



COMBINE |

STRV

TOMÁŠ ČEJKA (CJ)

- <https://github.com/strvcom/ios-course-mendelu-2021>
- iOS lead dev @ strv
- <https://www.strv.com/events>
- Questions?!



COMBINE

- What is FRP?
- Combine
- Operators
- Subjects

FRP

01

FRP

- Functional

FRP

- Functional
- Declarative

FRP

- Functional
- Declarative
- Input

FRP

- Functional
- Declarative
- Input
- Async methods

LIVE CODING

STRV

COMBINE

02

COMBINE

- Value over time

COMBINE

- Value over time
- Observing

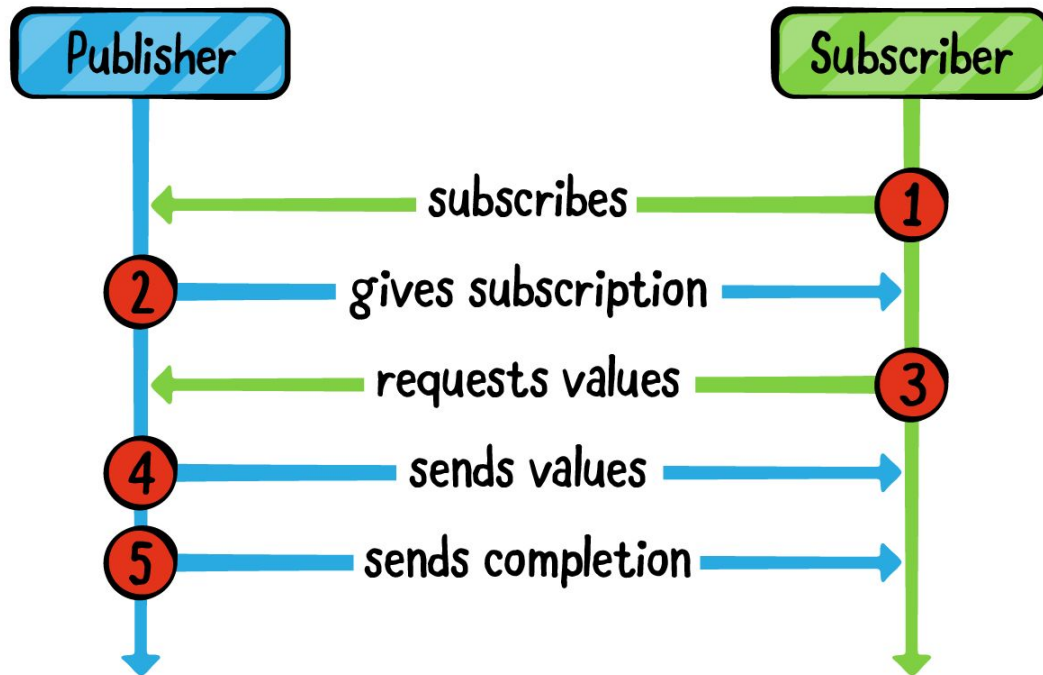
COMBINE

- Value over time
- Observing
- Binding

COMBINE

- Value over time
- Observing
- Binding
- RxSwift, ReactiveSwift

COMBINE



PUBLISHER

```
// MARK: Publisher protocol

public protocol Publisher {
    // 1 Value type
    associatedtype Output

    // 2 Failure type (Never)
    associatedtype Failure : Error

    // 4 Implementation of subscribe call this method to attach subscriber
    func receive<S>(subscriber: S)
    where S: Subscriber,
           Self.Failure == S.Failure,
           Self.Output == S.Input
}

extension Publisher {
    // 3 Subscriber calls this method to attach to a publisher
    public func subscribe<S>(_ subscriber: S)
    where S : Subscriber,
           Self.Failure == S.Failure,
           Self.Output == S.Input
}
```

SUBSCRIBER

```
// MARK: Subscriber protocol

public protocol Subscriber: CustomCombineIdentifierConvertible {
    // Value type
    associatedtype Input

    // Failure type
    associatedtype Failure: Error

    // Receive subscription from publisher
    func receive(subscription: Subscription)

    // Receive value from publisher
    func receive(_ input: Self.Input) -> Subscribers.Demand

    // Receive from publisher information that publisher finishes sending values
    func receive(completion: Subscribers.Completion<Self.Failure>)
```

