



Global Knowledge®

Angular

Module 4 - Observables

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WORLDWIDE LOCATIONS

BELGIUM CANADA COLOMBIA DENMARK EGYPT FRANCE IRELAND JAPAN KOREA MALAYSIA MEXICO NETHERLANDS NORWAY QATAR
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Angular Fundamentals Module – Observables



Peter Kassenaar –
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Hoofdstuk 6
p. 138 en verder



Async services met RxJS/Observables

Reactive programming with asynchronous streams

Async Services

- Statische data ophalen: *synchrone* actie
- Werken via `HttpClient`: *asynchrone* actie
- Angular 1: `Promises`
- Angular 2: `Observables`

Bovendien in Angular 2: `ReactiveX` library

`RxJS`



An API for asynchronous
with observable streams

Choose your platform

<http://reactivex.io/>

Languages

- Java: RxJava
- JavaScript: RxJS
- C#: Rx.NET
- C#(Unity): UniRx
- Scala: RxScala
- Clojure: RxClojure
- C++: RxCpp
- Ruby: Rx.rb
- Python: RxPY
- Groovy: RxGroovy
- JRuby: RxJRuby
- Kotlin: RxKotlin
- Swift: RxSwift

ReactiveX for platforms and frameworks

- RxNetty
- RxAndroid
- RxCocoa

DOCUMENTATION

Observable
Operators
Single
Subject

LANGUAGES

RxJava^ℹ
RxJS^ℹ
Rx.NET^ℹ
RxScala

RESOURCES

Tutorials

COMMUNITY

GitHub^ℹ
Twitter^ℹ
Others

Why Observables?

We can do much more with observables than with promises.

With observables, we have a whole bunch of operators to pull from, which let us customize our streams in nearly any way we want.

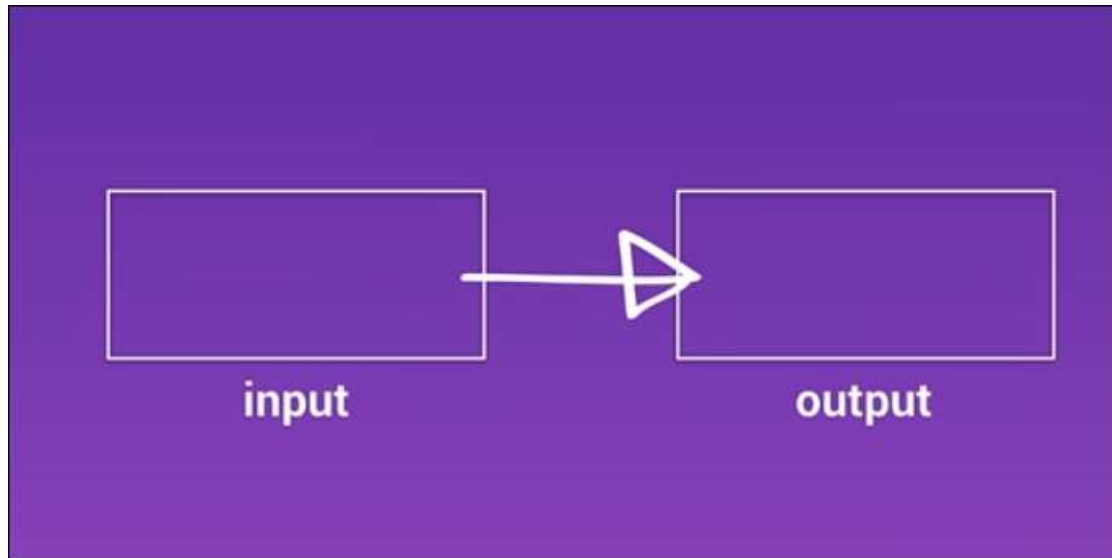
<https://auth0.com/blog/2015/10/15/angular-2-series-part-3-using-http/>

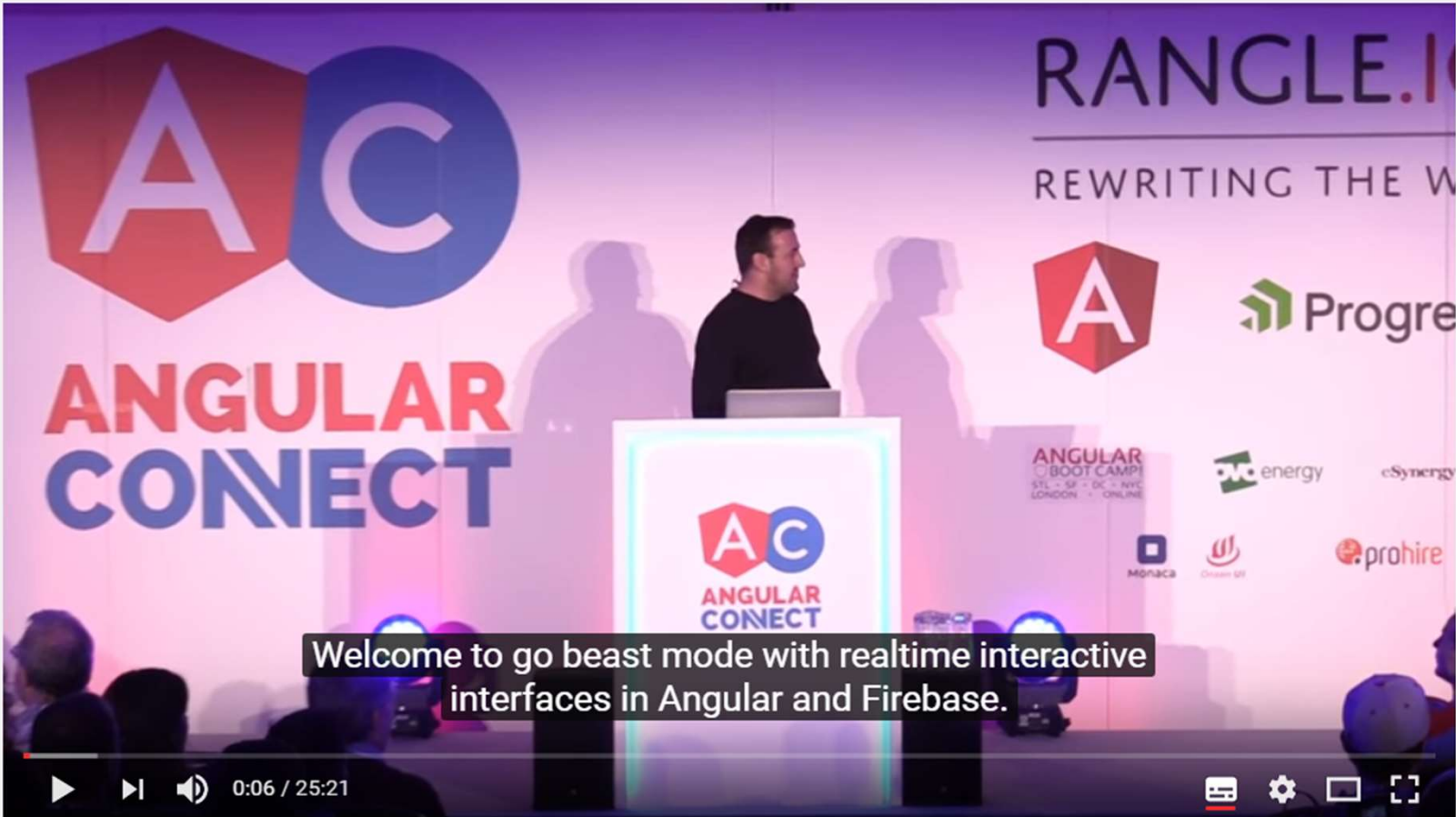
Observables en RxJs

- “Reactive Programming”
 - *“Reactive programming is programming with asynchronous data streams.”*
 - <https://gist.github.com/staltz/868e7e9bc2a7b8c1f754>
- Observables hebben extra mogelijkheden ten opzichte van Promises
 - Mapping
 - Filtering
 - Combining
 - Cancel
 - Retry
 - ...
- Gevolg: géén `.success()`, `.error()` en `.then()` chaining meer!

