RRRR…

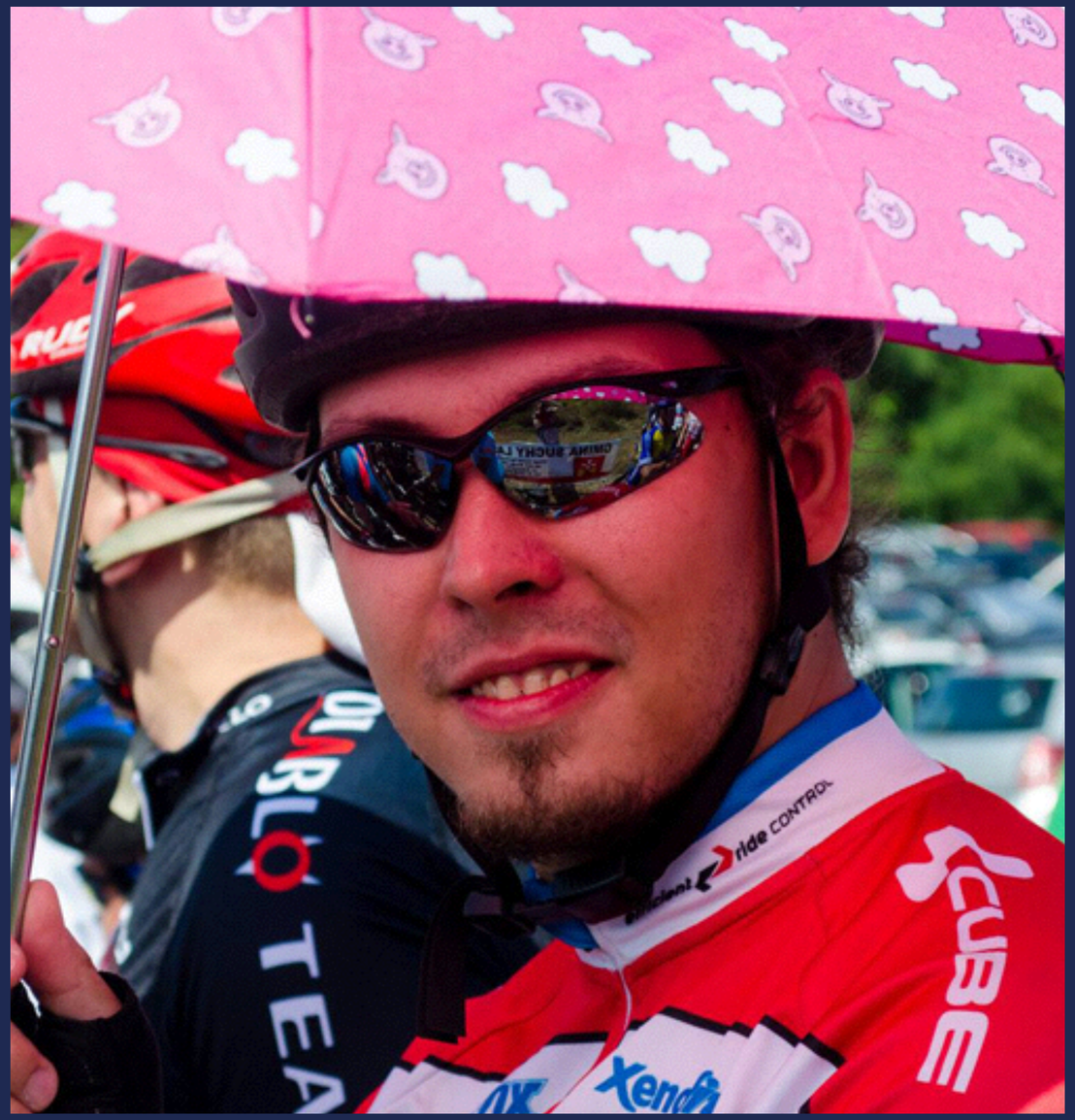
MVVM AND FUNCTIONAL REACTIVE PROGRAMMING

AGENDA

- Model - View - View Model
- Functional Reactive Programming
- Why these two belong together?
- Comparison of Frameworks

WHO AM I?

