

NICCOLÒ BORGIOLI

# FIGHT OF THE MOBILES

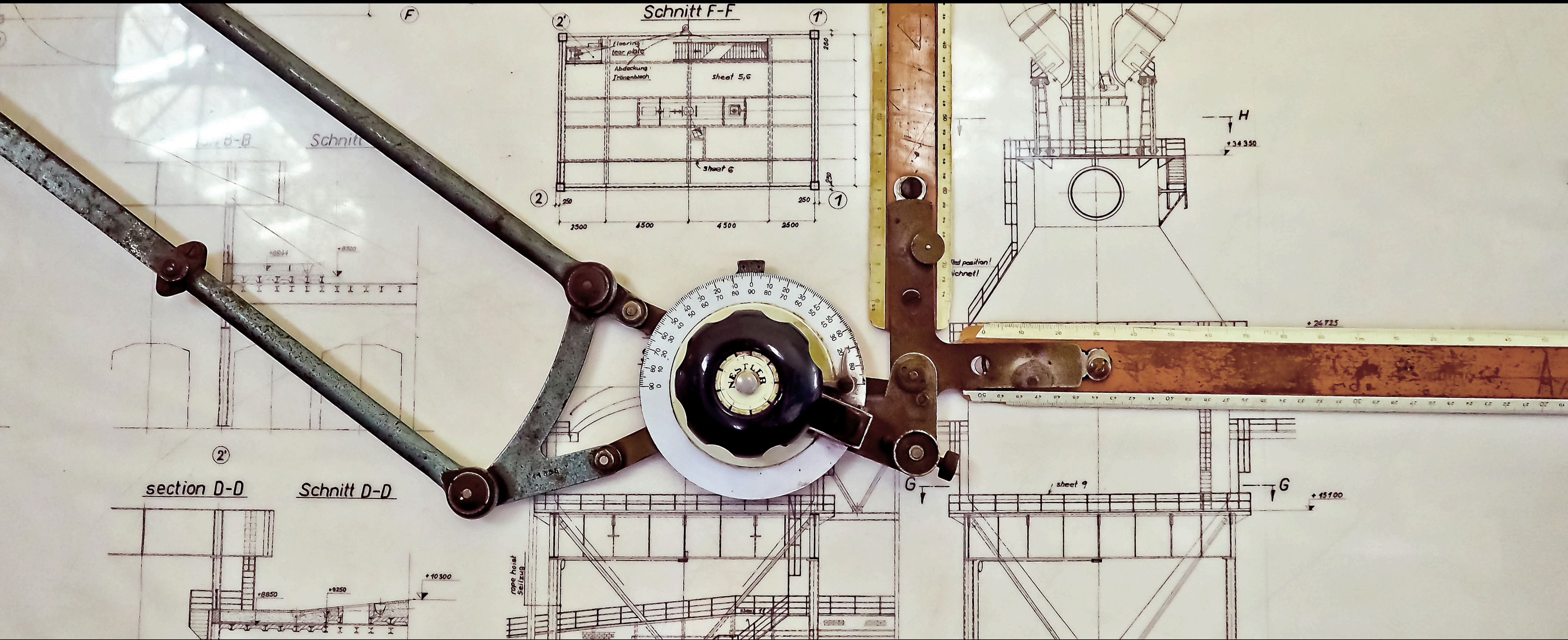
# TABLE OF CONTENTS

- Intro
  - Problems
  - Solution Candidates
  - Current State
- Solution
  - Test Cases & Design
  - Building
  - Conclusion



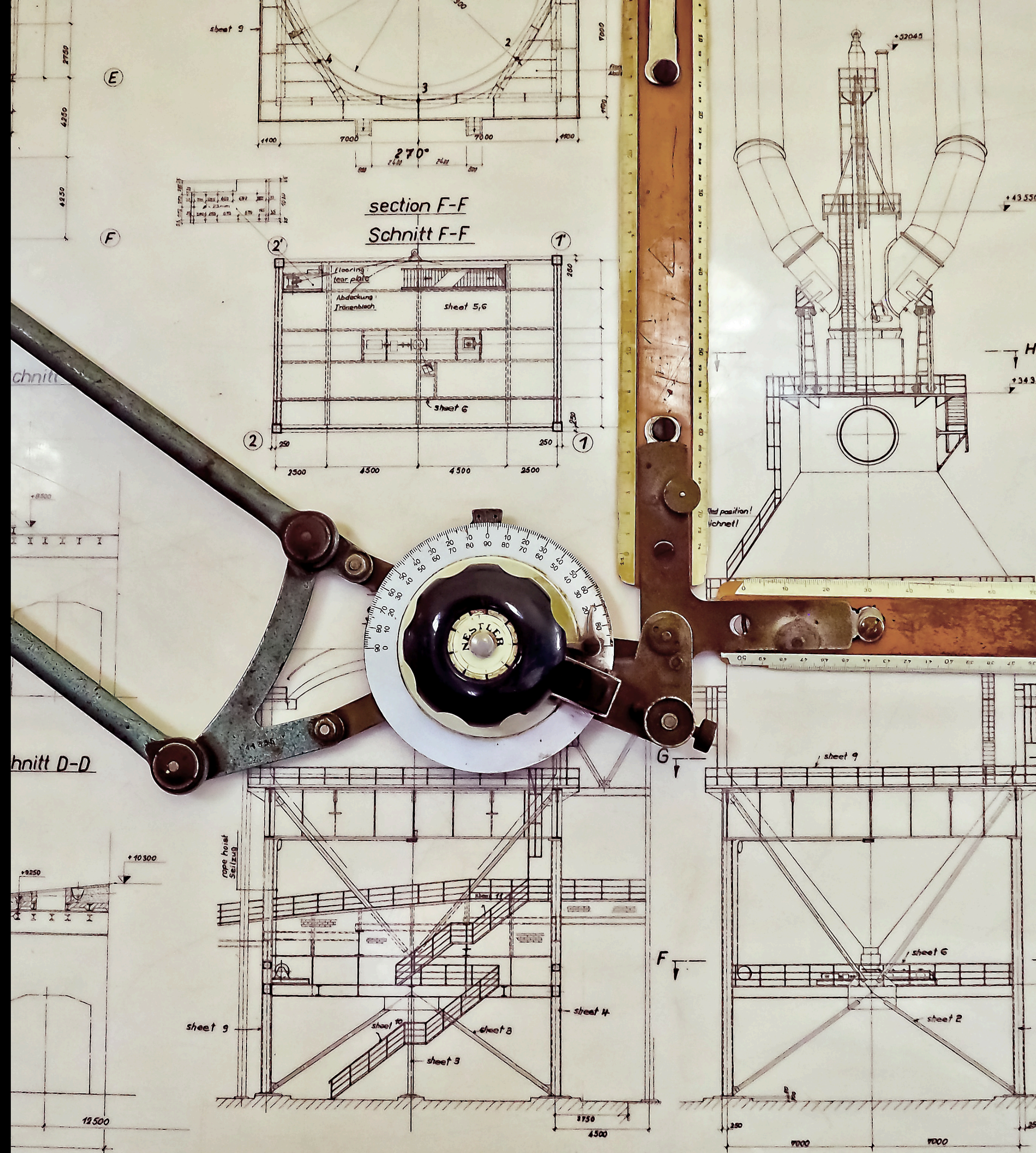
INTRO

# BUILDING A MOBILE APP IN 2018



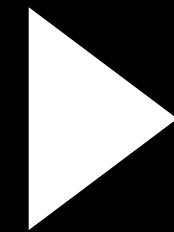
# THE PROBLEM WITH NATIVE

- 2 or more codebases
- Code redundancy
- Challenging pushing simultaneous updates
- Different expertise of devs



