**Exercises**

*Lecture 3:*

ES6 - part 2

1. **Default + rest + spread**

1.1. Write a function which returns an array of characters of a string.

1.2. Given 2 arrays:

var array1 = [1, 2, 3];

var randomValue = 'something';

var array2 = [4, 5, 6];

Write a function which returns [1, 2, 3, 'something', 4, 5, 6].

1.3. Write a function which returns sum of its arguments (number only).

1.4. Write a function which returns sum of its arguments except for the first one (number only).

1.5. Write a function which returns sum of its arguments except for the last one (number only).

1.6. Write a function which returns sum of its first 3 arguments (number only).

1. **Let + const**

Read some articles about let, const and var to have a better understanding about them.

Recommended articles:

* <https://medium.com/javascript-scene/javascript-es6-var-let-or-const-ba58b8dcde75>
* <https://ponyfoo.com/articles/var-let-const>
* <http://wesbos.com/let-vs-const/>

1. **Iterators + for .. of**

3.1. Create a countdown iterator that counts from 9 to 1. **Use iterator, do not use generator.**

let getCountdownIterator = // Your code comes here

console.log( [ ...getCountdownIterator ] );

> [9, 8, 7, 6, 5, 4, 3, 2, 1]

3.2. Create an infinite sequence that generates the next value of the Fibonacci sequence.

The Fibonacci sequence is defined as follows:

fib( 0 ) = 0

fib( 1 ) = 1

for n > 1, fib( n ) = fib( n - 1 ) + fib( n - 2 )

1. **Generators**

4.1. Create a countdown iterator that counts from 9 to 1. Use **generator** functions!

let getCountdownIterator = // Your code comes here

console.log( [ ...getCountdownIterator() ] );

> [9, 8, 7, 6, 5, 4, 3, 2, 1]

4.2. Use **generator**, create an infinite sequence that generates the next value of the Fibonacci sequence.

The Fibonacci sequence is defined as follows:

fib( 0 ) = 0

fib( 1 ) = 1

for n > 1, fib( n ) = fib( n - 1 ) + fib( n - 2 )

4.3. Create a lazy filter generator function. Filter the elements of the Fibonacci sequence by keeping the **even values only**.

function \*filter( iterable, filterFunction ) {

// insert code here

}