flatMappy bird

Martin Carolan

https://github.com/mcarolan/flatmappy-bird

@mcarolan88
mail@mcarolan.net

goals:

FRP - A Short Primer by Gergely Patai at Helsinki FRP Meetup April 1, 2015

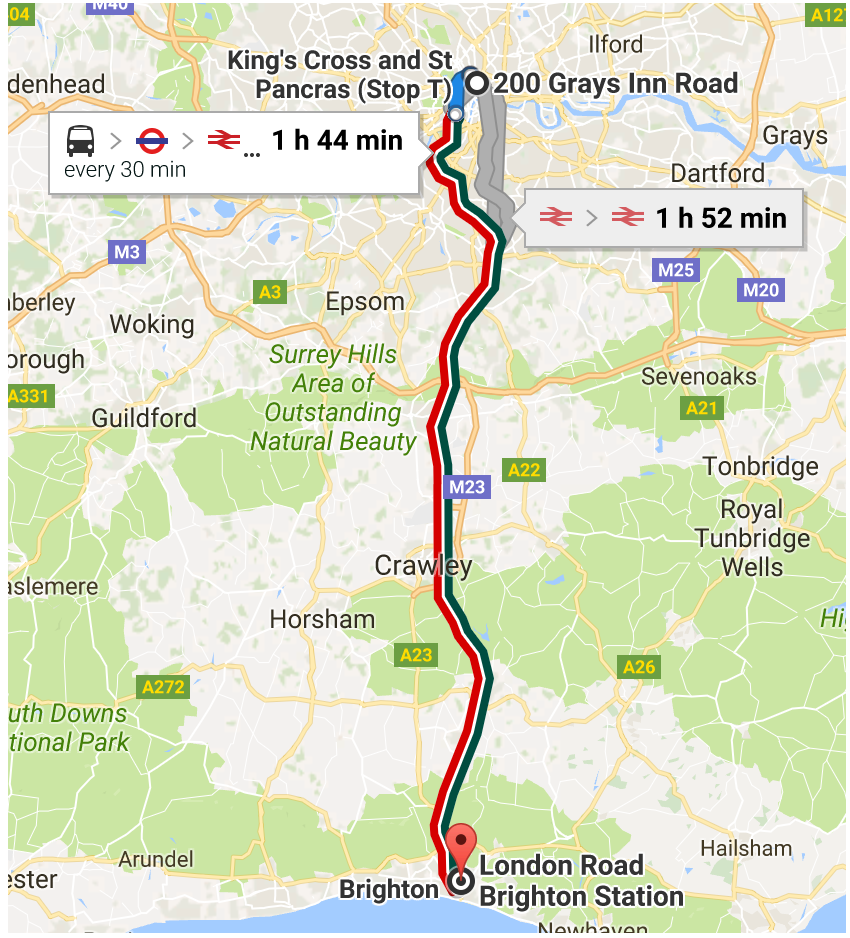
build a game out of referentially transparent functions