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- 2 or more codebases
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# THE SOLUTION: HYBRID / COMPILED APPS

- Code reusability
- Single codebase
- Ensuring a uniform experience across multiple platforms
- Same dev can develop both platforms

SOLUTIONS

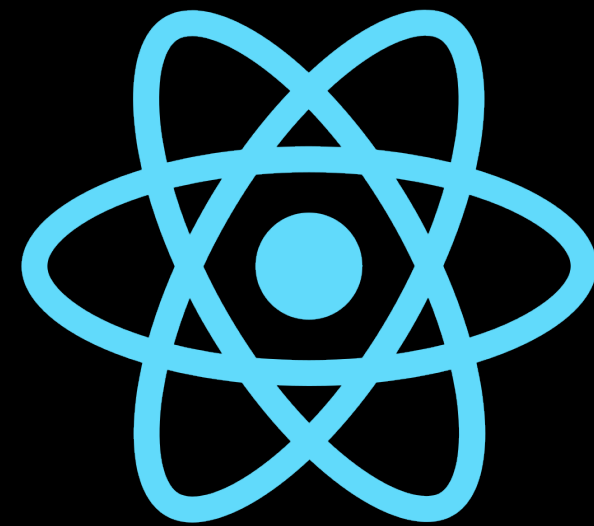


# SOLUTIONS

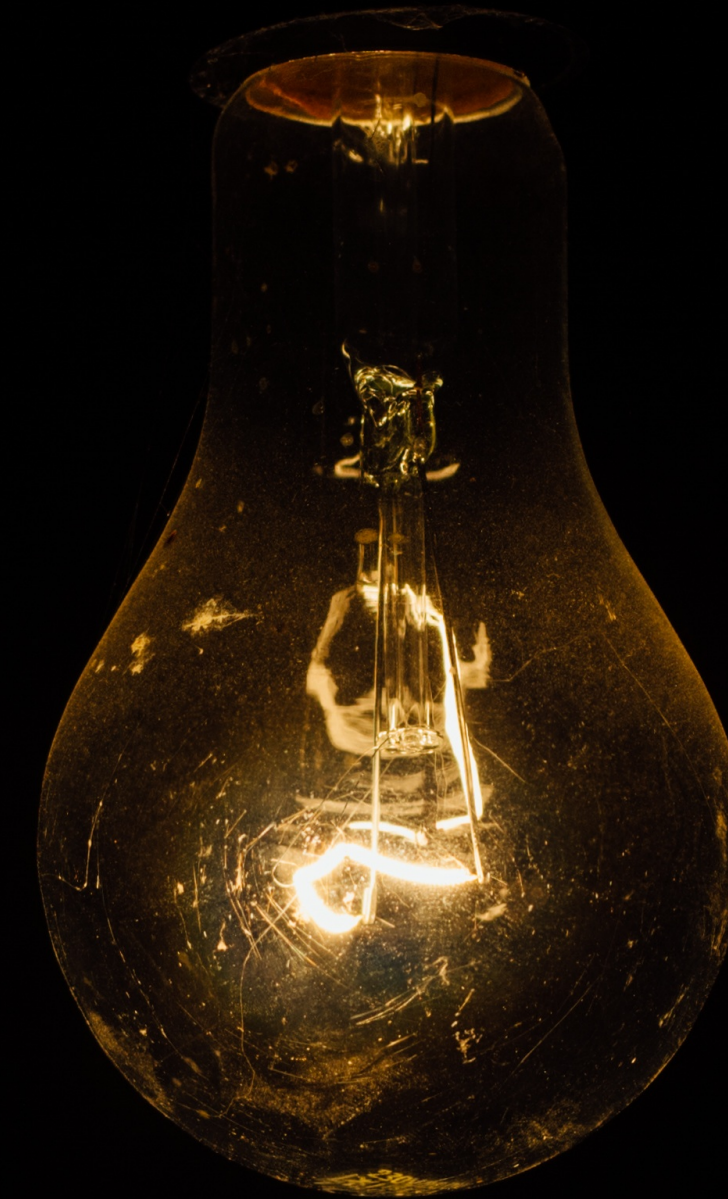
Flutter



React Native



Cordova



# HISTORY





# FLUTTER

## HISTORY

Started by Google as "Sky", which could run under Android. Later rebranded into Flutter.

Unveiled in 2015, with the first preview release (v0.6.0) in July of 2018.

Primary method to write apps and UI for Fuchsia.

## USERS

- Alibaba
- Google AdWords
- Greentee

# FLUTTER

## TECH BEHIND

Flutter does not use the OEM components. It has its own widgets and compiles everything down to the phone.

It believes in 120 FPS animations on every platform.

Uses Skia under the hood for rendering. Has bindings for GL or Vulkan.

## MOTIVATION

- Fuchsia
- Android
- Hip Factor

# REACT NATIVE

## HISTORY

Inside Facebook, Jordan Walke found a way to generate iOS UI elements from a background JavaScript thread. They decided to organise an internal hackathon to perfect this prototype in order to be able to build native apps with this technology.

Unveiled at React.js Conference in 2015

## USERS

- Facebook
- Messenger
- Instagram
- Uber
- Baidu
- Walmart
- OneDrive
- Skype

# REACT NATIVE

## TECH BEHIND

Code is Javascript that runs on a separated Thread.

Views get compiled to Native views. Instead of the normal VirtualDOM in the browser it manipulates native Views in Android and iOS.

## MOTIVATION

- Hip Status
- Internal usage

# CORDOVA

## HISTORY

Development started at an iPhoneDevCamp under approval of Apple.

Acquired by Adobe in 2011 and rebranded under PhoneGap.

A subset got open sourced later as Apache Cordova.

## USERS

?

# CORDOVA

## TECH BEHIND

Provides a `WebView` with bindings for native sensors and functions. Much like `Electron`.

