



ngVikings 2019

Our Observable Past Present And Future

github.com/mattpodwysocki/ng-vikings-2019

Matthew Podwysocki
@mattpodwysocki

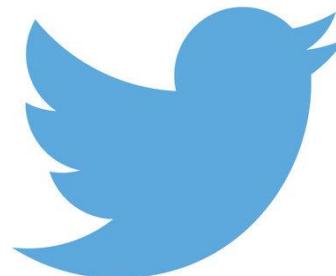


ngVikings 2019

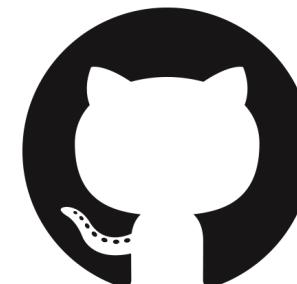
"Hej".sup());

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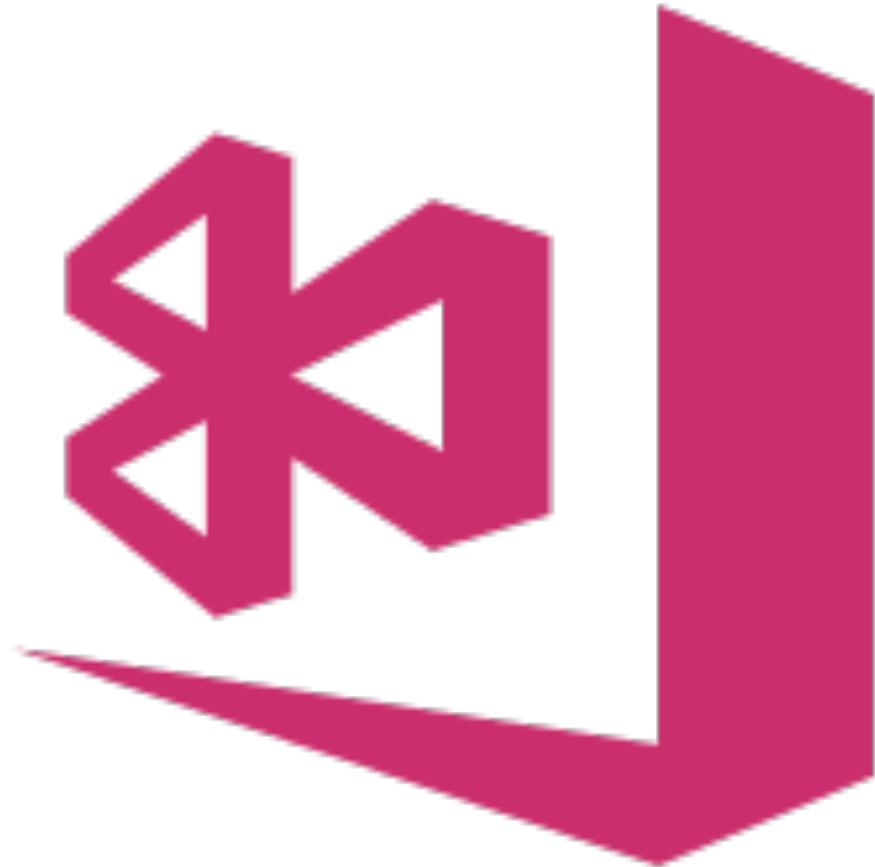


@mattpodwysocki
@mpodwysocki



BluerThanBlueFalcon

MICRÖSOFT



Visual Studio App Center
appcenter.ms
@VSAppCenter

2005



Microsoft Live Labs
Volta

```
public partial class VoltaPage1 : Page
{
    public VoltaPage1()
    {
        var output = new Div();

        var b = new Input();
        b.Type = "button";
        b.Value = "Get Message";
        b.Click += () => output.InnerHtml = Handler.GetMessage();

        Document.Body.AppendChild(output);
        Document.Body.AppendChild(b);
    }
}

class Handler
{
    [RunAtOrigin]
    public static string GetMessage()
    {
        return "Hello, World";
    }
}
```