Treat the whole lifetime of a time-varying quantity as a value

https://www.youtube.com/watch?v=_BICQhz6tkM

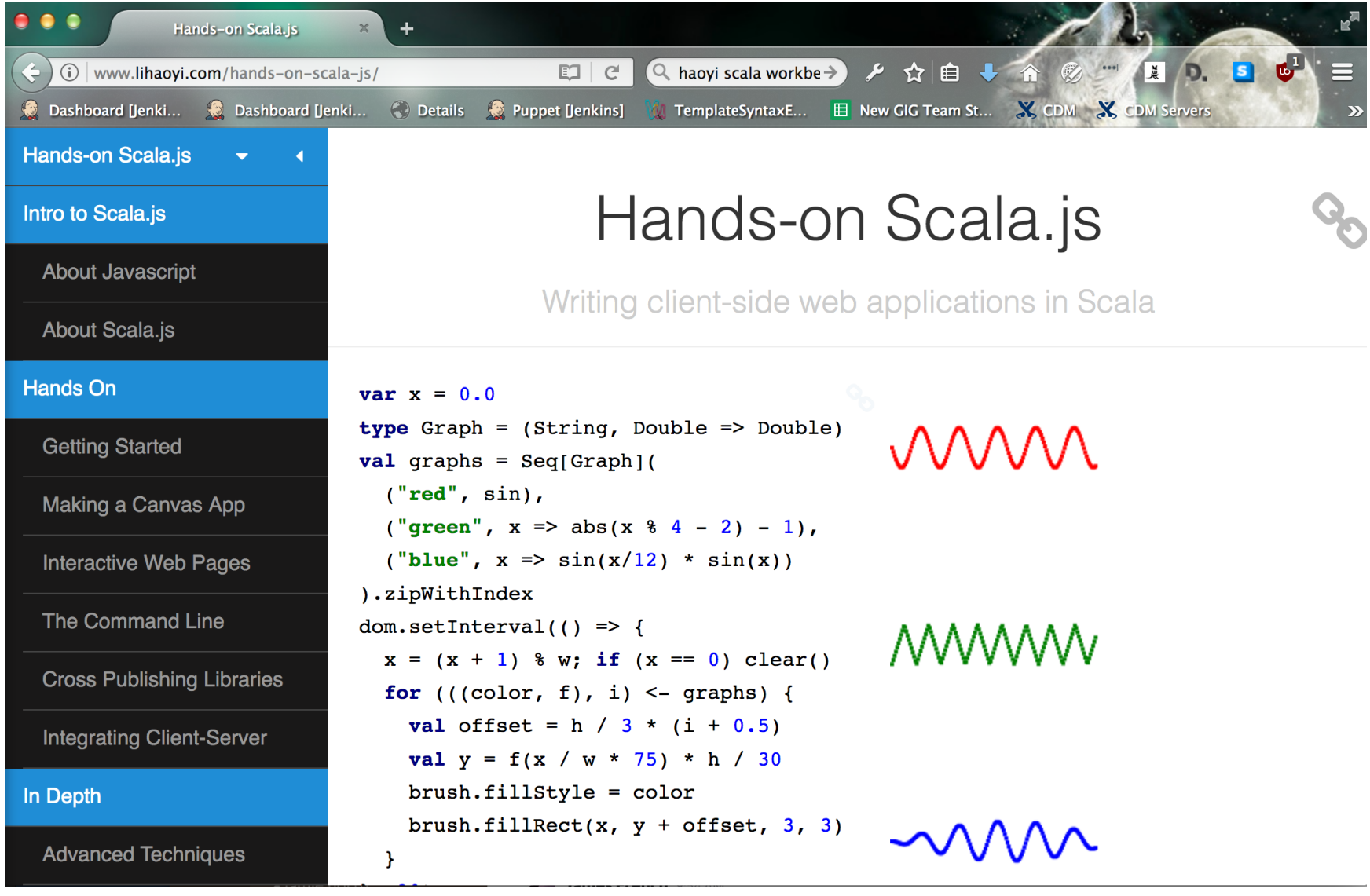
Behaviors -> player falls, pipe moves. Function of time => ???