SUBSCRIPTION

- Limit values
- Cancellable
- Sink
- Assign

LIFECYCLE

- Completion
- Cancellation

LIVE CODING

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PUBLISHERS

03

PUBLISHERS

- Just

PUBLISHERS

- Just
- Fail

PUBLISHERS

- Just
- Fail
- Empty

PUBLISHERS

- Just
- Fail
- Empty
- Sequence

PUBLISHERS

- Just
- Fail
- Empty
- Sequence
- Future

PUBLISHERS

- Just
- Fail
- Empty
- Sequence
- Future
- AnyPublisher

PUBLISHERS

- NotificationCenter.publisher
- URLSession.dataTaskPublisher
- SHA256Digest.publisher

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OPERATORS

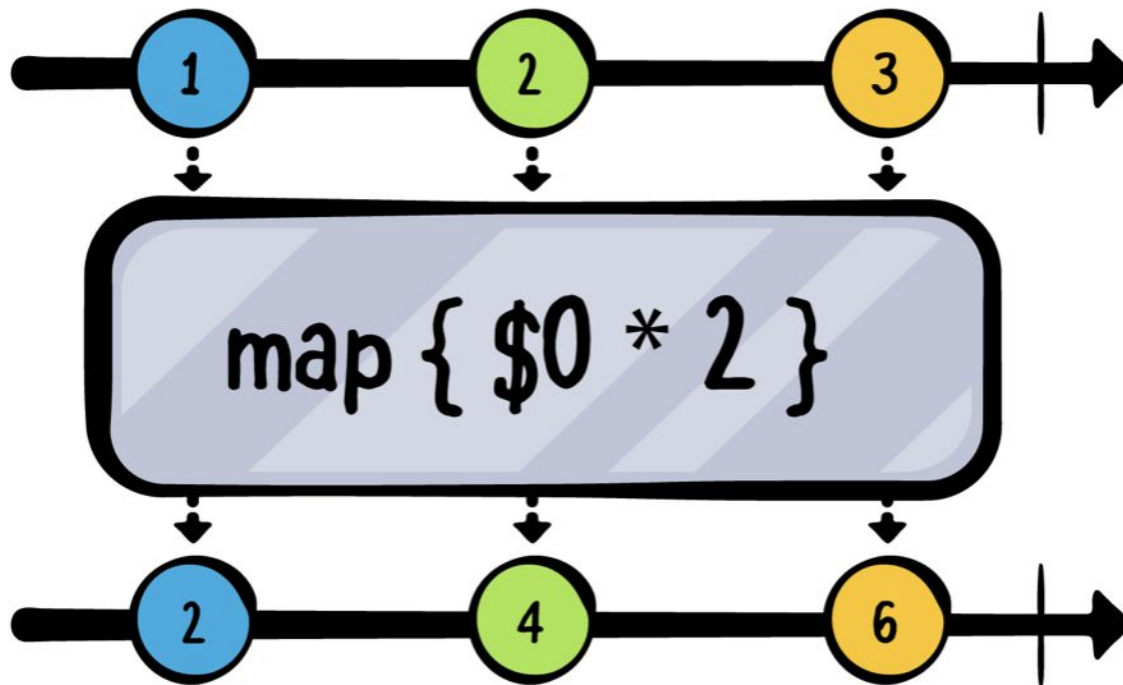
04

OPERATORS

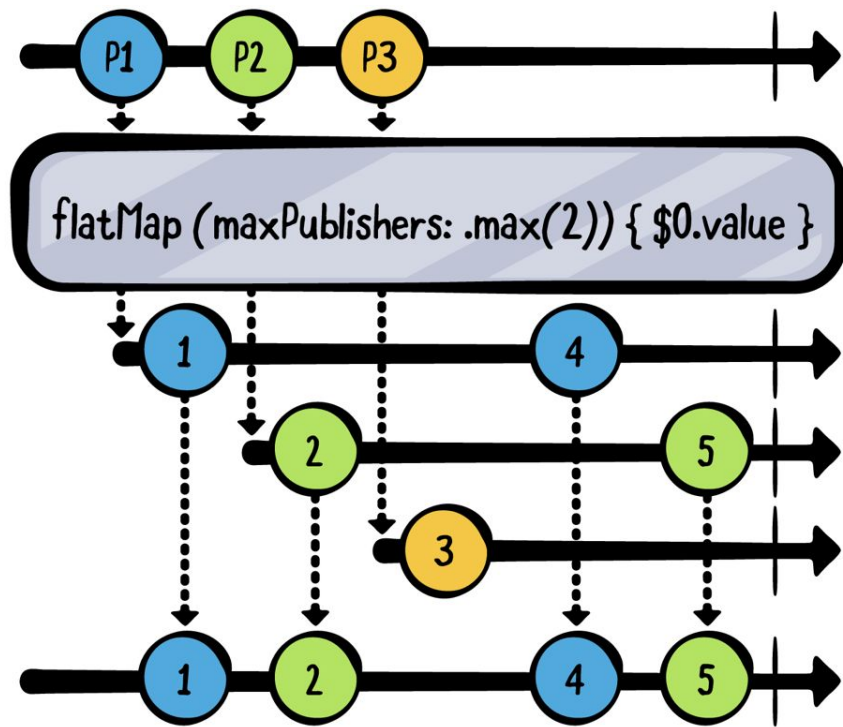
```
extension Publishers {  
    struct Map<Upstream: Publisher, Output>: Publisher {  
        typealias Failure = Upstream.Failure  
  
        let upstream: Upstream  
        let transform: (Upstream.Output) -> Output  
    }  
}
```

```
// Operator Construction  
extension Publisher {  
    func map<T>(_ transform: @escaping (Output) -> T) -> Publishers.Map<Self, T> {  
        return Publishers.Map(upstream: self, transform: transform)  
    }  
}
```

