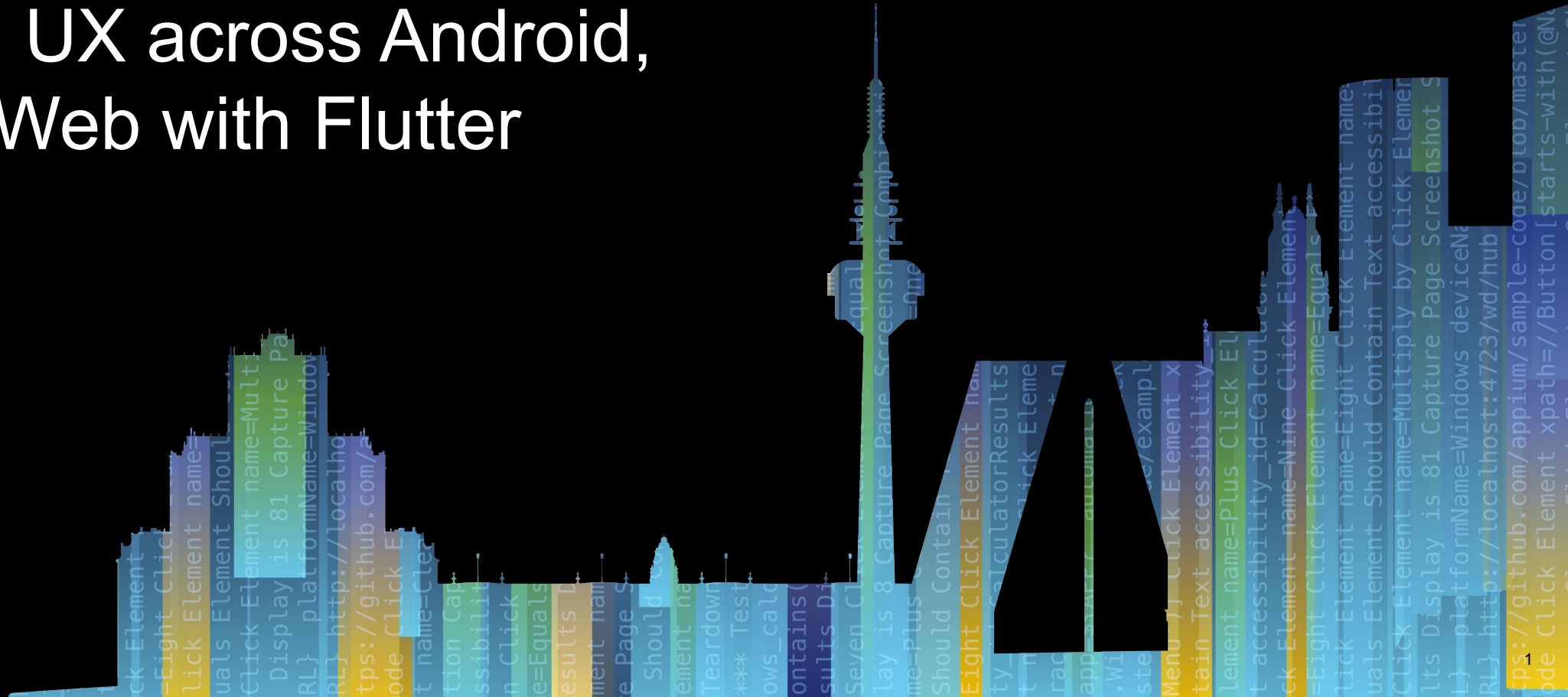# Common UX across Android, iOS and Web with Flutter
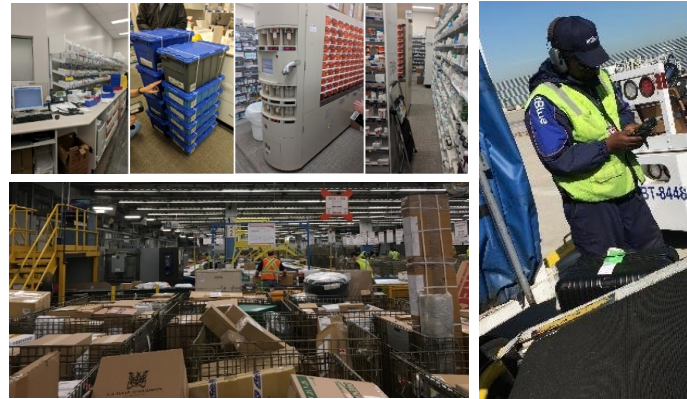
Luke Walton
Front End Developer