## MOTIVATION

- `PhoneGap`

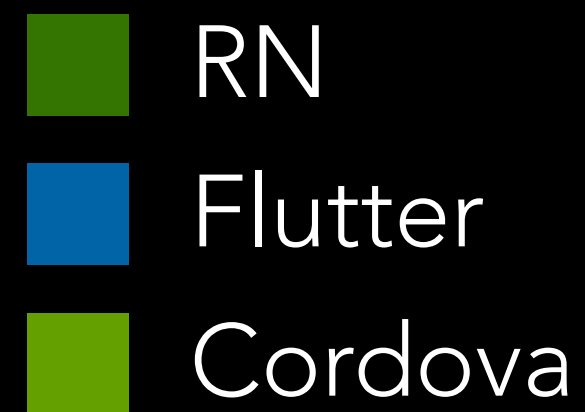
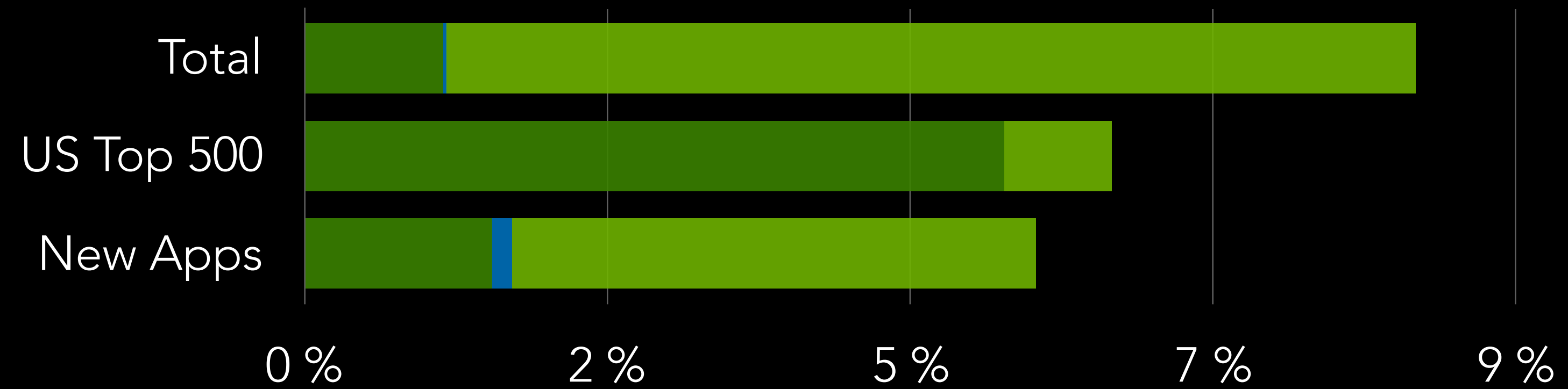
INTRO

# CURRENT STATE

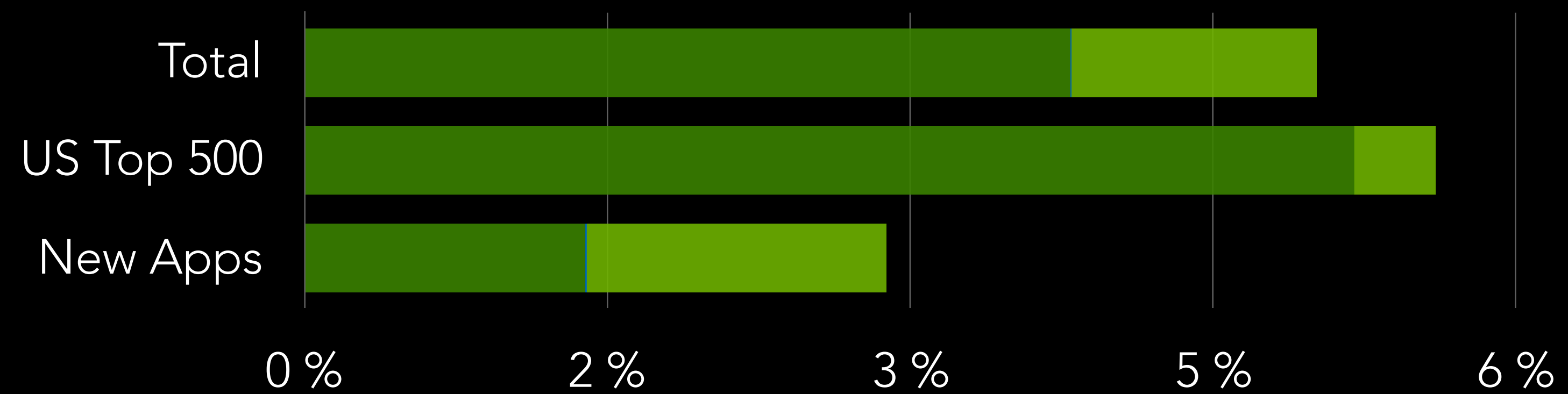


# CURRENT STATE

## STORE



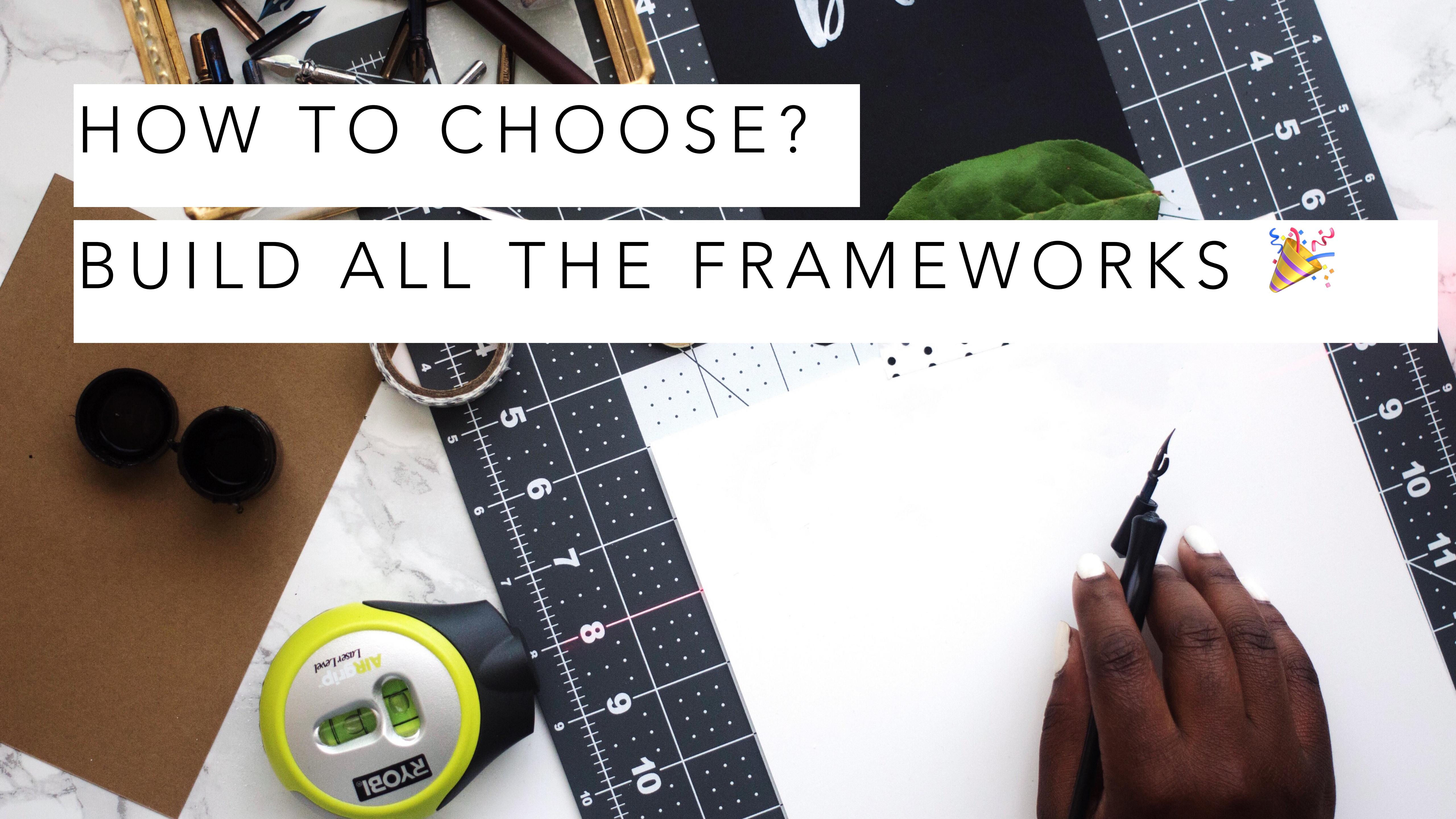
## INSTALLS





HOW TO CHOOSE?

