Functional Programming Explained to my Grandma

Whoami

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Tech lover, Game lover

....

This is my grandma

Nice

Connected

No scientific background

What are you working on?

But, what do "Concurrency and Scaling" mean?

Doing many things at the same time

Access at the same time

Why is it complicated?

It's all about side effect...

Side Effects!

- Modifying a variable
- Modifying a data structure in place
- Setting a field on an object
- Throwing an exception or halting with an error
- Printing to the console or reading user input
- Reading from or writing to a file
- Drawing on the screen

But you can use functional!

Pure Function

- It always gives the same result for the same parameters

- It doesn’t change his environment

Examples

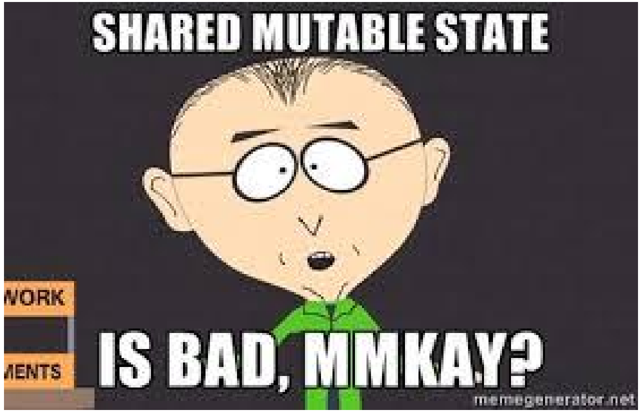
https://tech.io/playgrounds/6247/functional-programming-explained-to-my-grandma

So you don't change anything?

