ReactiveCocoa Lessons Learned

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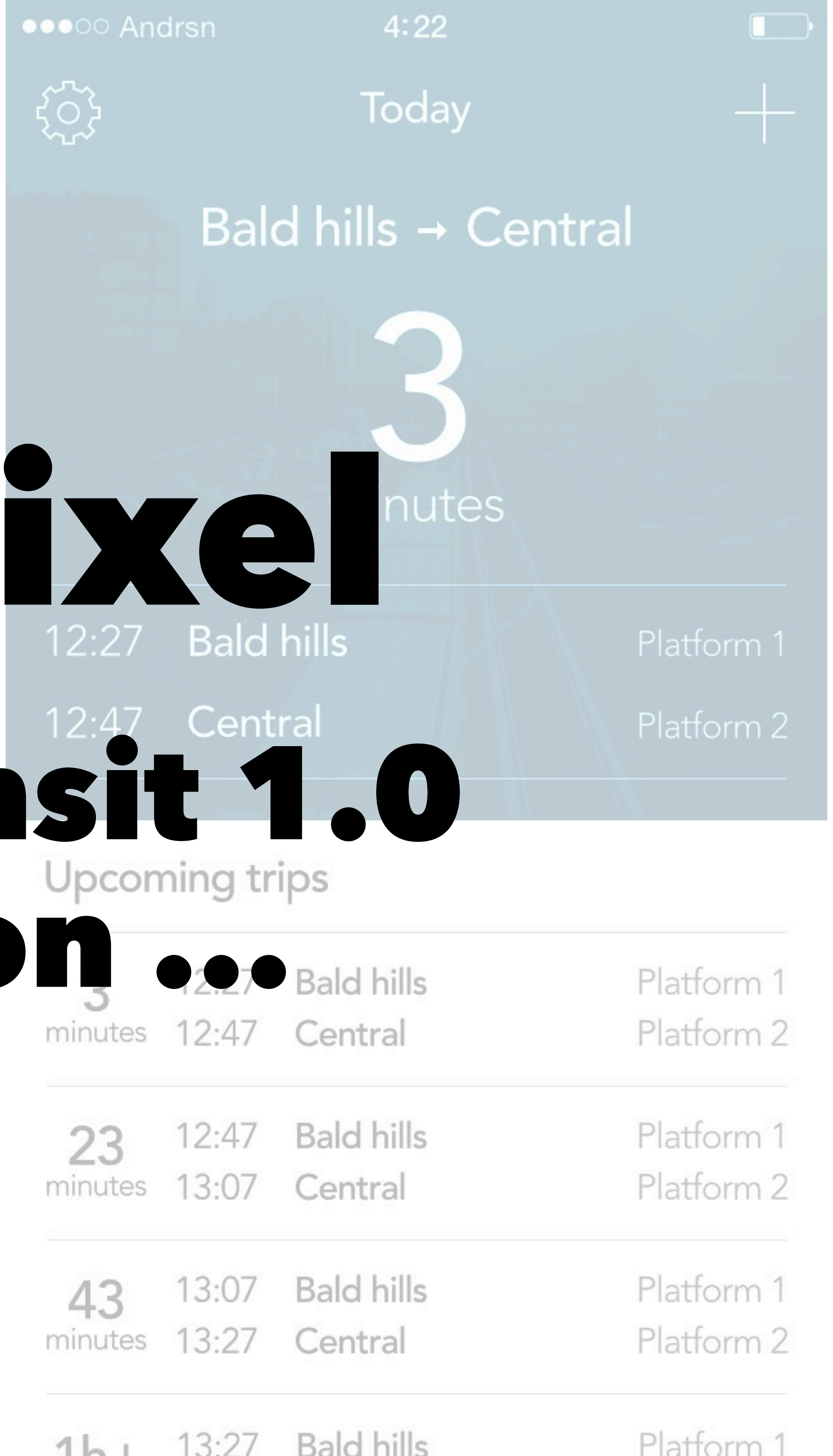
Maple Pixel