How do observables work

- First - *The Observable Stream*
- Later - all 10.000 operators...
- Traditionally:





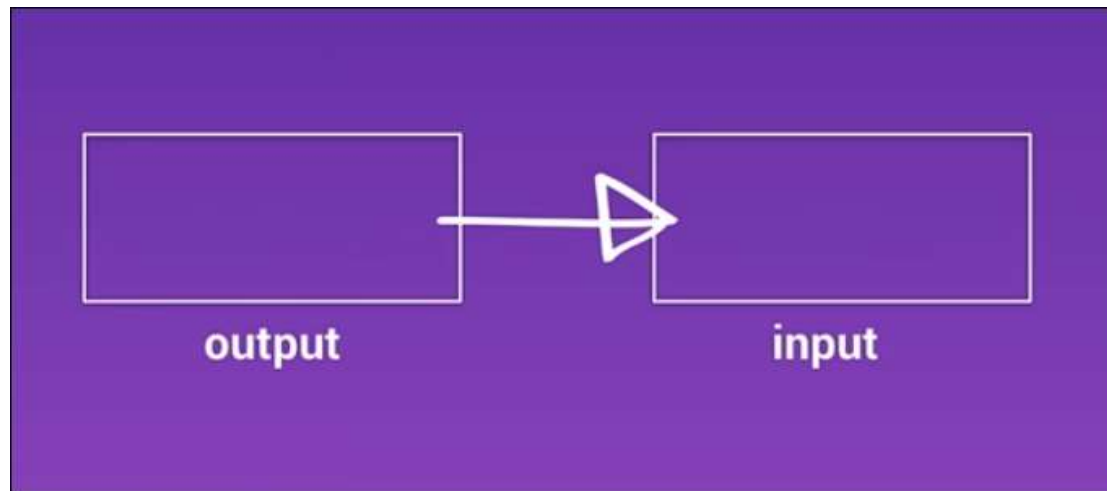
A screenshot of a YouTube video player. The video shows a man standing at a podium with the Angular Connect logo on it. Behind him is a large screen displaying the Angular Connect logo and the text "RANGLE.IO REWRITING THE W". To the right of the screen are logos for "Progre", "energy", "eSynergy", "prohire", and "MONACA". A subtitle at the bottom of the video reads: "Welcome to go beast mode with realtime interactive interfaces in Angular and Firebase." The video player interface at the bottom shows a play button, a progress bar at 0:06 / 25:21, and icons for settings, full screen, and a list.

Go beast mode with realtime reactive interfaces in Angular 2 & Firebase | Lukas Ruebbelke

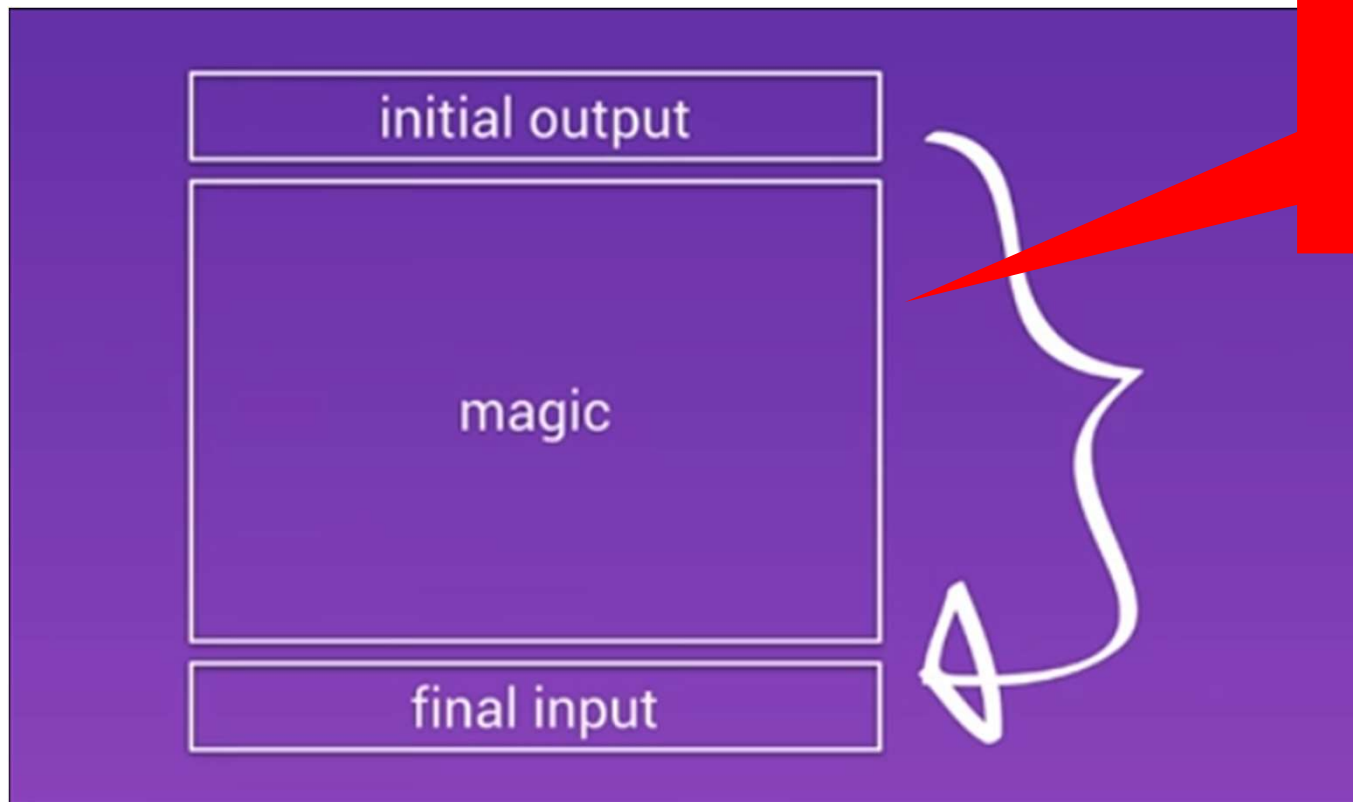
<https://www.youtube.com/watch?v=5CTL7aqSvJU>

<https://youtu.be/5CTL7aqSvJU?t=4m31s>

- With Observables -
 - a system, already outputting data,
 - Subscribe to that data
- "trade Output for Input"
- "Push vs. Pull"