Innovation Design

- Award winning products and solutions from concept to production.

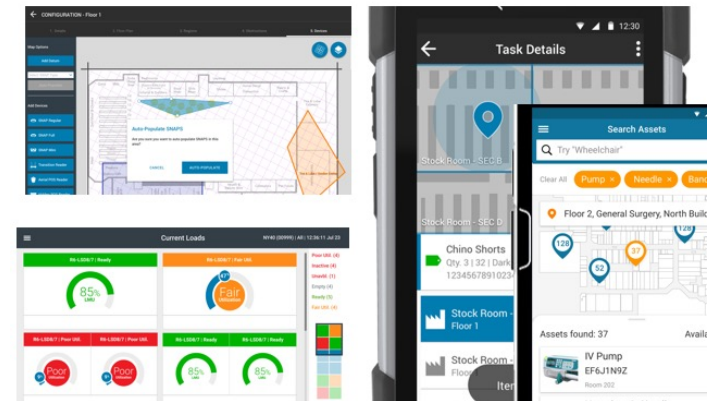- 7 studios globally

- 61 designers, researchers and developers

Customer Design Research

Physical Product Design

Human Factors Engineering
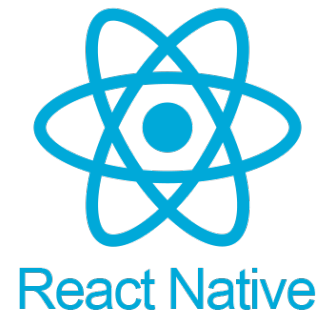
User Experience Design
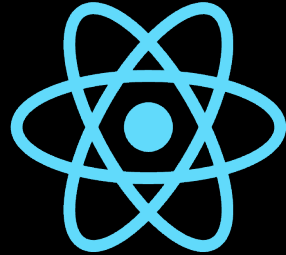
State of cross-platform

Cross platform history

Wrap a WebView with APIs	Compile to native

Wrap a WebView with APIs

Sencha

ext js

RhoMobile Suite

PhoneGap

APACHE CORDOVA™

ELECTRON

ionic

Compile to native

X Xamarin

React Native

Flutter

React Native or Flutter?

- JavaScript
  - Dynamically typed
- Native components
  - npm / React Native Directory
- Popularity

- Dart
  - Statically typed
- Rich core libraries
  - pub.dev
- Growing community

