REINVENTING RXJS

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HI 👋

I'M **MAX** GALLO

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PRINCIPAL ENGINEER

DAZN

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HERE'S THE AGENDA

1. **INTRODUCTION**
2. REINVENTING **RXJS**
3. DEEP DIVE **SCHEDULERS**

INTRODUCTION

INTRODUCING RXJS

PART OF THE **REACTIVE X** FAMILY

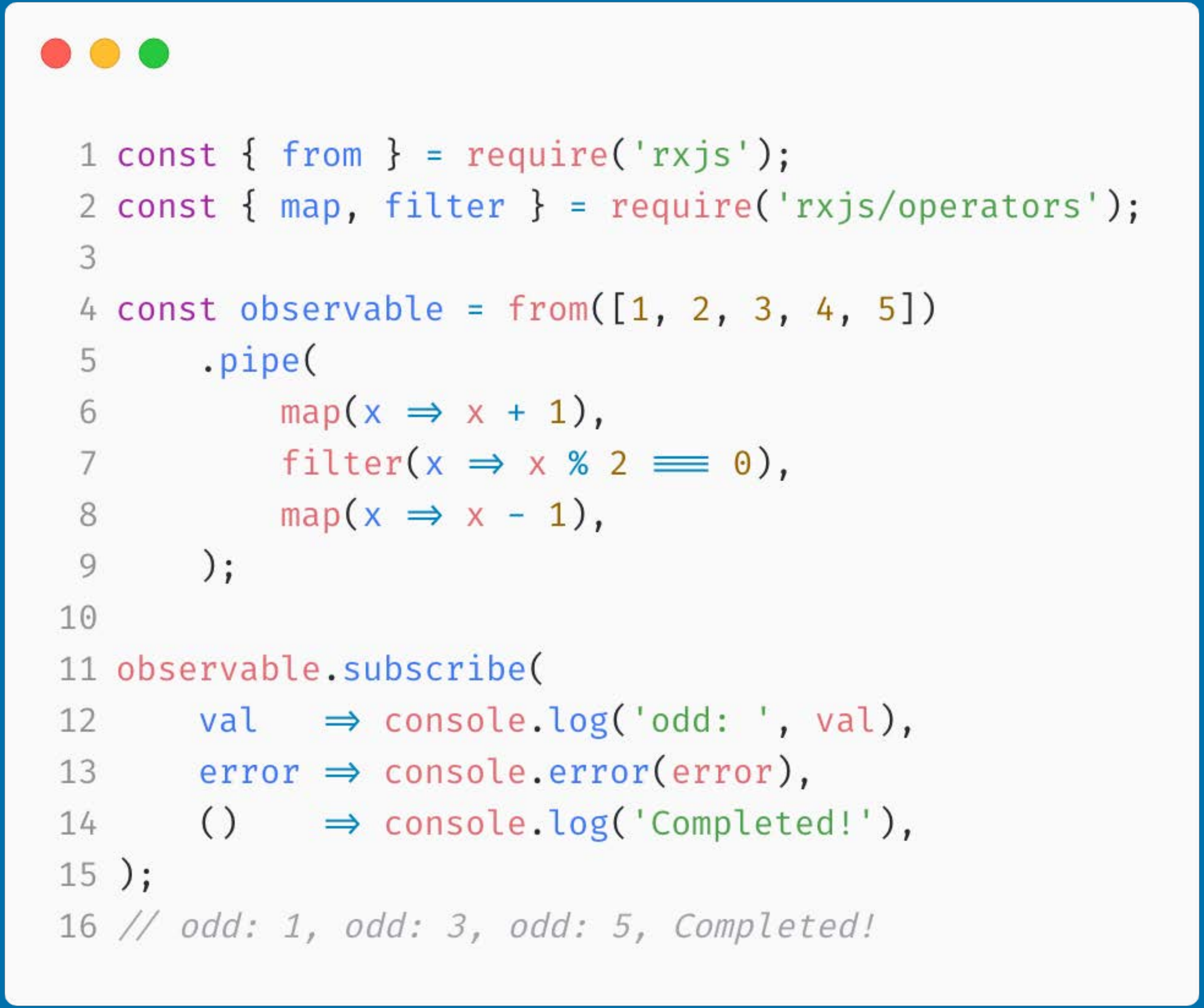
API FOR ASYNCHRONOUS PROGRAMMING WITH OBSERVABLE STREAMS

REINVENTING THE WHEEL

BY

TAKING THINGS APART

REINVENTING RXJS



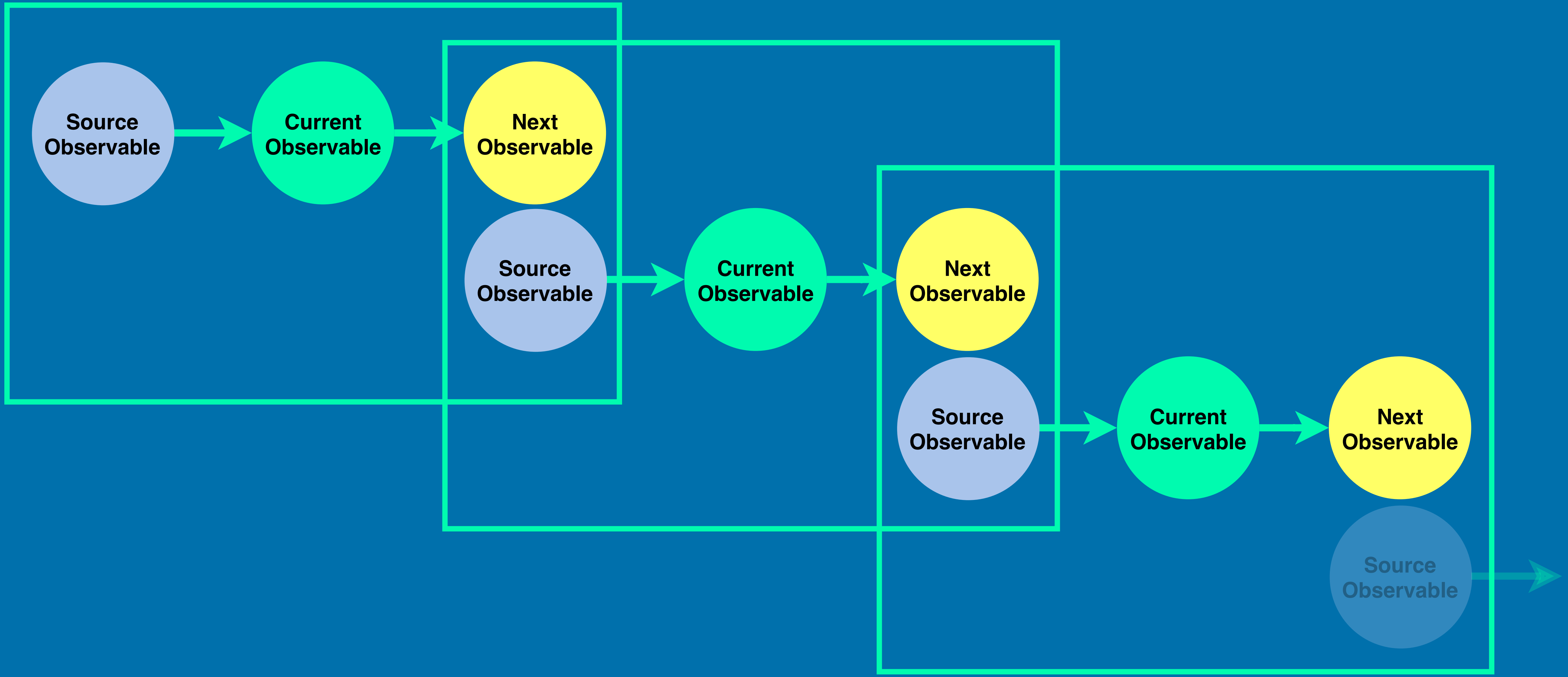
```javascript
const { from } = require('rxjs');
const { map, filter } = require('rxjs/operators');

const observable = from([1, 2, 3, 4, 5])
    .pipe(
        map(x => x + 1),
        filter(x => x % 2 === 0),
        map(x => x - 1),
    );

observable.subscribe(
    val   => console.log('odd: ', val),
    error => console.error(error),
    ()    => console.log('Completed!'),
);
// odd: 1, odd: 3, odd: 5, Completed!
```

RXJS **CODE** FIRST IMPRESSIONS

- **SYNTAX** IS LIBRARY SPECIFIC
- **EXPLICIT SUBSCRIPTION**
- **OBSERVABLE** TC39 STAGE 1
- **PIPELINE OPERATOR** TC39 STAGE 1