387
387 129

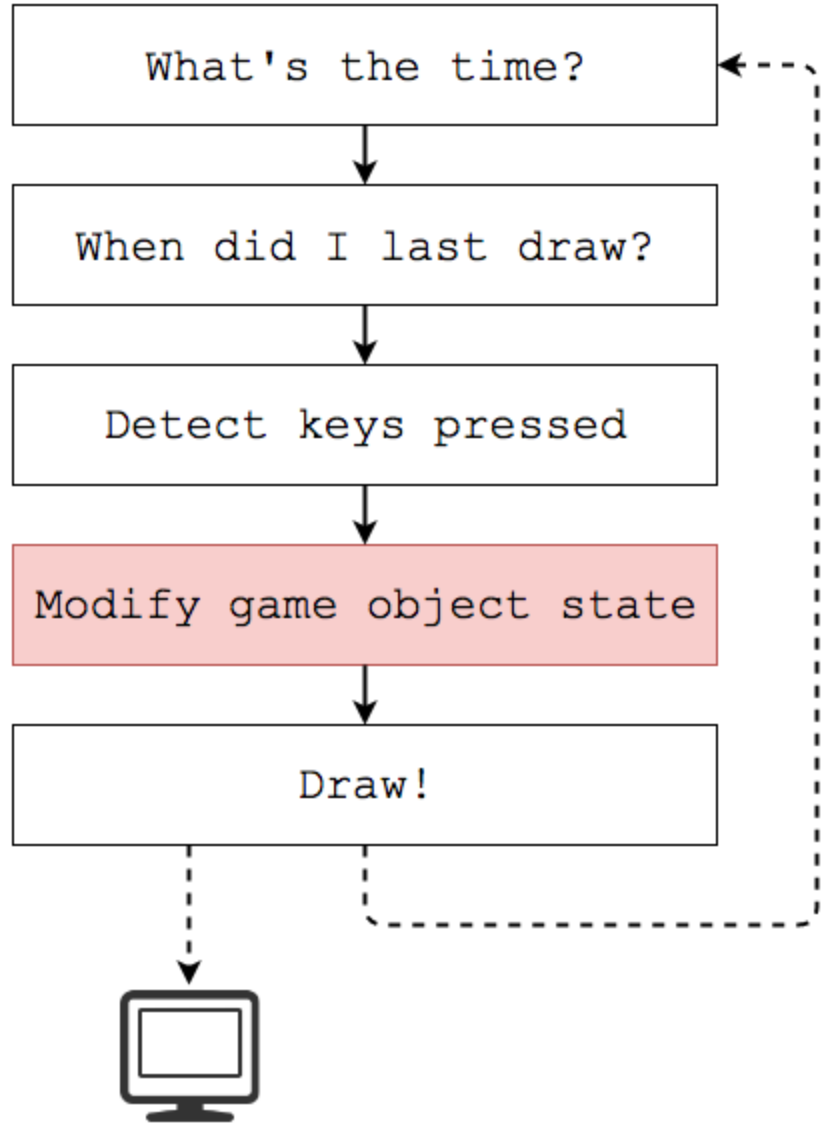

King's Cross and St Pancras (Stop T)
200 Grays Inn Road
1 h 44 min
every 30 min
1 h 52 min
Ilford
Grays
Dartford
Epsom
Woking
Guildford
Surrey Hills Area of Outstanding Natural Beauty
Sevenoaks
Tonbridge
Royal Tunbridge Wells
Crawley
Horsham
Arundel
Brighton
London Road Brighton Station
Hailsham
M3
M25
M20
A3
A331
A21
A22
M23
A23
A26
A272
A12