JS

The Assembly Language of the Web

IL2JS

<https://github.com/reactive-extensions/il2js>



CrockScript

```
var mousemove$ =  
  from ev in documentmousemove  
  select new {  
    x: ev.target.clientX,  
    y: ev.target.clientY  
  };
```

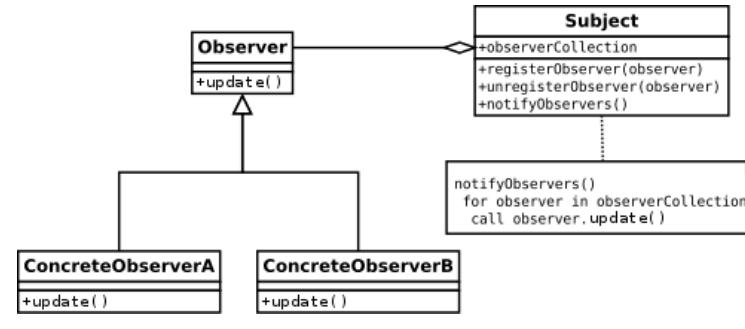


Async is
Awful

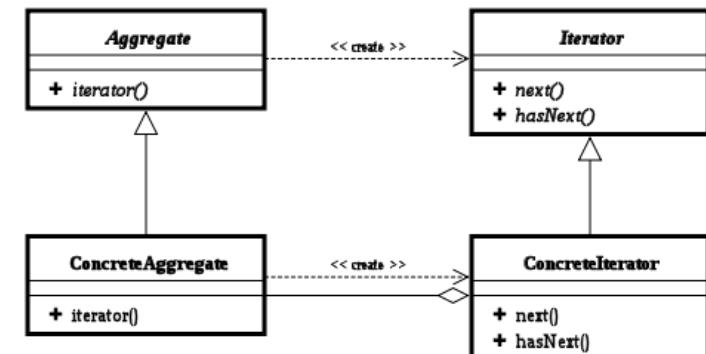
1994 - Design Patterns Emerge



Subject/Observer



Iterator

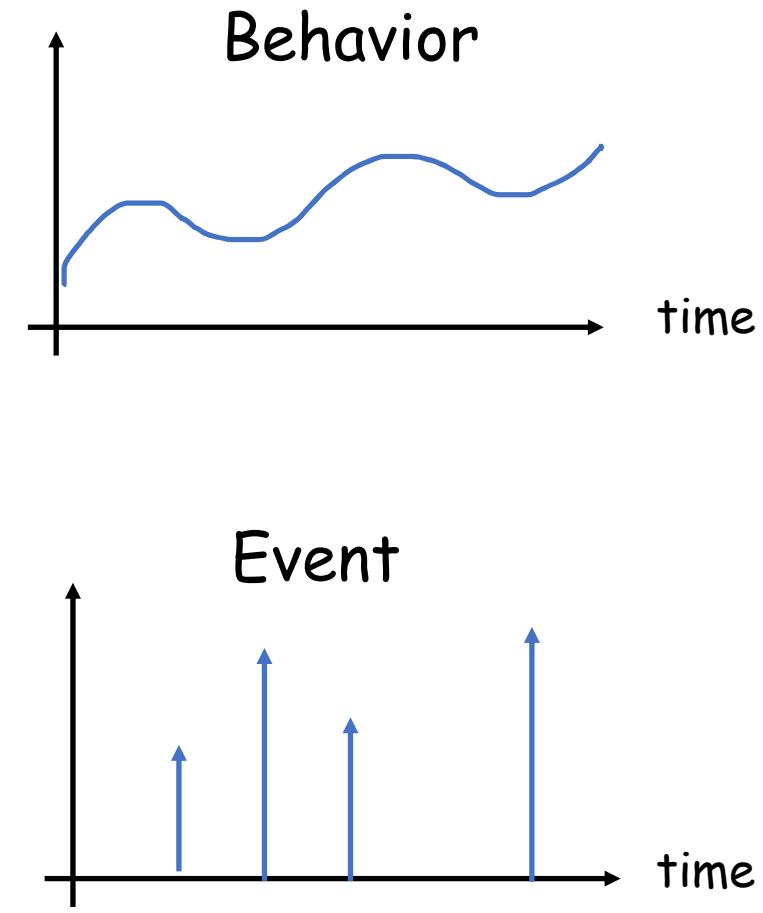


Duality of Push to Pull Collections

1997 - Functional Reactive Programming



Functional Reactive Animation
Conal Elliott / Paul Hudak
<http://conal.net/papers/icfp97/>





Your Mouse is a Database

Web and mobile applications are increasingly composed of asynchronous and realtime streaming services and push notifications.

