- **Add a new key-value pair of: name: 'john doe'**
- **Check if the value 'john doe' exists**
- **Remove the key-value pair of 'john doe'**

Problem #11: Explain what asynchronous programming means in 3 sentences.

Problem #12: Explain what call back hell is.

Problem #13: Explain what is a promise and describe the possible states of promises.

Problem #14: What is async/await?

Problem #15: Using Git, please push this code up to your GitHub repo following the directions:

1. **Initialize your project:** git init
2. **Git checkout to:** git checkout -b week1-day
3. **Git add all commits:** git add --all
4. **Git commit:** git commit -m 'week1-day1 assignment complete'
5. **Push to your remote branch:** git push