💡 LET'S REINVENT **RXJS**

RXJS OPERATORS



OPERATOR 1 -->> OPERATOR 2 -->> OPERATOR 3

RXJS FROM THE INSIDE

- MADE OF **REUSABLE PARTS** > **STREAMS**
- **STANDARD CONTRACT** BETWEEN PARTS
- **CUSTOM OPERATORS**
- **LAZY EVALUATION**
- **SYNCHRONOUS** BY DEFAULT > **SCHEDULERS**

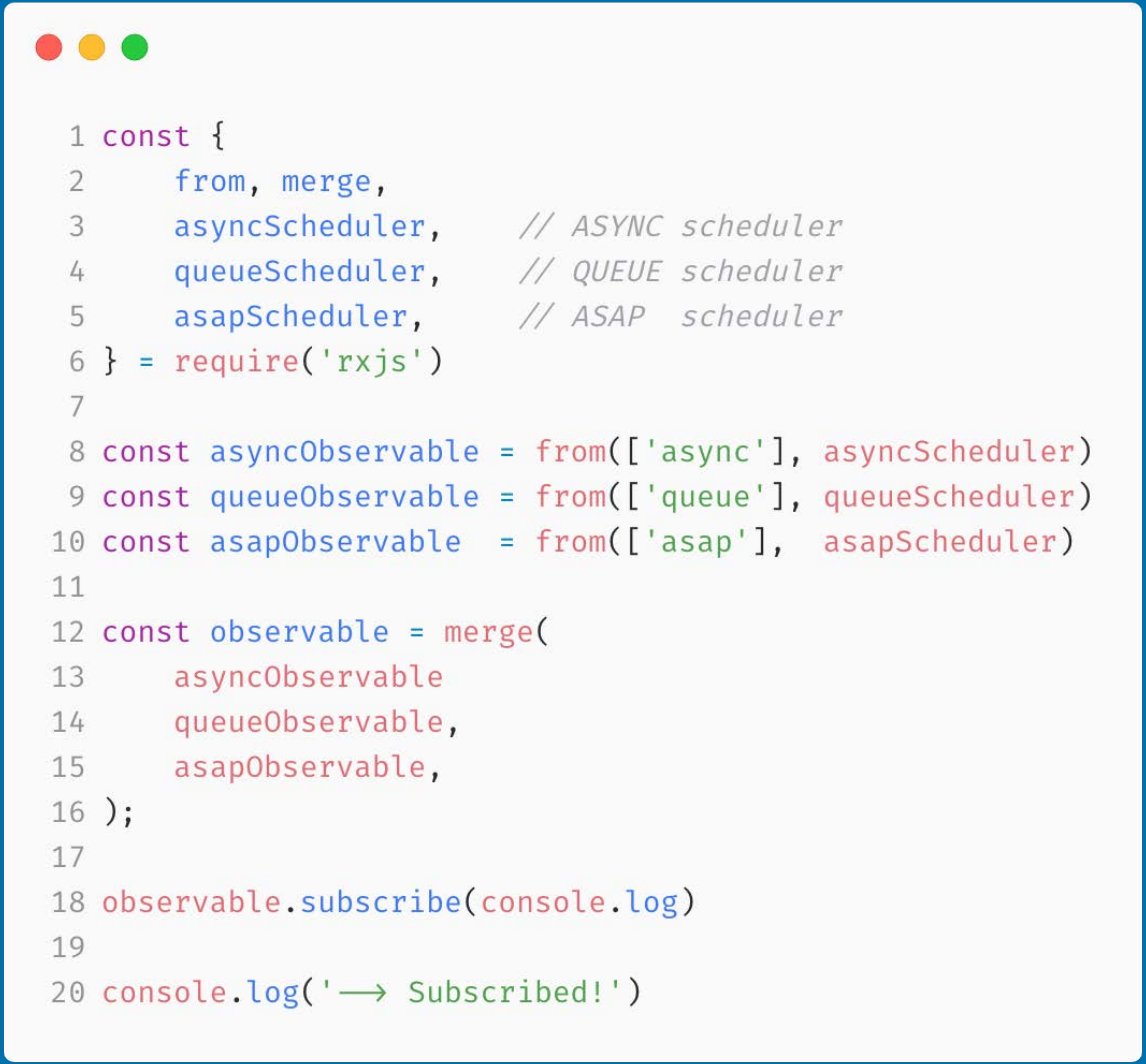
DEEP DIVE SCHEDULERS

SCHEDULERS IN RXJS ARE THINGS THAT CONTROL THE ORDER OF EVENT EMISSIONS **(TO OBSERVERS) AND** THE SPEED OF THOSE EVENT **EMISSIONS.**