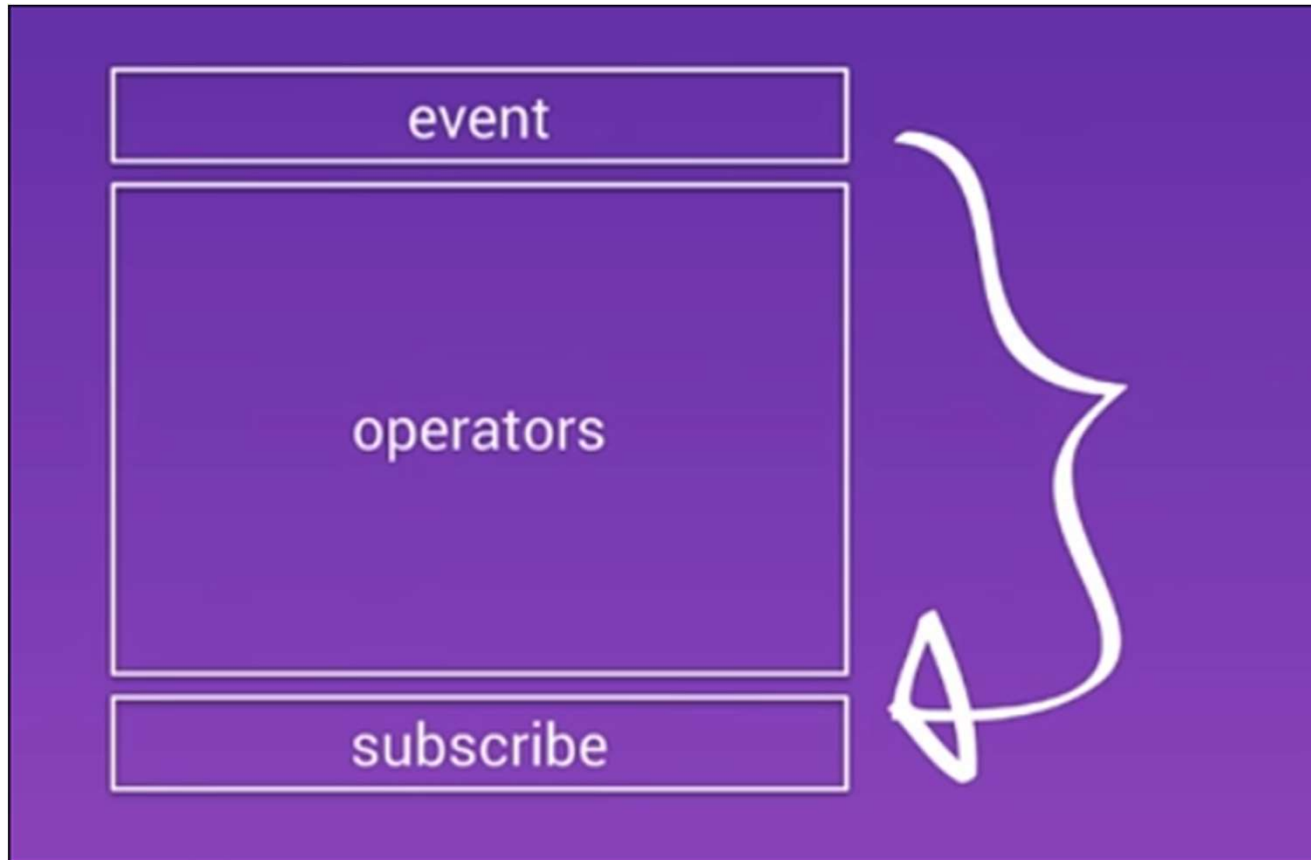


"The observable sandwich"



**Not really Magic.
Just operators**

Subscribe to events



In code:

Initial Output

```
this.http.get<City[]>( 'assets/data/cities.json' )  
    .pipe(  
        delay(...),  
        map(...)  
    )  
    .subscribe((result:City[]) => {  
        //... Do something  
    });
```

Optioneel:
operator(s)

Final Input

Ook: importeren HttpClientModule in @ngModule

- *// Angular Modules*
...
• **import** {HttpClientModule} **from** '@angular/common/http';
// Module declaration
@NgModule({
 imports : [BrowserModule, HttpClientModule],
 declarations: [AppComponent],
 bootstrap : [AppComponent],
 ...
})
export class AppModule {
}

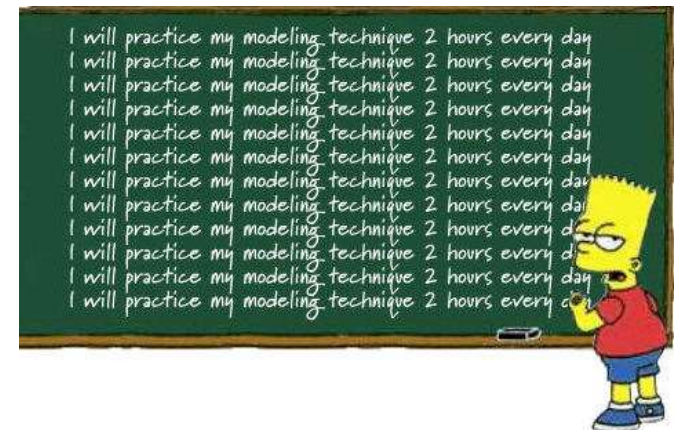
OUD: Angular < 4.3: HttpClientModule

- In je @NgModule: `imports : [HttpClientModule]`
- Met map-operator: `.map(res => res.json())`.
 - Nu: json is de standaard!
- HttpClientModule wordt in toekomstige versies verwijderd
- NU: nieuwe optie: Interceptors in HttpClientModule
- <https://alligator.io/angular/httpclient-intro/> en
- <https://alligator.io/angular/httpclient-interceptors/>

Oefening

- Bekijk het voorbeeld in `/201_services_http`
- Maak een eigen `.json`-bestand en importeer dit in je applicatie.
- Oefening 5c) , 5d)

Exercise....



Observable Cheat Sheet

genius to understand.

You can download the full-sized infographic at <http://bit.ly/observable-cheat-sheet>.

I really hope that you find the infographic helpful. Be sure to drop me a line below if you have any questions or comments. #highFive

OBSERVABLE CHEAT SHEET

Learning to work with observables is much like learning a new super power in that the entire process can be overwhelming! When you set aside all of the super shiny RxJS operators that you have at your disposal and start with a few key concepts, things suddenly start to come into focus and become fun.

BASIC OBSERVABLE SEQUENCE

The basic observable sequence is the foundation of everything we do with observable streams. In its simplest form, we have an **initial output** of data that we capture and then determine where we will **input** it into the application in its **final** form. We refer to data that arrives in the subscribe block as **final input** because it is no longer under control of the stream as it is being inputted in its final form to the application.

I AM
OUTPUTTING
DATA!

```
observable.fromEvent(this.btn, 'click')
```

<http://onehungrymind.com/observable-cheat-sheet/>

Hello RxJS

Gratis online training

The screenshot shows the 'Hello RxJS' micro-course interface. On the left, there's a sidebar with a course box titled 'ULTIMATE ANGULAR Hello RxJS MICRO COURSE', a progress bar at 5% complete, and navigation links for 'Class Curriculum' and 'Your Instructor'. The main area is titled 'Class Curriculum' and features a 'Start next lecture' button followed by 'Presentation: Realtime Observable Streams'. Below this is a list of course items under the 'Hello RxJS' heading, each with a status icon, a title, and a 'Start' button.

Hello RxJS		
<input checked="" type="radio"/>	Presentation: Realtime Observable Streams	Start
<input type="radio"/>	Slides: Realtime Observable Streams	Start
<input type="radio"/>	The Basic Observable Sequence (2:09)	Start
<input type="radio"/>	Lab: The Basic Observable Sequence	Start
<input type="radio"/>	Mapping Values (2:22)	Start
<input type="radio"/>	Lab: Mapping Values	Start
<input checked="" type="radio"/>	Maintaining State (3:25)	
<input type="radio"/>	Lab: Maintaining State	Start
<input type="radio"/>	Merging Streams (1:57)	Start
<input type="radio"/>	Lab: Merging Streams	Start
<input type="radio"/>	Mapping to Functions (5:18)	Start
<input type="radio"/>	Lab: Mapping to Functions	Start

<http://courses.ultimateangular.com/>

Pipeable operators

- In RxJS 6.x en hoger: alle operators komen binnen de `.pipe()` functie
- De parameters van de pipe-functie zijn de operatoren!
- Ze worden met komma's van elkaar gescheiden

```
.pipe(  
  delay(3000),  
  retry(3)  
  map(result => ...),  
  takeUntil(...condition...)  
)
```

Subscribe - only once per block!