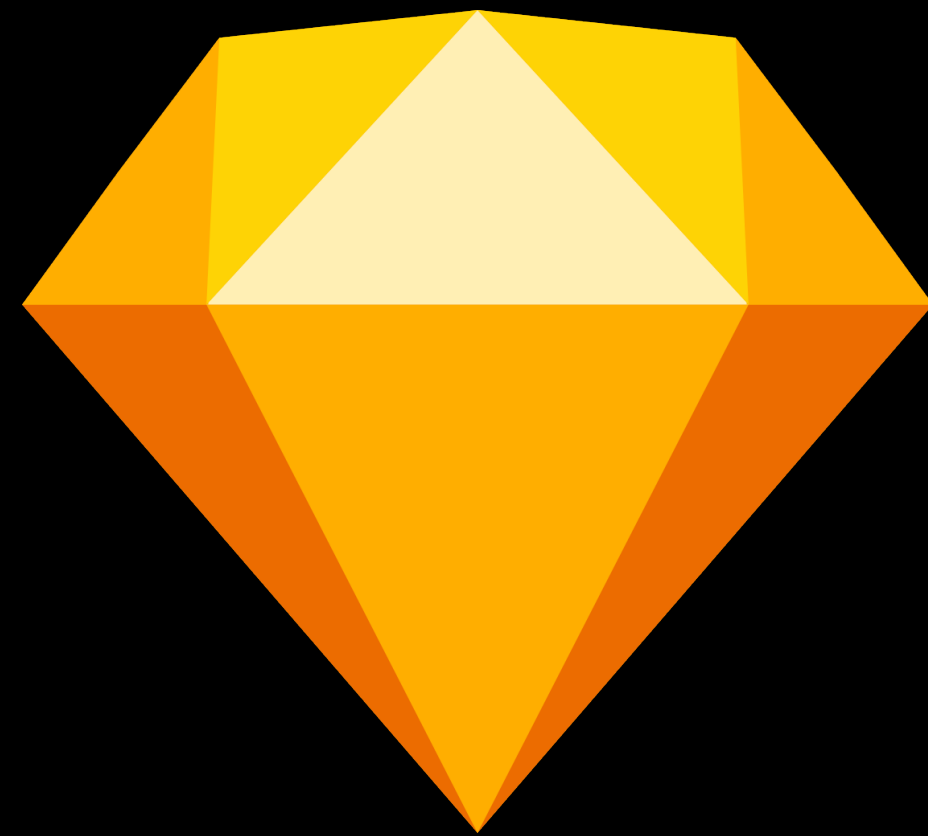
BUILD ALL THE FRAMEWORKS



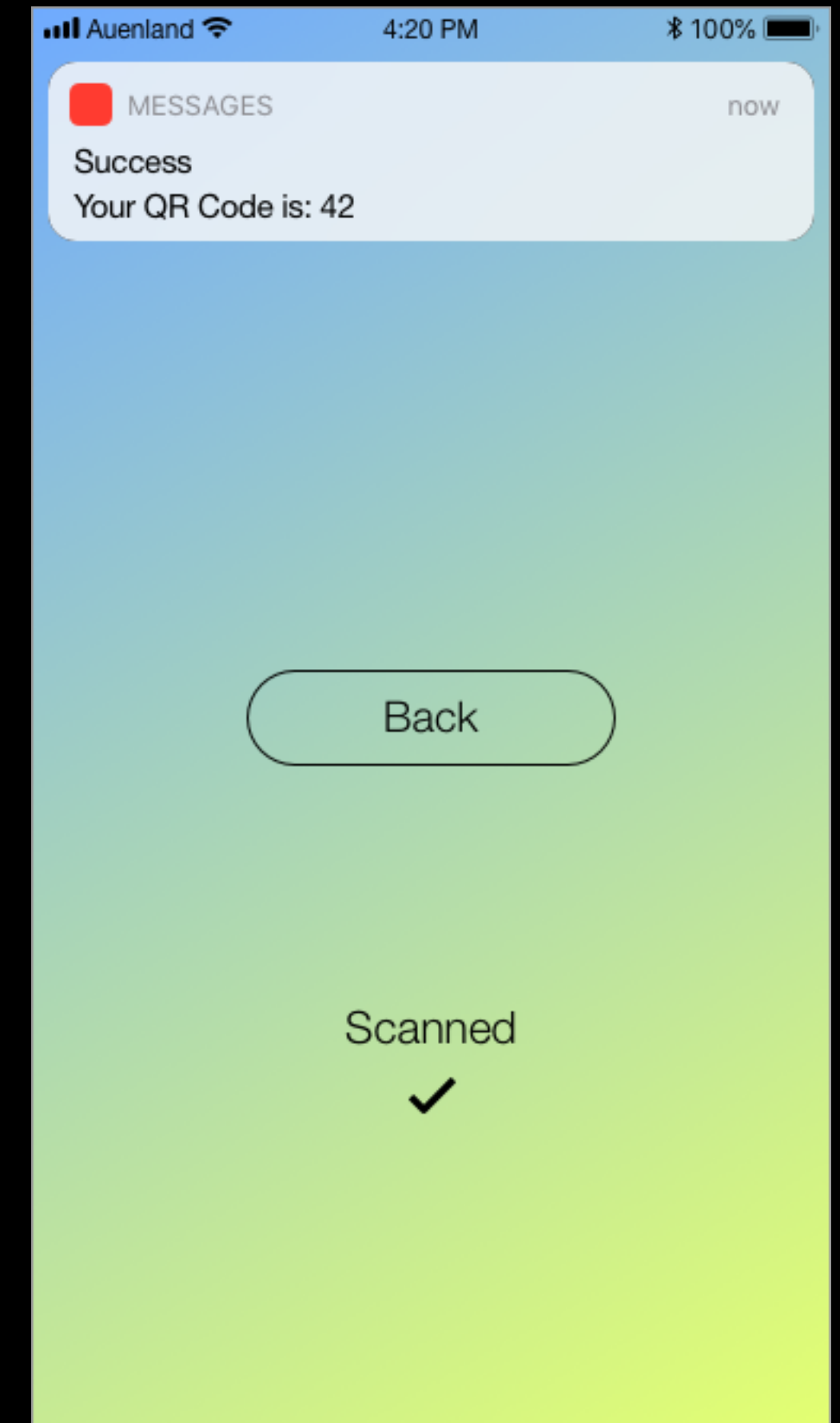
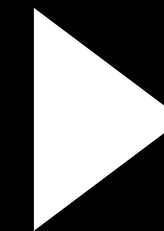