Everyday Transit 1.0 coming soon …


●●●○○ Andrsn 4:22

Today

Bald hills → Central

3 minutes

12:27	Bald hills	Platform 1
12:47	Central	Platform 2

Upcoming trips

3 minutes	12:27	Bald hills	Platform 1
	12:47	Central	Platform 2
23 minutes	12:47	Bald hills	Platform 1
	13:07	Central	Platform 2
43 minutes	13:07	Bald hills	Platform 1
	13:27	Central	Platform 2
1h	13:27	Bald hills	Platform 1

FrieNDA

Everyday ReactiveCocoa

1. ***Functional Programming*** Briefly
2. ***Signals and Pipelines***
3. ***RAC*** Lessons Learned

Functional Programming Briefly

State

Immutable Data

Recursion

Pure Functions

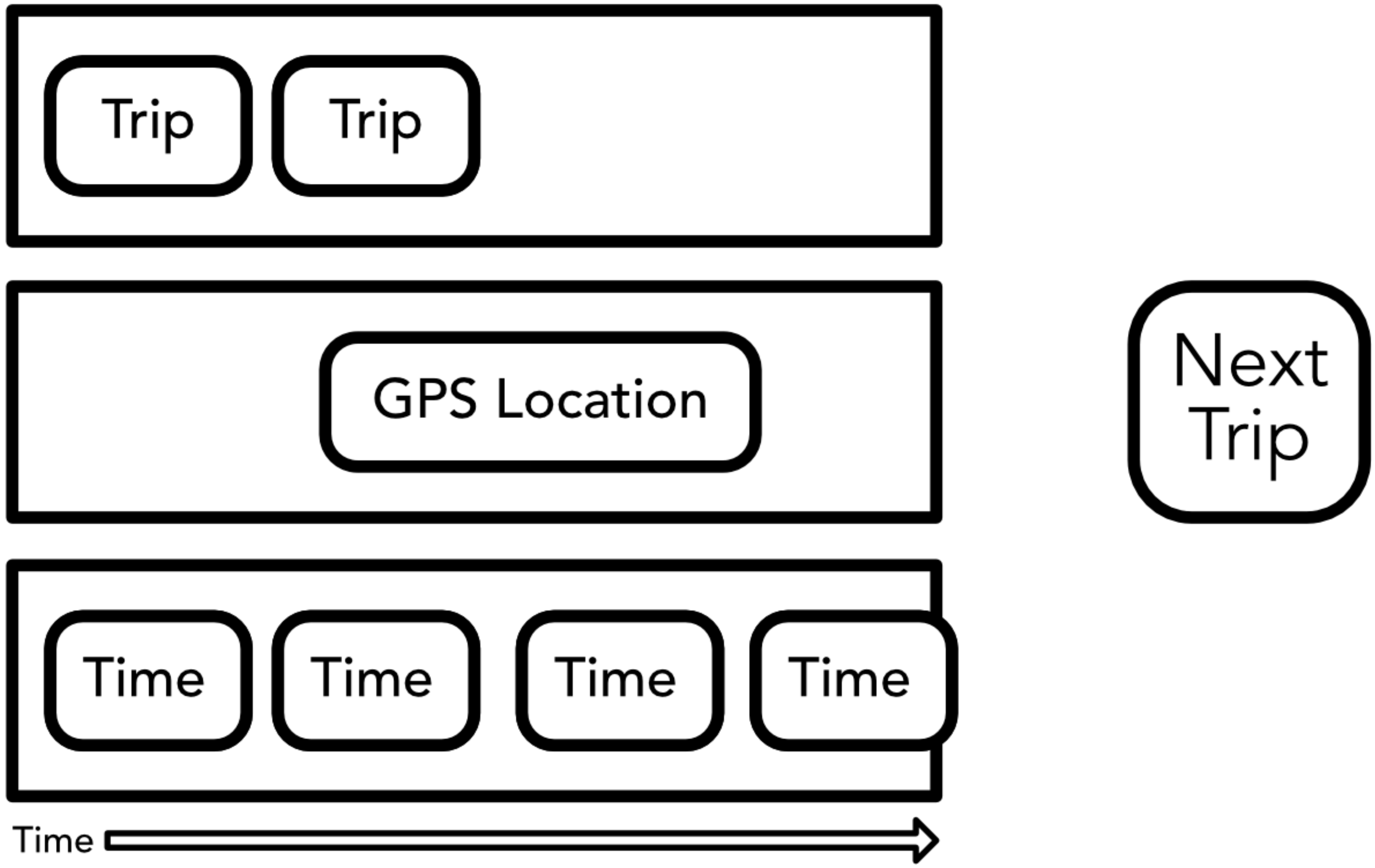
Higher Order Functions

Side-effect free

Repeatable

Signals and Pipelines

Demo


Trip
Trip
GPS Location
Next Trip
Time
Time
Time
Time
Time

Transit Dashboard Pipeline

Inputs:
* List of Everyday Trips (Favourites)
* GPS Location
* Time

Outputs:
* Next Transit Trip

Pipelines == RACSignals

RACSignal Example

```
[RACSignal createSignal:^(id<RACSubscriber subscriber) {

  // Do Something
    u_int32_t r = arc4random();

    // Start (and in this case complete) the signal.
    [subscriber sendNext:@(r)];
    [subscriber sendCompleted];

    return (RACDisposable *)nil;
}];
```

So we have Pipelines/ Signals. Now what?

Two Options

RAC(self, viewModel.something)
RACSignal subscribeNext: error: completed:

RAC Lessons Learned

RACify your obj-c Code

Signal Tips and Tricks

KVO

No, Seriously … KVO!

Key Value Observing

```
// Bind Transit Trips to Table View
[RACObserve(self.viewModel, everydayTransitTrips) subscribeNext:^(id x) {
    @strongify(self);

    [self.tableView reloadData];

}];
```

Work with Protocols

rac_signalForSelector

```
[[self rac_signalForSelector:@selector(searchBar:textDidChange:) fromProtocol:@protocol(UISearchBarDelegate)] subscribeNext:^(RACTuple *value) {
    @strongify(self);

    UISearchBar *searchBar = value.first;

    if (searchBar == self.departingLocationsSearchBar) {
        [self.viewModel filterDepartingLocationsByName:self.departingLocationsSearchBar.text];