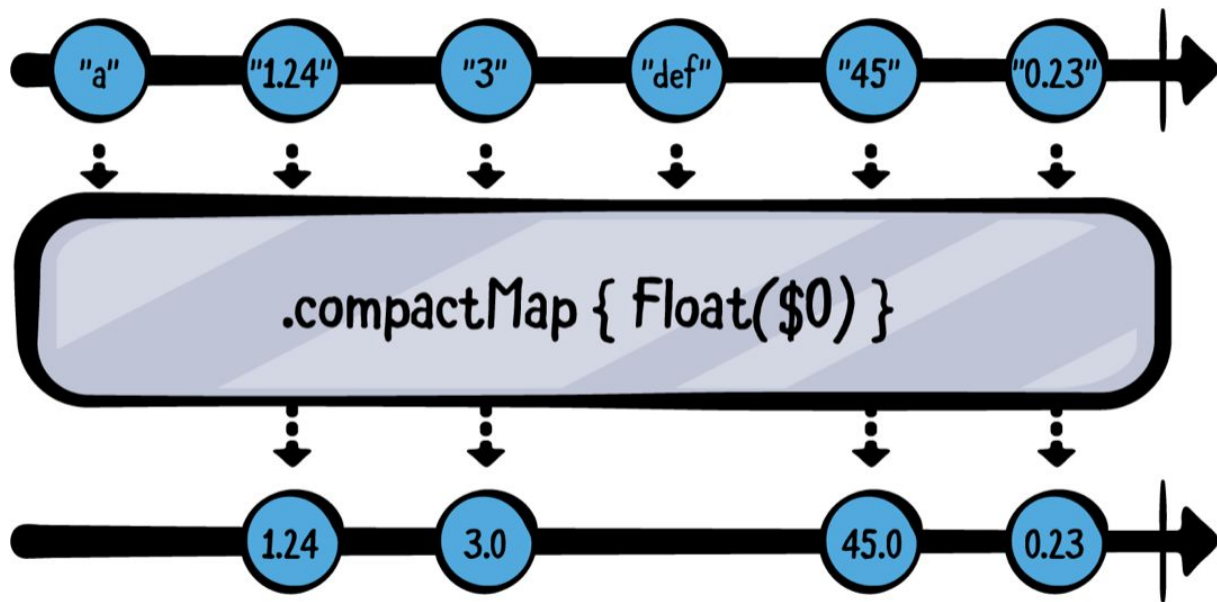

MAP



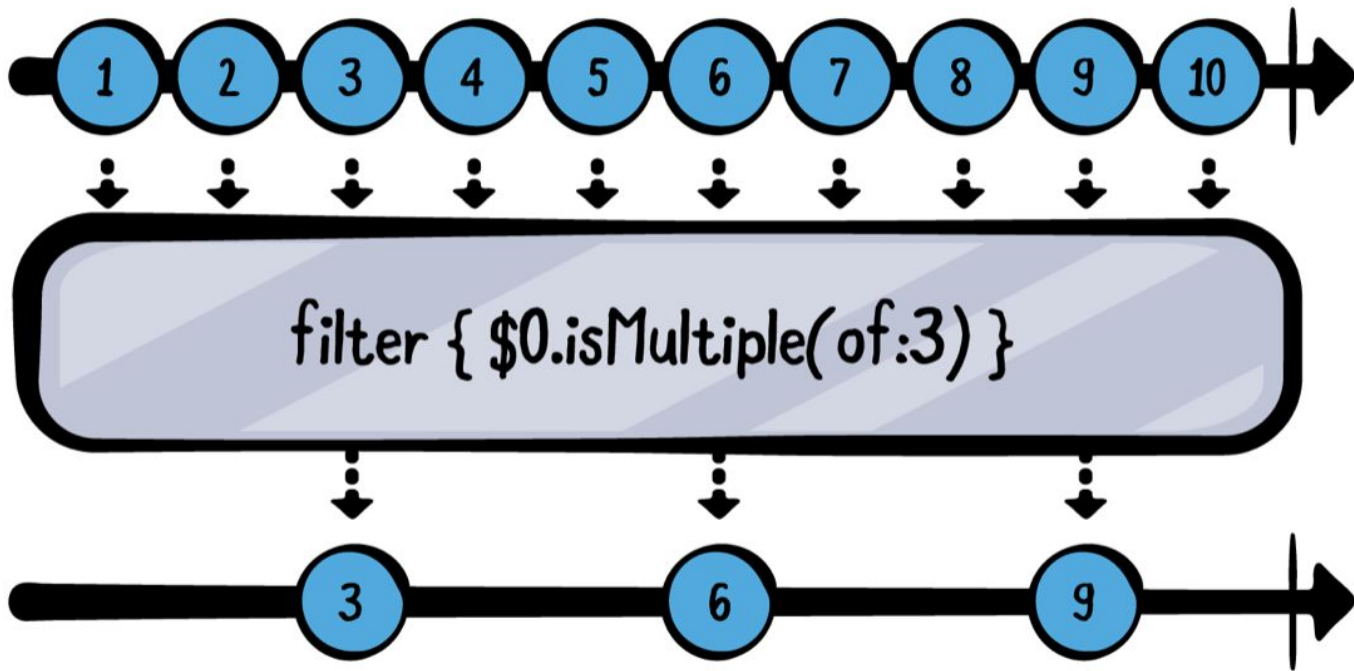
FLATMAP



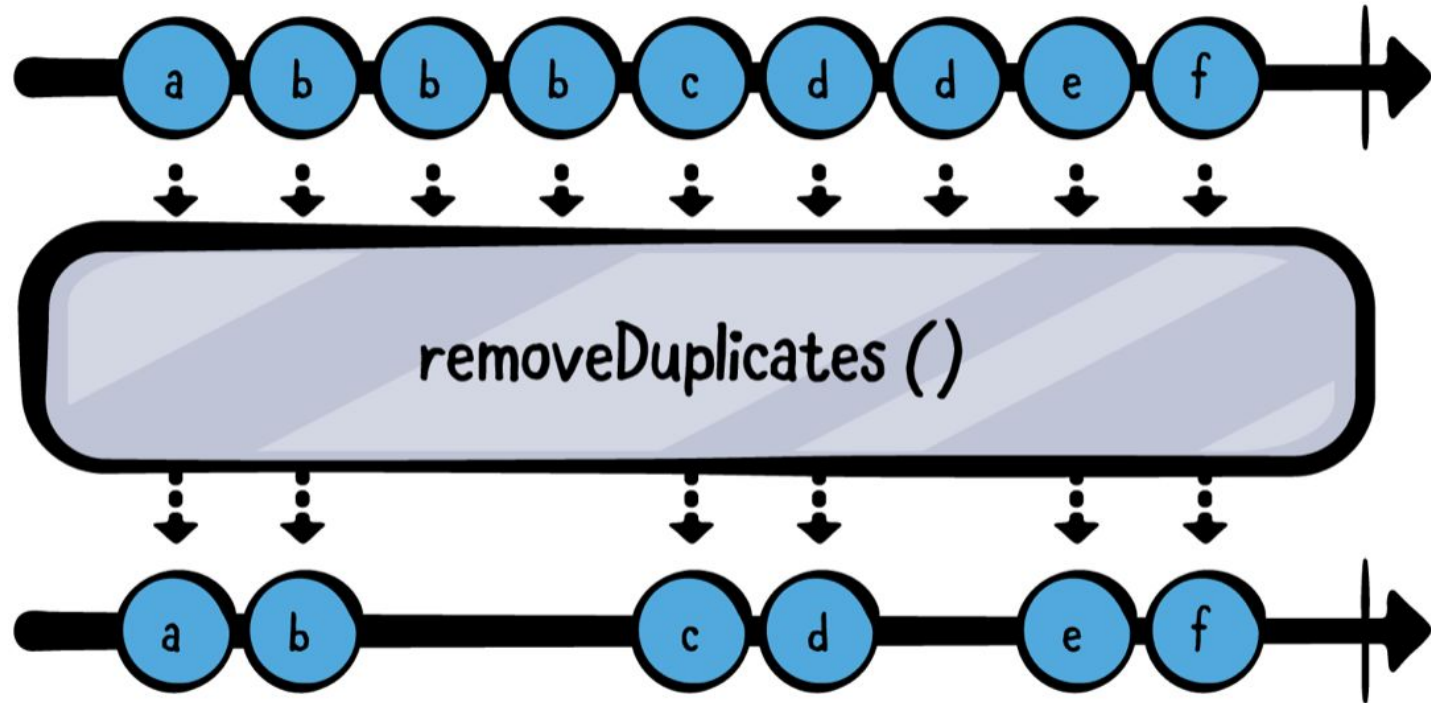
COMPACTMAP



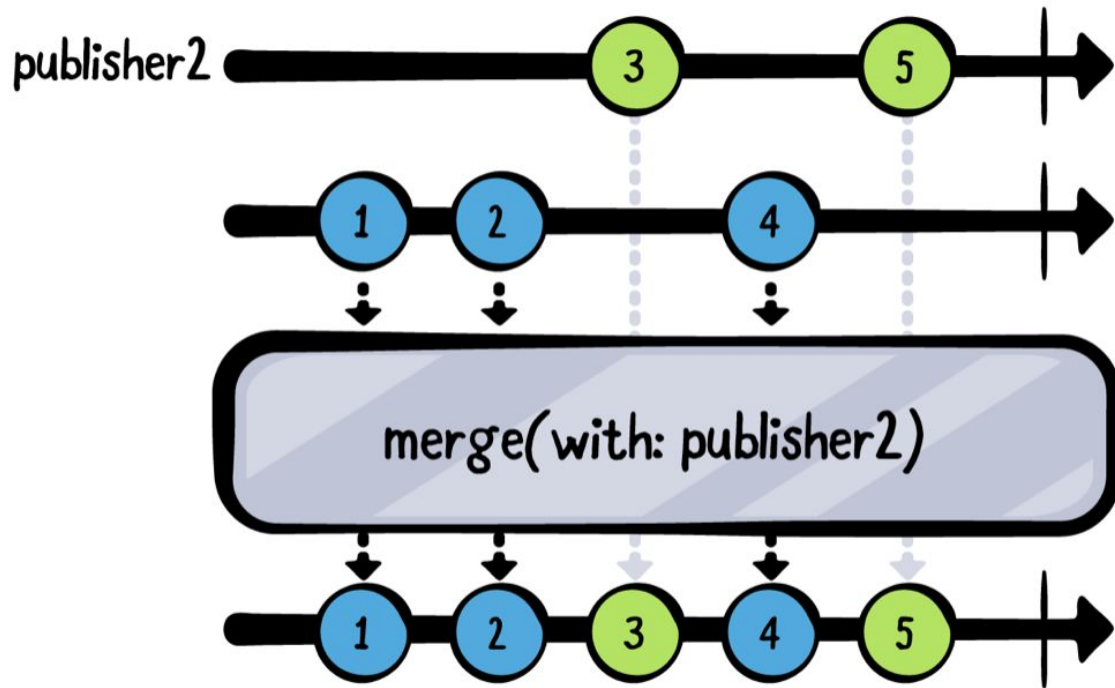
FILTER



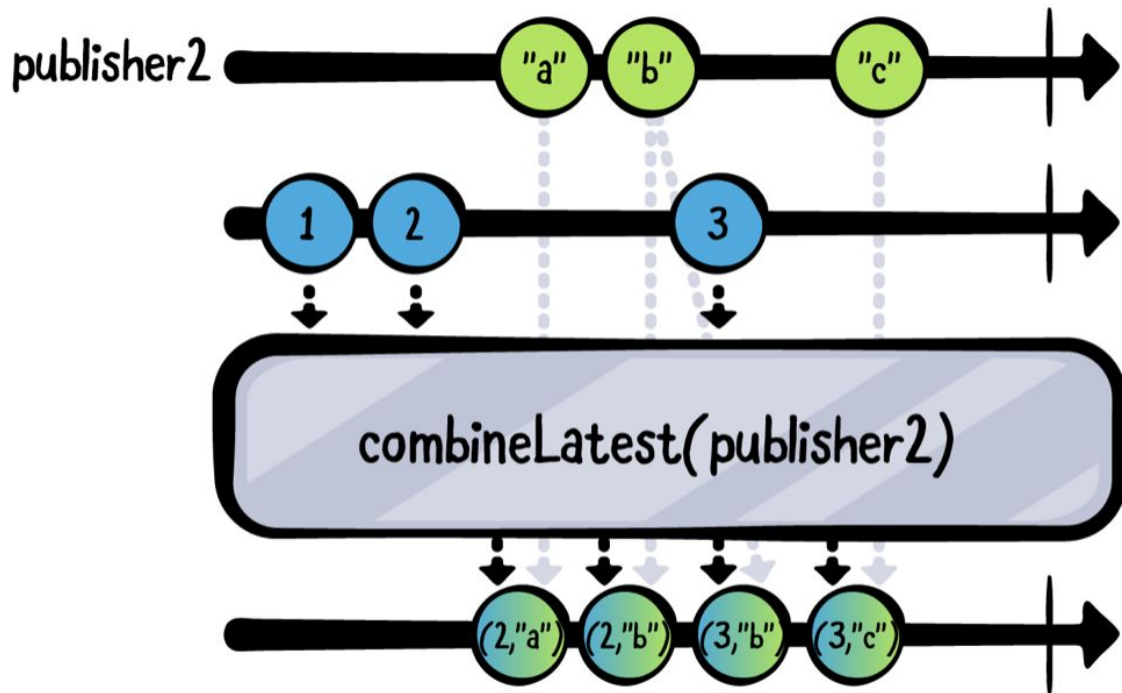
REMOVEDUPLICATES



MERGE



COMBINELATEST



OTHERS

- Retry
- Print
- Delay

LIVE CODING

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SUBJECTS

05

SUBJECTS

- Publisher from value
- Allows sending value into the stream

SUBJECTS

- PassthroughSubject
- CurrentValueSubject
- @Published

LIVE CODING