Developer experience…

ZSB Series Printer

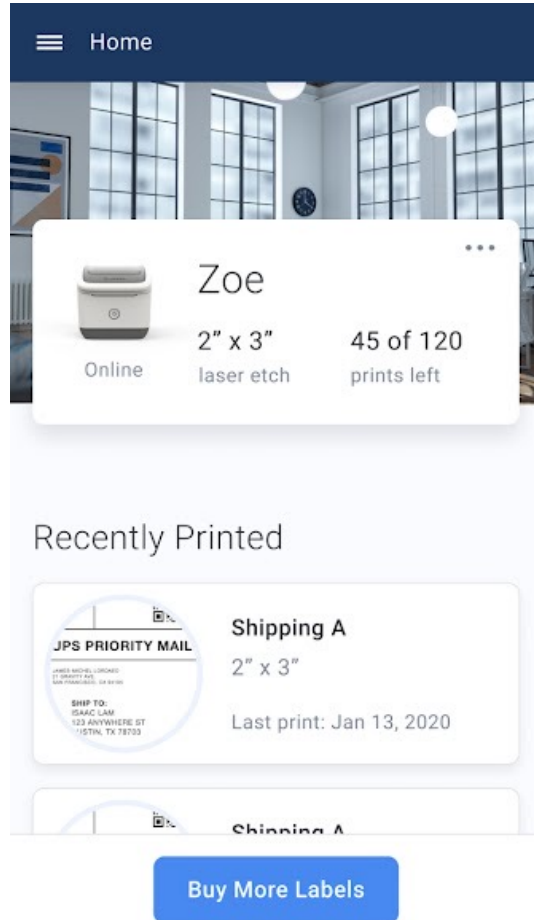## New experience for Zebra

- Great UX
- Cross platform
- Native features
- Developer experience

The solution: Flutter 🎉

ZSB Series Printer

Our findings

Good 👍

- Flutter
- Performance
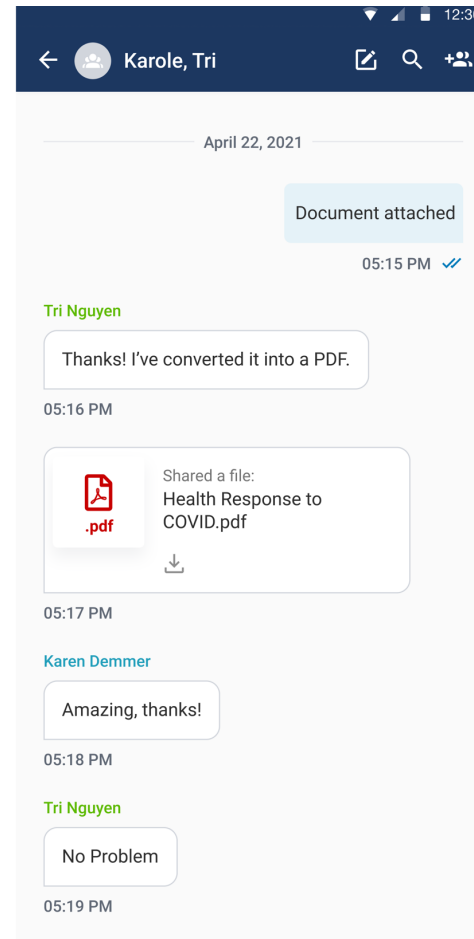- User Experience
- Developer experience

Less good 👎

- Accessibility
- Responsiveness
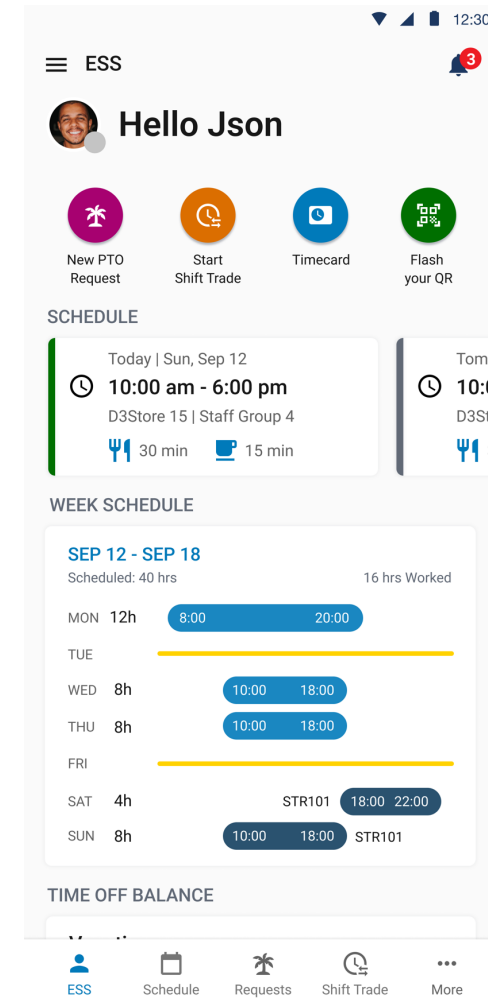- UI customization
- State management