- iOS developer 5+ years of experience
- Freelance Dev, former iOS Lead
- Intrested in Game Dev and IoT
- Slight experience with FRP and MVVM

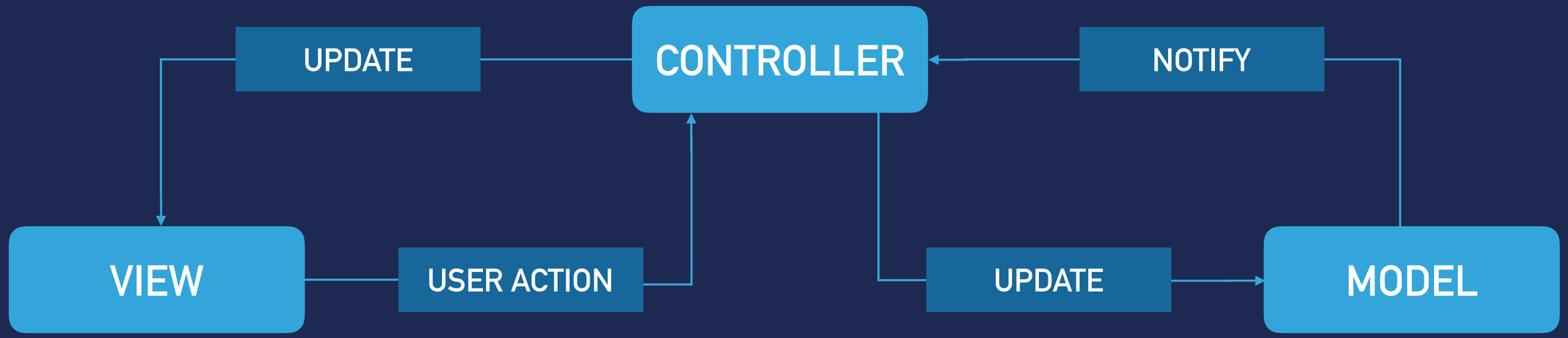


MODEL,
VIEW,
VIEW MODEL

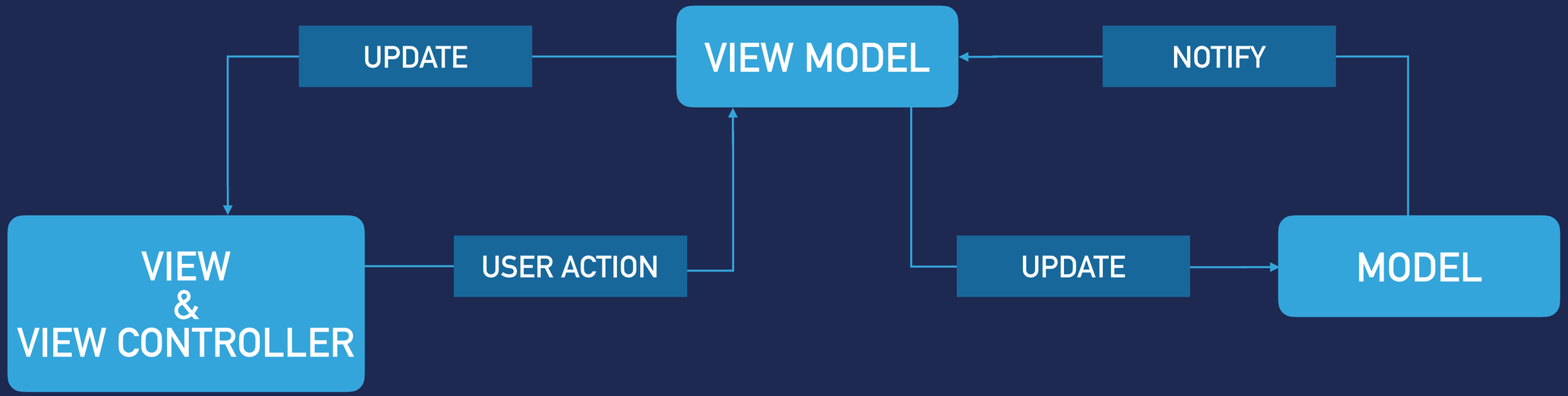
WHAT IS IT?

