

A low-angle shot of a massive, ancient-looking tree with a thick trunk and sprawling branches. The leaves are a vibrant green, and sunlight filters through the canopy, creating a dappled light effect. The ground is covered in dark, rich soil or mulch.

Elm

A functional web for the mainstream

Yanik Ceulemans

Yanik Ceulemans

- / Jan 2015 begonnen bij Euricom (bootcamp 2)
- / 10 maanden geleden: Elm ontdekt
- / Laatste 8 maanden: Hobby projecten

Agenda

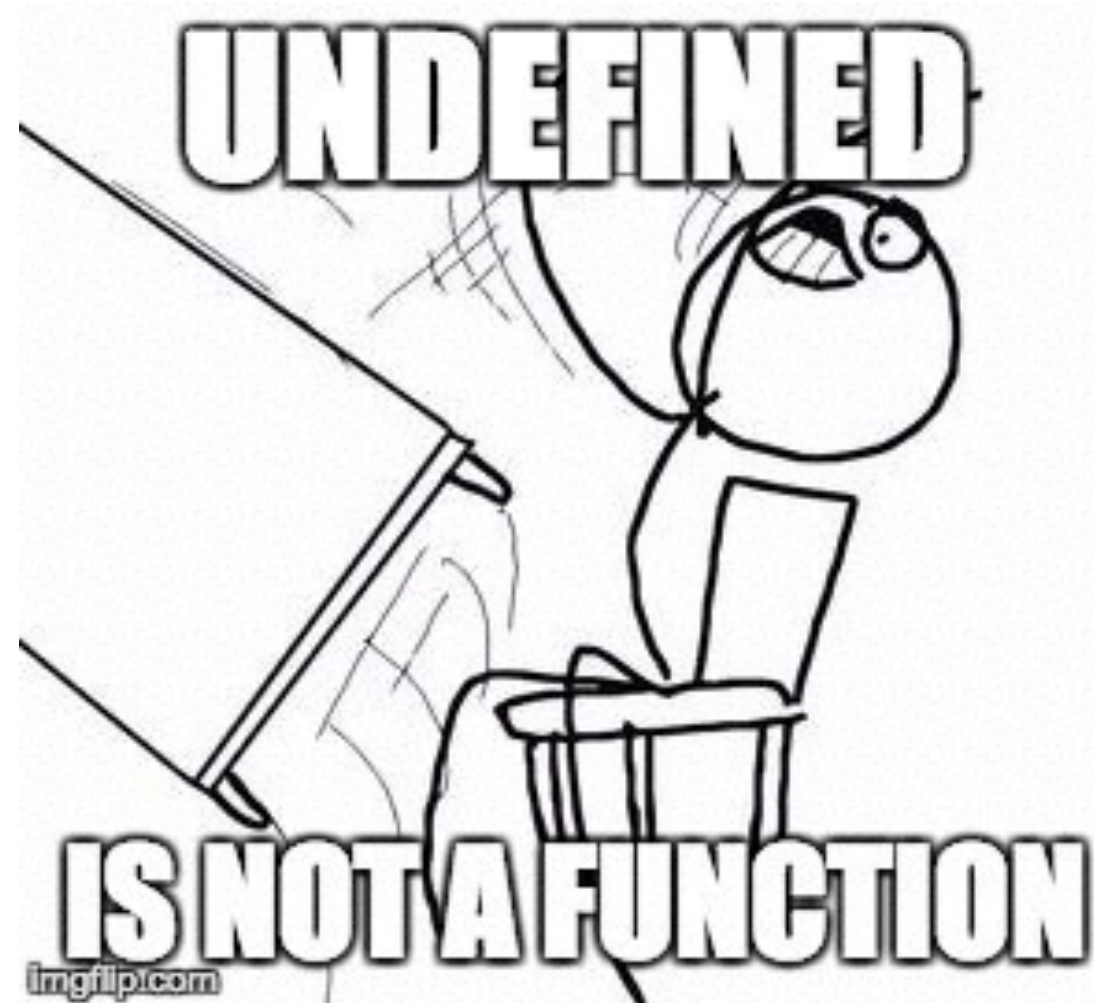
— Agenda

- / Problemen Javascript
- / Wat is Elm?
- / Voordelen & nadelen
- / Elm architecture
- / Demo