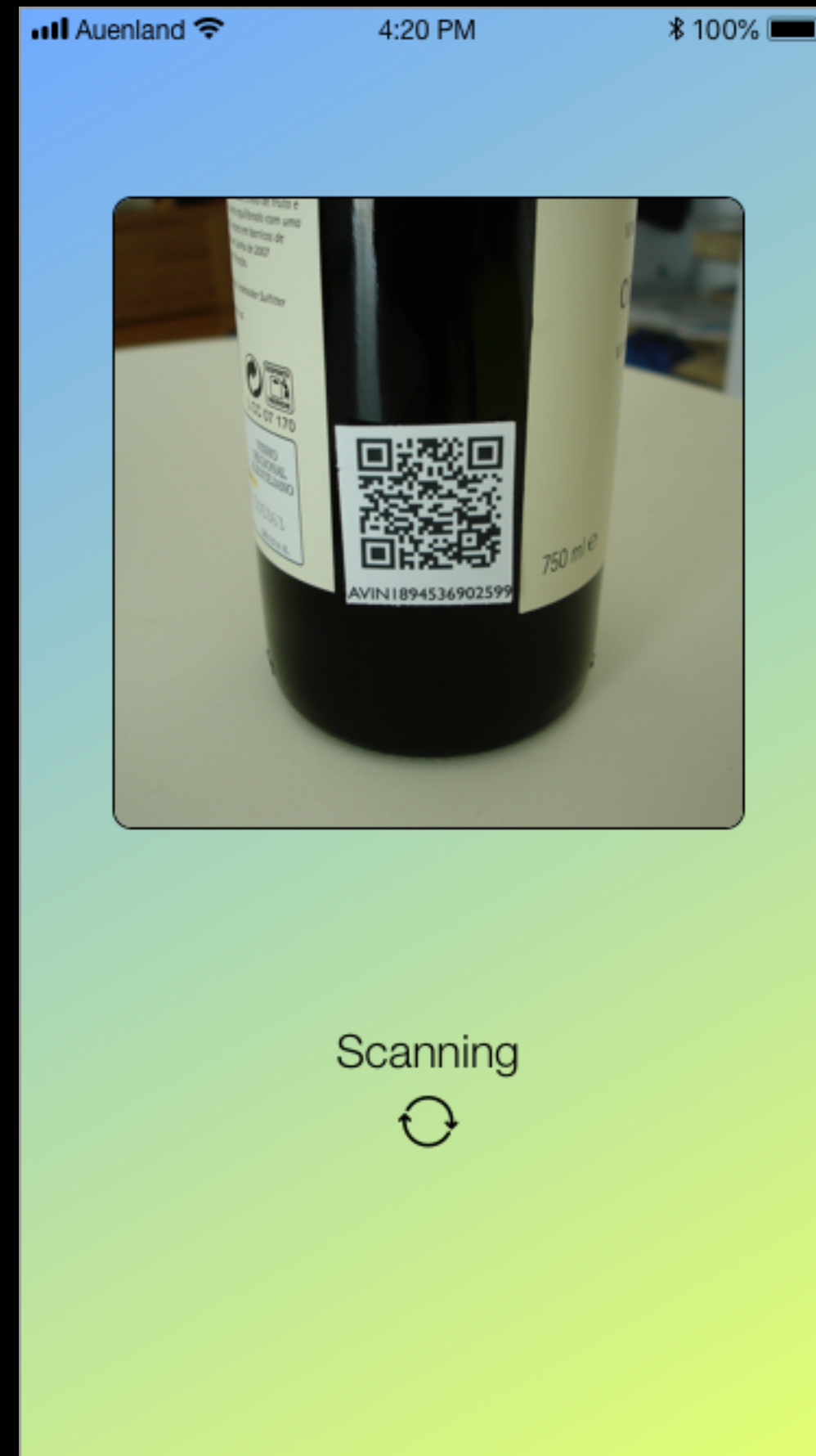
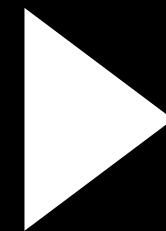
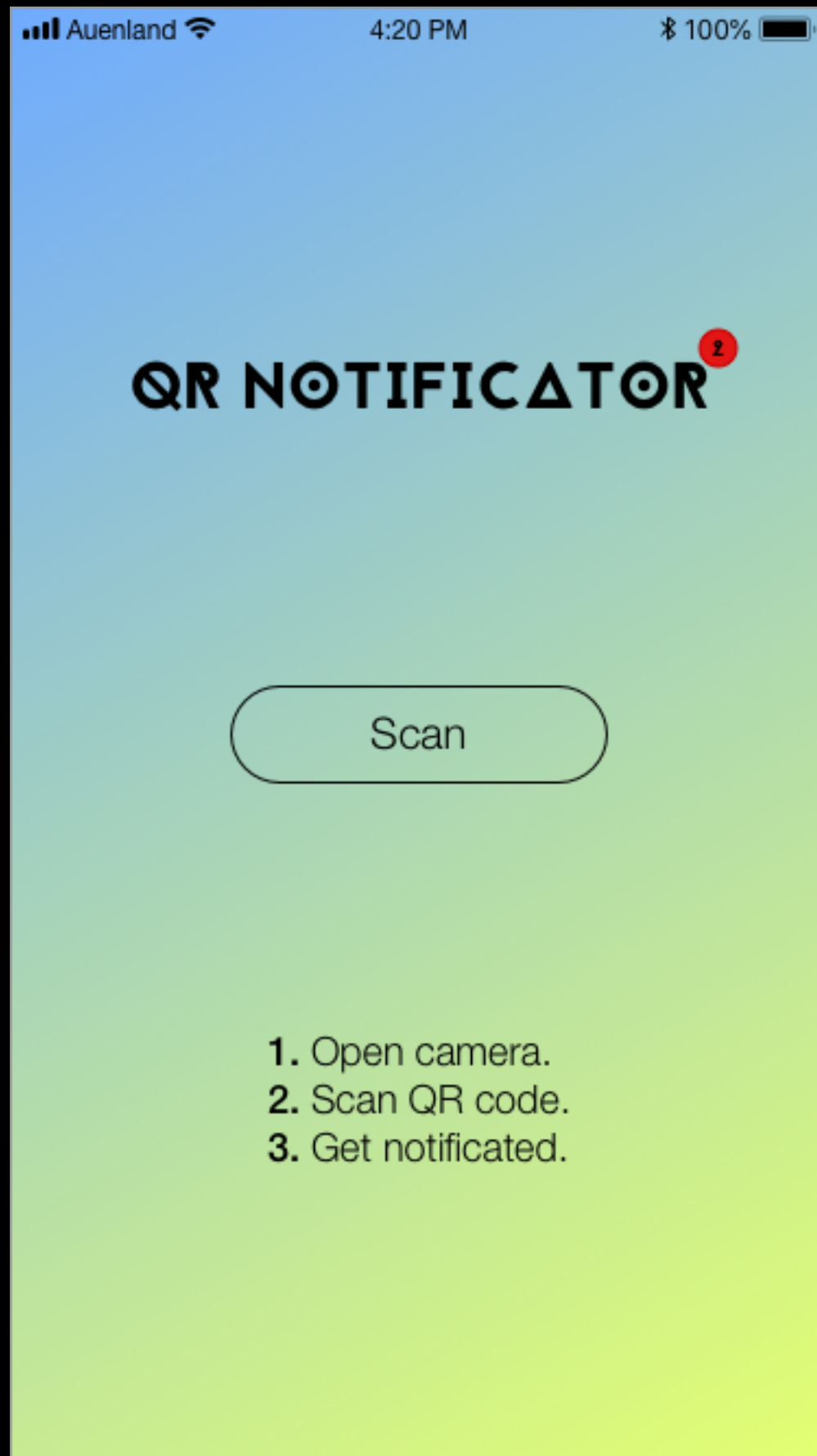
# WHAT DO WE WANT TO INCLUDE?