Zebra Workcloud

~70k lines to ~35k lines

- Accessibility

- Responsiveness

- UI customization

- State management

Workcloud Chat

Workcloud Scheduling Employee Self-Service

Flutter 101

What does Flutter look like?
## Declarative UI

Hello Flutter!

```dart
1  import 'package:flutter/widgets.dart';
2
3  void main() => runApp(const Example());
4
5  class Example extends StatelessWidget {
6   const Example({super.key});
7
8   @override
9   Widget build(BuildContext context) {
10    return Column(
11      mainAxisAlignment: MainAxisAlignment.spaceAround,
12      children: [
13        const Text('Hello Flutter!'),
14        Image.asset('assets/dash.png', height: 200),
15      ],
16    );
17   }
18  }
```
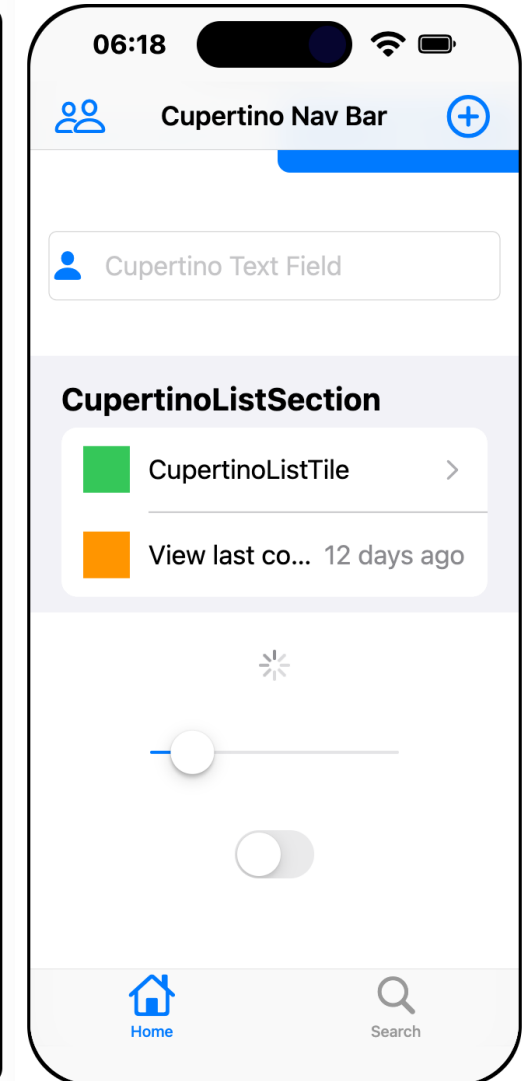
Core components
Material and Cupertino

