



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

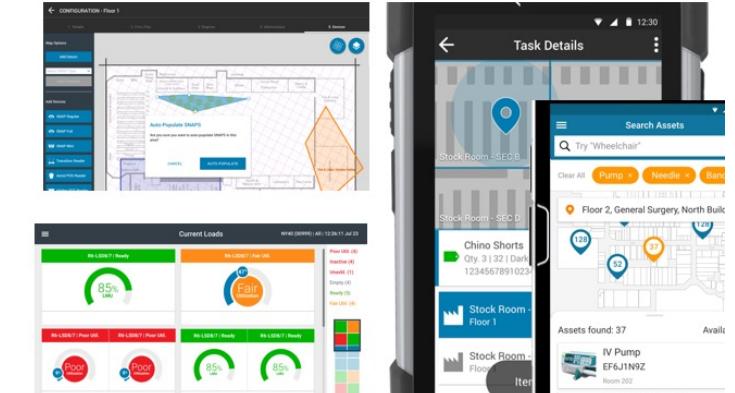
Customer Design Research



Physical Product Design



Human Factors Engineering



User Experience Design



State of cross-platform



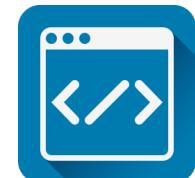
Cross platform history

Wrap a WebView with APIs



APACHE
CORDOVA™

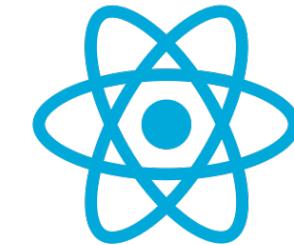
PhoneGap



Compile to native



Xamarin

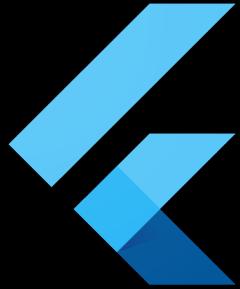
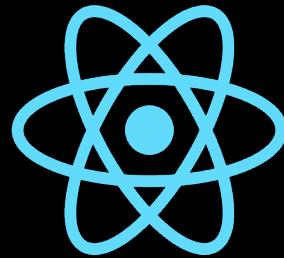


React Native



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...