- App Icon
- Navigation
- Animations  
Simple loading animation
- Camera  
Scan a QR Code
- Notifications
- Styling  
Text, fonts, components, gradients
- Reusability  
Reuse components between screens

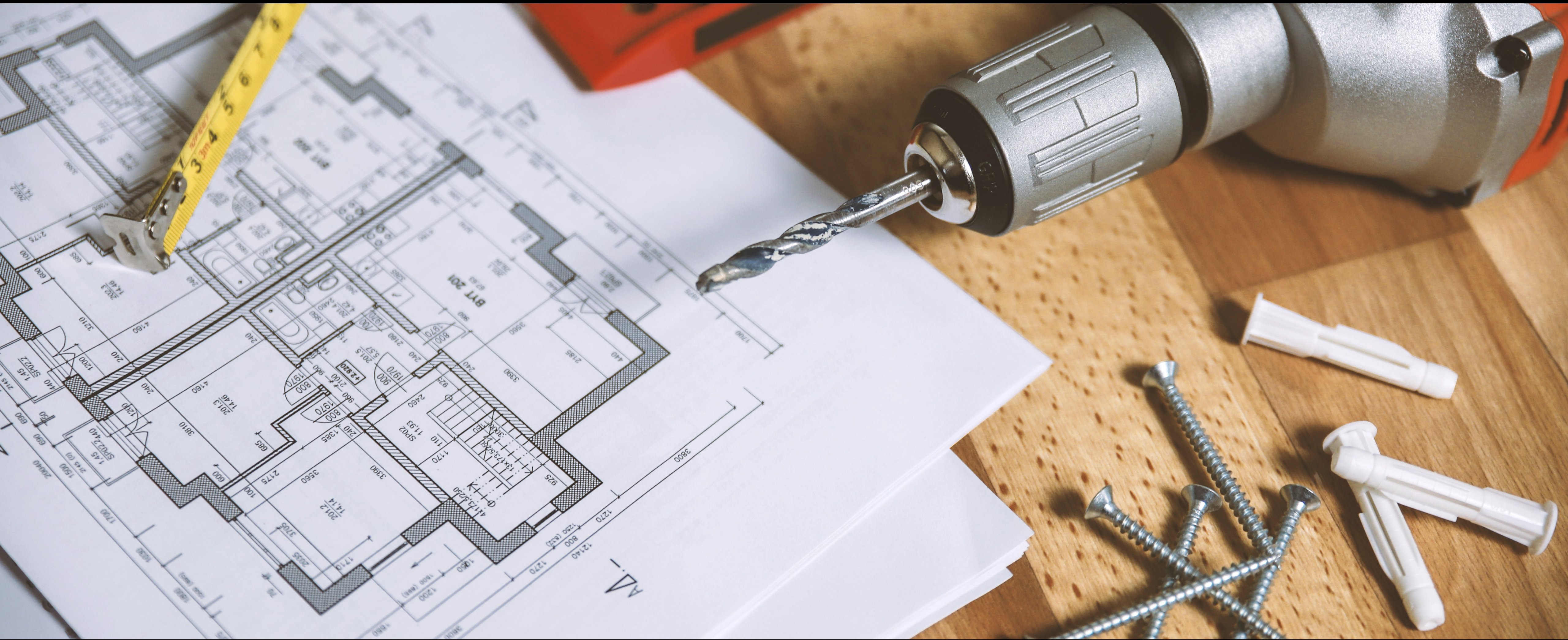
# DESIGN



# DESIGN



# TIME TO BUILD



# FLUTTER

- Dart: a mix between Typescript and Java
- Styling is much more "Native"
- Lot of nesting

```
9 import 'package:flutter/material.dart';
8
7 class Button extends StatelessWidget {
6   Button({@required this.text, @required this.callback});
5
4   final String text;
3   final Function callback;
2
1   @override
10  Widget build(BuildContext context) {
1    return GestureDetector(
2      onTap: this.callback,
3      child: Container(
4        width: 180.0,
5        height: 45.0,
6        decoration: BoxDecoration(
7          borderRadius: BorderRadius.circular(100.0),
8          border: Border.all(width: 1.0, color: const Color(0xFF000000))),
9        child: Center(
10       child: Text(
11         text,
12         style: TextStyle(fontSize: 20.0),
13       )); // Text // Center // Container // GestureDetector
14     });
15   }
16 }
```

# FLUTTER

POSITIVE 

- "Batteries included"
- Docs

NEGATIVE 

- Dart
- Ecosystem

# REACT NATIVE

- It's basically React
- Instead of HTML Tags we use predefined native components.

```
3 import React, { Component } from 'React' 8.1K (gzipped: 3.3K)
2 import { StyleSheet, TouchableOpacity, Text } from 'react-native'
1
4 export default class extends Component {
1   render() {
2     return <TouchableOpacity
3       style={styles.button}
4       onPress={this.props.callback}>
5       <Text style={styles.label}>{this.props.text}</Text>
6     </TouchableOpacity>
7   }
8 }
9
10 const styles = StyleSheet.create({
11   label: {
12     fontSize: 20
13   },
14   button: {
15     width: 180,
16     height: 45,
17     borderRadius: 100,
18     borderColor: '#000000',
19     borderWidth: 1,
20     alignItems: 'center',
21     justifyContent: 'center',
22   },
23 })
```



# REACT NATIVE

## POSITIVE

- Currently the biggest community
- A LOT of 3rd party packages
- For react devs very easy to get started

## NEGATIVE

- Feels Hacky
- Nothing out of the box.
- Docs

# CORDOVA

- In this case React.
- Works with every Website, since it packs into an "enhanced" browser.

```
2 import React from 'react' 8.1K (gzipped: 3.3K)
1
3 export default class Logo extends React.Component {
1   render() {
2     return <div className="Logo">
3       <div className="title">QR NOTIFICATOR</div>
4       <div className="badge">
5         <div>2</div>
6       </div>
7     </div>
8   }
9 }
```

```
.Logo {
  position: relative;
  font-family: 'Jaapokki';
  .title {
    font-size: 30px;
  }
  .badge {
    .center;
    position: absolute;
    right: -20px;
    top: -5px;
    width: 20px;
    height: 20px;
    background-color: #f00;
    border-radius: 20px;
    div {
      font-size: 10px;
    }
  }
}
```