Erik Meijer

<https://queue.acm.org/detail.cfm?id=2169076>



Joe Armstrong @joeerl · Apr 4

One on the disadvantages of having a PhD in computer science is that I get asked really difficult questions.

Like - "In gmail on my iPhone I press archive - can I get my mail back?"

and "Why have they changed the interface?"

Why no easy questions like what's a monad?

59

677

3.8K



Ahmad @sudoreality · Apr 4

What's a monad?

4

15

15



Joe Armstrong

@joeerl

Follow

Replying to @sudoreality

it's a thingy - see
en.wikipedia.org/wiki/Monad

11:59 AM - 4 Apr 2019

3 Retweets 60 Likes



Monads???



An API for
with obs

Choose y

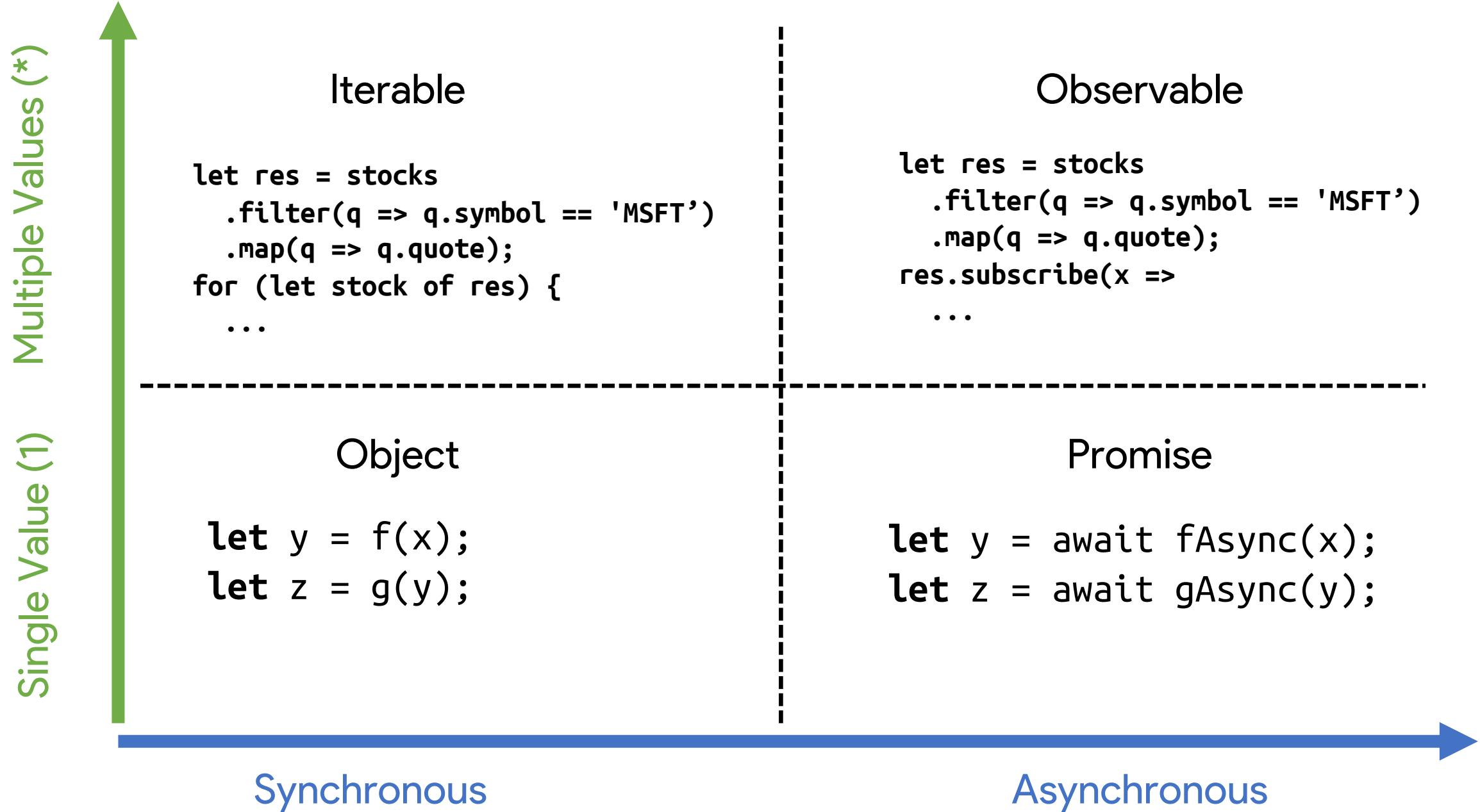
Languages

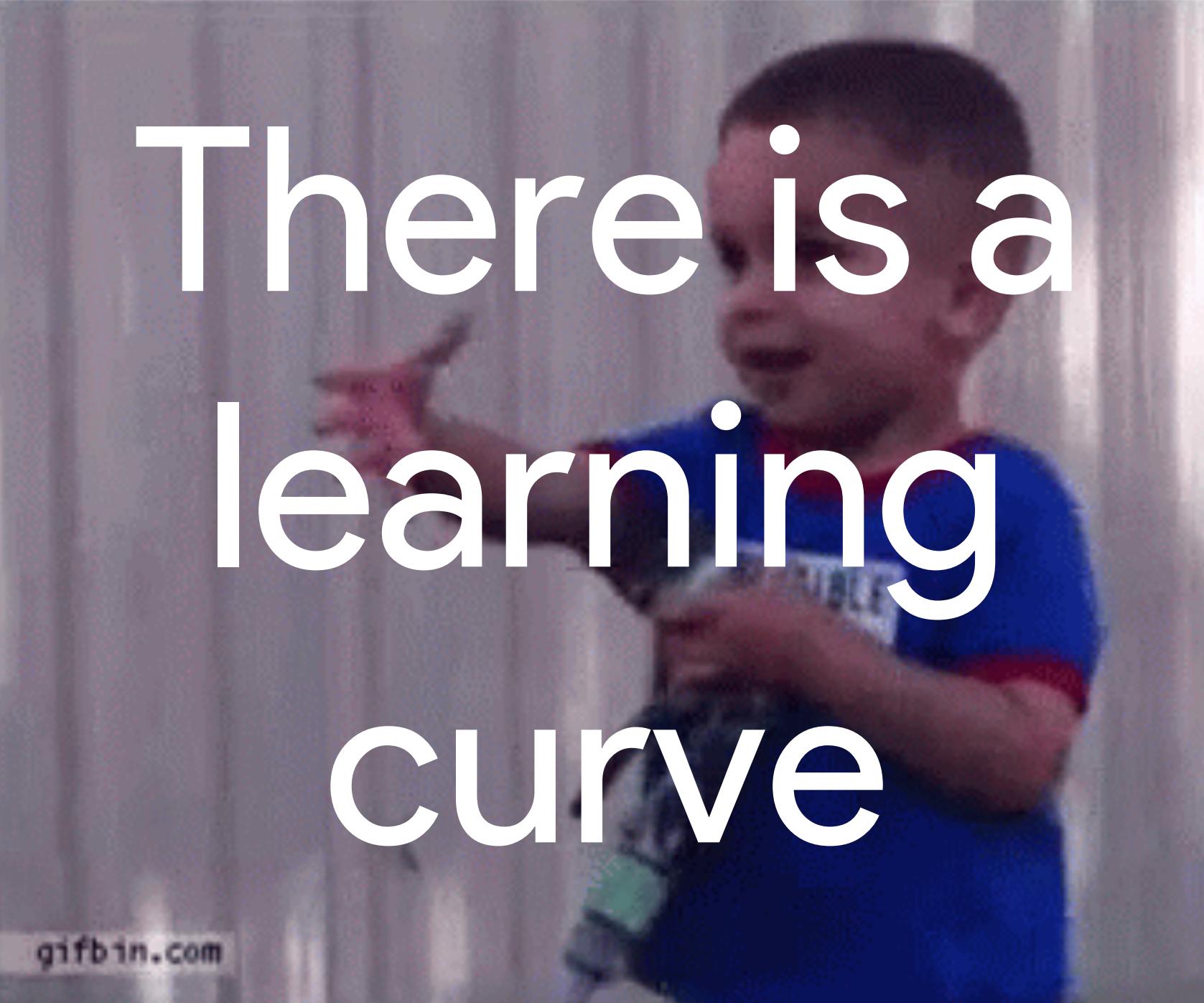
- Java: [RxJava](#)
- JavaScript: [RxJS](#)
- C#: [Rx.NET](#)
- C#(Unity): [UniRx](#)
- Scala: [RxScala](#)
- Clojure: [RxClojure](#)
- C++: [RxCpp](#)
- Lua: [RxLua](#)
- Ruby: [Rx.rb](#)
- Python: [RxPY](#)
- Go: [RxGo](#)
- Groovy: [RxGroovy](#)
- JRuby: [RxJRuby](#)
- Kotlin: [RxKotlin](#)
- Swift: [RxSwift](#)
- PHP: [RxPHP](#)
- Elixir: [reaxive](#)
- Dart: [RxDart](#)