JS

Problemen

JS



Dynamic types

Dynamic types

- / Goed voor prototyping
- / Slecht voor maintainability

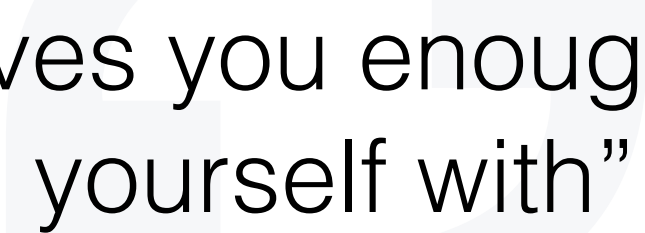
Gotcha's

Gotcha's

/ == VS ===

/ 'This' keyword

/ function scoped vs block scoped



“Javascript gives you enough rope to hang yourself with”

A dramatic landscape photograph featuring a vast, cloudy sky with sunlight breaking through, casting rays over a calm body of water. The foreground consists of a dark, rocky shoreline. The word "Elm" is centered in the middle of the image in a white, sans-serif font.

Elm

Ontstaan

— Ontstaan

- / Evan Czaplicki thesis
- / Verticaal centreren
- / Wens voor iets beters

Definitie

Definitie

- / Functional (ML-familie)
- / Declarative
- / Statically typed
- / compile-to-js (web assembly in de toekomst)

Features

Features

- / Pure functions
- / Immutability
- / Geen NULL
- / Alles is een expression
- / Modules

Voordelen

Voordelen

Geen runtime exceptions!

Geen runtime exceptions!

Of toch zo goed als geen

Compiler

Compiler

- / Korte feedback loop
- / Refactoring wordt gemakkelijk
- / Zeer behulpzame errors

```
Detected errors in 1 module.
```

```
-- NAMING ERROR -----
```

```
Cannot find variable `sayHelo`
```

```
7|      <| sayHelo "Yanik"  
    ^^^^^^
```

```
Maybe you want one of the following?
```

```
sayHello
```



“If it compiles, it works”



Package manager

Package manager

- / Enforced semantic versioning
- / Major.Minor.Patch formaat
- / definitie in package file: $1.0.0 \leq v < 2.0.0$

Nadelen

Nadelen

Jonge taal

Jonge taal

- / Eerst verschenen in 2012
- / Nu versie 0.17 sinds 10 mei 2016
(4 maanden geleden)

