

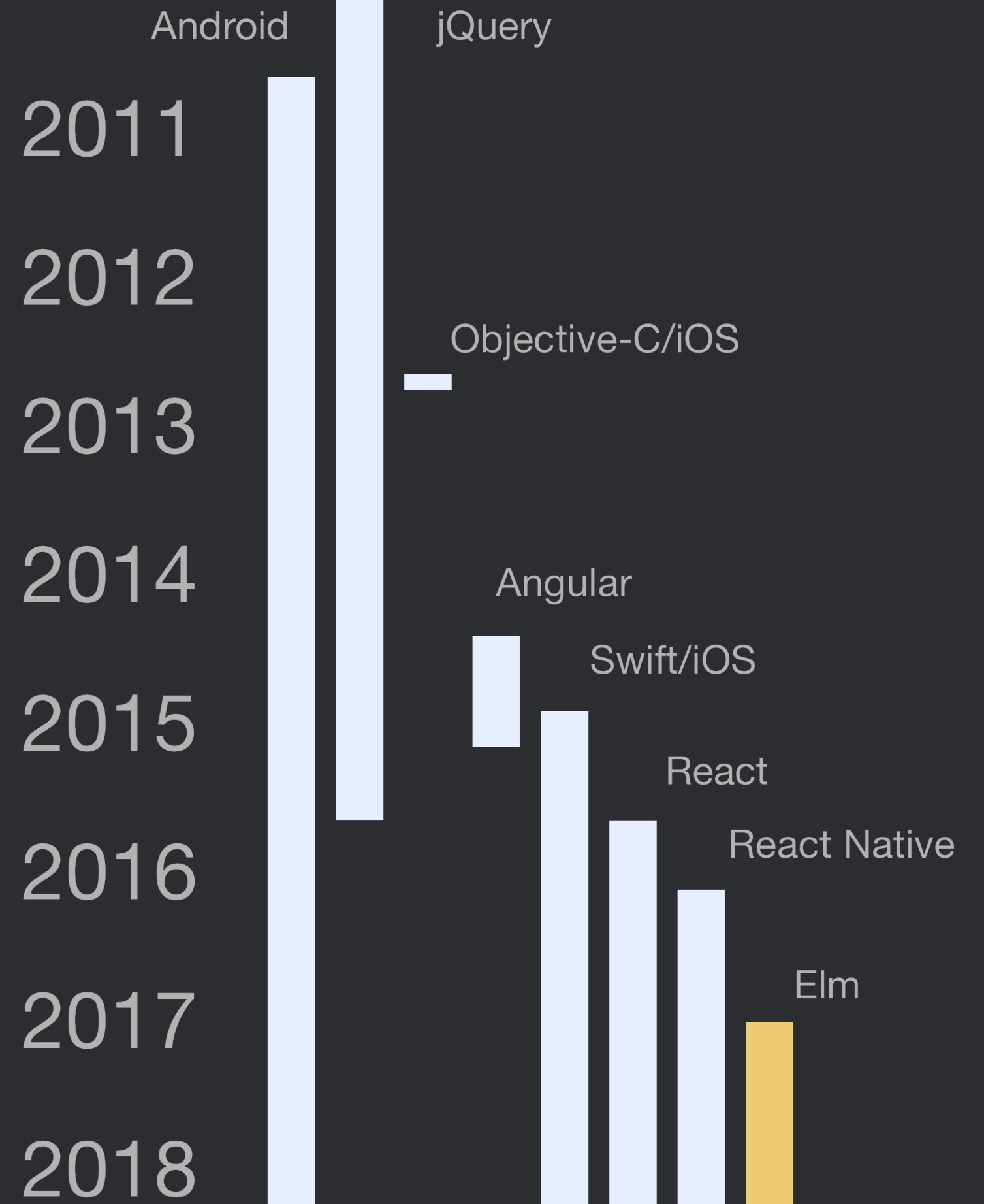
# Elm: your next Programming Language?

**James Porter**

# My front-end journey

- Vanilla Javascript
- jQuery
- Angular 1
- React
- Elm

Not just tradeoffs, levelling up  
Back to...



# Classic Functional Programming

- Monads
- Monoids
- Semigroups
- Functors
- traversable/applicative
- lifting
- $\gg=$

# Functional Programming with Elm (or Elixir)

What if...

- Data
- (Pure) Functions
- Keep things simple

# **(Modern) Javascript**

- React
- Redux
- Immutable.js (or not?)
- Flow/TypeScript
- Prettier
- Dependencies

# Elm

- Fast vdom included
- Elm architecture
- Always immutable
- Powerful ML type system
- elm-format (no config!)
- Enforced semantic versioning!