ReactiveX for platforms and frameworks

- [RxNetty](#)
- [RxAndroid](#)
- [RxCocoa](#)

General Theory of Reactivity





There is a
learning
curve



HTML





RxJS Evolved with the Times...

```
import * as Rx from 'rxjs';

Rx.Observable.fromEvent(document, 'mousemove')
  .map(ev => ev.target)
  .scan(calculateDelta, { x: 0, y: 0 })
  .subscribe(render);
```



RxJS Evolved with the Times...

```
import { Observable } from 'rxjs';
import 'rxjs/add/operator/map';
import 'rxjs/add/operator/scan';

Observable.fromEvent(document, 'mousemove')
  .map(ev => ev.target)
  .scan(calculateDelta, { x: 0, y: 0 })
  .subscribe(render);
```



RxJS Evolved with the Times...

```
import { fromEvent } from 'rxjs';
import { map, scan } from 'rxjs/operators';

fromEvent(document, 'mousemove')
  .pipe(
    map(ev => ev.target),
    scan(calculateDelta, { x: 0, y: 0 })
  )
  .subscribe(render);
```



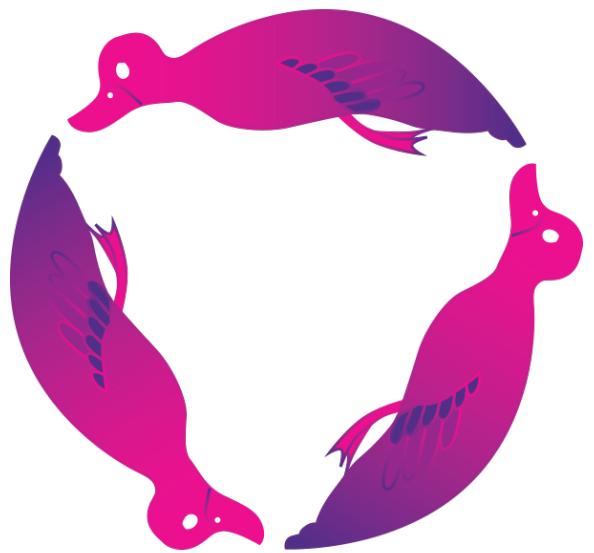


A predictable state container for JavaScript apps.