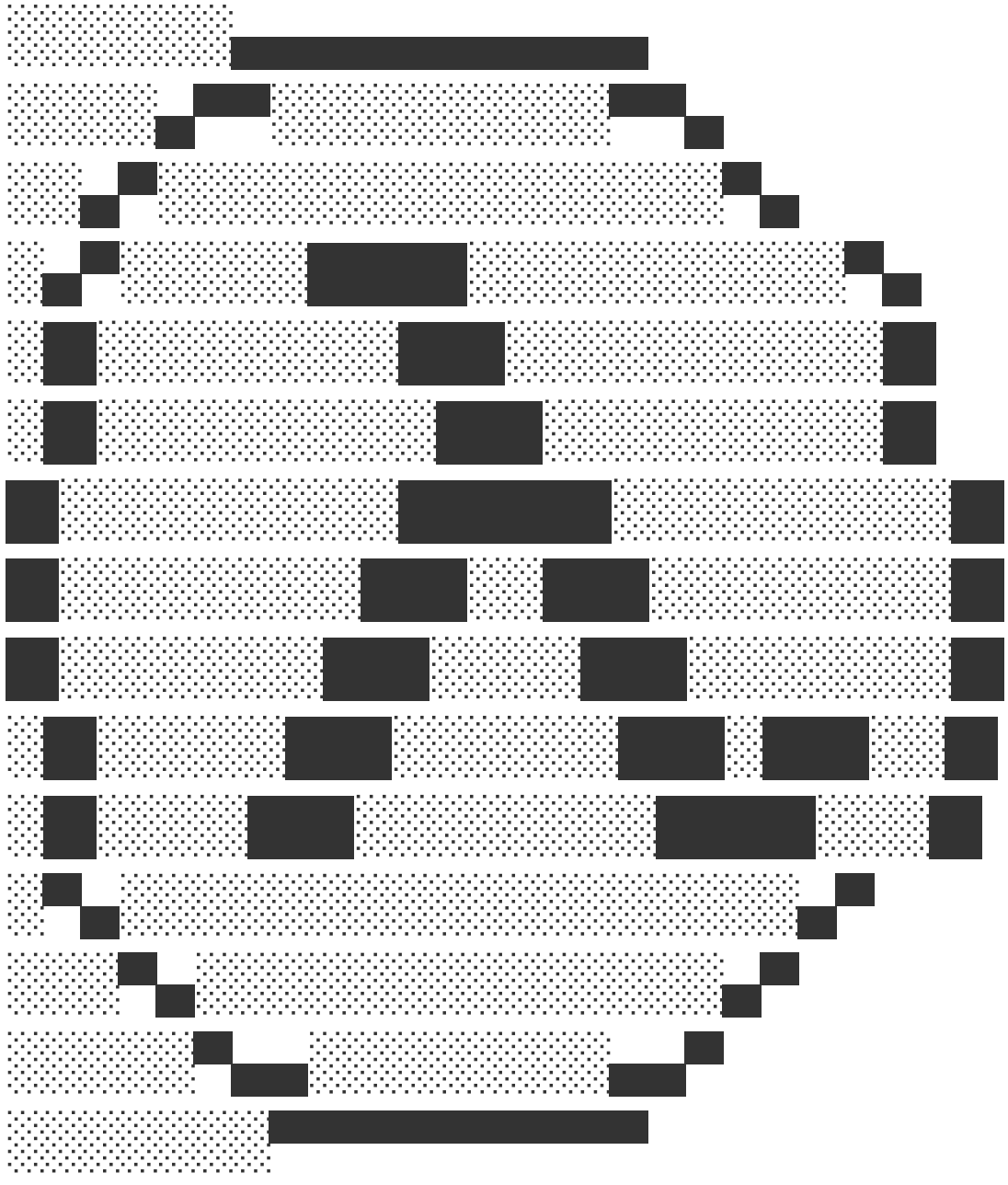

94070
READING

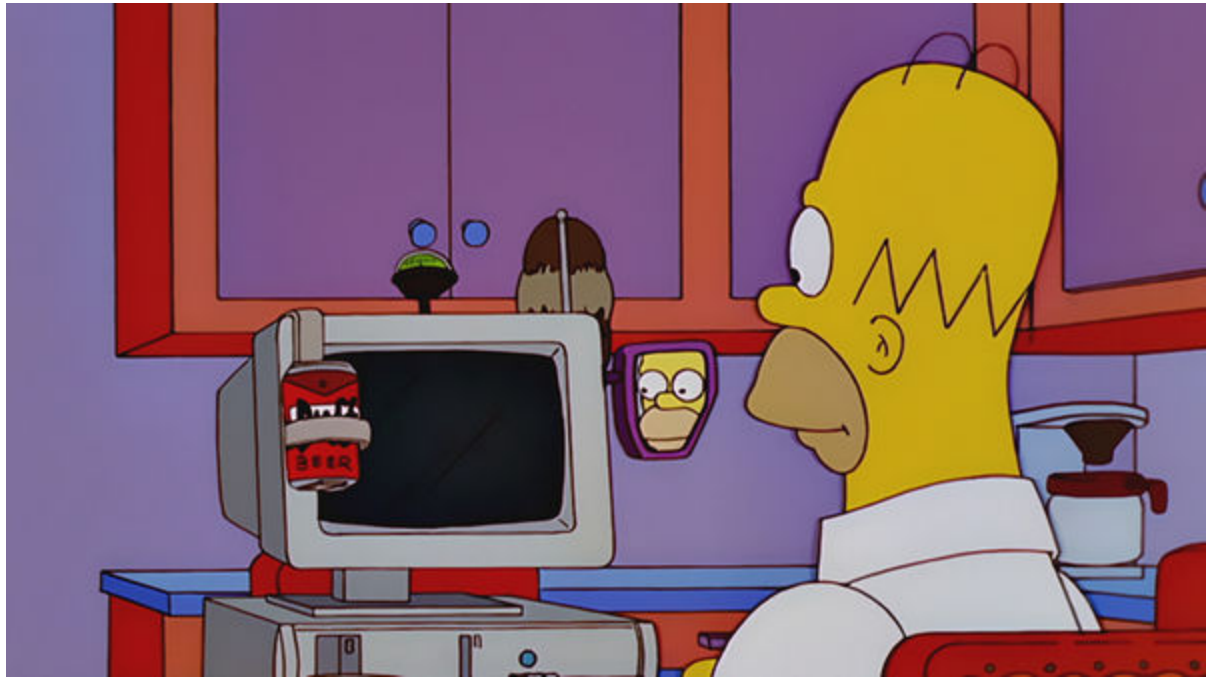

BIT
BLASTER
XL

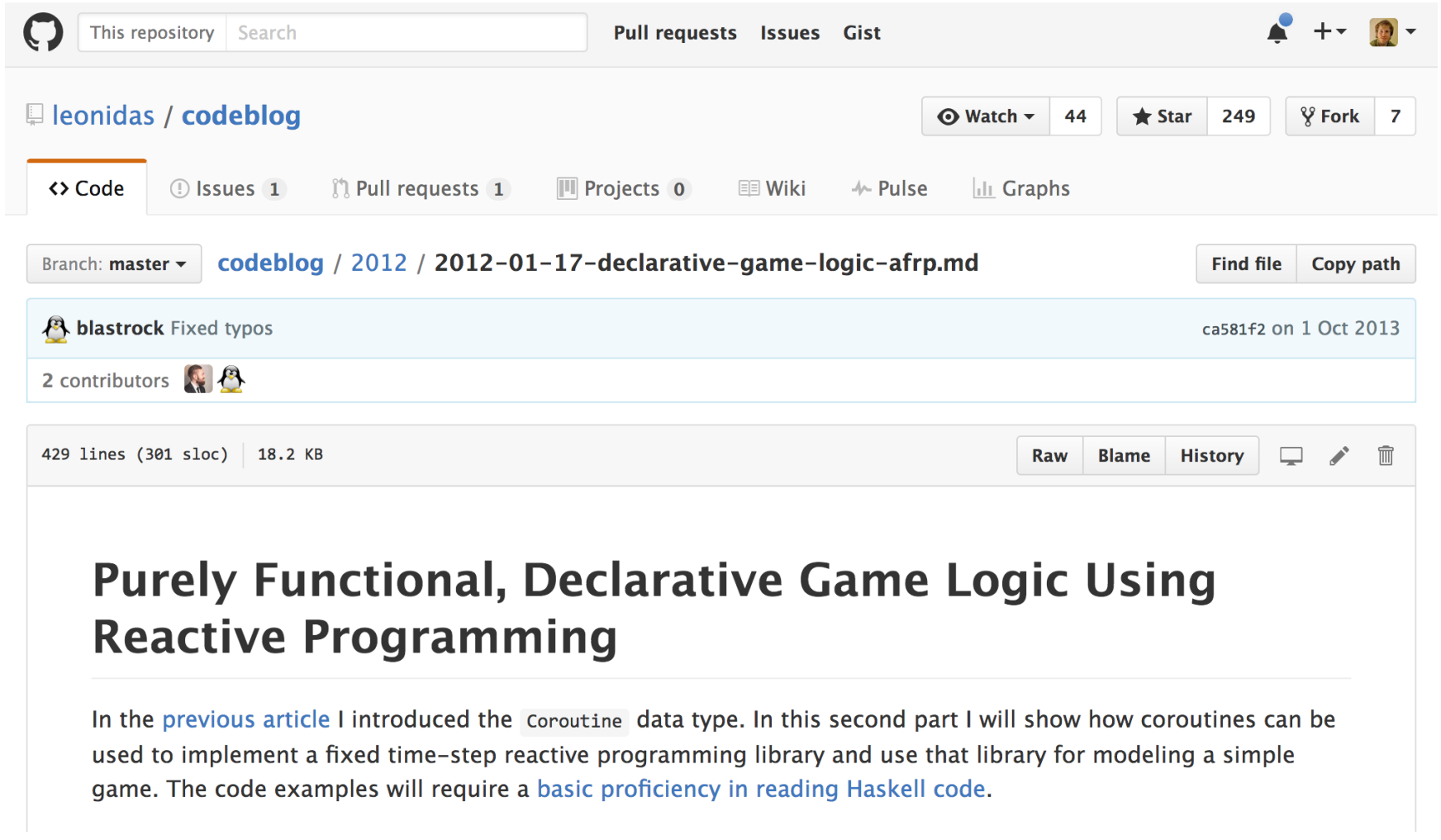


http://www.lihaoyi.com/hands-on-scala-js/


What's the time?
When did I last draw?
Detect keys pressed
Modify game object state
Draw!