Gevolgen

— Gevolgen

- / Kleine community
- / Package ecosysteem is nog klein
- / Weinig tooling

Leercurve

Leercurve

/ Niet OO maar Functional

/ Imperative <-> Declarative

SPA's

— SPA's

Elm Architecture

Elm Architecture

/ Model

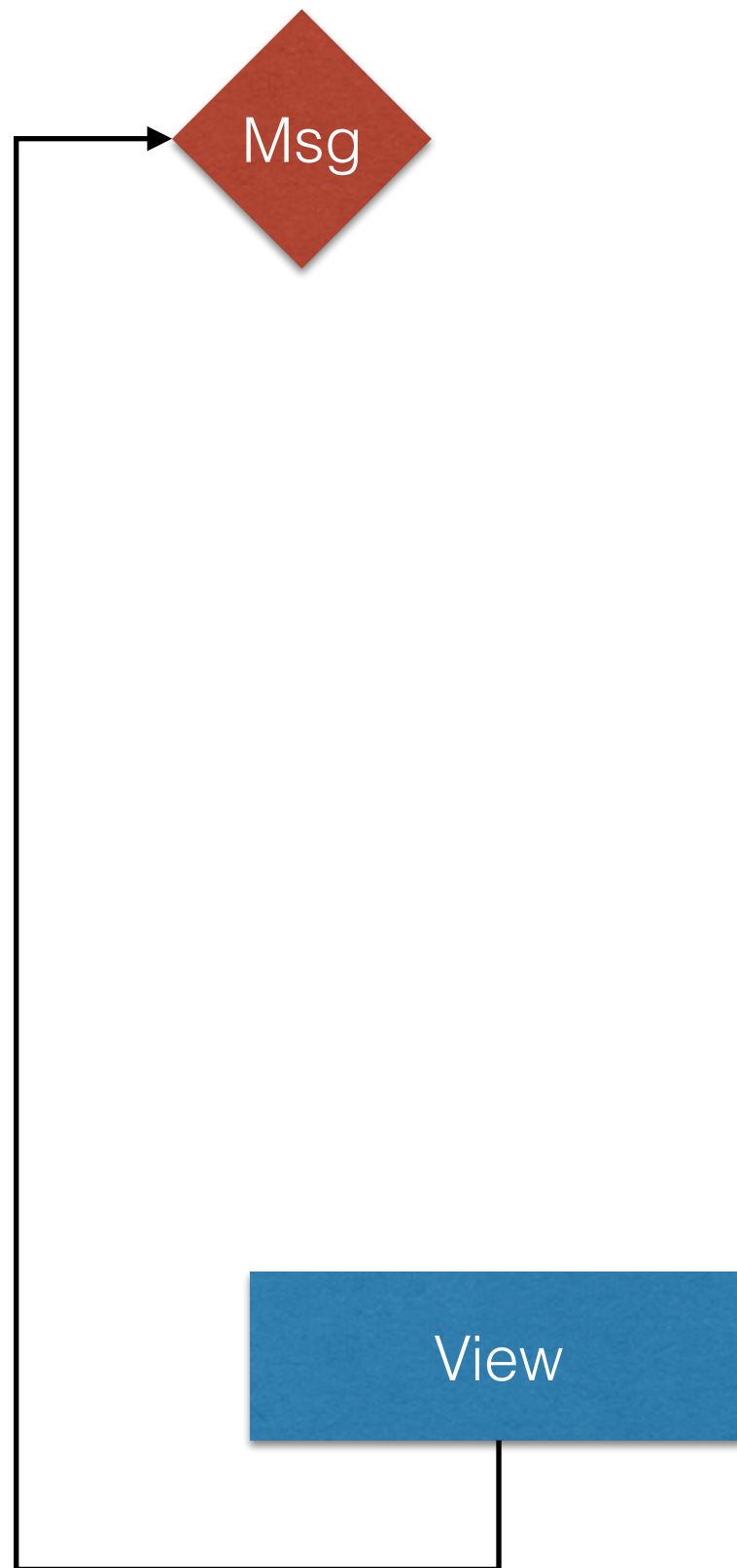
/ Update

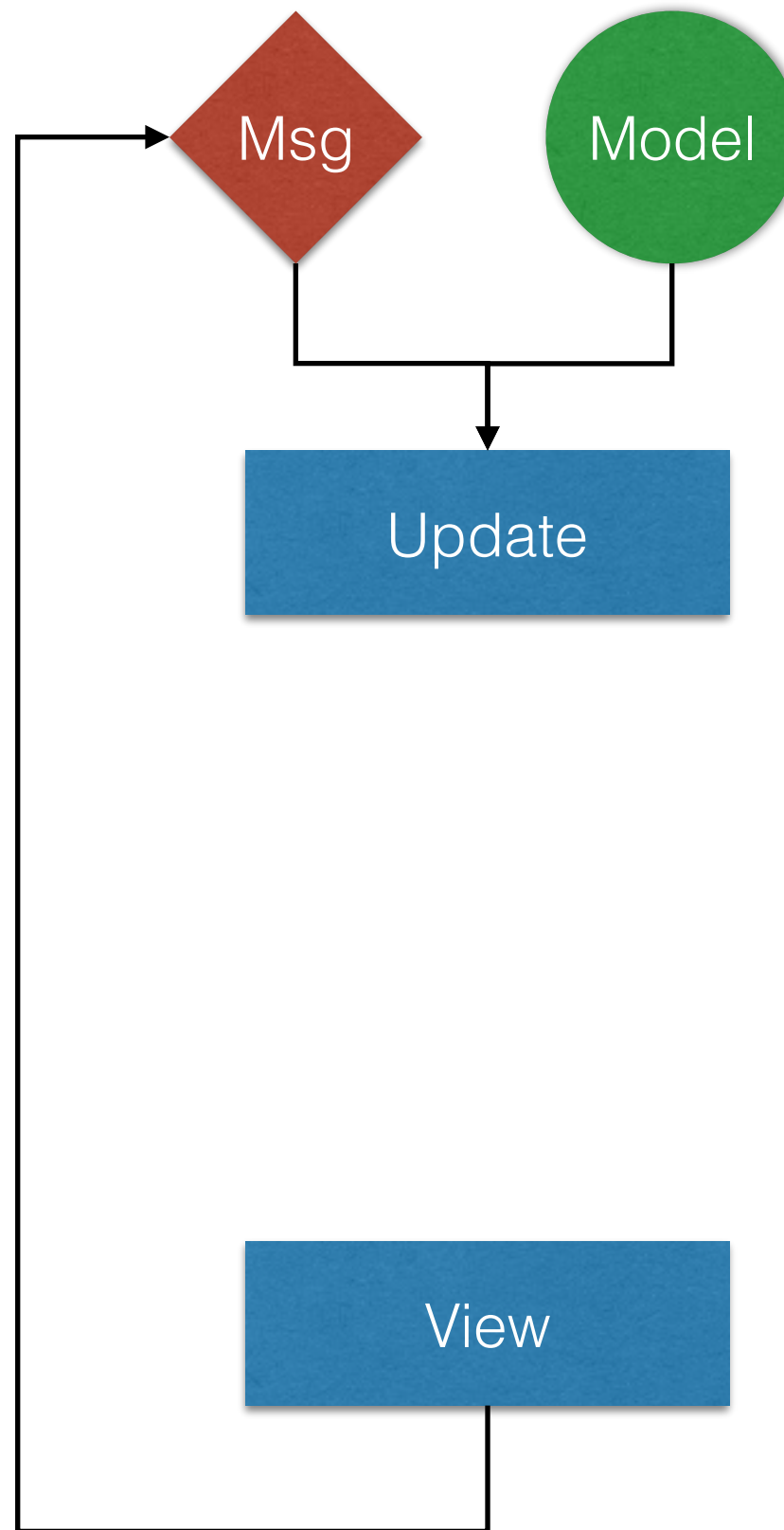
/ View

