Lab 1

Start Assignment

Due Jan 31 by 11:59pm **Points** 100 **Submitting** a file upload
File Types zip **Available** after Jan 24 at 12am

CS-546 Lab 1

An Intro to Node

For this lab, you will be creating and running several functions to practice JavaScript syntax.

For this lab, you will make two files: `lab1.js` and `lab1.test.js` and submit them in a zip file that's named `LastName_FirstName.zip`. For example: Hill_Patrick.zip

You **should not** have any folders inside the zip file.

You **must** submit your files with the format specified, named as specified.

lab1.js

In this file, you will update the content of the functions and update the `firstName`, `lastName`, and `studentId` with the appropriate information. The function specifications are listed in the section below.

```
const questionOne = function questionOne(arr) {
    // Implement question 1 here
}

const questionTwo = function questionTwo(num) {
    // Implement question 2 here
}

const questionThree = function questionThree(text) {
    // Implement question 3 here
}

const questionFour = function questionFour(num) {
    // Implement question 4 here
}

module.exports = {
    firstName: "YOUR FIRST NAME",
    lastName: "YOUR LAST NAME",
    studentId: "YOUR STUDENT ID",
    questionOne,
    questionTwo,
    questionThree,
    questionFour
};
```

lab1.test.js

```
const lab1 = require("./lab1");

console.log(lab1.questionOne([1, 2, 3]));
// should output 14

console.log(lab1.questionTwo(7));
// should output 13

console.log(lab1.questionThree("Mr. and Mrs. Dursley, of number four, Privet Drive, wer
e  proud  to  say  that  they  were  perfectly  normal,  thank you  very  much.  They  w
ere  the  last  people  youd  expect  to  be  involved in anything strange or mysteriou
s, because they just didn't hold with such nonsense. \n Mr. Dursley was the director of
 a firm called Grunnings, which  made  drills.  He  was  a  big,  beefy  man  with  har
dly  any  neck,  although he did have a very large mustache. Mrs. Dursley was thin and
blonde and had nearly twice the usual amount of neck, which came in very useful as she
spent so much of her time craning over garden fences, spying on the neighbors. The Durs
leys had a small son  called  Dudley  and  in  their  opinion  there  was no finer boy
anywhere."));
// should output 196

console.log(lab1.questionFour(10));
// should output 3628800
```

Functions to implement

questionOne(arr)

For your first function, you will calculate the sum of the squares of all numbers in the arrayn numbers and return that result. That means that in `lab1.test.js`, running `lab1.questionOne([5, 3, 10])` would return `134`.

To test this function, you will log the result of 5 calls to `lab1.questionOne([x, y, z])` with different inputs, like so:

```
console.log(lab1.questionOne([5, 3, 10]));
// 134
console.log(lab1.questionOne([2, 1, 2]));
// 9
console.log(lab1.questionOne([5, 10, 9]));
// 206
```

questionTwo(index);

This function should calculate the **Fibonacci** **(https://en.wikipedia.org/wiki/Fibonacci_number)** that corresponds to the `index` given.

The Fibonacci value of a number is the sum of the previous two Fibonacci values; the Fibonacci of any number less than 1 is 0; the Fibonacci Value of 1 is 1; the Fibonacci value of all other numbers is the sum of the previous two Fibonacci numbers.

Index	Value	Description
0	0	Fibonacci of anything less than 1 is 0
1	1	Fibonacci of 1 is 1
2	1	Fibonacci of 2 is Fibonacci(1) + Fibonacci(0)
3	2	Fibonacci of 3 is Fibonacci(2) + Fibonacci(1)
4	3	Fibonacci of 4 is Fibonacci(3) + Fibonacci(2)
5	5	Fibonacci of 5 is Fibonacci(4) + Fibonacci(3)
6	8	Fibonacci of 6 is Fibonacci(5) + Fibonacci(4)
7	13	Fibonacci of 7 is Fibonacci(6) + Fibonacci(5)
8	21	Fibonacci of 8 is Fibonacci(7) + Fibonacci(6)
9	34	Fibonacci of 9 is Fibonacci(8) + Fibonacci(7)
10	55	Fibonacci of 10 is Fibonacci(9) + Fibonacci(8)
11	89	Fibonacci of 11 is Fibonacci(10) + Fibonacci(9)

And so on.

questionThree(str)

This function will return the number of vowels contained in the value `str`. For the purposes of this exercise, we are not counting `y` as a vowel.

questionFour(num)

This function will return the factorial of the number `num` provided.

The factorial of a number is a simple formula:

`factorial(n) = n * (n - 1) * (n - 2) ... * 1`

The factorial of 0 is 1. If `num` is less than `0`, then return `NaN`.

Number	Factorial
-1	NaN
0	1
1	1
2	2
3	6
4	24
5	120

Requirements

1. You will have to write each function
2. You must submit all files, zipped up, not contained in any folders
3. You must not use any npm dependenices in this lab