BEER



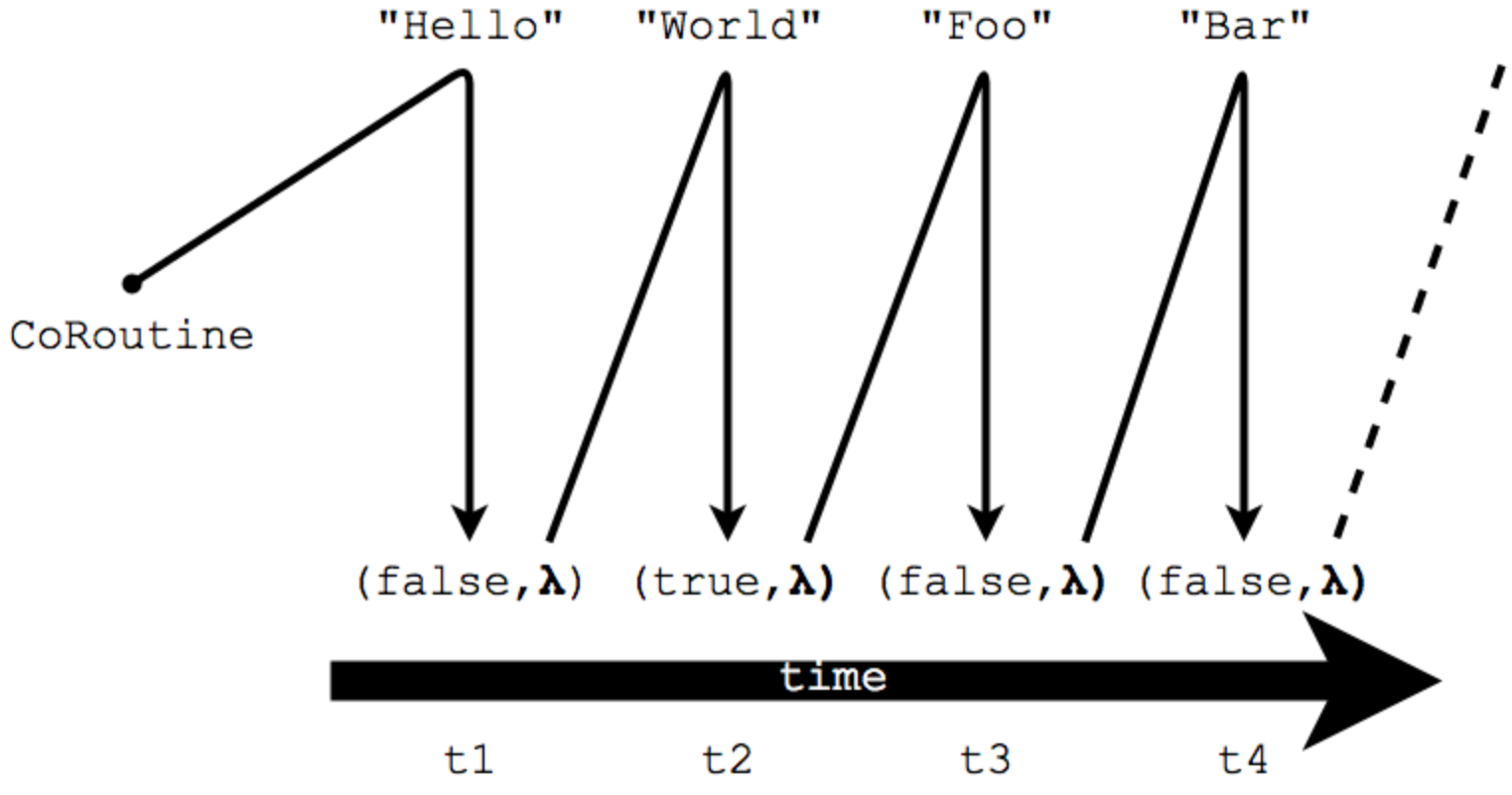
https://github.com/leonidas/codeblog/blob/master/2012/2012-01-08-streams-coroutines.md

https://github.com/leonidas/codeblog/blob/master/2012/2012-01-17-declarative-game-logic-afrp.md

CoRoutine

Problem: identify when the provided string is "World" AND the previously provided string is "Hello"

Problem: identify when the provided string is "World" AND the previously provided string is "Hello"



```
trait CoRoutine[A, B] {
  def apply(input: A): (B, CoRoutine[A, B])
}
```

```
trait CoRoutine[A, B] {
  def apply(input: A): (B, CoRoutine[A, B])
}

object CoRoutine {
  def lift[A, B](f: A => (B, CoRoutine[A, B])): CoRoutine[A, B]
    new CoRoutine[A, B] {
      override def apply(input: A): (B, CoRoutine[A, B]) =
        f(input)
    }
}
```

7 minutes

How does this relate to games programming?