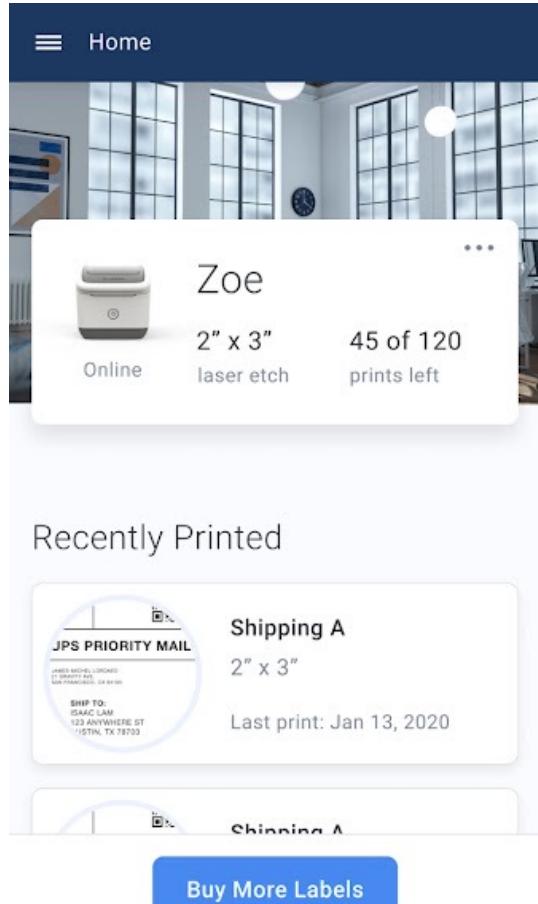
ZSB Series Printer

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

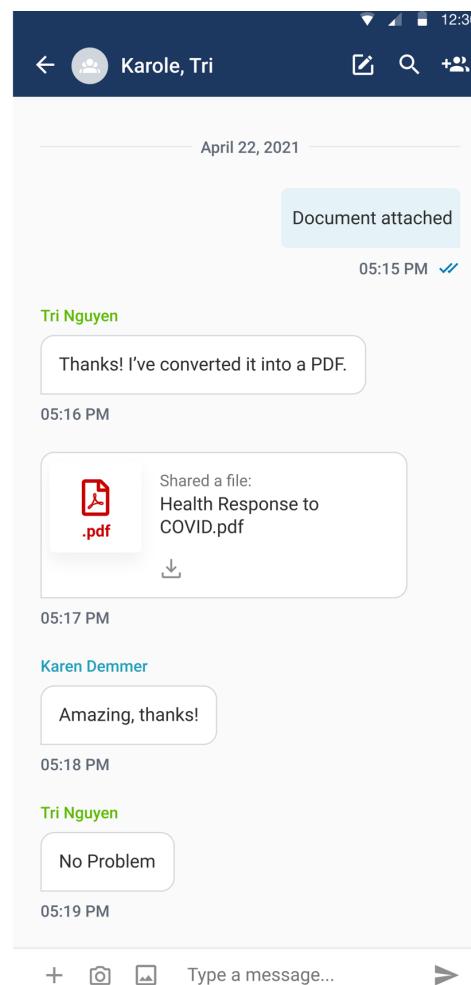
Less good 🤐

- Accessibility
- Responsiveness
- UI customization
- State management

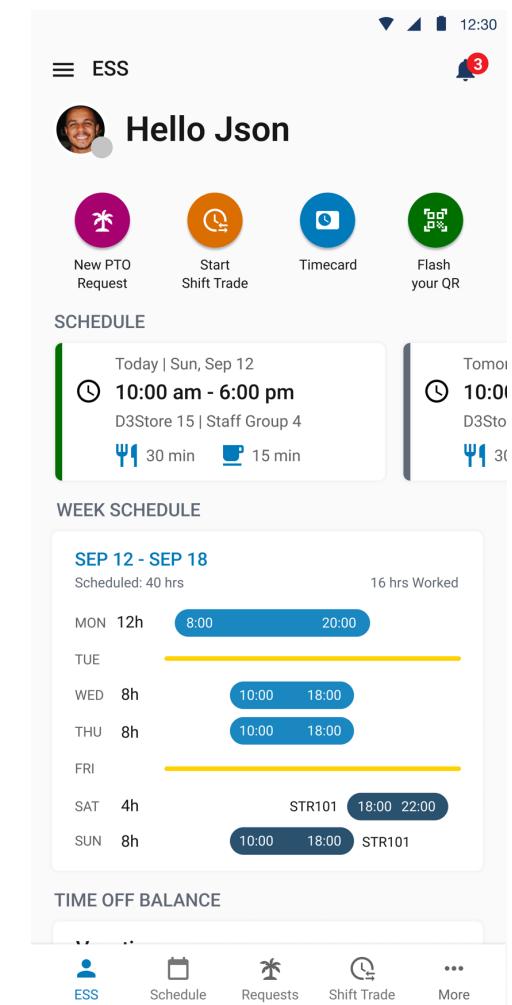
Zebra Workcloud

~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!