# Elm's key features

- No runtime errors
- Hyper-intelligent/helpful pairing partner
  - Incredibly friendly compiler messages
  - Making major structural changes is easy and fun
  - If it compiles it will just work

# Demo 1

- Basic Elm
  - Numbers, strings
  - Functions
  - Tuples and records
  - Library stuff
  - Pipelines



## Some Code

```
main =  
  Html.program  
    { init = init  
      , view = view  
      , update = update  
      , subscriptions = subscriptions  
    }
```

## Some Code II: a Model

```
type Position
  = At Int
  | Forward Int Int Float
  | Backward Int Int Float
```

```
type alias Presentation =
  { position : Position
  , slides : Array Slide
  , showCode : Bool
  }
```

— Make impossible states impossible

## Some Code III

- Websockets
- Animation Frame

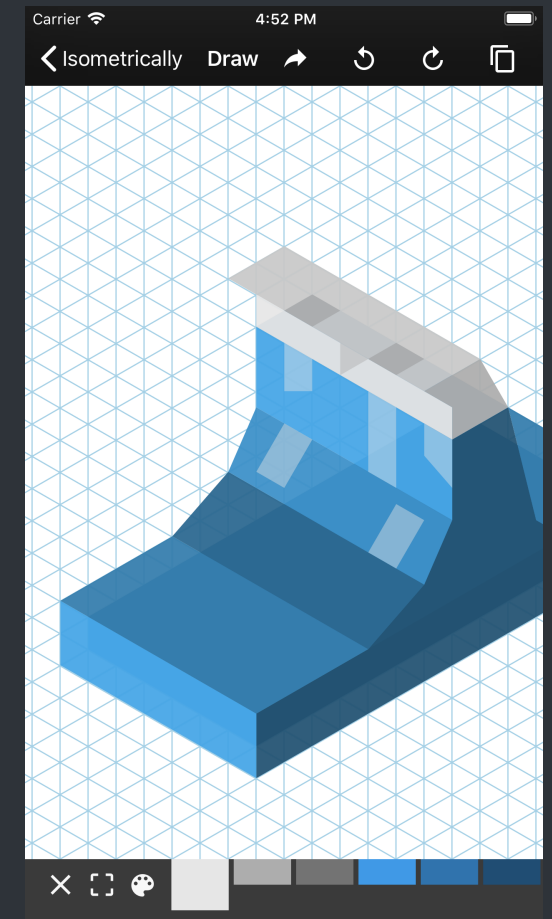
`subscriptions : Model -> Sub Msg`

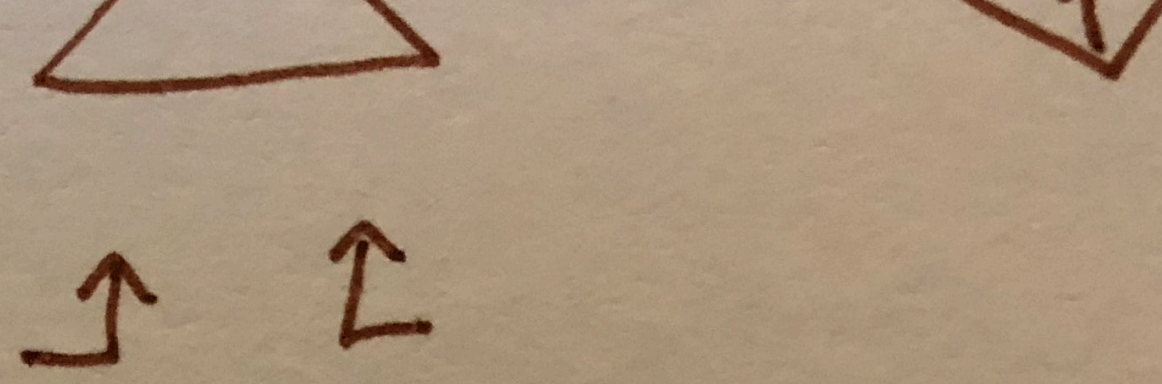
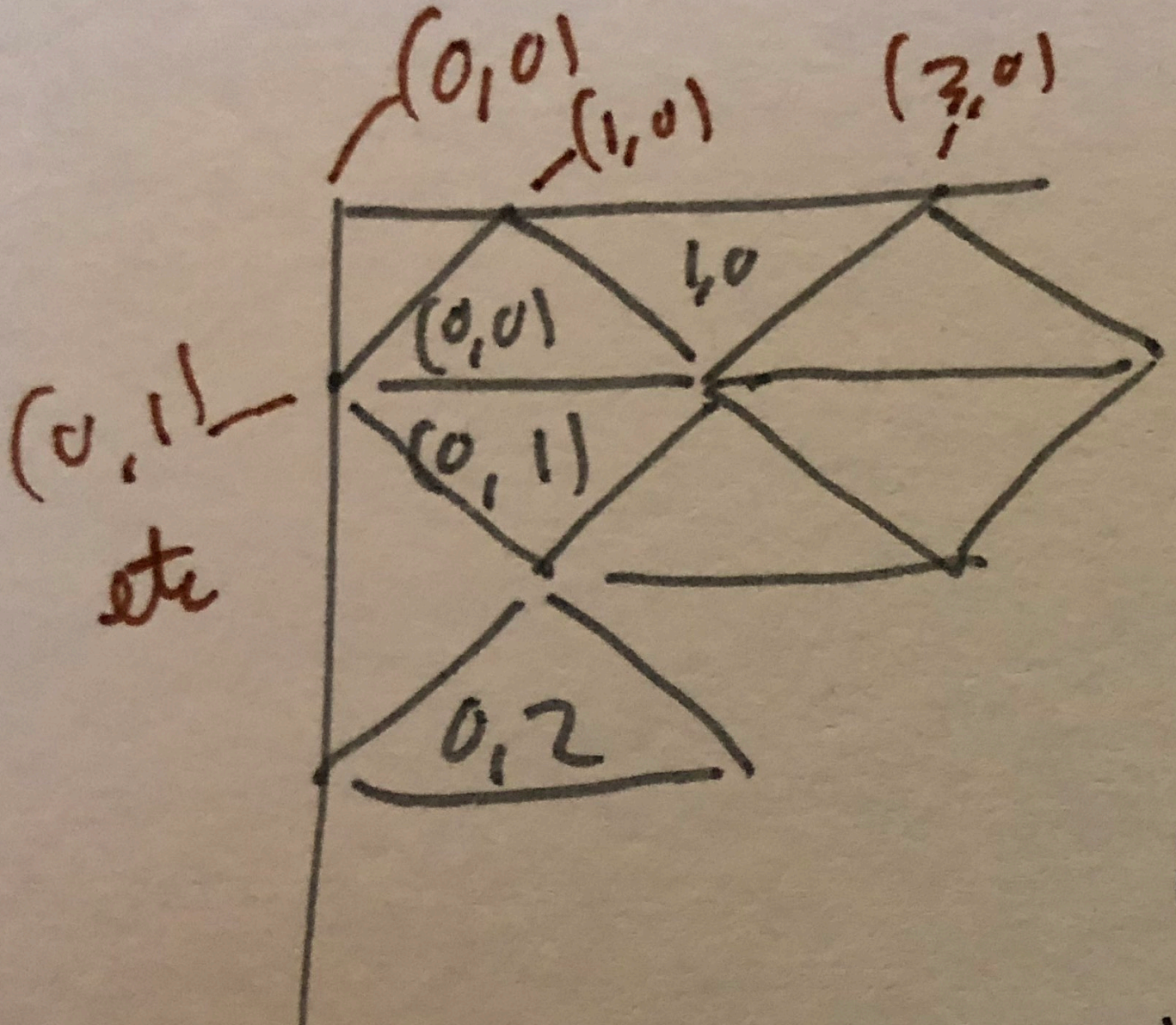
- no `componentDidMount/componentWillUnmount`

# Demo 2

- Work on a real App (not a to do list)
- Based very loosely off my Isometrically iPhone/iPad App

Google Calendar - Week of 16 July 2018





$(0,1)$   
etc

$(x,y) \rightarrow$

"Up" |  $x+y$   
↓  
Even

$(x+1, y), (x, y+1), (x+2, y+1)$

"Down" |  $(x, y), (x+2, y), (x+1, y+1)$

[examples](#)[docs](#)[community](#)[blog](#)

## Get Started

[elm-lang.org](http://elm-lang.org)

[elmlang.slack.com](http://elmlang.slack.com)

```
Install npm i -g elm
```

[Elm Format](#) (no-config  
formatter!)

Try: [Ellie](#) like JSFiddle/CodePen

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# elm

A delightful language for reliable webapps.  
Generate JavaScript with great performance and no runtime exceptions.

[Try Online](#)[Install](#)

## Features

## Next

### Books

- [Free online intro/book](#) (Can get as epub/Kindle)
- [Elm in Action](#)
- [Why Elm? \(O'Reilly\)](#)
- [Elm Accelerated \(ebook/flash cards/audio\)](#)

### Code

- [jamesporter/trielmular](#)
- [rtfeldman/elm-spa-example](#)

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## Elm Accelerated

Quickly get fluent at Elm Programming

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Flash Cards

Learn

Resources

Welcome

Updates/More