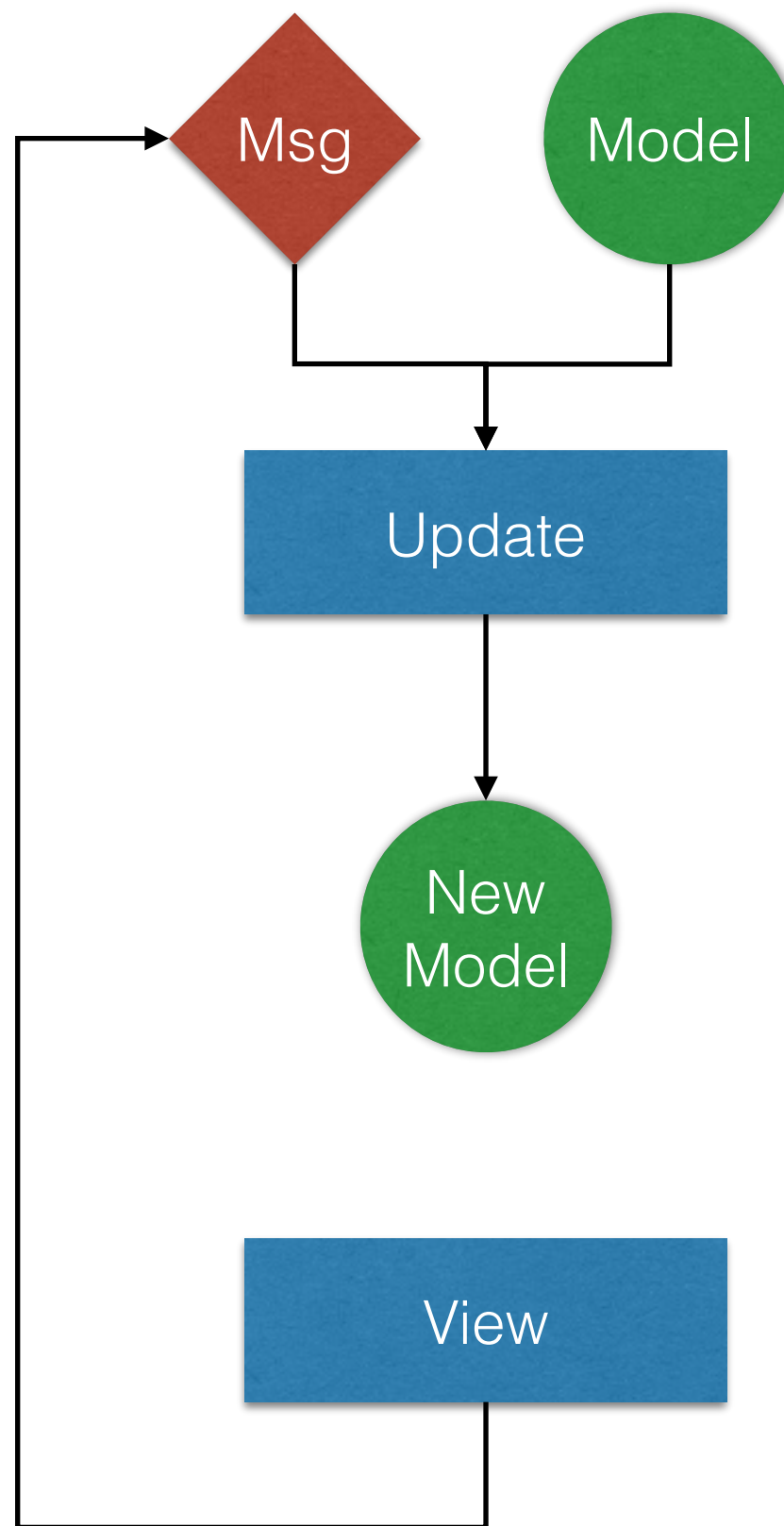
Data Flow

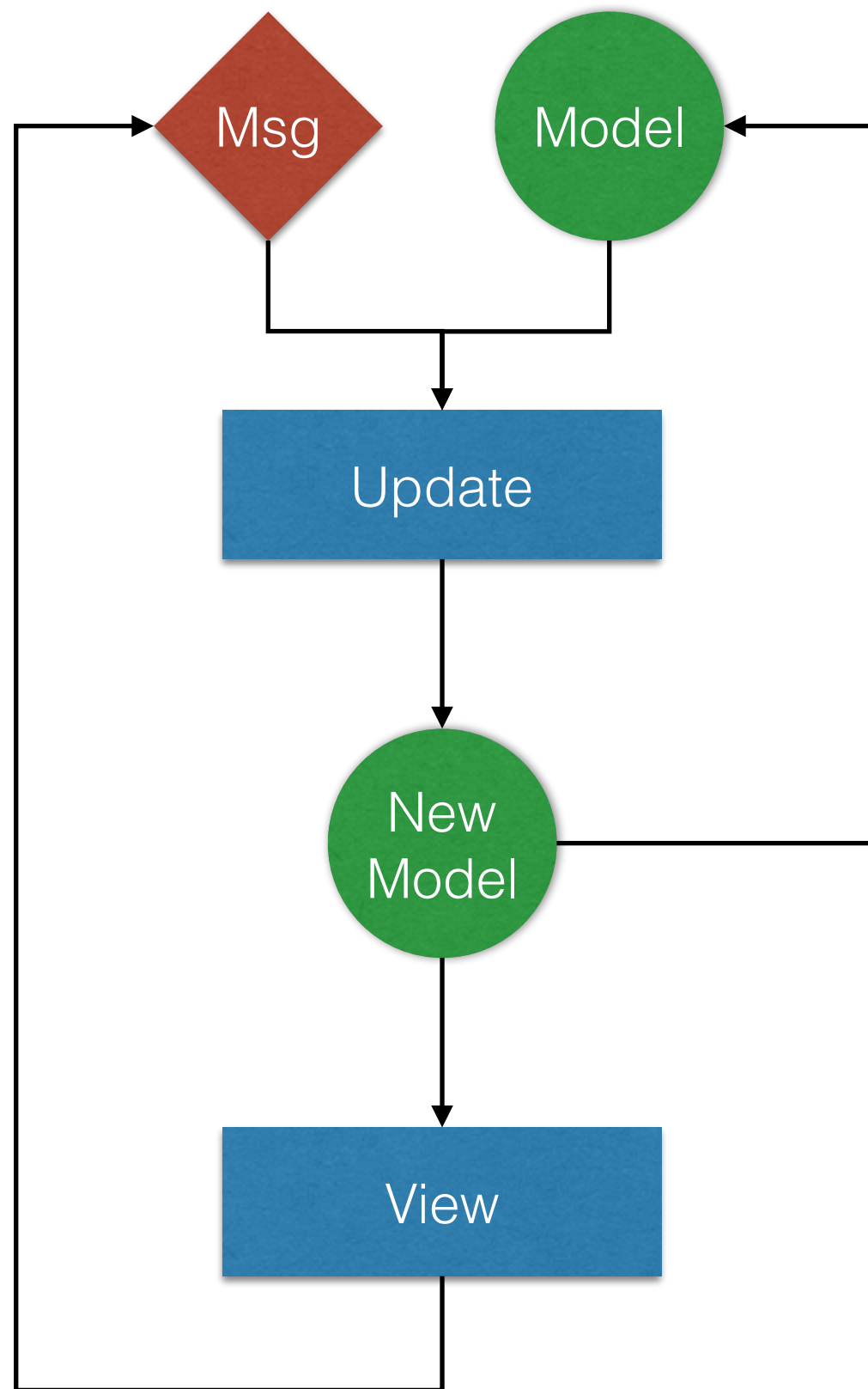
Data Flow

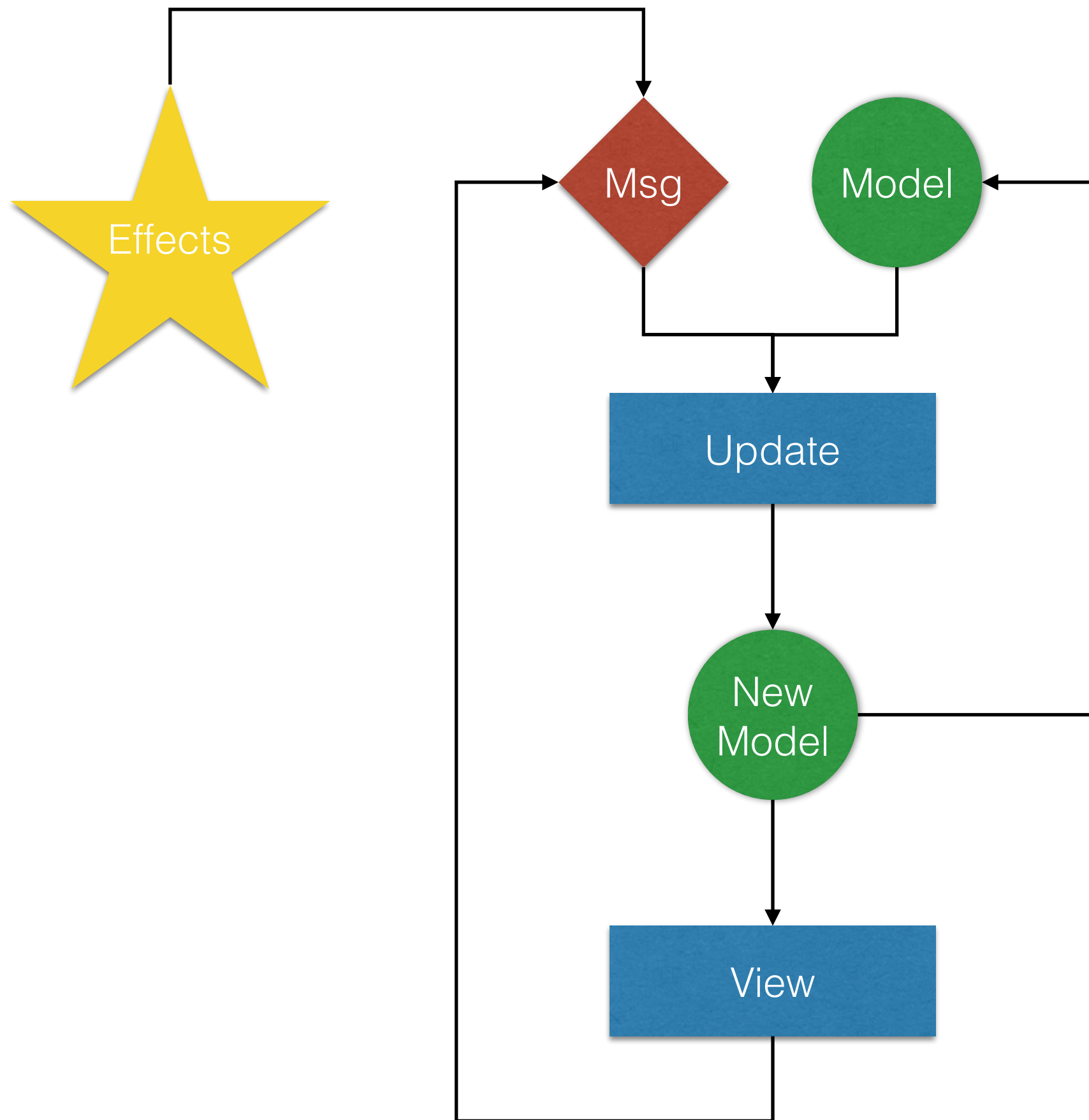