GET STARTED

```
$action
  .pipe(scan(reducer, initialState))
  .subscribe(renderer);
```

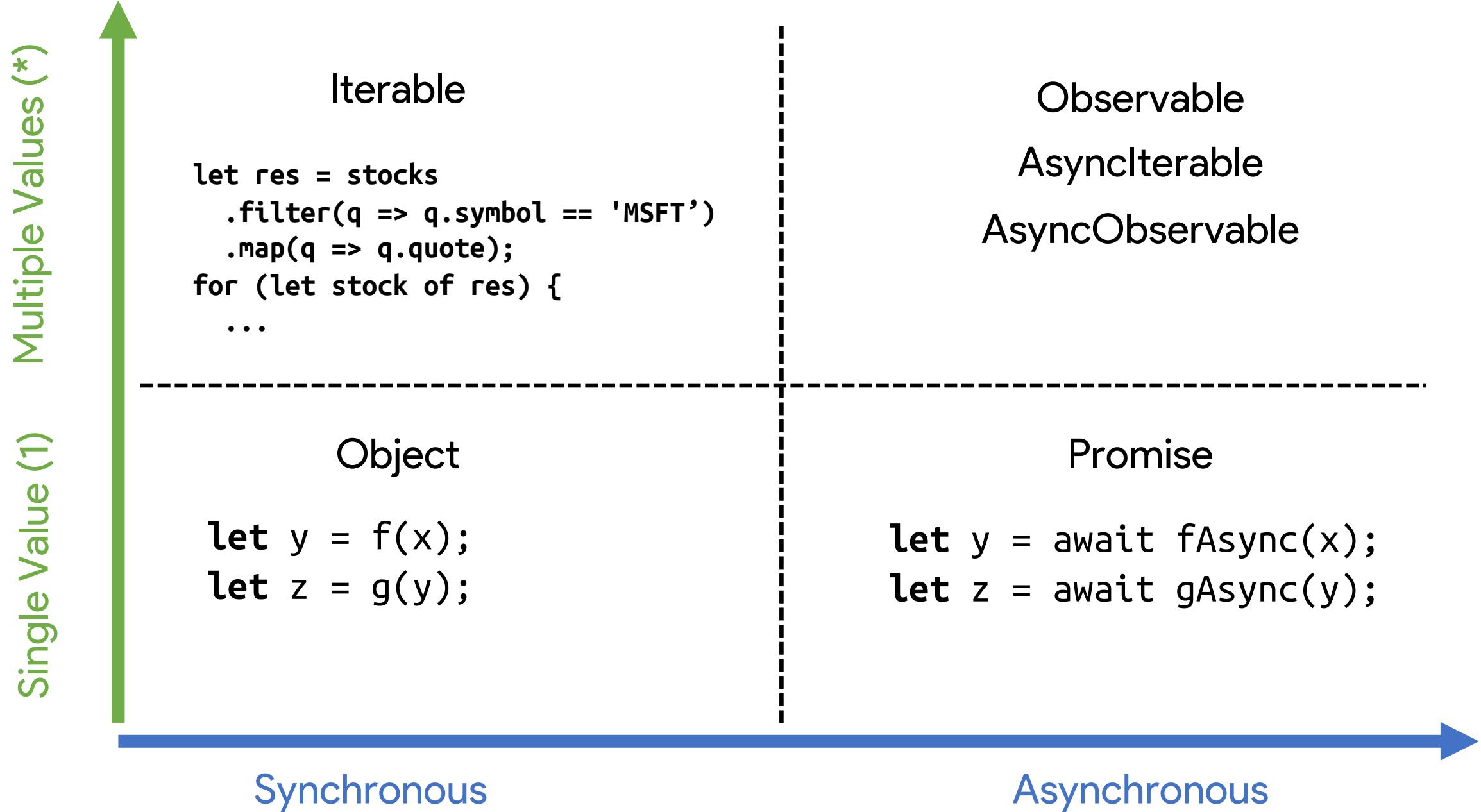
State Management using RxJS



NGXS

Akita 

General Theory of Reactivity





Things can
overload

Pull/Push/Pull Collections with IxJS

```
import { as } from 'ix/asynciterable';
import { map } from 'ix/asynciterable/operators';

async function* getData() { ... }

let data = getData()
  .pipe(map(transformData))
  .pipe(domEncodeStream);

for await (let item of data) {
  ...
}
```

<https://github.com/reactivex/ixjs>





Where will
we go
next?



ngVikings 2019

Let's Build Something Amazing Together!

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