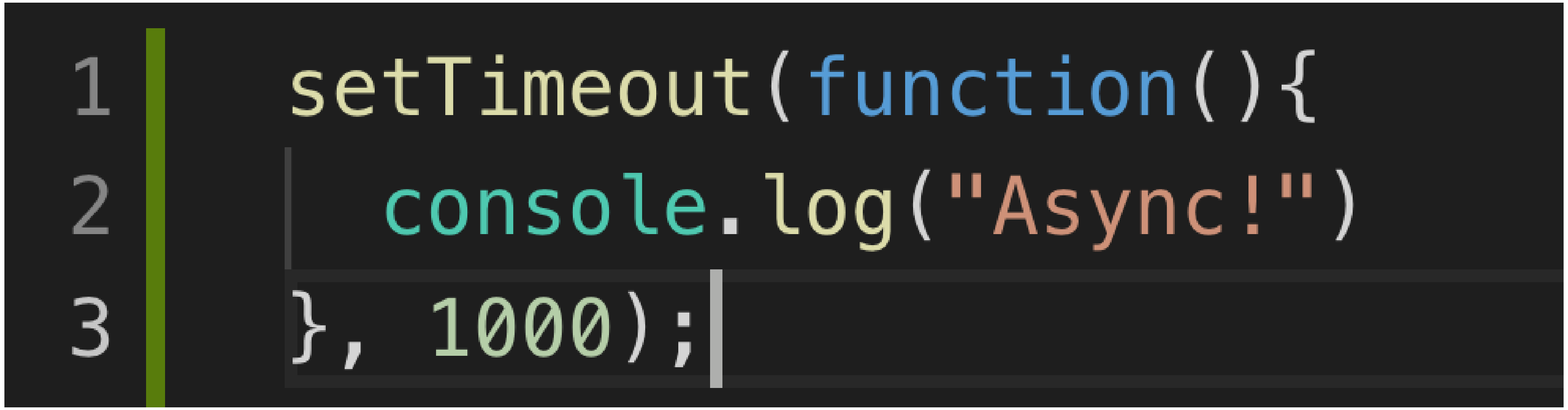
Essence of Reactive Programming

Speaker: NC Patro

You can follow me on ncpatro.com

What is Asynchronous Programming ?



```
setTimeout(function(){
  console.log("Async!")
}, 1000);
```