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SOURCES

05

SOURCES

- [Online combine book](#)
- [WWDC 2019 videos](#)
- [Hackingwithswift](#)
- [Raywenderlich operators](#)

QUESTIONS

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THX!

Tomáš Čejka / tomas.cejka@strv.com

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PRESENTATION TITLE WITH TWO LINES

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PRESENTATION TITLE WITH TWO LINES

[Name][Surname], [Position] at STRV

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SECTION TITLE

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SECTION TITLE

01

SECTION TITLE WITH TWO LINES

01

TEXT SLIDES

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SLIDE TITLE

- This is the most basic text content slide int, or use a full sentence to highlight something
- Go straight to the point, or use a full sentence to highlight something like this
- Use only one-line texts, beware of splitting text into two rows
- Don't overload text screen too much, 6-8 points are enough
 - You can also use second level
 - Describe more stuff more in detail if necessary

SLIDE TITLE

- Don't let this text overlay your image
- Always choose the image wisely
- Try to not split your point into two rows
- 6-8 points are enough



1 x 1

SLIDE TITLE

75%

Client leads increase

34K

Daily Active Users

3

Total Devs (mo)

SLIDE TITLE

You can also start your content screen with a paragraph before you introduce a couple of bullet points. But stick with 2-3 rows top here so the text isn't too long.

- Now you can use bullet point list
- Points out some highlights
- And use 3-5 points max.