- Created by Microsoft
- Based on MVC architecture
- Separates Logic from views
- Adds an intermediate object between view and model
- One can test it easily

MVC - MASSIVE VIEW CONTROLLER



SOLUTION? MVVM



VIEW MODEL

- Acts as a model value transformer
- Interacts with the data
- Is independent of the presentation layer, it is portable
- Reacts to user input, already filtered by view

AND VIEW CONTROLLER?

- Controls the view
- Manages user input
- Is a view itself!

FUNCTIONAL REACTIVE PROGRAMMING

FRP IS A PROGRAMMING PARADIGM
FOR REACTIVE PROGRAMMING (ASYNCHRONOUS DATAFLOW PROGRAMMING)
USING THE BUILDING BLOCKS OF FUNCTIONAL PROGRAMMING (E.G. MAP, REDUCE, FILTER)

Wikipedia

WHAT IS THE WORST ENEMY OF A PROGRAMMER?

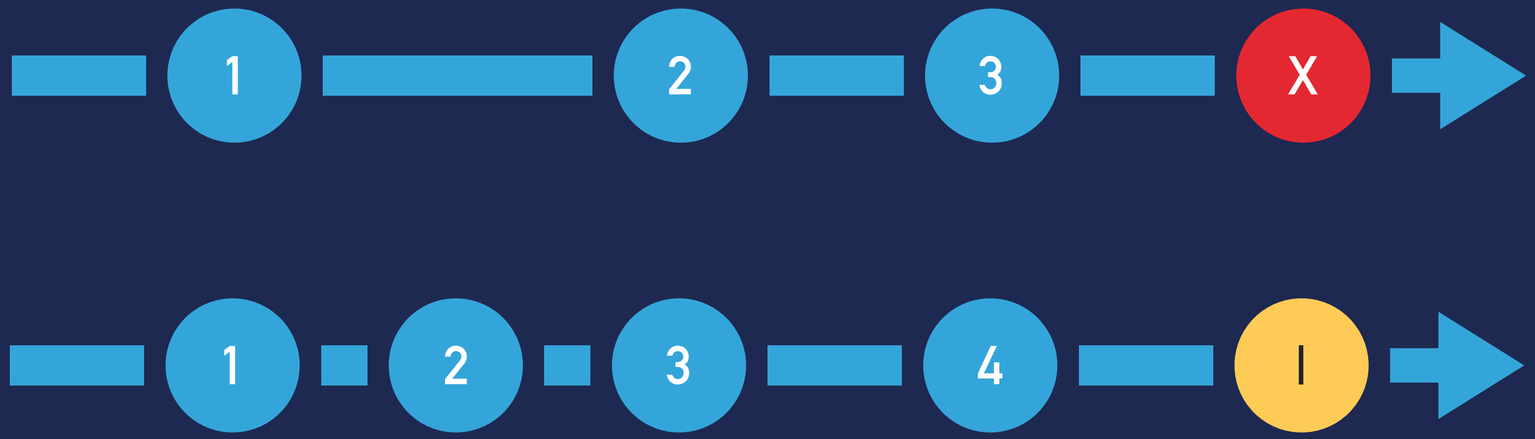
WHAT IS THE WORST ENEMY OF A PROGRAMMER?