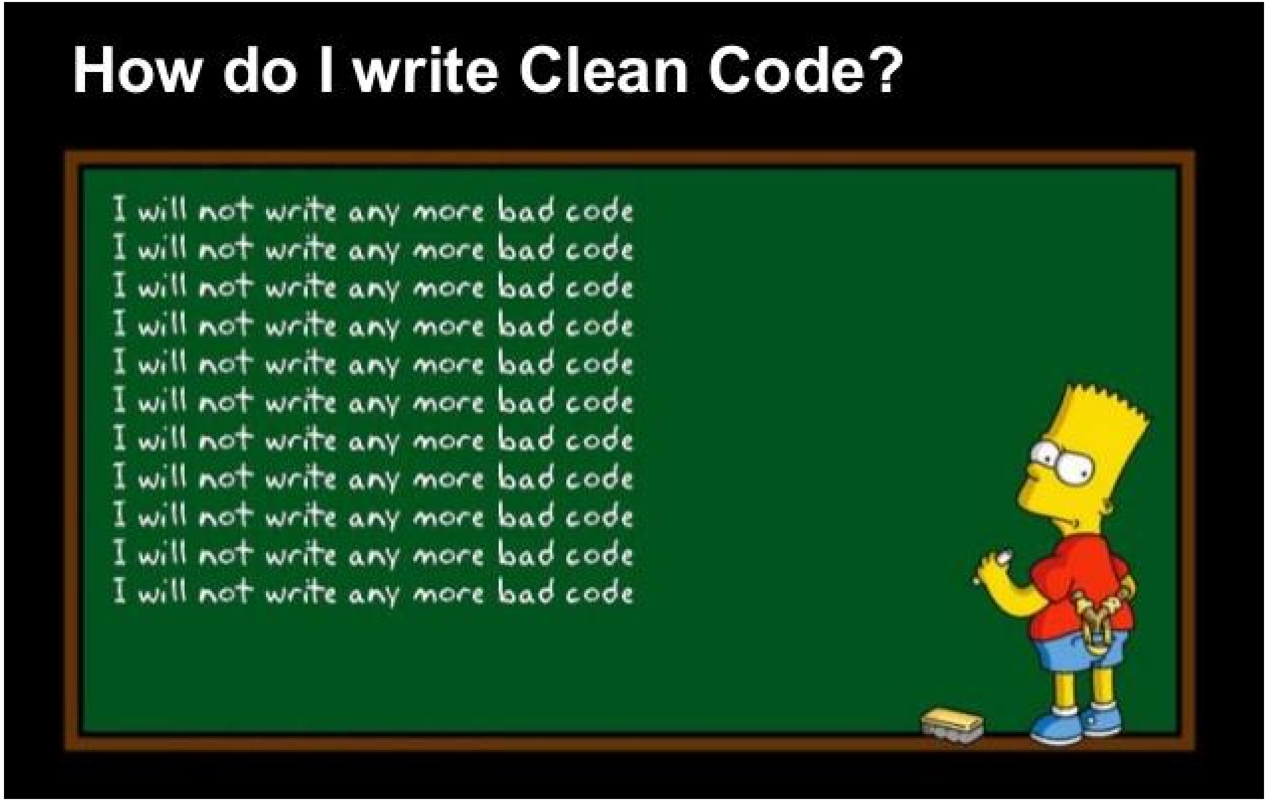
Yes we do

But only in some layers....

Core code should stay immutable and so 'observable'



Code clearly


How do I write Clean Code?
I will not write any more bad code
I will not write any more bad code
I will not write any more bad code
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Higher Order Function

First class citizen

Can be affect to a name

Can be result of a function

Can be a parameter of a function

Key tools

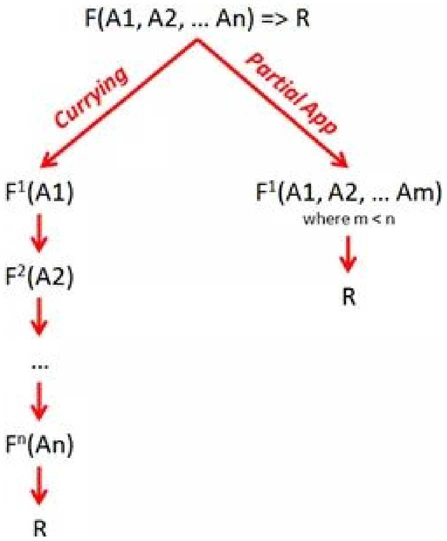
Currying

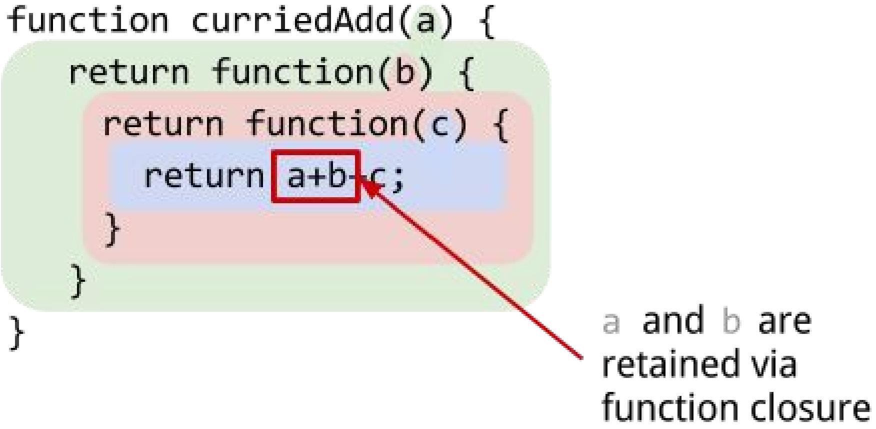
Partial Application

```
function addColumnToDB(DB connection, string columnName, string Type){}
```

```
function addColumn(string columnName, string type)
```

What's the difference?