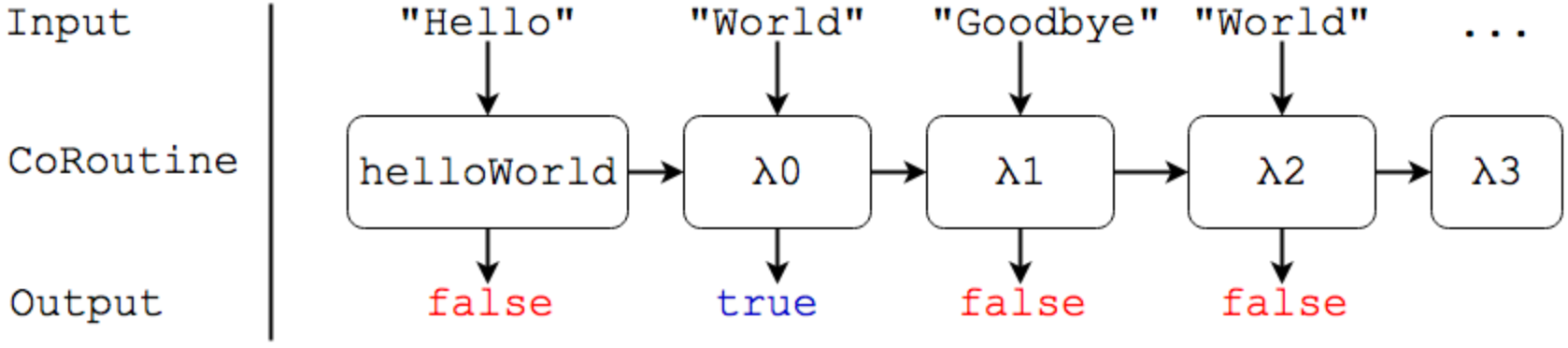
Redraw gameloop as game function

1. Intro
2. Fundementals of a CoRoutine
3. How does can this be applied to a game?
4. Case study: flatMappy bird player
5. When would you use this?
6. Why would you use this?
7. Questions

https://www.flickr.com/photos/jonathankosread/6184019357/in/photolist-aqsHvp-2g17mh-dR3Y9x-gponG-kKZytZ-pNhwM5-77ihw8-oTwyQb-dteNS-bkSYHH-4u3pAF-a6Yj8h-6pypTD-kZSzJ3-fcryvD-ajC5LU-9De9QT-7zizEa-eCgF8-kj3Ru-eV1rEG-aEuC9-6dVK9j-6pypBR-jm7aq-5g1duM-xoEbF2-o5epCf-6pCXbS-6h6Zu8-6pyiwZ-6pCvB7-6pCy21-4cog75-7AcTfS-e6XAqK-4uo2MP-6pCs1m-6ASZJU-e1YtBB-6huVMT-d2iPZW-8jEqvi-977fud-6A7aJZ-6vmzV-gjmyZ-69QmoH-8cNM7c-pTTjA

http://www.deviantart.com/art/Gaming-Icons-179546229

https://www.flickr.com/photos/marianopaulin02/16895155137/in/photolist-rJY61e-dN1SXG-49sN6T-dZa635-tfS3xJ-tfTcFJ-xNNHo6-bvVDie-wR9Mt9-5Z5q7d-o4EsFw-7q9qBF-6dYoeL-4qyEp4-cRGCeL-72tLMF-bFxRCV-5tWxwf-5tWxV3-7x7o1q-d8atD7-5tSaJe-4nWKA7-ese74Y-xAMYw-4myiwF-oqisgw-cRGCnh-9BVHmk-7dcFo-8jqLdc-6sHJFL-6yq1bj-g9FyfG-DWtde-7bNZYS-cRGCD1-662Gp4-cRJxT1-7edja8-


Input
CoRoutine
Output
"Hello"
"World"
"Goodbye"
"World"
...
helloWorld
λ0
λ1
λ2
λ3
false
true
false
false