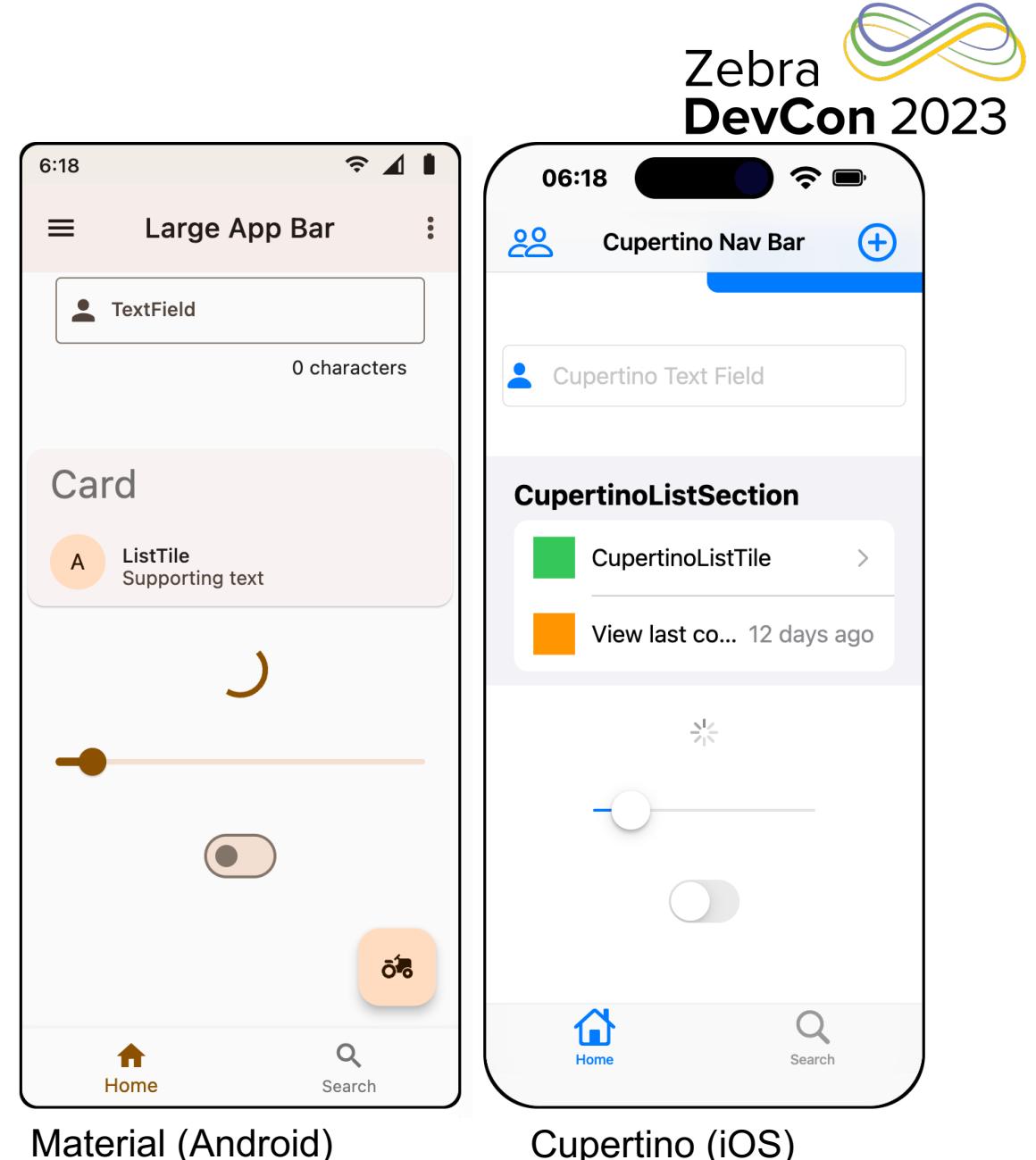


```
1 import 'package:flutter/widgets.dart';
2
3 void main() => runApp(const Example());
4
5 class Example extends StatelessWidget {
6   const Example({super.key});
7
8   @override
9   Widget build(BuildContext context) {
10     return Column(
11       mainAxisAlignment: MainAxisAlignment.spaceAround,
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



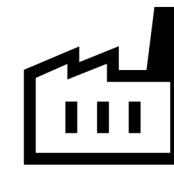
Visual



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



Conclusion

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

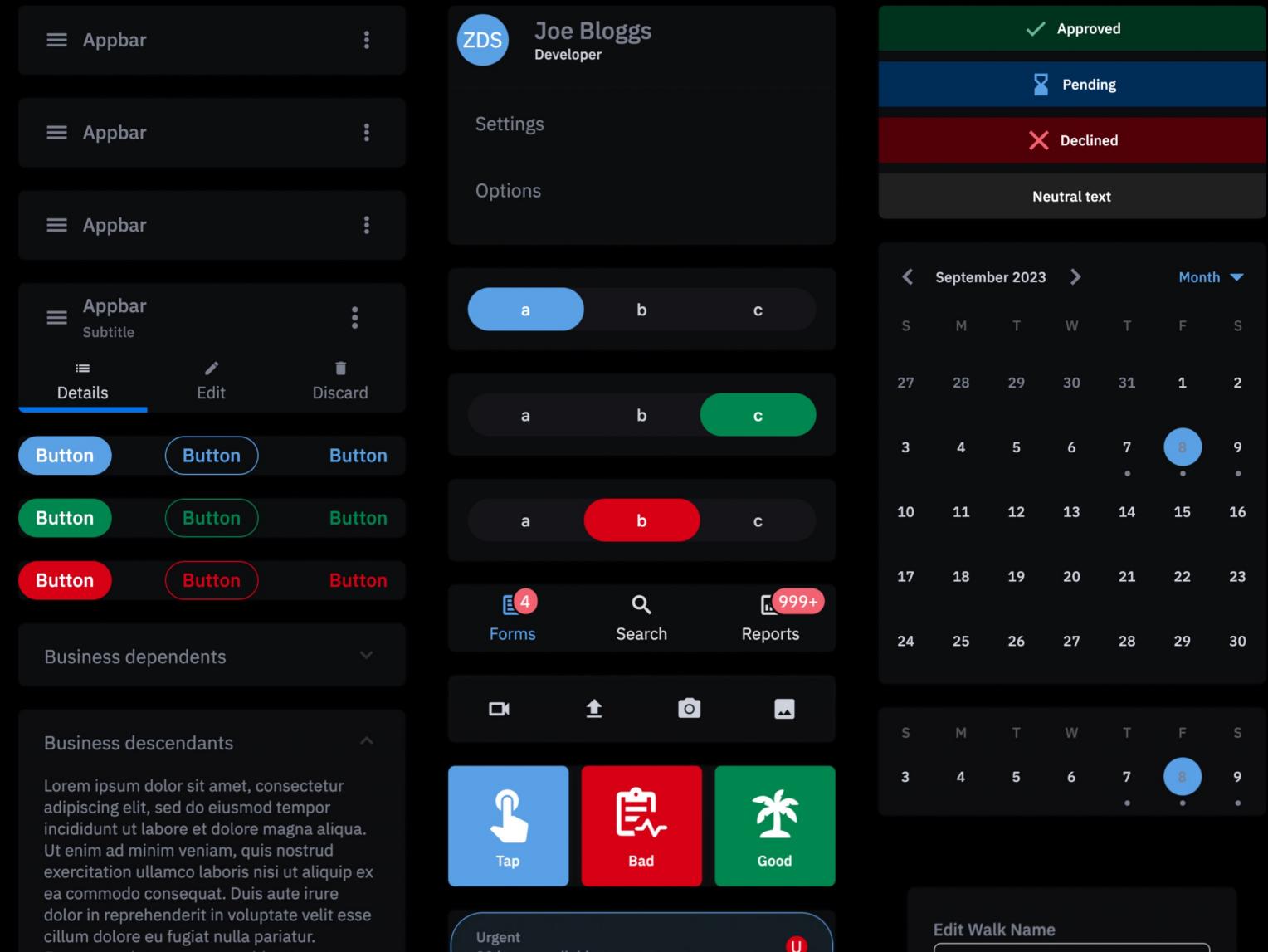
The image displays several screenshots of the ZDS-Flutter UI library:

- Appbar:** Multiple examples of the Appbar component in different states (blue, black, white) and with different subtitle and icon configurations.
- Profile Card:** A developer profile card for "Joe Bloggs" (Developer) featuring a circular profile picture, the name, and a "Settings" button.
- Navigation Bar:** A horizontal navigation bar with three items labeled "a", "b", and "c". The item "c" is highlighted with a green background.
