Angular Basics

by Martin Dobrev

Lecture 4:

RxJs Basics

Lecture Overview

- Reactive Programming Paradigm and RxJS
- Observables & Observers
- Demo
- Subjects
- Demo

RxJS

- **Reactive programming** is an asynchronous programming paradigm concerned with data streams and the propagation of change

- **RxJS (Reactive Extensions for JavaScript)** is a library for reactive programming using observables that makes it easier to compose **asynchronous or callback-based** code

RxJS Building Blocks

- Stream in RxJS -just values over time
- **Observable -** a function that produces a stream of values
- **Observer -** subscriber of an observable

Observer & Observable

```ts
export interface Observer<T> {
    closed?: boolean;
    next: (value: T) => void;
    error: (err: any) => void;
    complete: () => void;
}

export declare class Observable<T> implements Subscribable<T>


export interface Subscribable<T> {
    subscribe(observer?: PartialObserver<T>): Unsubscribable;
    subscribe(
        next?: (value: T) => void,
        error?: (error: any) => void,
        complete?: () => void
    ): Unsubscribable;
}
```

Creating Observables

- From values through different operators (rxjs/operators): **of(1, 2, 3,4), fromEvent(mouseEvent: MouseEvent)**, **interval**(…),
- Angular **EventEmitters** actually create observables and call the **next** method when emitting values
- **HttpClient** is completely reactive
- **Observable.pipe()** allows data transformation, filtering, reducing, etc.

Demo

RxJS Subjects

- Subjects are used for multicast
- Create subjects if you want to create
- They implement both Observable and Observer interfaces
- Four main classes available:
  Subject, BehaviorSubject, AsyncSubject, ReplaySubject

Demo

THE END

Danke für die Aufmerksamkeit :)

Resources

- Angular RxJs Documentation: https://angular.io/guide/rx-library (read the whole chapter)
- Useful info about operators: https://www.learnrxjs.io
- Tutorial Github Repo: https://github.com/martindobrev/nb-angular-tutorial
- Resources will be available on the webpage of the tutorial https://martindobrev.github.io/nb-angular-tutorial/