SLIDE TITLE

First section subtitle

- Use this in case you need to have some sections
- Keep section titles short and clear
- 2-3 points are enough

Second section subtitle

- You can also use 2-3 points in this section
- This slide is nicely structured
- With 6 points in total

SLIDE TITLE

First section subtitle

- You place two list next to each other
- Make sure there is not too much text
- It does not look that pretty
- Only use this when necessary
- Otherwise choose a simple option

Second section subtitle

- You place two list next to each other
- Make sure there is not too much text
- It does not look that pretty
- Only use this when necessary
- Otherwise choose a simple option

SLIDE TITLE

- Describe your code here
- I have no idea what this router shit means

```
1  Import { Router, Route } from 'react-router'
2  ReactDOM.render(
3    <Router>
4      <Route component={App} >
5        <Route path="/user" component={User} />
6        <Route path="/user/:id" component={User} />
7      </Route>
8    </Router>
9  )
```

SLIDE TITLE

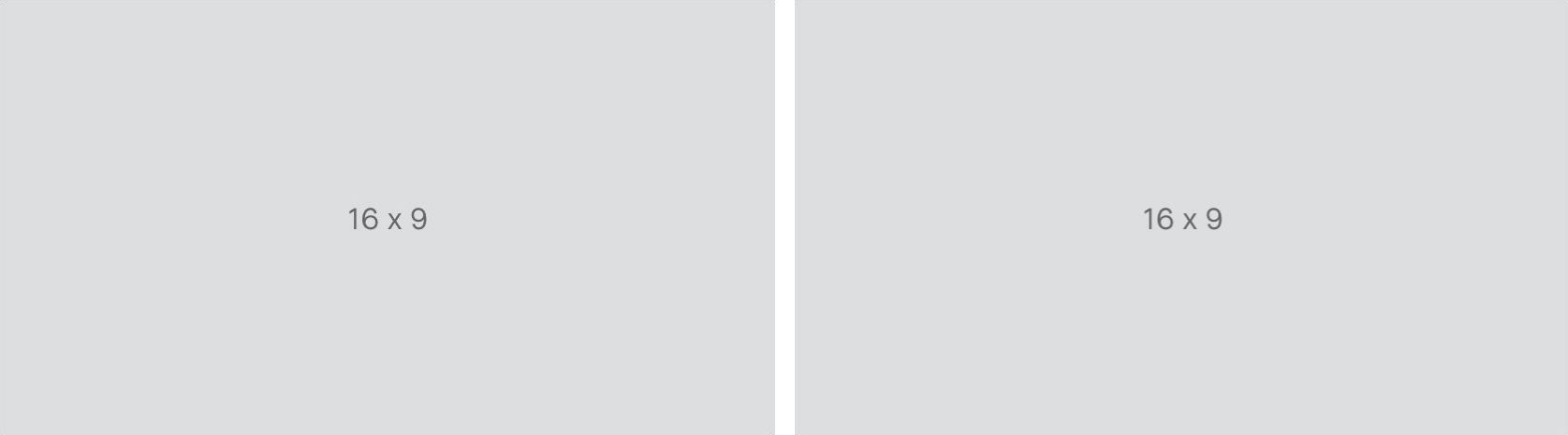
```
1 import React, { Component } from 'react'
2 import { connect } from 'react-redux'
3
4 class LineupList extends Component {
5   render() {
6     return (
7       <h1>LineupList</h1>
8     )
9   }
10 }
11
12 function select(state) {
13   return {
14     lineups: state.lineups
15   }
16 }
17
18 export default connect(select)(LineupList)
```

```
1 import React, { Component } from 'react'
2 import { connect } from 'react-redux'
3
4 @connect(
5   state => ({ lineups: state.lineups })
6 )
7 export default class LineupList extends Component {
8   render() {
9     return (
10       <h1>LineupList</h1>
11     )
12   }
13 }
```