- Card Layout:** A card layout with three items labeled "a", "b", and "c". The item "c" is highlighted with a green background.
- Bottom Navigation Bar:** A bottom navigation bar with three items: "Forms" (with a red badge showing "4"), "Search", and "Reports" (with a red badge showing "999+").
- Image Buttons:** Three large buttons labeled "Tap", "Bad", and "Good" with corresponding icons.
- Calendar:** A monthly calendar for September 2023. The date "8" is highlighted with a blue circle. Other dates are shown in a standard grid format.
- File Manager:** A screenshot of a file manager interface showing a list of files and a search bar.

ZDS-Flutter

pub.dev/packages/zds_flutter

- Current design components
- Production tested



- Cross-platform, curated design system.
 - Flutter, Web components
- Early alpha release

Zeta Heading Large

Zeta Heading Medium

Zeta Heading Small

Zeta Title Large

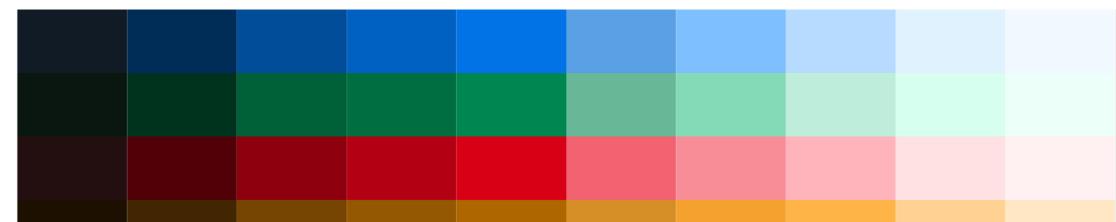
Zeta Title Medium

Zeta Title Small

Zeta Body Large

Zeta Body Medium

Zeta Body Small





Thank You

github.com/thelukewalton/devcon23

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