- Three parameters:
 - success()
 - error() – Optioneel!
 - complete() – Optioneel!

```
this.cityService.getCities()
```

```
    .subscribe(cityData => {  
        this.cities = cityData;  
    },  
    err => console.log(err),  
    ()=> console.log('Getting cities complete...')  
    )
```



RxJS-operators in de service

```
import {Injectable} from '@angular/core';
import {HttpClient} from "@angular/common/http";
import {map, delay, takeUntil, ...} from "rxjs/operators";

@Injectable()
export class CityService {

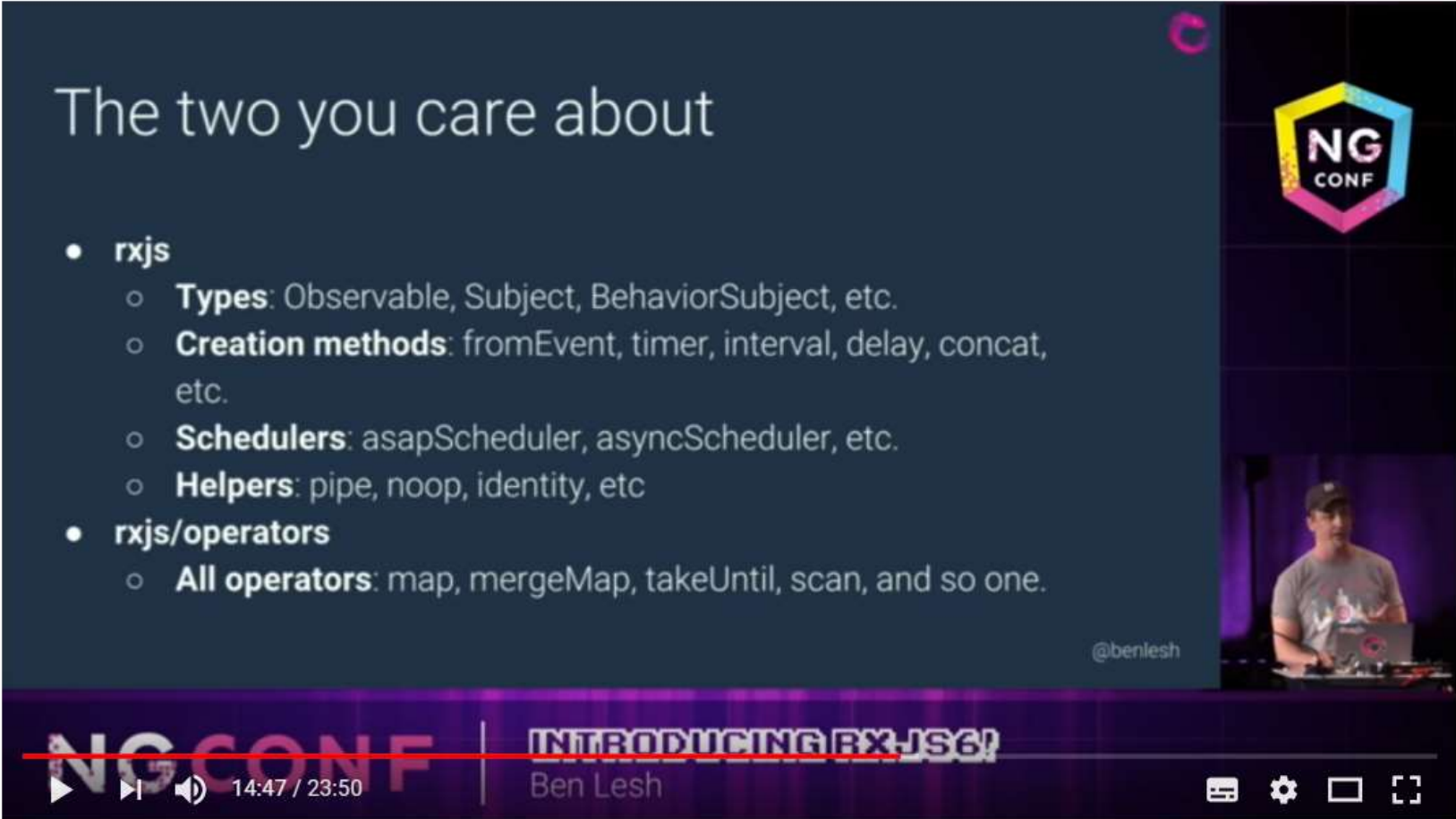
    constructor(private http: HttpClient) {

    }

    // retourner alle cities
    getCities(): Observable<Response> {
        return this.http.get('shared/data/cities.json')
            .pipe(...);
    }

}
```

Ben Lesh on observables in RxJS 6.0



The video player shows a presentation slide titled "The two you care about" with a bulleted list of RxJS concepts. The speaker, Ben Lesh, is visible in a small window on the right. The video player interface includes a progress bar at 14:47 / 23:50 and standard playback controls.

The two you care about

- **rxjs**
 - **Types:** Observable, Subject, BehaviorSubject, etc.
 - **Creation methods:** fromEvent, timer, interval, delay, concat, etc.
 - **Schedulers:** asapScheduler, asyncScheduler, etc.
 - **Helpers:** pipe, noop, identity, etc
- **rxjs/operators**
 - **All operators:** map, mergeMap, takeUntil, scan, and so one.

Introducing RxJS6! - Ben Lesh

<https://www.youtube.com/watch?v=JCXZhe6KsxQ>

Useful operators

- RxJS operators are (mostly) like Array operators
- Perform actions on a stream of objects
- Grouped by subject
 - Creation operators
 - Transforming
 - Filtering
 - Combining
 - Error Handling
 - Conditional and Boolean
 - Mathematical
 - ...

<https://www.learnrxjs.io/>

The screenshot shows the Learn RxJS website. On the left is a sidebar with a search bar labeled 'Type to search'. Below it, 'learn-rxjs' is listed. The main navigation menu includes 'LEARN RXJS', 'Introduction' (highlighted in blue), 'Operators', and 'Conditional'. Under 'Operators', a list of operators is shown: 'Combination' (with sub-items 'combineAll', 'combineLatest', 'concat', 'concatAll', 'forkJoin', 'merge', 'mergeAll', 'pairwise', 'race', 'startWith', 'withLatestFrom'), and 'zip'. The main content area has a header with 'Star 733' and 'Watch 54' buttons, along with social media icons. The title 'Learn RxJS' is prominently displayed, followed by the subtitle 'Clear examples, explanations, and resources for RxJS.' The 'Introduction' section begins with the text: 'RxJS is one of the hottest libraries in web development today. Offering a powerful, functional approach for dealing with events and with integration points into a growing number of frameworks, libraries, and utilities, the case for learning Rx has never been more appealing. Couple this with the ability to utilize your knowledge across [nearly any language](#), having a solid grasp on reactive programming and what it can offer seems like a no-brainer.' This is followed by a 'But...' section that states: 'Learning RxJS and reactive programming is [hard](#). There's the multitude of concepts, large API surface, and fundamental shift in mindset from an [imperative to declarative style](#). This site focuses on making these concepts approachable, the examples clear and easy to explore, and features references throughout to the best RxJS related material on the web. The goal is to supplement the [official docs](#) and pre-existing learning material while offering a new, fresh perspective to clear any hurdles and tackle the pain points. Learning Rx may be difficult but it is certainly worth the effort!' The 'Content' section is partially visible at the bottom.