Evolution of Asynchronous Patterns

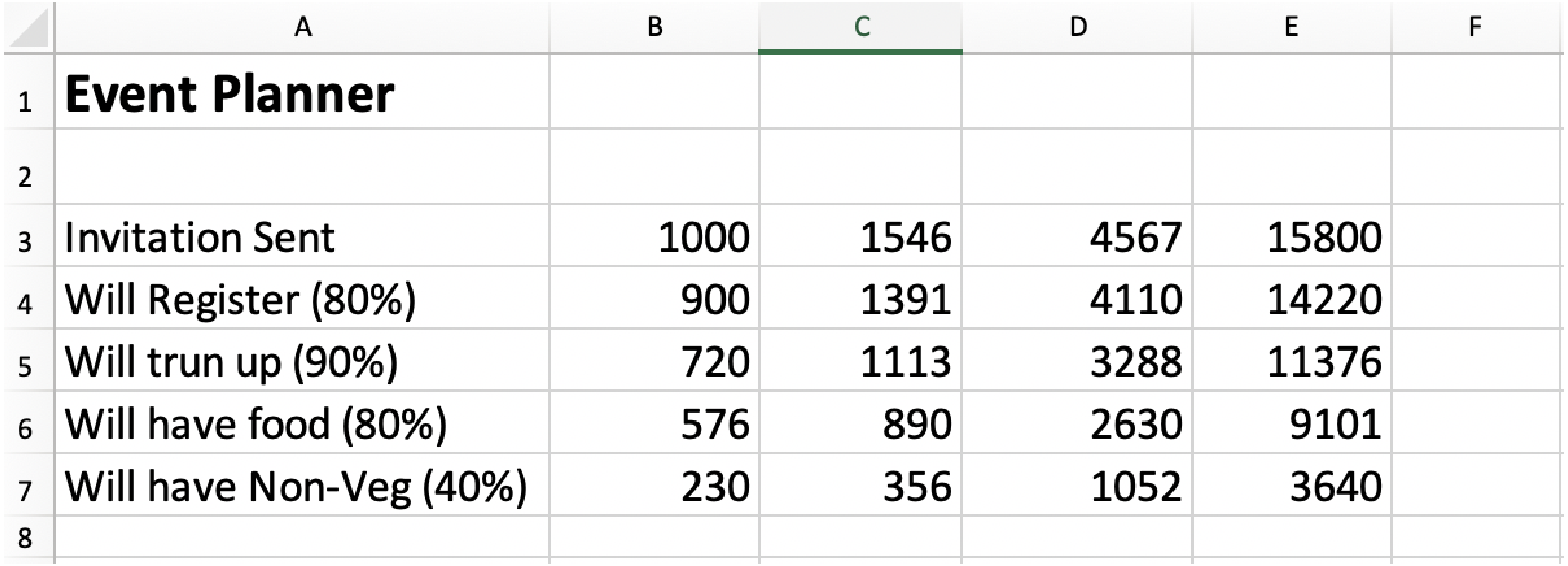
Callbacks

Promises

Generators

Observables

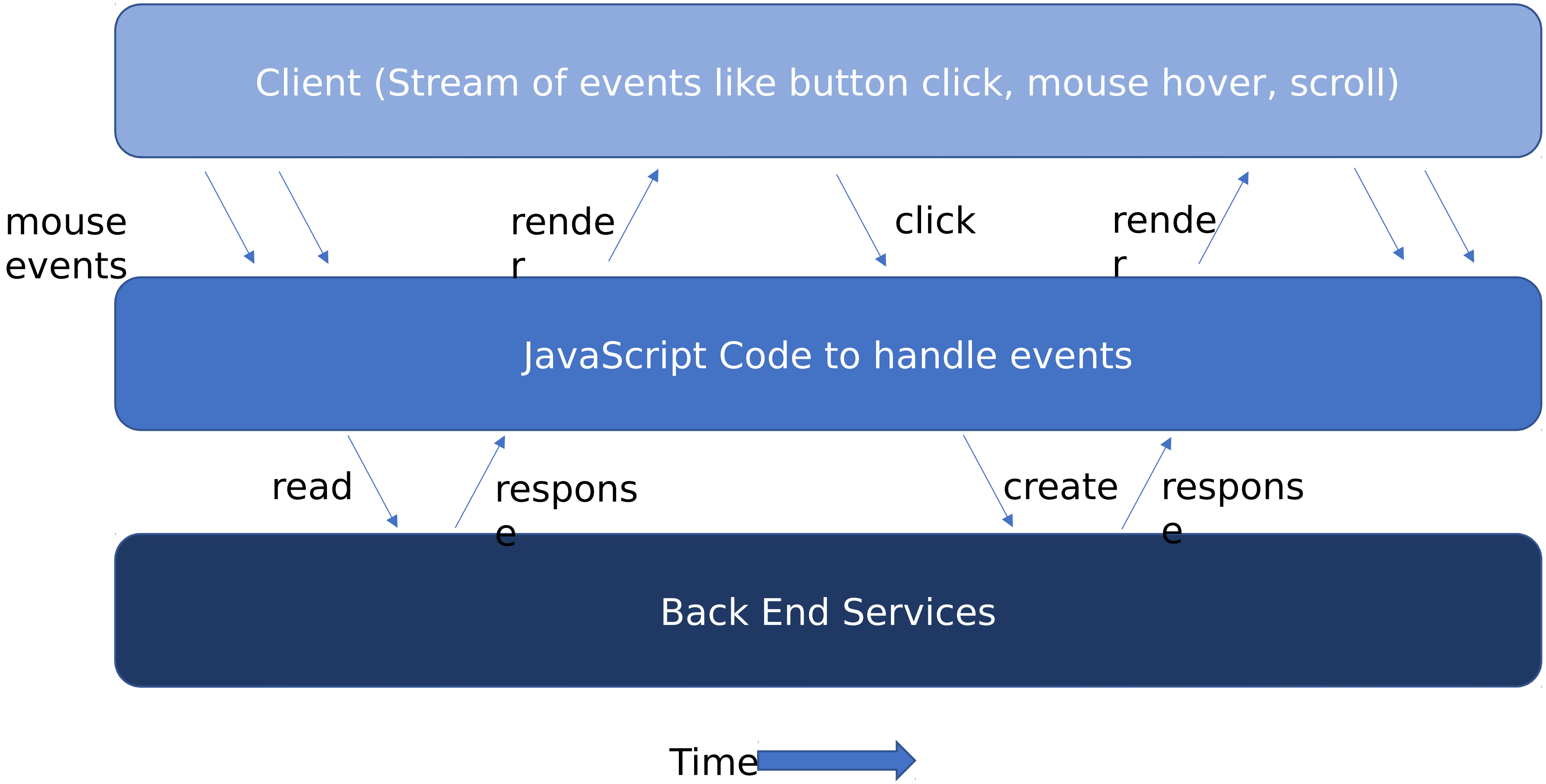
Let’s understand Reactive Programming



	A	B	C	D	E	F
1	**Event Planner**					
2						
3	Invitation Sent	1000	1546	4567	15800	
4	Will Register (80%)	900	1391	4110	14220	
5	Will trun up (90%)	720	1113	3288	11376	
6	Will have food (80%)	576	890	2630	9101	
7	Will have Non-Veg (40%)	230	356	1052	3640	
8						