# CORDOVA

POSITIVE 

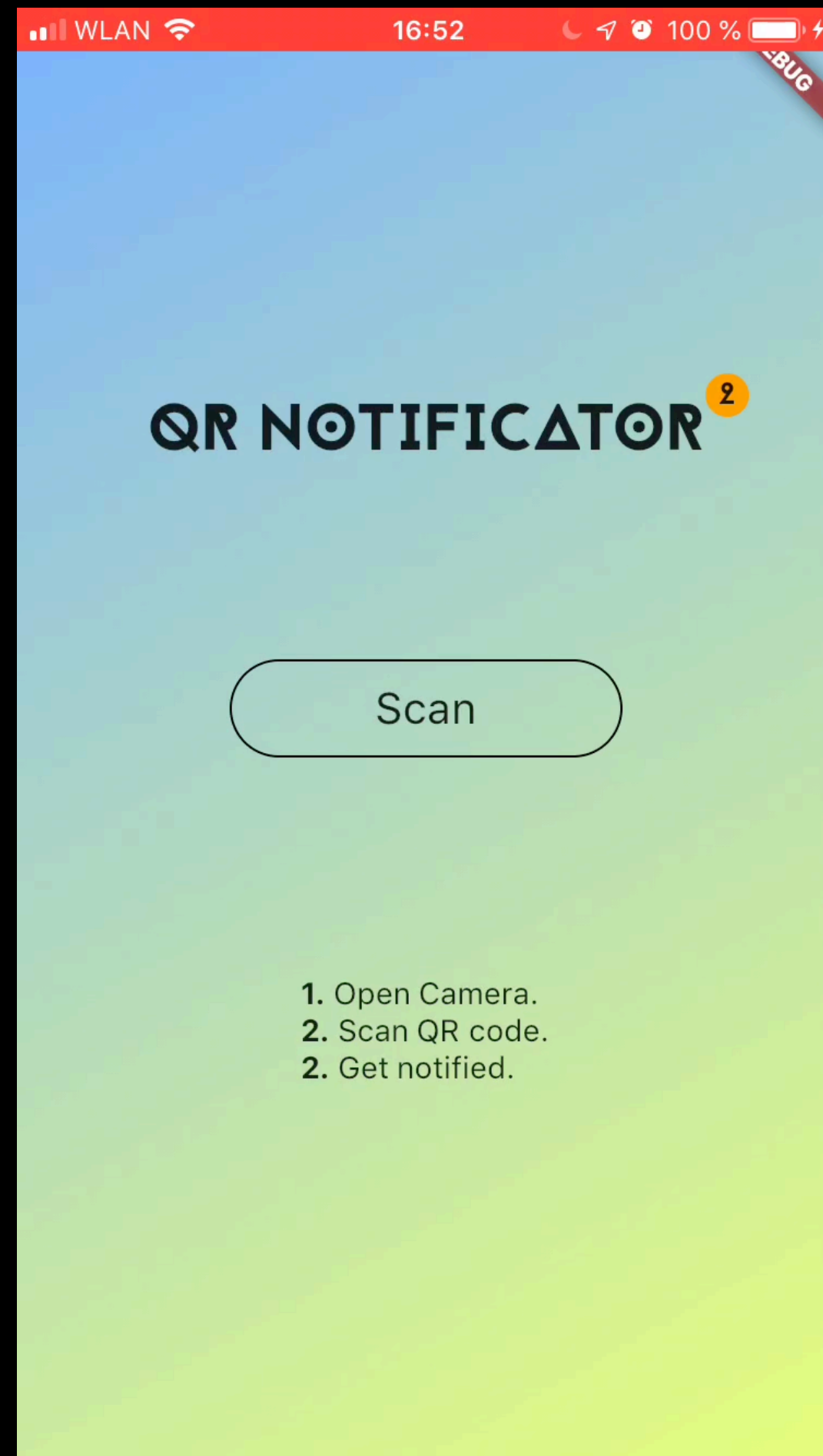
- Known technologies
- Reusable codebase between app and website!
- Huge ecosystem