Async pipe

Automatische `.subscribe()` en `.unsubscribe()`

Async Pipe

- Bij `.subscribe()`, eigenlijk ook `.unsubscribe()` aanroepen.
 - Netjes!
 - Bij HTTP-requests niet beslist nodig, bij andere subscriptions wel, in verband met memory leaks.
- Niet meer zelf `.subscribe()` en `.unsubscribe()` aanroepen:
 - **Gebruik `async pipe` van Angular**

- In de component:

```
Cities$: Observable<City[]>; // Nu: Observable naar Type  
...
```

```
ngOnInit() {  
    // Call naar de service, retourneert Observable  
    this.cities$ = this.cityService.getCities()  
}
```

- In de view:

```
<li *ngFor="let city of cities$ | async">
```

Werken met Live API's

- MovieApp
- `examples\210-services-live`

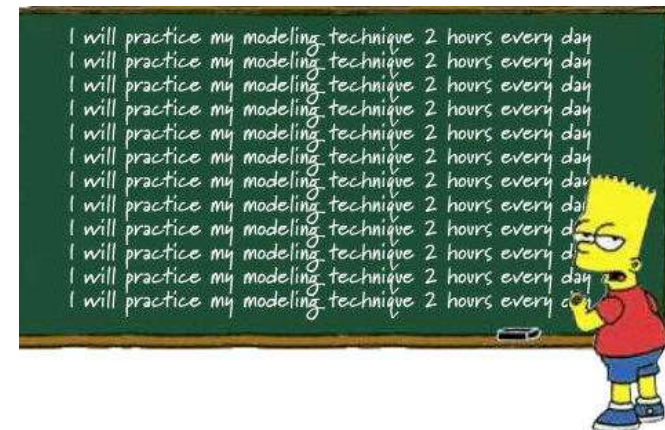


Voorbeeld API's

- <https://pokeapi.co/> - Pokemon API
- <http://openweathermap.org/API> (weerbericht)
- <http://randomuser.me/> (random NAW-gegevens)
- <http://ergast.com/mrd/> - Ergast Motor (F1) API
- <http://www.omdbapi.com/> - Open Movie Database
- <http://swapi.co/> - Star Wars API
- Zie ook `JavaScript APIs.txt` met meer voorbeelden

Workshop

- Pick one of your own projects, or see for instance:
 - `../210-services-live`
- Create a small application using one of the API's in the file `JavaScript API's.txt`, using RxJS-calls, for example
 - Pokemon API
 - Kenteken API
 - OpenWeatherMap API
 - ...
- Exercise : 5^e)



Online JSON to TypeScript converter

json2ts

generate TypeScript interfaces from JSON

[email](#) [feedback](#) [help](#)

```
300.jpg"}, {"Title": "The Amazing Captain Nemo", "Year": "1978", "imdbID": "tt0077156", "Type": "movie", "Poster": "https://images-na.ssl-images-  
amazon.com/images/M/MV5BMTc4NzExNjcwN15BMl5BanBnXkFtZTYwMTM1Mjg5_V1_SX300.jpg"},  
{"Title": "Nemo", "Year": "1984", "imdbID": "tt0087784", "Type": "movie", "Poster": "https://images-na.ssl-images-  
amazon.com/images/M/MV5BMTY2NzlwMTgwN15BMl5BanBnXkFtZTcwMjlyMzMzMzMQ@@_V1_SX300.jpg"}, {"Title": "Captain  
Nemo", "Year": "1975", "imdbID": "tt0453375", "Type": "movie", "Poster": "https://images-na.ssl-images-  
amazon.com/images/M/MV5BM2JmOTRlMGQtODMxNy00YmRkLWI1OWEtMmQ2YjZlZmQzZGU5XkEyXkFqcGdeQXVyNDUxNjc5NjY@_V1_  
SX300.jpg"}, {"Title": "Finding Nemo", "Year": "2003", "imdbID": "tt0401422", "Type": "game", "Poster": "N/A"}, {"Title": "Making  
'Nemo'", "Year": "2003", "imdbID": "tt0387373", "Type": "movie", "Poster": "N/A"}, {"Title": "Finding Nemo Submarine  
Voyage", "Year": "2007", "imdbID": "tt1319713", "Type": "movie", "Poster": "https://images-na.ssl-images-  
amazon.com/images/M/MV5BMzAxMzMyODQtNWY0Yy00N2M3LWE5MDQtZDUzNjc1ZGFmMzA4XkEyXkFqcGdeQXVyMzcxMzc4Mw@@_V  
1_SX300.jpg"}, {"Title": "Little Nemo: The Dream  
Master", "Year": "1990", "imdbID": "tt0206895", "Type": "game", "Poster": "N/A"}], "totalResults": "31", "Response": "True"}
```

generate TypeScript

```
declare module namespace {  
  
  export interface Search {  
    Title: string;  
    Year: string;  
    imdbID: string;  
    Type: string;  
    Poster: string;  
  }  
}
```

<http://json2ts.com/>

In VS Code? Use this extension!

EXTENSIONS: MARKET... **paste json**

Paste JSON as Code 10.0.24
Copy JSON, paste as Go, Type...
quicktype **Install**

JSON Tools 1.0.2
Tools for manipulating JSON
Erik Lynd **Install**

JSON to TS 1.5.5
Convert JSON object to typesc...
MariusAlchimavicius **Install**

Paste Image 1.0.2
paste image from clipboard dir...
mushan **Install**

Paste and Indent 0.0.8
Paste some code with "correct...
g3rry **Install**

Prettify JSON 0.0.3
Visual Studio Code Prettify JS...
Mohsen Azimi **Install**

Sort JSON objects 1.11.0
Sorts the keys within JSON ob...
richie5um2 **Install**

JSON Schema to JSON T.. 1.0.2
Generate json template from js...
ChaunceyKiwi **Install**

json2ts 0.0.6
Convert a JSON from clipboar...
Gregor Biswanger **Install**

Extension: Paste JSON as Code — voorbeeldenTypeScript

Extension: Paste JSON as Code x

Paste JSON as Code quicktype.quicktype

quicktype | 63,602 | ★★★★★ | Repository | License

Copy JSON, paste as Go, TypeScript, C#, C++ and more.

Install

Details Contributions Changelog Dependencies

Visual Studio Marketplace v10.0.24 installs 63602 rating 5/5 (5)

Supports C#, Go, C++, Java, TypeScript, Swift, Elm, and JSON Schema.

quicktype infers types from sample JSON data, then outputs strongly typed models and serializers for working with that data in your desired programming language. For more explanation, read [A first look at quicktype](#).

[Extension Development Host] - pokedex.json

1 { >cop|

2 Copy

3 Copy Line Down

4 Copy Line Up

5 Copy With Syntax Highlighting

6 Developer: Inspect TM Scopes

7 File: Clear Recently Opened

8 File: Copy Path of Active File


9

10 "Poison"

11 }

<https://marketplace.visualstudio.com/items?itemName=quicktype.quicktype>

Data Mocken - Mockaroo

 realistic data generator ? [PRICING](#) [SIGN IN](#)

Need some mock data to test your app?

Mockaroo lets you generate up to 1,000 rows of realistic test data in CSV, JSON, SQL, and Excel formats.