Reactive Programming is a pattern
oriented around data streams
and the propagation of changes.
(source: wiki)

Application of Reactive Pattern


Client (Stream of events like button click, mouse hover, scroll)
mouse events
rende r
click
rende r
JavaScript Code to handle events
read
respons e
create
respons e
Back End Services
Time

Reactive Extensions

An API for asynchronous programming
with observable streams

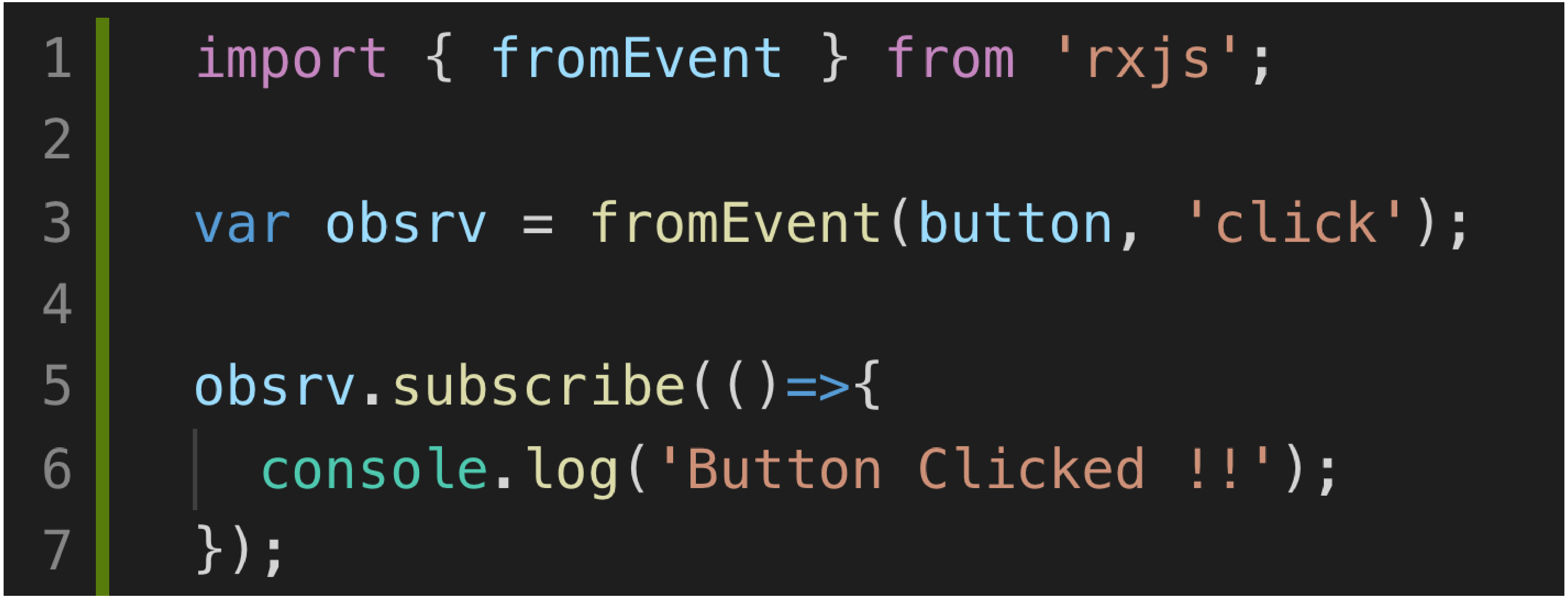
RxJS is the JavaScript library of ReactiveX