View



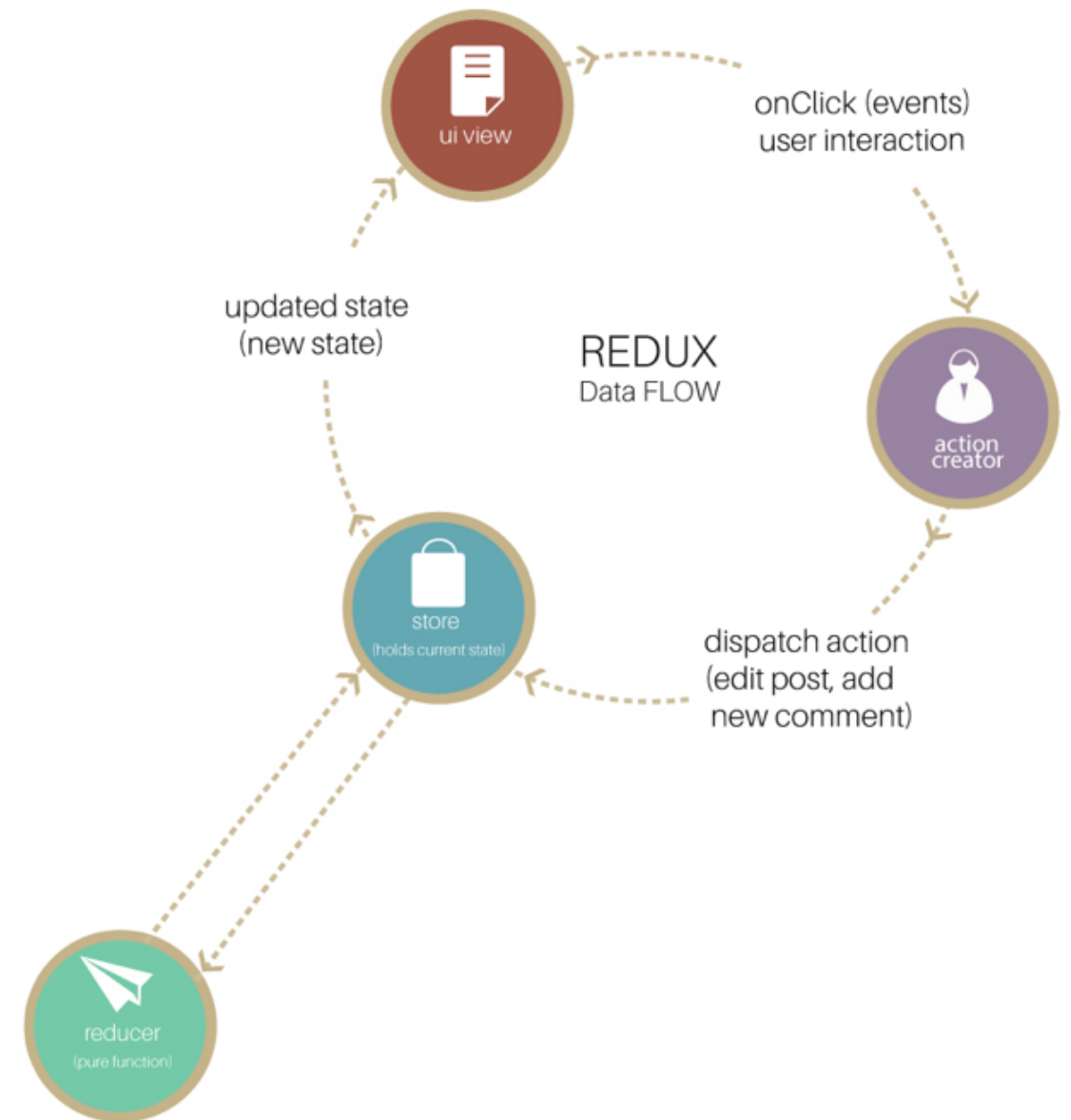
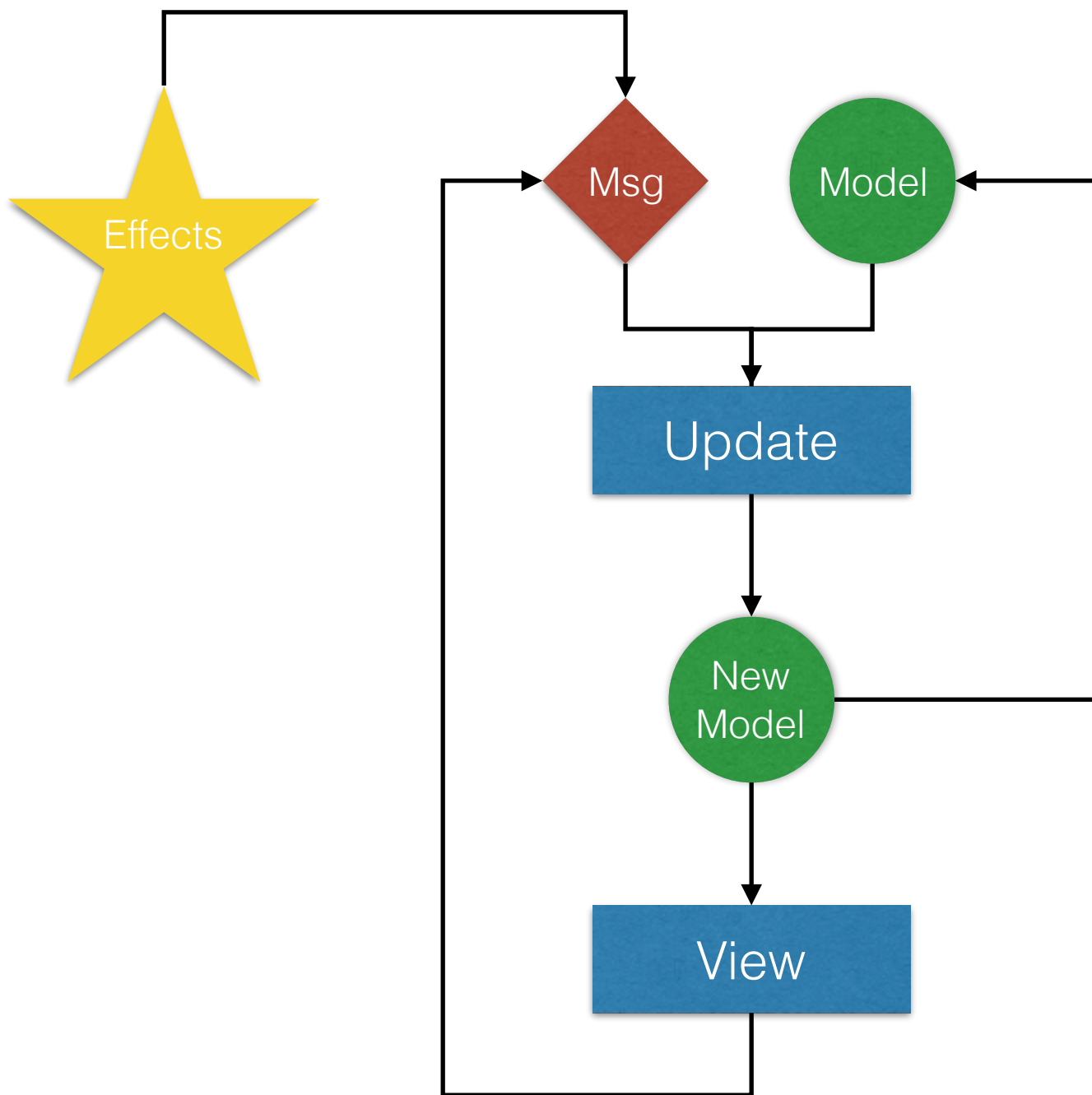