[Need more data? Plans start at just \\$50/year.](#)

Field Name	Type	Options
<div>id</div>	Row Number	blank: 0 % <div>fx</div> ×
<div>first_name</div>	First Name	blank: 0 % <div>fx</div> ×
<div>last_name</div>	Last Name	blank: 0 % <div>fx</div> ×
<div>email</div>	Email Address	blank: 0 % <div>fx</div> ×
<div>gender</div>	Gender	blank: 0 % <div>fx</div> ×
<div>ip_address</div>	IP Address v4	blank: 0 % <div>fx</div> ×

Add another field

Rows:

1000

 Format:

CSV

 Line Ending:

Unix (LF)

 Include: ☒ header ☐ BOM

Download Data

Preview

More

Want to save this for later? [Sign up for free.](#)

<http://mockaroo.com/>

Official documentation...

The screenshot shows the RxJS official documentation website. The left sidebar contains a navigation menu with categories like 'observable', 'observable/dom', 'operator', and 'scheduler'. The main content area is titled 'Observable' and includes the following sections:

- Direct Subclass:** ConnectableObservable, GroupedObservable, Subject
- Indirect Subclass:** AnonymousSubject, AsyncSubject, BehaviorSubject, es6/operator/windowTime.js~CountedSubject, ReplaySubject
- Description:** A representation of any set of values over any amount of time. This the most basic building block of RxJS.
- Test:** Observable, Observable.create, Observable.lift
- Static Method Summary:**

Static Public Methods	
public static	bindCallback (func: function, selector: function, scheduler: Scheduler): function(...params: *): Observable Converts a callback API to a function that returns an Observable.
public static	bindNodeCallback (func: function, selector: function, scheduler: Scheduler): function(...params: *): Observable

Generated by ESDoc(0.4.8)

<http://reactivex.io/rxjs/class/es6/Observable.js~Observable.html>

<https://www.learnrxjs.io/>

The screenshot displays the 'Learn RxJS' website. On the left is a sidebar with a search bar and a list of topics: 'Introduction' (highlighted), 'Operators' (with sub-items like 'Combine', 'concat', 'forkJoin', etc.), and 'Conditional'. The main content area has a header with 'Star 733' and 'Watch 54' buttons. The title 'Learn RxJS' is followed by a subtitle 'Clear examples, explanations, and resources for RxJS.' The 'Introduction' section explains that RxJS is a popular library for dealing with events and integration points, and that the site aims to make learning RxJS approachable. The 'But...' section mentions that learning RxJS is 'hard' due to its many concepts and API surface, but the site focuses on making it approachable. The 'Content' section is partially visible at the bottom.

Type to search

EDIT THIS PAGE

Star 733 Watch 54

Learn RxJS

Clear examples, explanations, and resources for RxJS.

Introduction

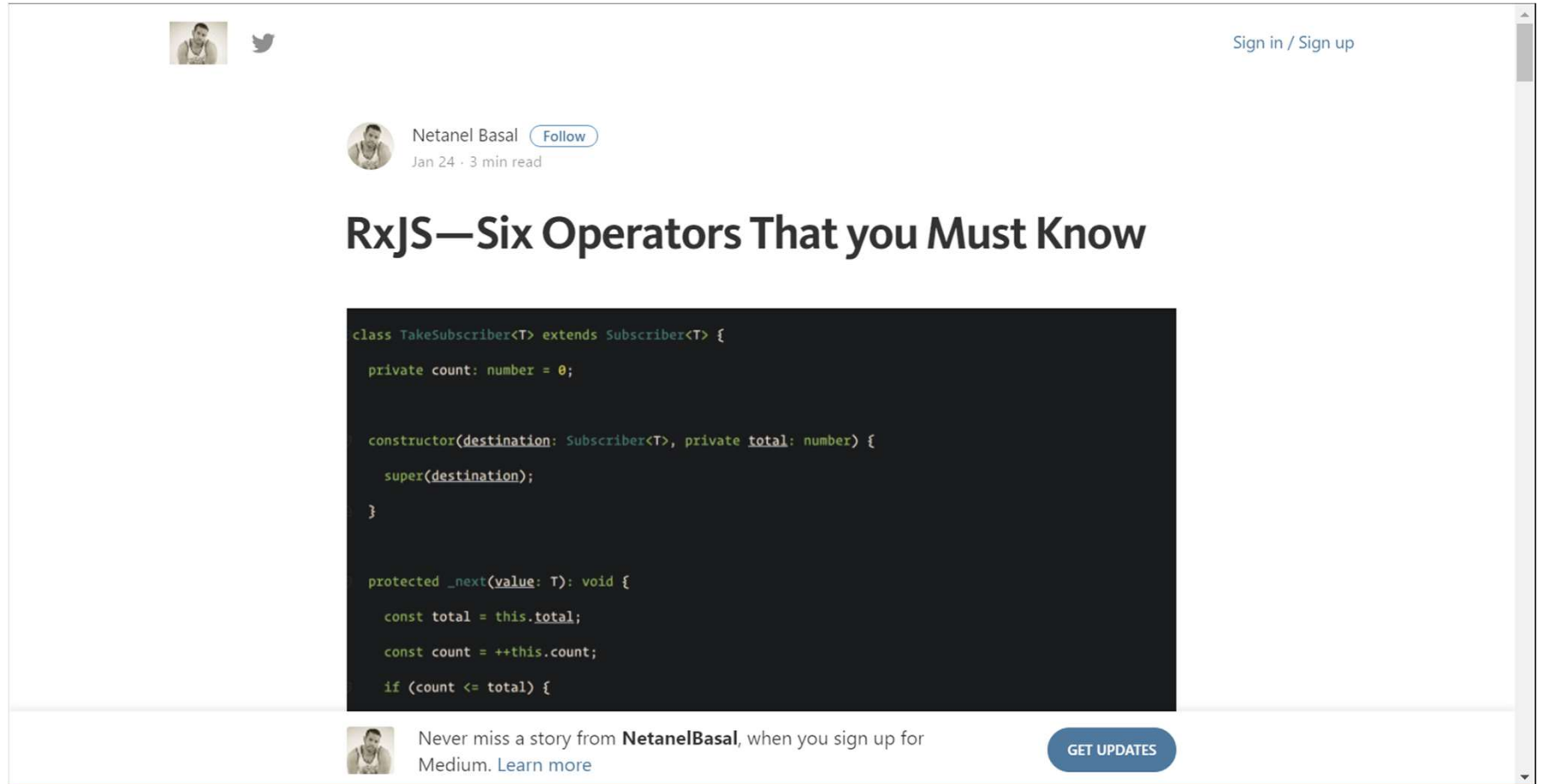
[RxJS](#) is one of the hottest libraries in web development today. Offering a powerful, functional approach for dealing with events and with integration points into a growing number of frameworks, libraries, and utilities, the case for learning Rx has never been more appealing. Couple this with the ability to utilize your knowledge across [nearly any language](#), having a solid grasp on reactive programming and what it can offer seems like a no-brainer.

But...

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Content

Article - 6 Operators you must know



The screenshot shows a Medium article preview. At the top left, there's a small profile picture and a Twitter icon. In the top right corner, it says "Sign in / Sign up". Below this, the author's name "Netanel Basal" is displayed with a "Follow" button and the text "Jan 24 · 3 min read". The article title "RxJS—Six Operators That you Must Know" is prominently displayed. Below the title, a code block is shown with a dark background and light green text. The code is a TypeScript class definition for "TakeSubscriber". At the bottom of the preview, there's a small profile picture, a promotional message "Never miss a story from NetanelBasal, when you sign up for Medium. Learn more", and a blue button labeled "GET UPDATES".