- Foundation

- UI Components
  - Adaptive Constructors
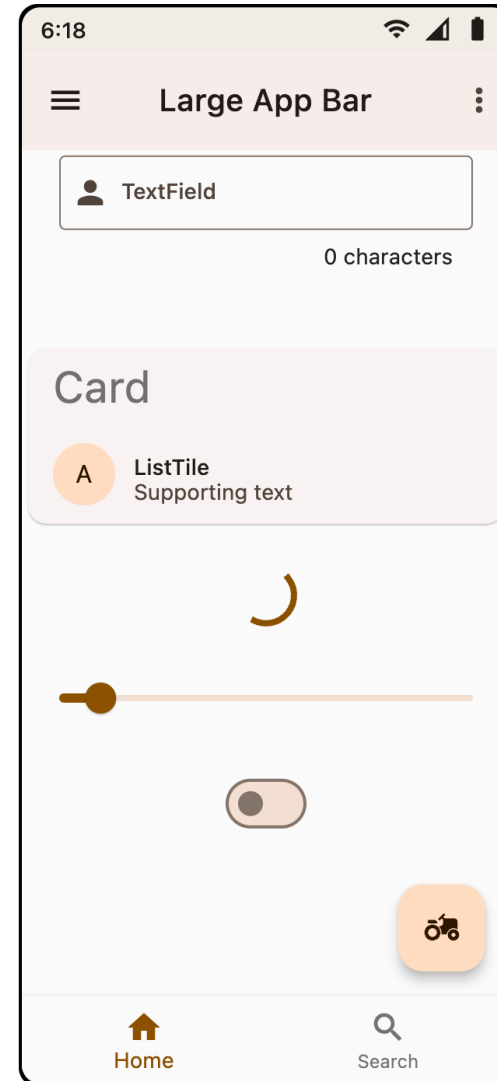
Material (Android)   Cupertino (iOS)

Accessibility

Accessibility
Make experience great for all users

Hearing

Physical

Visual

Cognitive

Age

Situational

Cultural

Accessibility
Achieving AA and AAA

- Responsiveness
  - Screen size
  - Font scale
- Localization
- Color contrast
- Alternative I/O
  - Switches
  - Screen readers

AbleNet Blue2 switch

Android TalkBack

Apple VoiceOver

Accessibility
Simple semantics

- Eliminating vision barriers
  - Content, Actions, State

```
IconButton(
  icon: const Icon(RflxIcons.edit),
  tooltip: 'Edit entries'
)
```

Built-in

```
MergeSemantics(
  child: Row(
  children: [
    Text('Count: '),
    Text('$nmr', style: s2)
    ]
  ),
)
```

MergeSemantics

```
Semantics(
  child: GestureDetector(
    child: ProfileImage(),
  ),
  label: '$user's profile picture',
  button: true,
  hint: 'open profile page'
)
```