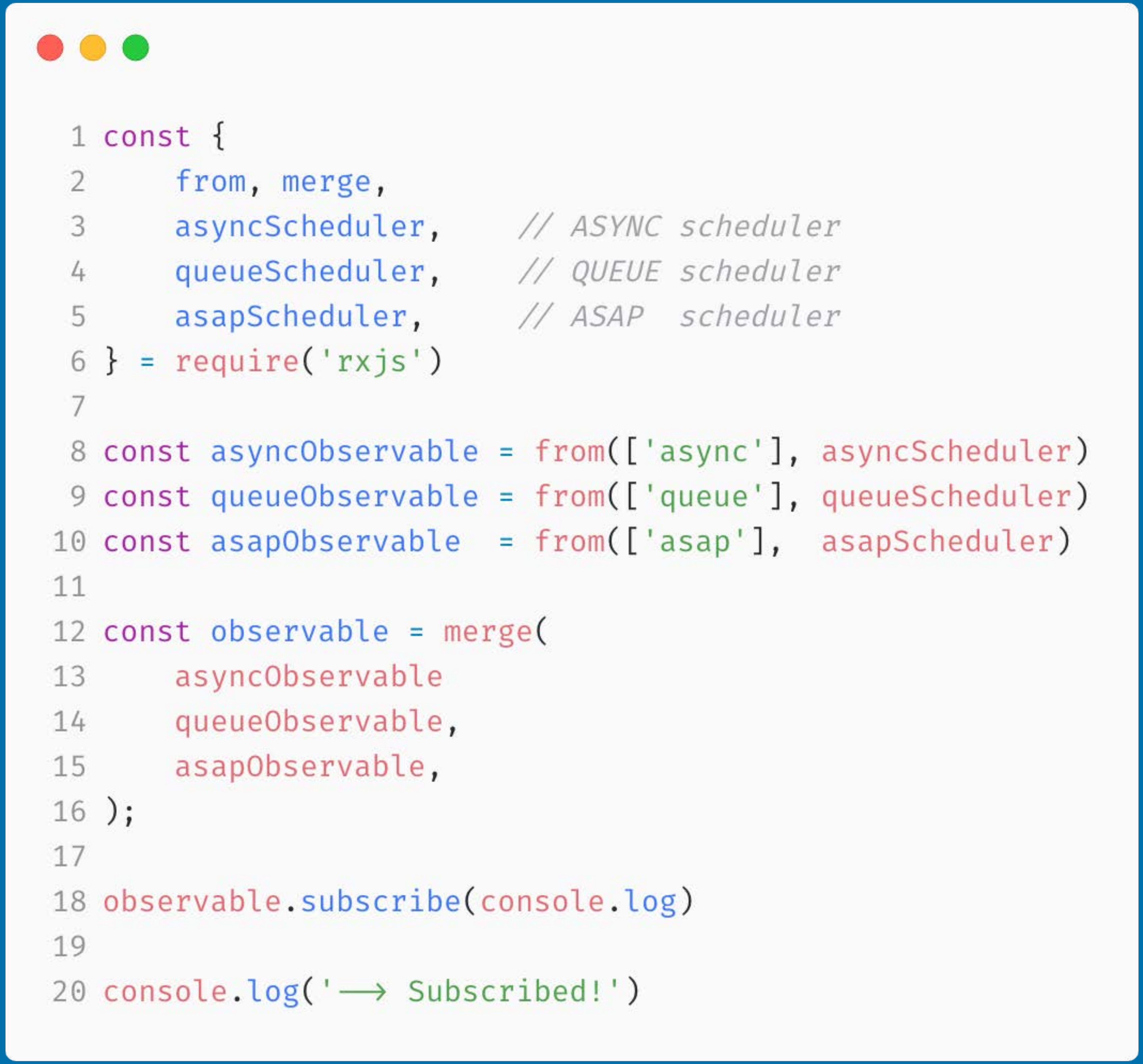
- ANDRÉ STALTZ

ORDER OF EVENT EMISSIONS

SPEED OF EVENT EMISSIONS



```
const {
    from, merge,
    asyncScheduler,    // ASYNC scheduler
    queueScheduler,    // QUEUE scheduler
    asapScheduler,     // ASAP  scheduler
} = require('rxjs')

const asyncObservable = from(['async'], asyncScheduler)
const queueObservable = from(['queue'], queueScheduler)
const asapObservable  = from(['asap'],  asapScheduler)

const observable = merge(
    asyncObservable
    queueObservable,
    asapObservable,
);

observable.subscribe(console.log)

console.log('⟶ Subscribed!')
```