STATE

DIFFERENT APPROACH

https://gist.github.com/staltz/868e7e9bc2a7b8c1f754

STREAM



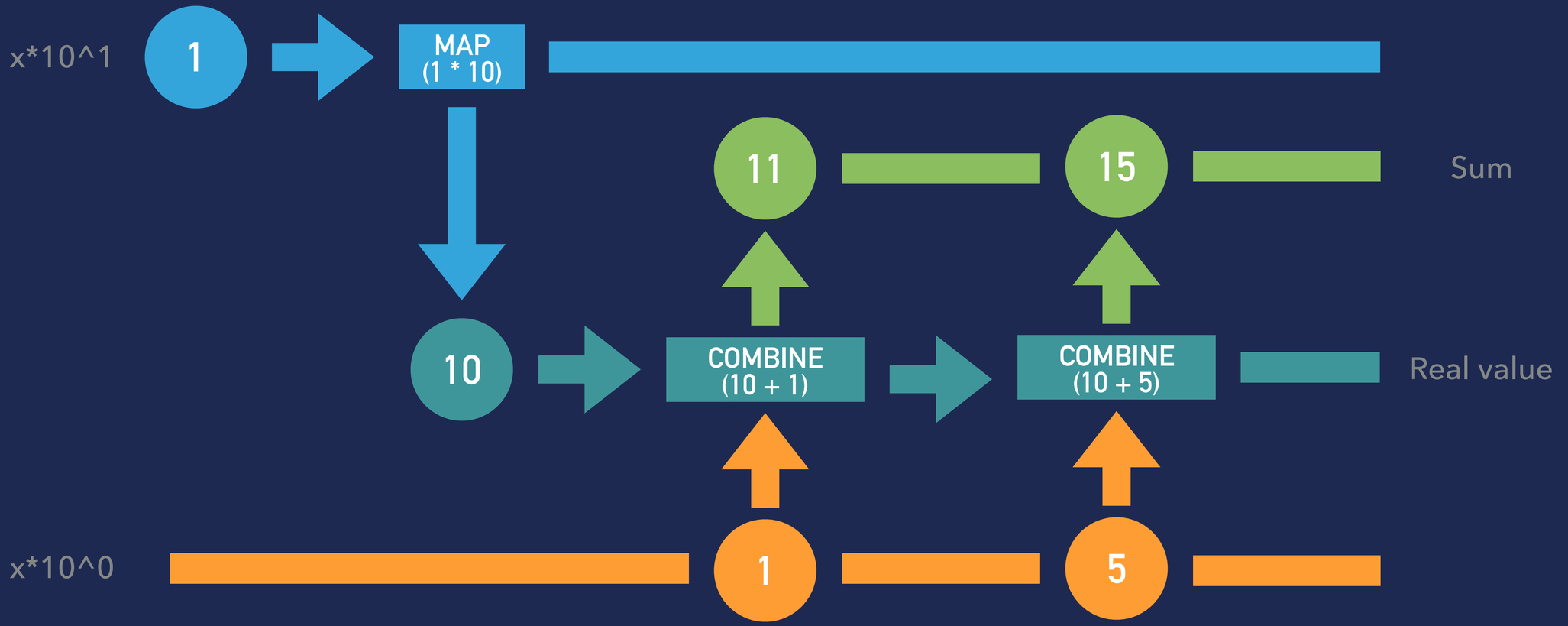
PULL AND PUSH DRIVEN STREAM

- Pull is when there is a set of data and you use one at a time (eg. Array)
- Push is when you subscribe to changes overtime (eg. changes in model)

ITS REACTIVE, BUT WHAT ABOUT FUNCTIONAL?

- map
- filter
- reduce
- merge

STREAM MANIPULATION



SIDE EFFECTS

Sometimes flow of data needs to create something, maybe a new model or trigger non reactive part of code. This is a side effect.

WHY THESE TWO BELONG TOGETHER?

MVVM WAS CREATED WITH BINDINGS IN MIND!

- No need to manually refresh views
- View model applies transformations to streams instead of values
- Provides easy interface for viewModel (w/o callback hell)

THE FRAMEWORKS!

SWIFT

- Reactive Cocoa
- RxSwift
- ReactKit

OBJECTIVE - C

- Reactive Cocoa 2.x

RX SWIFT

- Based on Rx library
- Observables and Observers
- Lots of documentation on http://reactivex.io
- Many concepts are cross-platform

REACTIVE COCOA

- Available for Obj-C and Swift
- Focuses on being more Cocoa-ish
- Some issues with Obj-C implementation
- Largest iOS specific community.

REACT KIT

- Own concept of syntax
- Smaller community
- Uses stream pipelining operator |>

DEMO :)

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QUESTIONS?