CONTENT SLIDES

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16 x 9 / 1 x 1



16 x 9

16 x 9



16 x 9

16 x 9

16 x 9





iPhone X - Black
364 x 790 px



iPhone X - Black
364 x 790 px

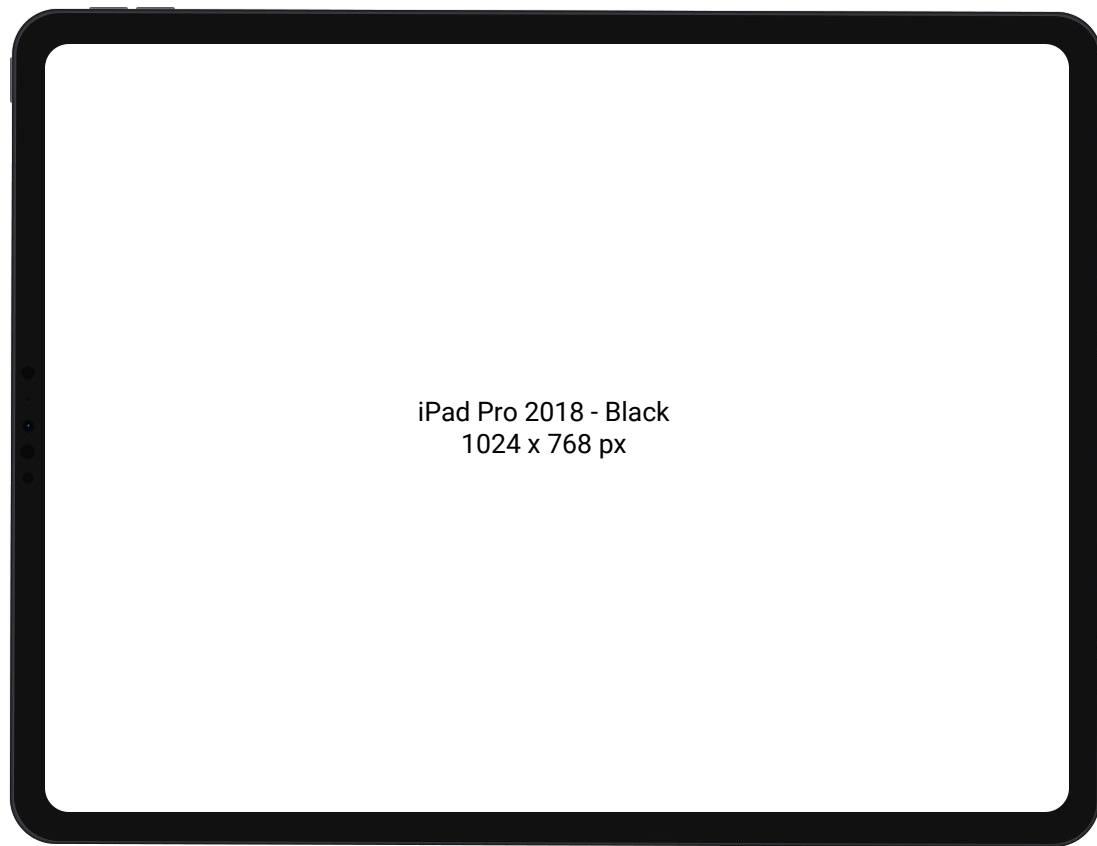




iPhone X - Silver
364 x 790 px

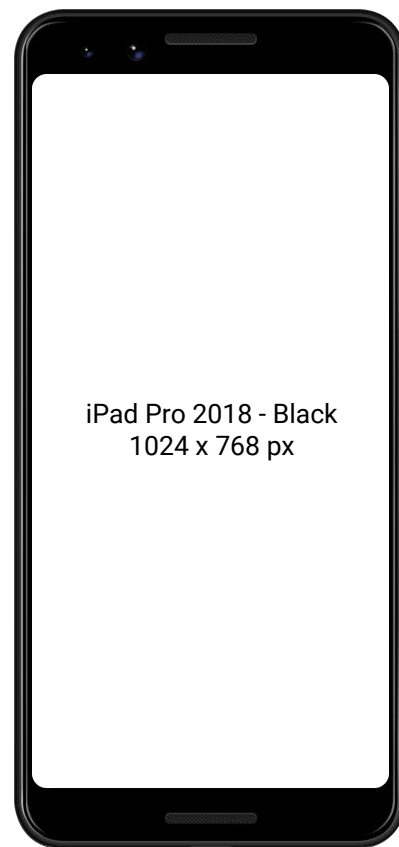


iPhone X - Silver
364 x 790 px













“Creativity is putting your
imagination to work, and it’s
produced the most extraordinary
Results in human culture.”

Ken Robinson, Designer at STRV

FINISH

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THANK YOU!

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THANK YOU!

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QUESTIONS

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ADDITIONAL SLIDES

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- Offices in the US and Europe
- More than 190 experts on our side

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ONE-LINE MESSAGE

ONE-LINE MESSAGE