ReactiveX is based on Observer Pattern

Observer Pattern is a design pattern in which an object (called subject), maintains a list of its dependents, called observers, and notifies them automatically of any state changes.

(source: wiki)

Let’s Code

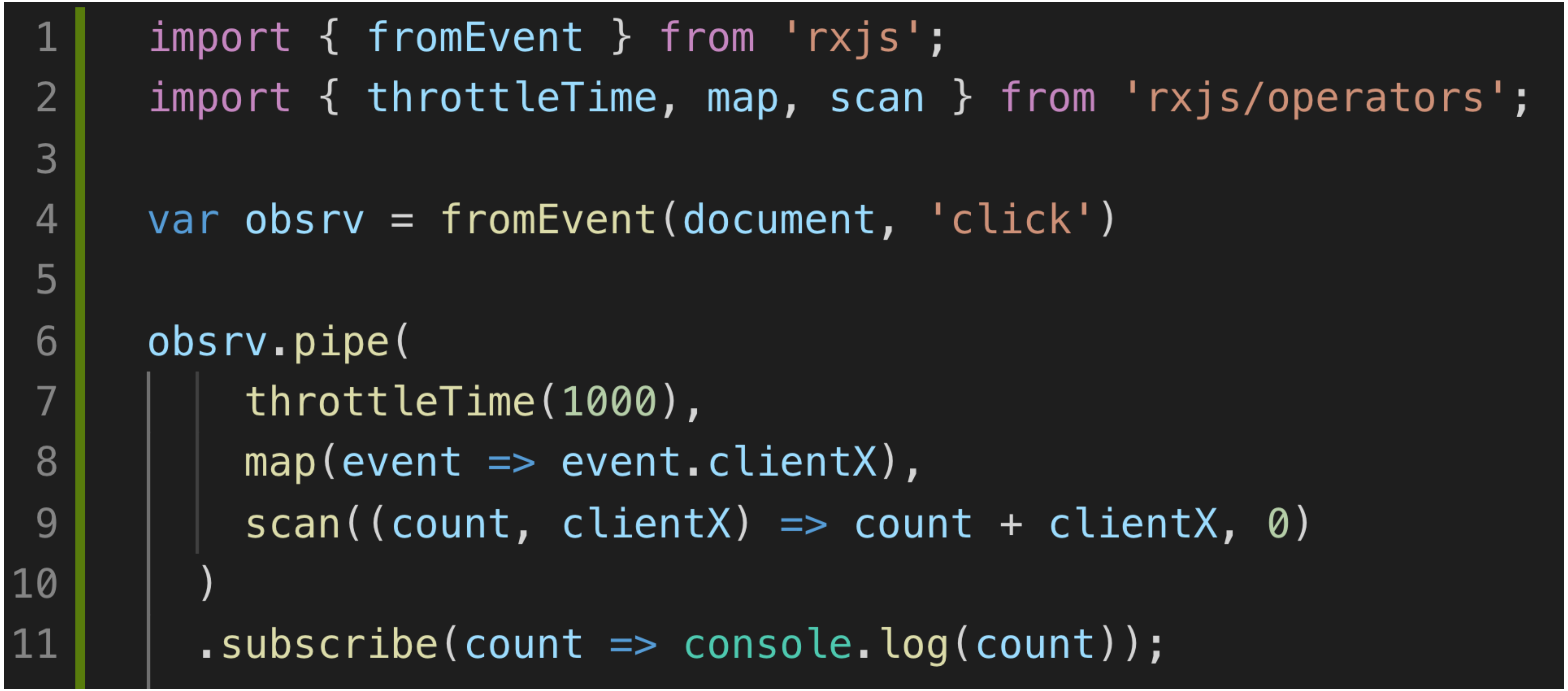


```
import { fromEvent } from 'rxjs';

var obsrv = fromEvent(button, 'click');

obsrv.subscribe(()=>{
  console.log('Button Clicked !!');
});
```

Let’s Code more !

