

# RxJS Operators

1. Pipe  $\rightarrow$  Function that takes an observable as its input and return another Observable

2. Filter  $\rightarrow$  Filter source observable before subscribe

3. Tap  $\rightarrow$  perform other side-effects / different actions without modify the data stream.

Eg  $\rightarrow$  `obs = new Observable((observer)  $\Rightarrow$  {  
 observer.next(1);  
 observer.next(2);  
 observer.next(3);  
 observer.complete();  
}).pipe(`

`tap (data  $\Rightarrow$  console.log('tap' + data))`

`filter (data  $\Rightarrow$  data > 2),`

`tap (data  $\Rightarrow$  console.log('filter' + data))`

`map (val  $\Rightarrow$  return val as no * 2)`

We use pipe to chain the tap operator which just logs value of source observable to console.

We use filter, to filter out observable according to our requirement.

4. Take  $\rightarrow$  emits only the first count values by the source observable mentioned in take operator.

5. Take Until  $\rightarrow$  use for unsubscribe observable until not getting response. Can use for complete and destroy observable after subscribe.

6. Take Last  $\rightarrow$  emits only last count values.

7. Take While  $\rightarrow$  emit value if condition is true.



Eg  $\rightarrow$  obs = of (1, 2, 3, 4, 5, 6).pipe (

```
take while (val  $\Rightarrow$  val < 3, true),  
takeLast(3),  
take(2),  
takeUntil (Subject)  
);
```

Output  $\rightarrow$

1, 2	(take while)
4, 5, 6	(take last)
1, 2	(take)

8. retry when  $\Rightarrow$  retry with condition.  
If you want to retry after few seconds, not instantly then use retry when

Foreg - If getting 404 error, then you should retry

9. From Event - handling DOM events using target Element and event type.

10. debounce Time  $\rightarrow$  delays the value emitted by source.

11. distinct Until Changed  $\rightarrow$  emits all items that are distinct from previous items

12. Subject - Subject does not return the current value of subscription.

It triggers only on .next(value) call and return output.

Eg  $\rightarrow$  `var Subject = new Subject();`  
`Subject.next(1);`

// will not output any value

`Subject.subscribe ( {`  
`next: (v)  $\Rightarrow$  conse.log (v);`  
`})`

`Subject.next(1);`

// Logs 1

13. behaviour Subject  $\Rightarrow$  It will return current value or initial value on subscription.

14. asyncSubject  $\Rightarrow$  emits last value on completion.

15. Concat  $\Rightarrow$  join multiple Observable and emits one by one

Eg  $\Rightarrow$  Concat (  
    of (1, 2, 3), of (4, 5, 6), )  
    .subscribe (console.log);

// 1, 2, 3, 4, 5, 6

16. Share Reply  $\Rightarrow$  use with async, avoid duplicate request

17. Zip  $\Rightarrow$  pass 2 observables using zip. when change will be detected in 2 observables then only subscription will emit value



Use Case - When you have to make several http requests at same time and need to complete all before emitting value.

Eg → `const sourceOne = of('Deepa');`  
`const sourceTwo = of('Jyoti');`

```
const eg = zip(  
  sourceOne,
```

```
  sourceTwo, pipe(delay(1000)),  
  );
```

```
const subscribe = eg.subscribe(  
  val ⇒ console.log(val));
```

18. `ForkJoin` → Wait for all observables to complete and then emit an array of last emitted values.

Join multiple Observable to a single one.

If any Observable came through error, `ForkJoin` will not return any value.

# Flattening Operators

while using multiple observables  
into nested Subscription

1) Merge Map  $\rightarrow$  Simultaneously  
executes observables.

- \* Sequence of execution not guaranteed
- \* If any observable throw error,  
It will emit other values.

2) Concat Map  $\Rightarrow$  does not  
subscribe to next Observable  
until previous completes

- \* Execute one by one
- \* sequence of execution guaranteed.

3) exhaust Map  $\Rightarrow$  map to inner  
observable and ignore other until  
observable complete

4) Switch Map  $\Rightarrow$  try to resubscribe  
observable by cancelling previous