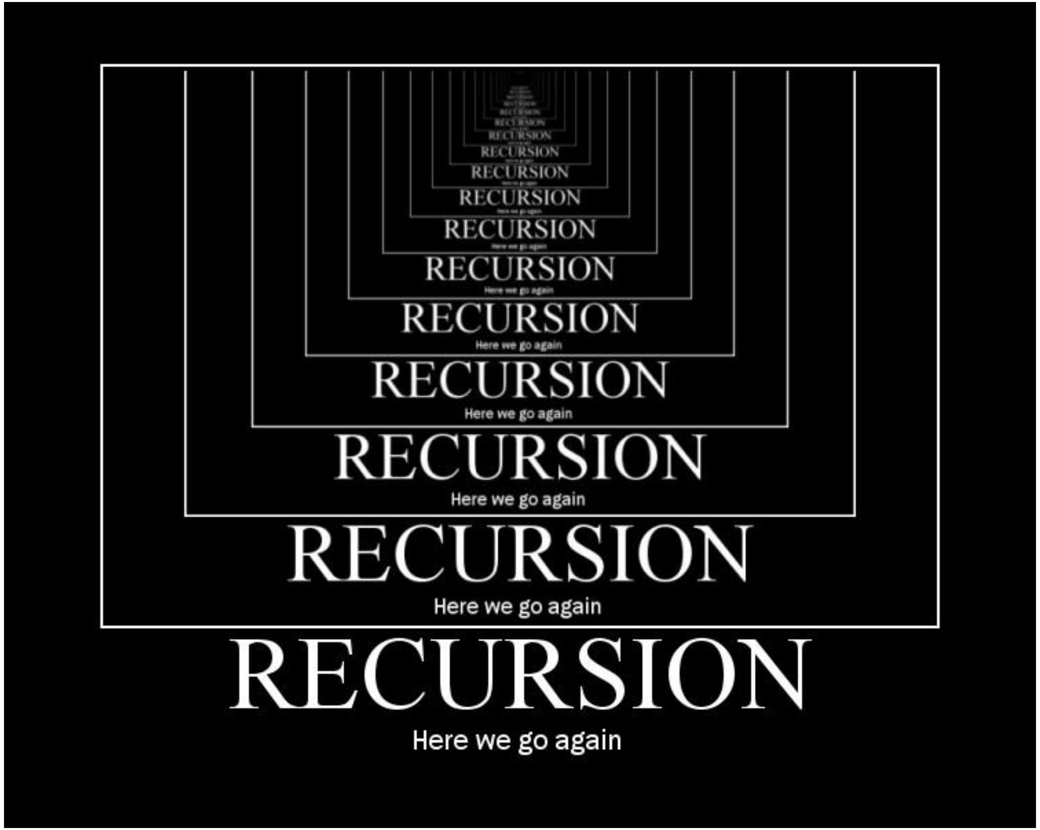


```
function curriedAdd(a) {
  return function(b) {
    return function(c) {
      return a+b+c;
    }
  }
}
```

a and b are retained via function closure

http://www.datchley.name/currying-vs-partial-application/

Recursion



Tail Recursion

Compute 4!

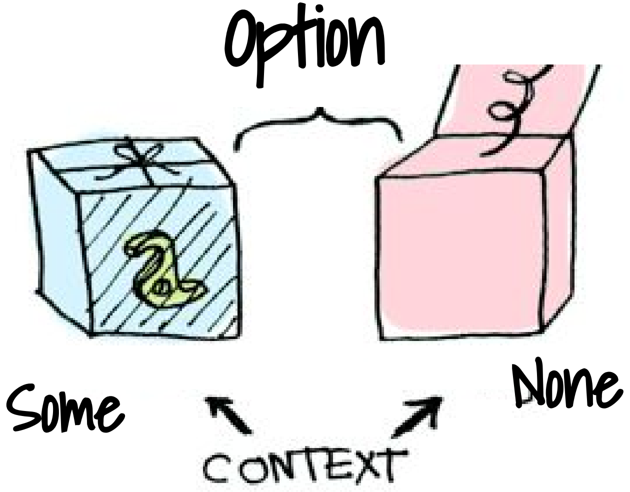
without tail recursion	with tail recursion
4*3!	3! (4*1)
4*3*2!	2! (4*3)
4*3*2*1	1! (12*2)
4*3*2	
4*6	
24	

Lambda

Some functionalities changed my life!

Options

An option, could have a value, or not...



No more NPE

I DON'T ALWAYS CODE IN JAVA
BUT WHEN I DO IT'S JAVA.LANG.NULLPOINTER EXCEPTION

Futures

Coca example

Tomatoes are missing:

wait to someone go buy it

- Ask someone to buy tomatoes
- Cut pepper
- Cut onions
- ….

- As soon the tomatoes are available, add it to the recipe

Coca Frita Recipe

- Heat the oven to 180 degres
- Fry the garlic
- Cut the onions tomatoes and pepper
- Cook it in the pan with olive oil
- Wrap it in a pastry
- Cook for 20 min

Thank you

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montpellier jug

duchess france