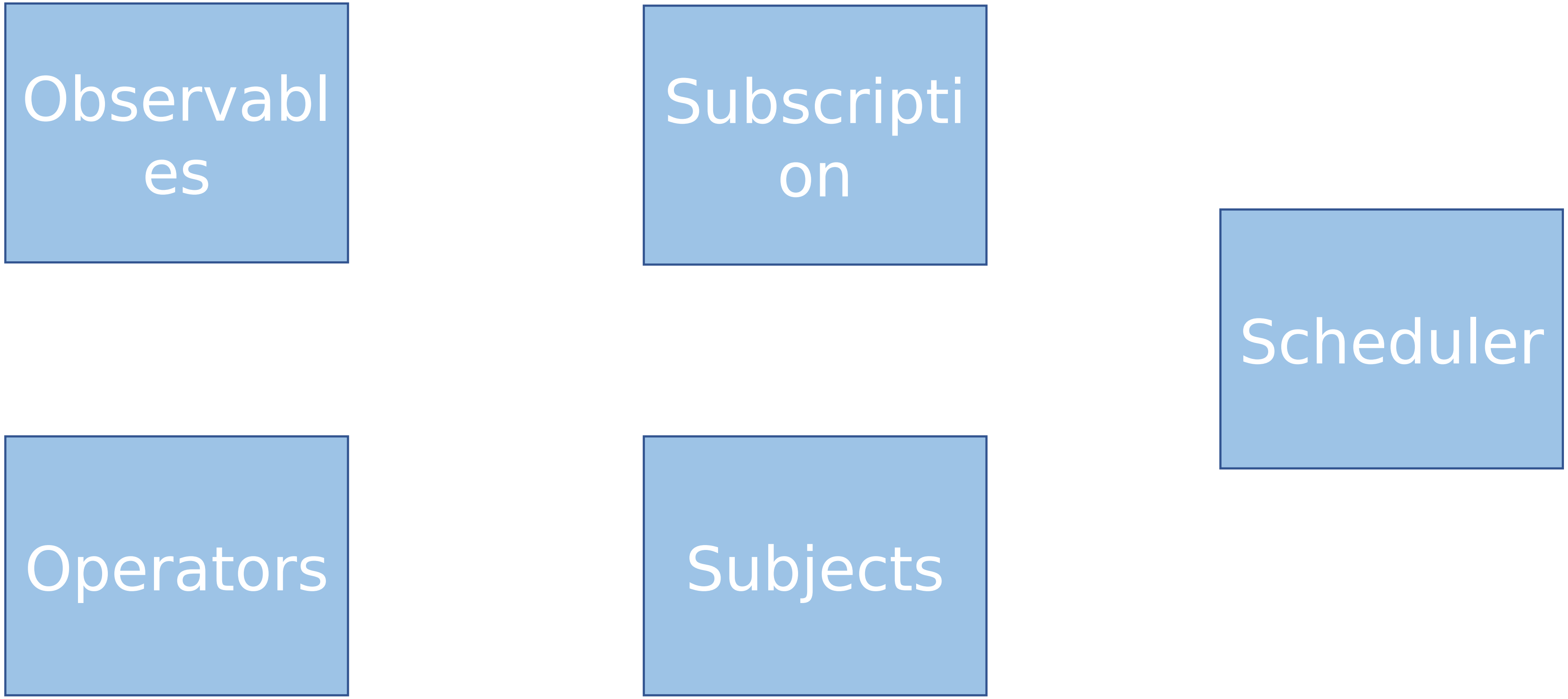


```
import { fromEvent } from 'rxjs';
import { throttleTime, map, scan } from 'rxjs/operators';

var obsrv = fromEvent(document, 'click')

obsrv.pipe(
    throttleTime(1000),
    map(event => event.clientX),
    scan((count, clientX) => count + clientX, 0)
  )
  .subscribe(count => console.log(count));
```

Building Blocks of RxJs



Observables

Subscription

Scheduler

Operators

Subjects

Resources to keep learning

- https://rxjs-dev.firebaseapp.com
- http://reactivex.io
- https://rxmarbles.com

Thank You