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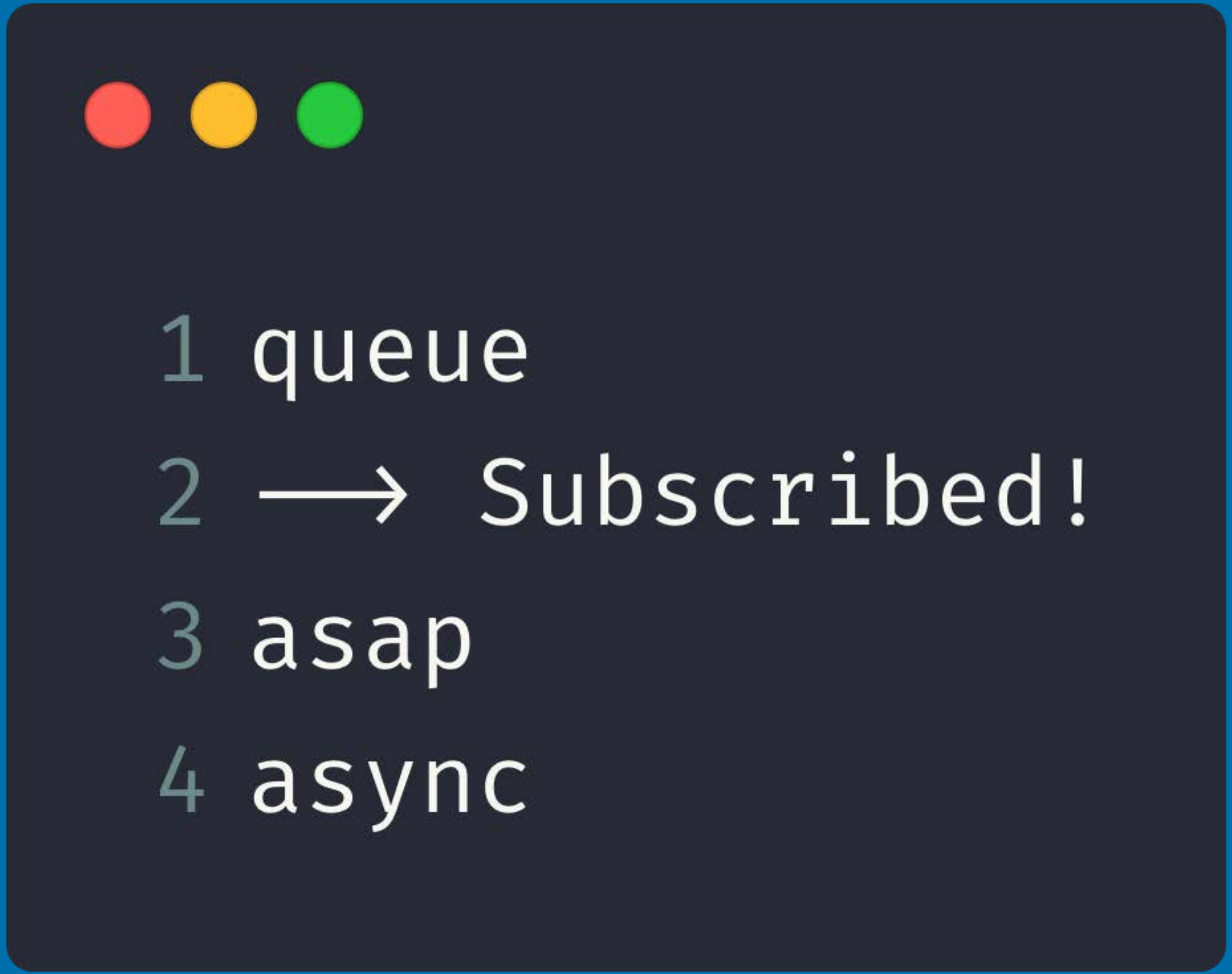
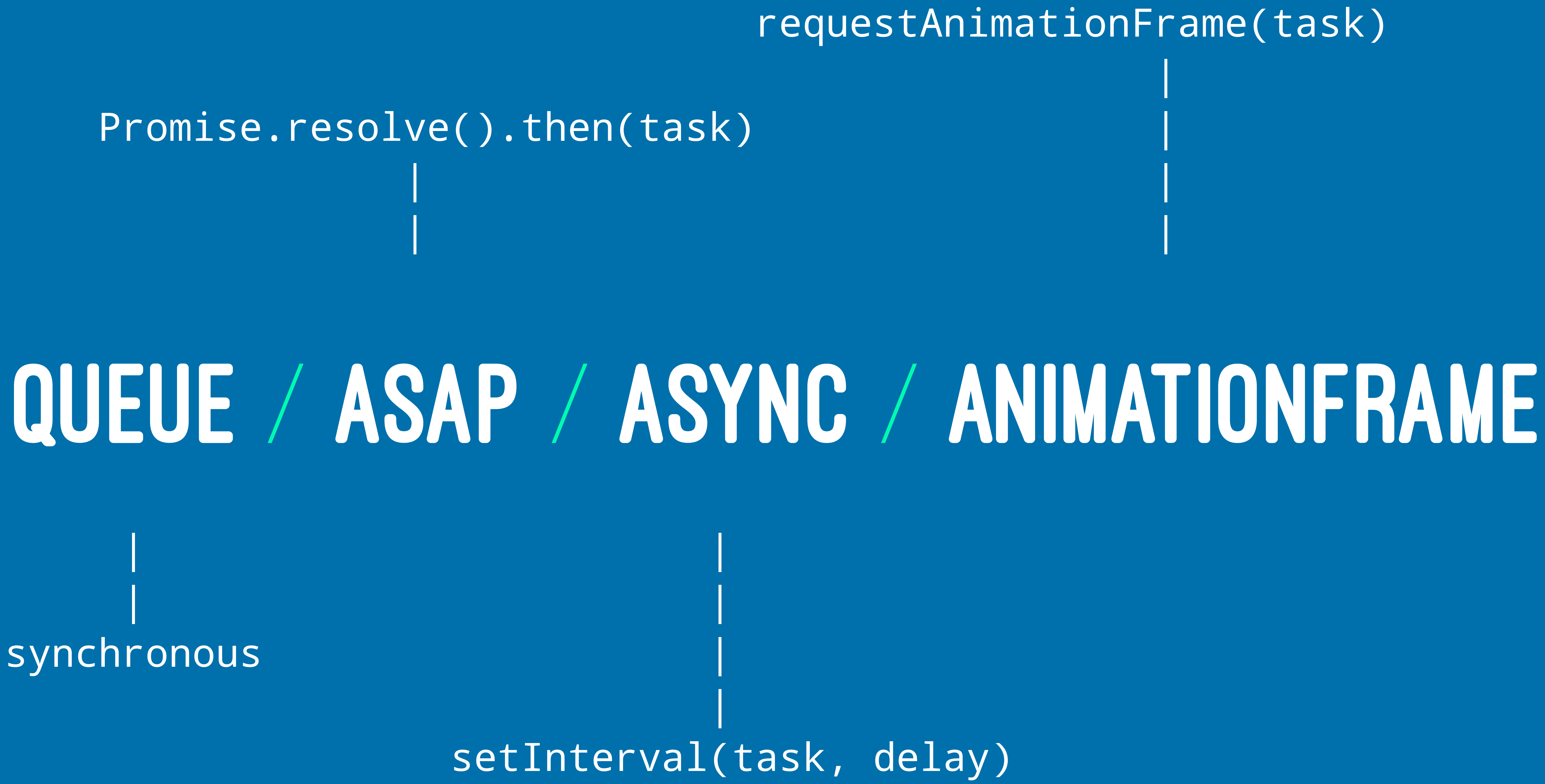
CONSOLE



```
queue
⟶ Subscribed!
asap
async
```

QUEUE / ASAP / ASYNC / ANIMATIONFRAME



QUEUE / ASAP / ASYNC / ANIMATIONFRAME

requestAnimationFrame(task)

Promise.resolve().then(task)

synchronous

setInterval(task, delay)

ORDER OF EVENT EMISSIONS

QUEUE / ASAP / ASYNC / ANIMATIONFRAME

ORDER OF EVENT EMISSIONS

QUEUE / ASAP / ASYNC / ANIMATIONFRAME

SPEED OF EVENT EMISSIONS

/ VIRTUALTIME /

VIRTUAL TIME **SCHEDULER**

(HANDS ON 🙌 EXAMPLE)

WE MADE IT 🙌

› DISASSEMBLE

TAKE THINGS APART TO UNDERSTAND
WHAT'S GOING ON

REINVENT

BUILD YOUR OWN VERSION

LEARN

BUILD MEANS LEARN

SHARE

TELL OTHERS WHAT YOU DID

DISASSEMBLE / REINVENT / LEARN / SHARE

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THANK YOU 🙏

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