Syntax

```
1  myName : String
2  myName =
3      "Yanik"
4
5
6  sayHello : String → String
7  sayHello name =
8      "Hello " ++ name
9
10
11 add : Int → Int → Int
12 add x y =
13     x + y
```

```
16 type alias Person =
17     { name: String
18       , age: Int
19     }
20
21
22 type Color
23     = Brown
24     | Blue
25     | Green
```

Elm

Demo



Demo

Conclusie

Conclusie

- / Schaalbaar: NoRedInk (36K lines of Elm)
- / Maintainable: Geen runtime errors in meer dan 1 jaar
- / Voortaan alles in Elm? **Nog** niet
- / Wel: Kleinere integraties bestaande codebases*
- / Javascript interop is soms pijnlijk

*

<http://elm-lang.org/blog/how-to-use-elm-at-work>

<http://tech.noredink.com/post/126978281075/walkthrough-introducing-elm-to-a-js-web-app>

Resources

Resources

/ <http://elm-lang.org/>

/ <http://elmlang.herokuapp.com/>

/ <https://www.reddit.com/r/elm/>

/ <https://groups.google.com/forum/#!forum/elm-discuss>

/ <https://github.com/YanikCeulemans/elm-presentation-portugal>

/ <http://tech.noredink.com/>

Vragen?

— Vragen?