Sign in / Sign up

Netanel Basal Follow
Jan 24 · 3 min read

RxJS—Six Operators That you Must Know

```
class TakeSubscriber<T> extends Subscriber<T> {  
  private count: number = 0;  
  
  constructor(destination: Subscriber<T>, private total: number) {  
    super(destination);  
  }  
  
  protected _next(value: T): void {  
    const total = this.total;  
    const count = ++this.count;  
    if (count <= total) {
```

Never miss a story from NetanelBasal, when you sign up for Medium. Learn more

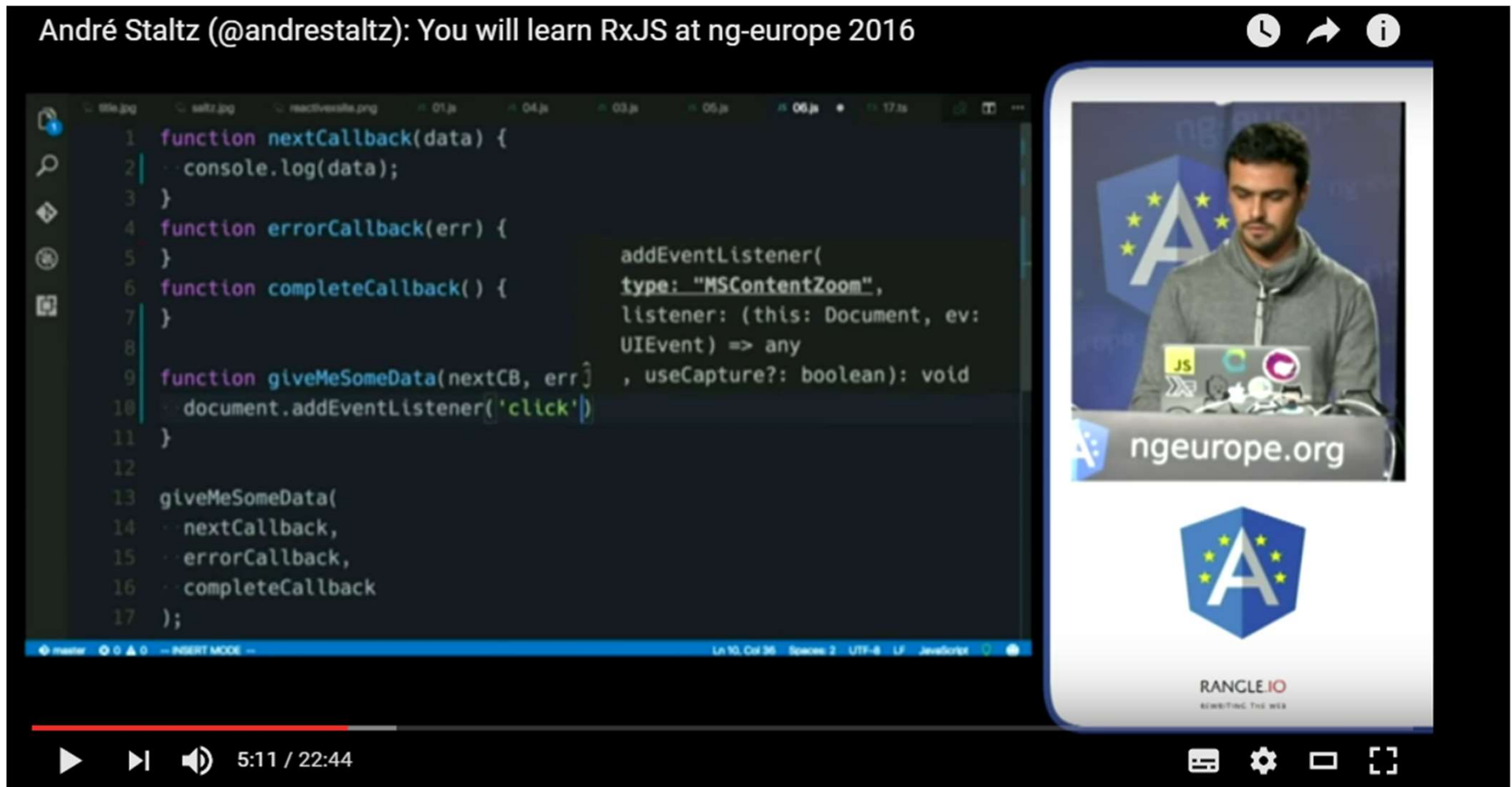
GET UPDATES

<https://netbasal.com/rxjs-six-operators-that-you-must-know-5ed3b6e238a0#.11of73aox>

Creating Observables from scratch

- André Staltz

André Staltz (@andrestaltz): You will learn RxJS at ng-europe 2016



```
1 function nextCallback(data) {
2   console.log(data);
3 }
4 function errorCallback(err) {
5 }
6 function completeCallback() {
7 }
8
9 function giveMeSomeData(nextCB, err) {
10  document.addEventListener('click')
11 }
12
13 giveMeSomeData(
14   nextCallback,
15   errorCallback,
16   completeCallback
17 );
```

addEventListener(
 type: "MSContentZoom",
 listener: (this: Document, ev:
 UIEvent) => any
 , useCapture?: boolean): void

ng-europe.org

RANGLE.IO
REWRITING THE WEB

5:11 / 22:44

<https://www.youtube.com/watch?v=uQ1zhJHclvs>

The screenshot shows a GitHub Gist page for a file named `introrx.md` by user `staltz`. The page has a light gray header with the GitHub Gist logo, a search bar, and navigation links for 'All gists' and 'GitHub'. On the right of the header are buttons for 'New gist' and a user profile icon. Below the header, the user's profile is shown with a small avatar, the name 'staltz / introrx.md', and the text 'Last active an hour ago'. To the right of the profile are buttons for 'Star' (10,812), 'Fork' (1203), and a dropdown menu. Below this is a tabbed interface with 'Code' selected, and other tabs for 'Revisions' (259), 'Stars' (10812), and 'Forks' (1203). To the right of the tabs are buttons for 'Embed' (with a dropdown), a script tag icon, a download icon, and 'Download ZIP'. The main content area has the title 'The introduction to Reactive Programming you've been missing'. Below the title is a tabbed editor for the file `introrx.md`, with a 'Raw' button on the right. The content of the file is as follows:

The introduction to Reactive Programming you've been missing

(by @andrestaltz)