    }
    else {
        [self.viewModel filterArrivingLocationsByName:self.arrivingLocationsSearchBar.text];
    }

}];
```

Take advantage of RAC Category Methods

NotificationCentre

```
RACSignal *appActiveSignal = [[[[NSNotificationCenter.defaultCenter
        rac_addObserverForName:UIApplicationDidBecomeActiveNotification object:nil] mapReplace:@YES]
        startWith:@YES]
        setNameWithFormat:@"%@ appActive", self];
```

Signal Tips and Tricks

Reactive Timer 1

Map Time

Reactive Timer 1

```
[[[[[RACSignal interval:60 onScheduler:[RACScheduler scheduler]]
        map:^id(NSDate *timestamp) {
            @strongify(self);

              if (self.hasEverydayTrips != nil && [@(YES) isEqualToNumber:self.hasEverydayTrips]) {
                  return @"SEQ";
              }
              else {
                  return @"Everyday Transit";
              }
        }]
        startWith:@"Everyday Transit"]
        distinctUntilChanged]
        deliverOn:[RACScheduler mainThreadScheduler]];
```

Reactive Timer 2

Empty Signal with a delay.

Reactive Timer 2

```
RACSignal *nextTransitTripIntervalSignal = [RACSignal interval:1 onScheduler:[RACScheduler scheduler]];
RACSignal *currentUserLocationRefreshDelay = [[RACSignal empty] delay:60];
RACSignal *currentUserLocationRefreshSignal = [[[self.locationService.locationSignal
        take:1]
        concat:currentUserLocationRefreshDelay]
        repeat];
```

Real Power is combing and chaining signals

Protips

- Start by reading IntroToRx.com
- Start small and iterate.
- Logging w/ Something like Cocoalumberjack
- Asks questions by opening issues at http://github.com/ReactiveCocoa/

Challenges

- Thinking like a Functional Programmer
- ReactiveCocoa Doco
- Debugging

References

- Github Repo: http://github.com/ReactiveCocoa/
- Ray Wenderlich Tutorial: https://bit.ly/1rXA31Y
- Big Nerd Ranch Tutorial: https://bit.ly/1mp04mI
- FRP on iOS by Ash Furrow: https://leanpub.com/iosfrp
- Brent Simmons on ReactiveCocoa: https://bit.ly/PcyjCL

Questions?