NEGATIVE 

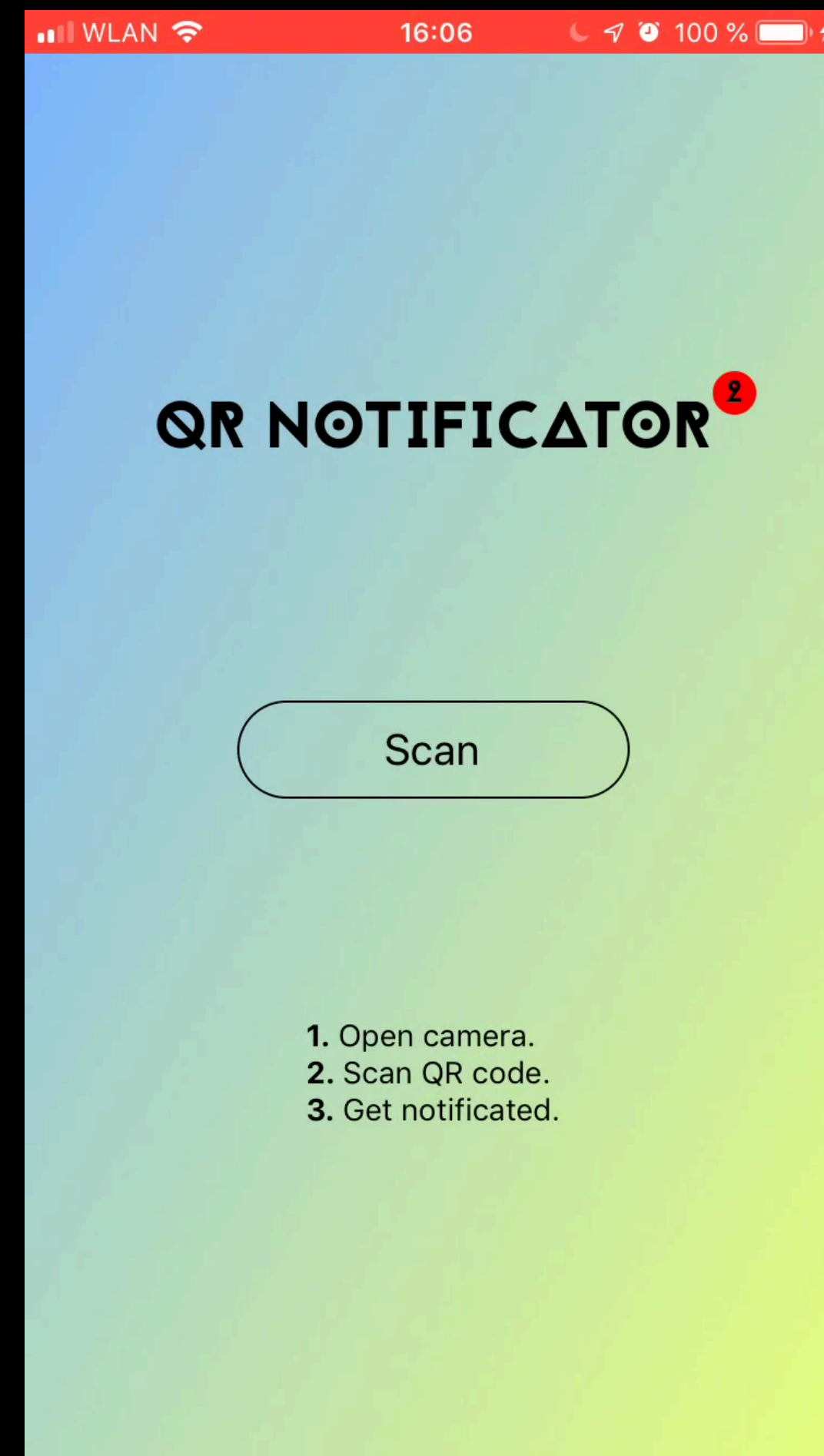
- Performance

# RESULTS

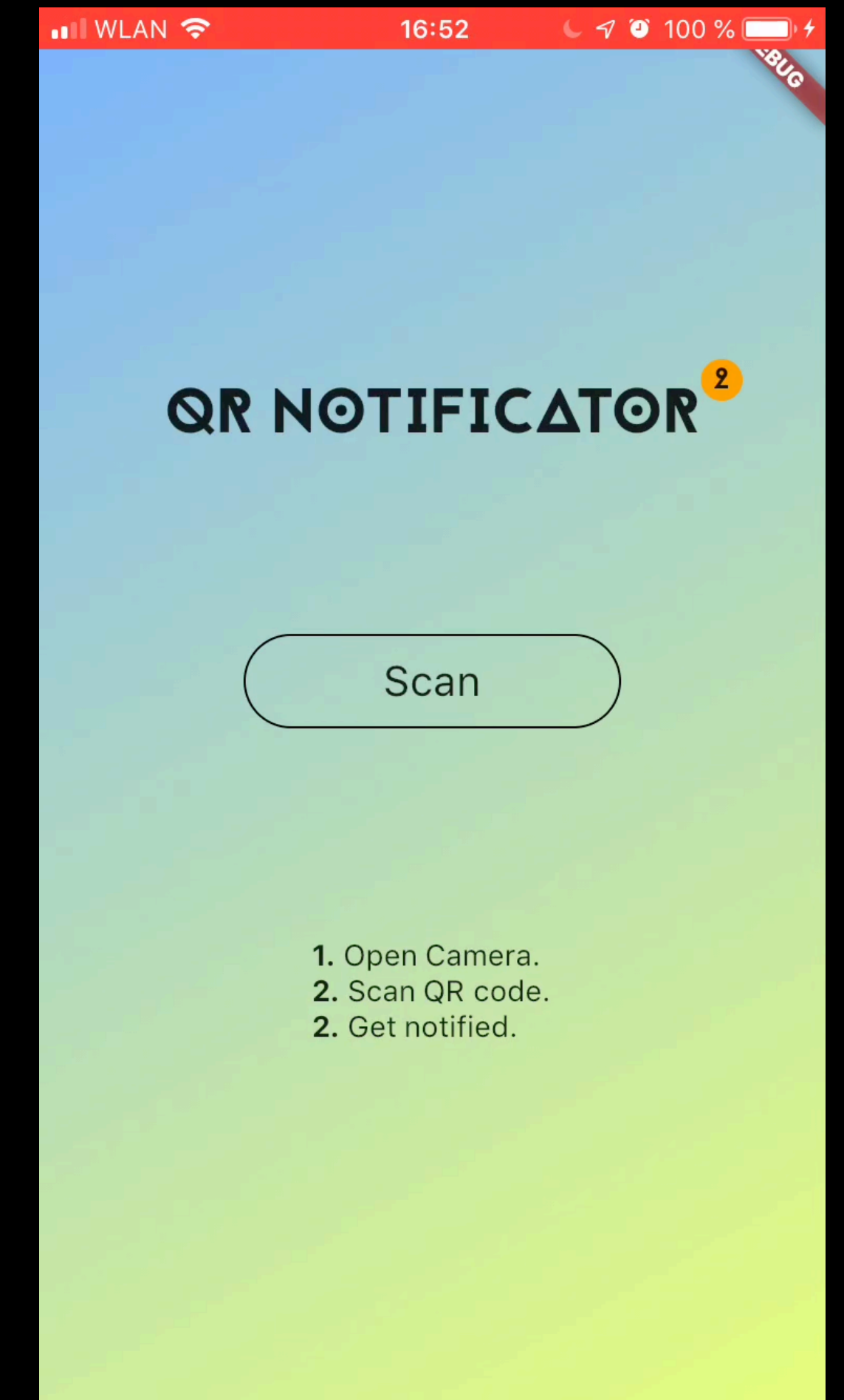
## FLUTTER



## REACT NATIVE



## CORDOVA

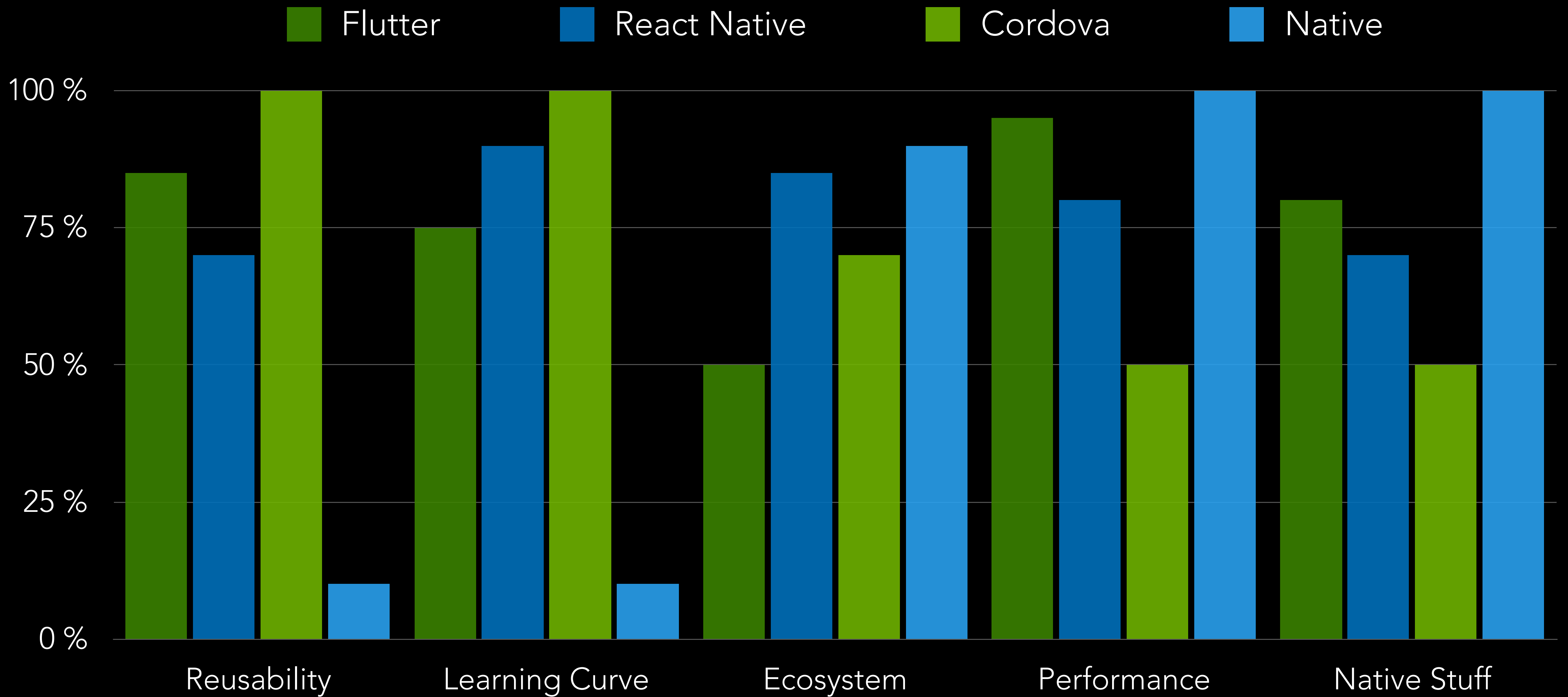


CONCLUSION

# COMPARISON



# COMPARISON



CONCLUSION

WHICH ONE IS THE RIGHT ONE ?



END / QA

 [github.com/CupCakeArmy/fight-of-the-mobiles](https://github.com/CupCakeArmy/fight-of-the-mobiles)