Semantics

```
ExcludeSemantics(
  child: DecorativeWidget(),
),
```

ExcludeSemantics

Next steps

Conclusion
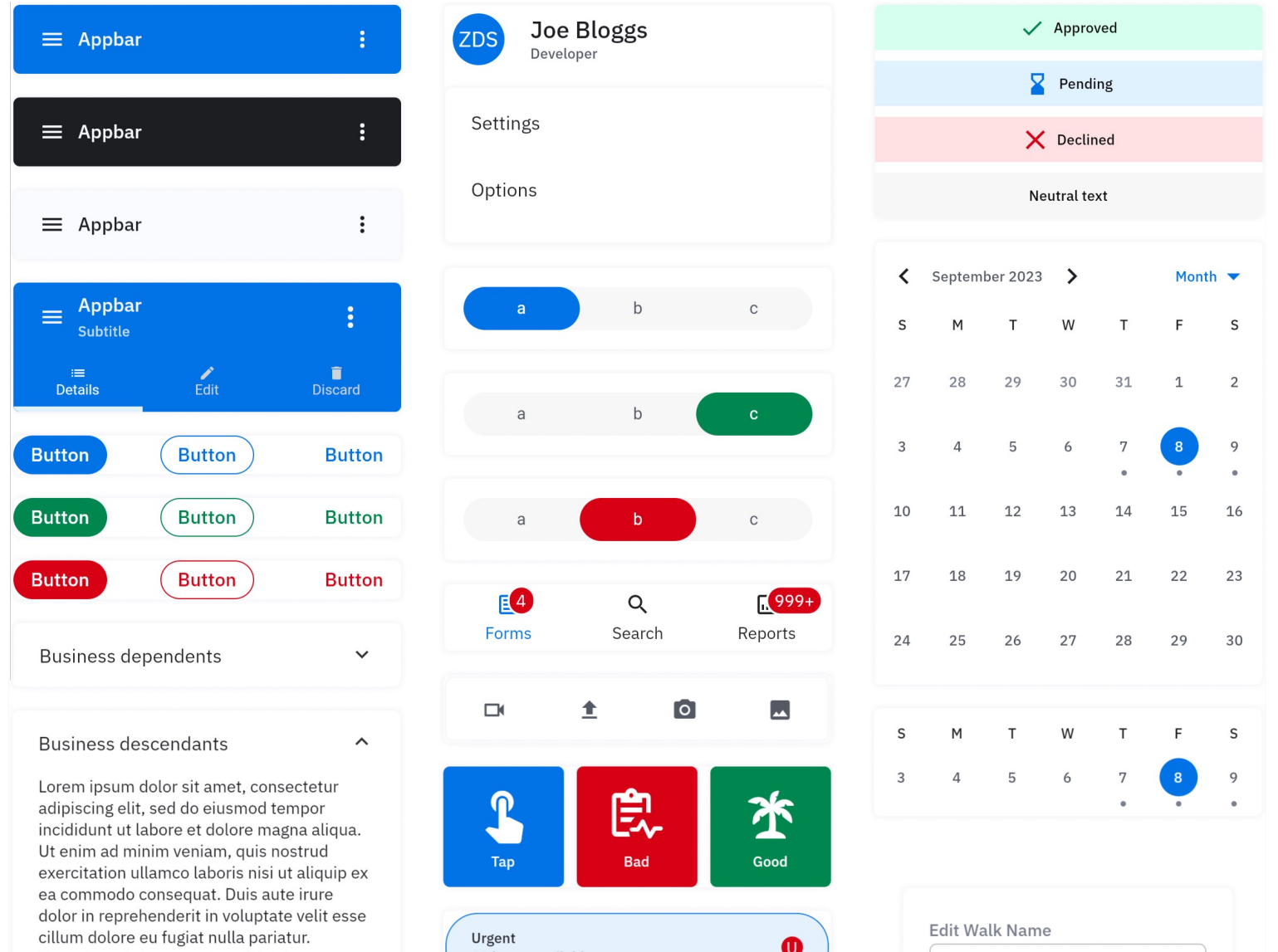
- Flutter makes great apps
  - Android, iOS, Web, Windows, MacOS, Linux

- Good performance

- Great user and developer experience

- Continuous improvements

- Almost total feature parity with native

ZDS-Flutter

pub.dev/packages/zds_flutter

- Current design components
- Production tested

ZDS-Flutter
pub.dev/packages/zds_flutter

- Current design components
- Production tested

Zeta

- Cross-platform, curated design system.
  - Flutter, Web components

- Early alpha release

Zeta Heading Large

Zeta Heading Medium
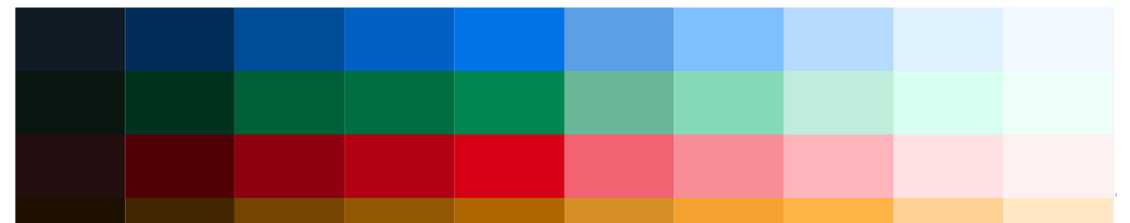
Zeta Heading Small

Zeta Title Large

Zeta Title Medium

Zeta Title Small

Zeta Body Large

Zeta Body Medium

Zeta Body Small

Thank You

github.com/thelukewalton/devcon23