This tutorial as a series of videos

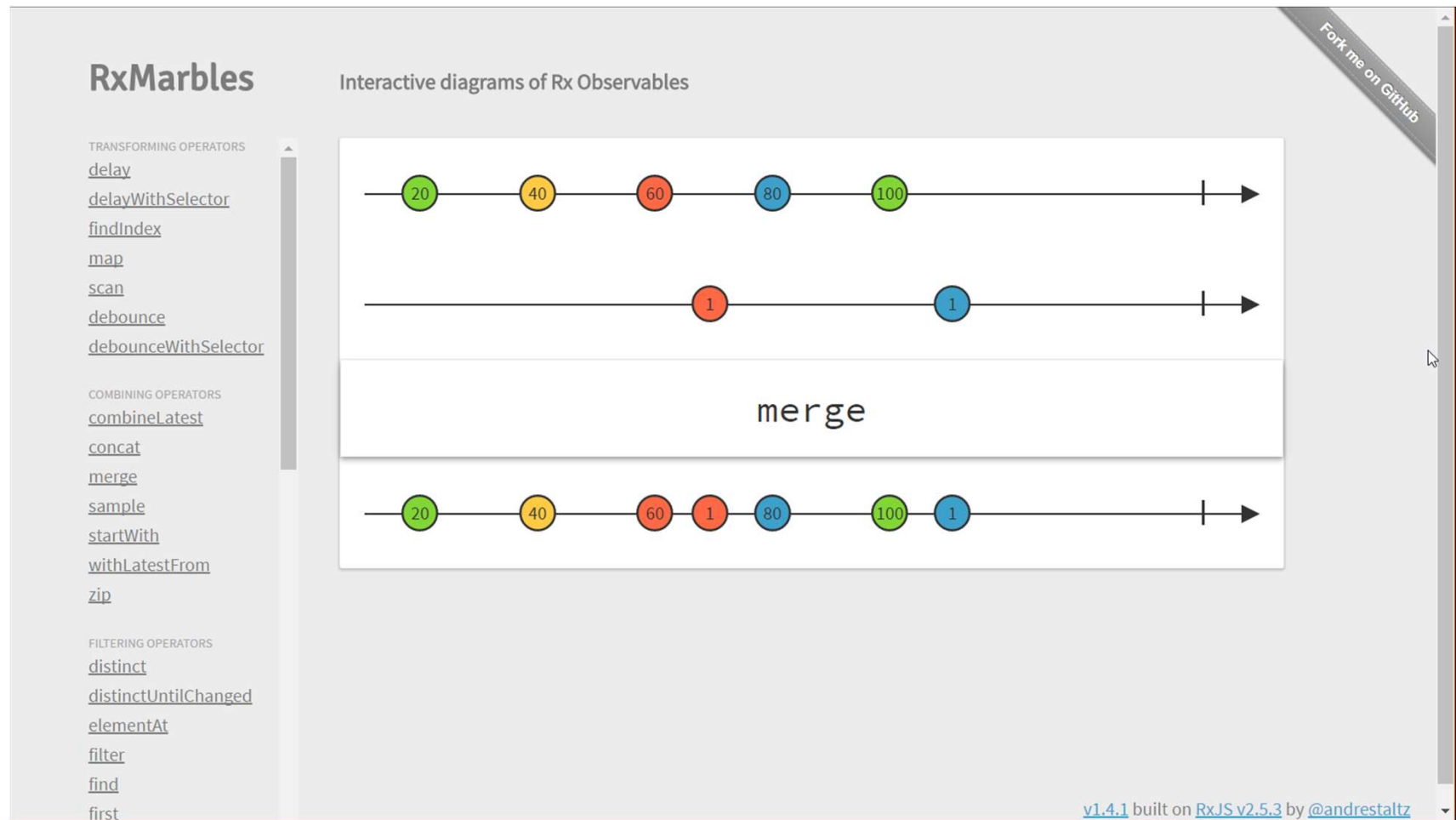
If you prefer to watch video tutorials with live-coding, then check out this series I recorded with the same contents as in this article: [Egghead.io - Introduction to Reactive Programming](#).

So you're curious in learning this new thing called Reactive Programming, particularly its variant comprising of Rx, Bacon.js, RAC, and others.

Learning it is hard, even harder by the lack of good material. When I started, I tried looking for tutorials. I found only a handful of practical guides, but they just scratched the surface and never tackled the challenge of building the whole architecture

<https://gist.github.com/staltz/868e7e9bc2a7b8c1f754>

Also by Andre Stalz - RxMarbles



<http://rxmarbles.com/>

Dan Wahlin on Modules and Observables

Integrating Angular with RESTful Services using RxJS and Observables



```
15 baseUrl: string = '/api/customers';
16
17 constructor(private http: Http) {
18 }
19
20
21 getCustomers() : Observable<ICustomer[]> {
22   return this.http.get(this.baseUrl)
23     .map((res: Response) => {
24       let customers = res.json();
25       this.calculateCustomersOrderTotal(customers);
26       return customers;
27     })
28     .catch(this.handleError);
29 }
30
31 getCustomersPage(page: number, pageSize: number) : Observable<IPagedResults<ICustomer[]> {
32   return this.http.get(`${this.baseUrl}/page/${page}/${pageSize}`)
33     .map((res: Response) => {
34       const totalRecords = +res.headers.get('x-inlinecount');
35       let customers = res.json();
36       this.calculateCustomersOrderTotal(customers);
37       return {
38         results: customers,
```

52:13 / 1:24:02

<https://www.youtube.com/watch?v=YxK4UW4UfCk>

Subscribing to websocket server

The screenshot shows the GitHub repository page for `PeterKassenaar / ng2-websockets`. The repository is described as an "Example project of using WebSockets in an Angular 2 (.rc6) application". It has 4 watchers, 36 stars, and 15 forks. The repository contains 5 commits, 1 branch, and 0 releases, with 1 contributor. The commit history shows updates to `package.json`, `client`, `server`, `.gitignore`, and `README.md`, all dated 5 months ago. The `README.md` file is visible, showing the repository name `ng2-websockets` and the description "Example project of using WebSockets in an Angular 2 application."

Repository: PeterKassenaar / ng2-websockets

Unwatch 4 Star 36 Fork 15

Code Issues 2 Pull requests 0 Projects 0 Wiki Pulse Graphs Settings

Example project of using WebSockets in an Angular 2 (.rc6) application

New Add topics Edit

5 commits 1 branch 0 releases 1 contributor

Branch: master New pull request Create new file Upload files Find file Clone or download

PeterKassenaar committed on GitHub Update package.json Latest commit b996ada on 5 Sep 2016

client	Update package.json	5 months ago
server	Added first client and server code	5 months ago
.gitignore	Added first client and server code	5 months ago
README.md	Added stuff to readme	5 months ago

README.md

ng2-websockets

Example project of using WebSockets in an Angular 2 application.

<https://github.com/PeterKassenaar/ng2-websockets>

More info - subscribing to websocket server

Check out my [Angular article series with live demos](#)

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Socket.io with RxJs in Angular



Torgeir "Tor" Helgevold

- JavaScript Developer and Blogger

Published: Mon May 30 2016

In this article we will discuss how to combine socket.io with RxJs Observables in Angular.

We will implement a simple chat feature using socket based communication between client and server. Socket.io will take care of setting up the socket, but we will be using observables to receive and distribute chat messages from the server.

The goal is to build a chat server where we can open multiple browser windows and be able to send chat messages between the different browsers.

<http://www.syntaxsuccess.com/viewarticle/socket.io-with-rxjs-in-angular-2.0>



THOUGHTTRAM

TRAINING

CODE REVIEW

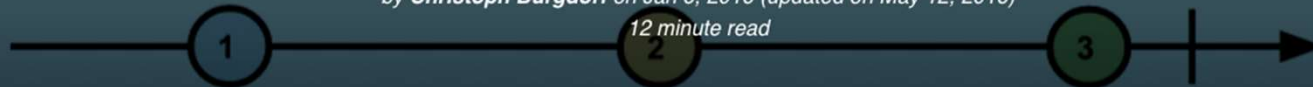
BLOG



TAKING ADVANTAGE OF OBSERVABLES IN `distinctUntilChanged()` ANGULAR 2

by **Christoph Burgdorf** on Jan 6, 2016 (updated on May 12, 2016)

12 minute read



Some people seem to be confused why Angular 2 seems to favor the Observable abstraction over the Promise abstraction when it comes to dealing with async behavior.

There are pretty good resources about the difference between Observables and Promises already out there. I especially like to highlight this free [7 minutes video](#) by [Ben Lesh](#) on [egghead.io](#). Technically there are a couple of obvious differences like the *disposability* and *lazyness* of Observables. In this article we like to focus on some practical advantages that

<http://blog.thoughttram.io/angular/2016/01/06/taking-advantage-of-observables-in-angular2.html>

Een collectie observables ophalen

<https://blog.angularindepth.com/practical-rxjs-in-the-wild-requests-with-concatmap-vs-mergemap-vs-forkjoin-11e5b2efe293>

