



Introduction to Flutter

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PDX Cocoaheads
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What is Flutter?

- Flutter is an Open Source UI Toolkit created by Google to enable developers to build natively compiled mobile, web, and desktop apps with a single codebase.
- Flutter comes with many pre-built widgets to easily layout your apps. (see [Widgets Catalog](#) and [Community Dart Packages](#)) ,
- Flutter starts with a blank screen and then paints renderings (widgets, animations, etc.).

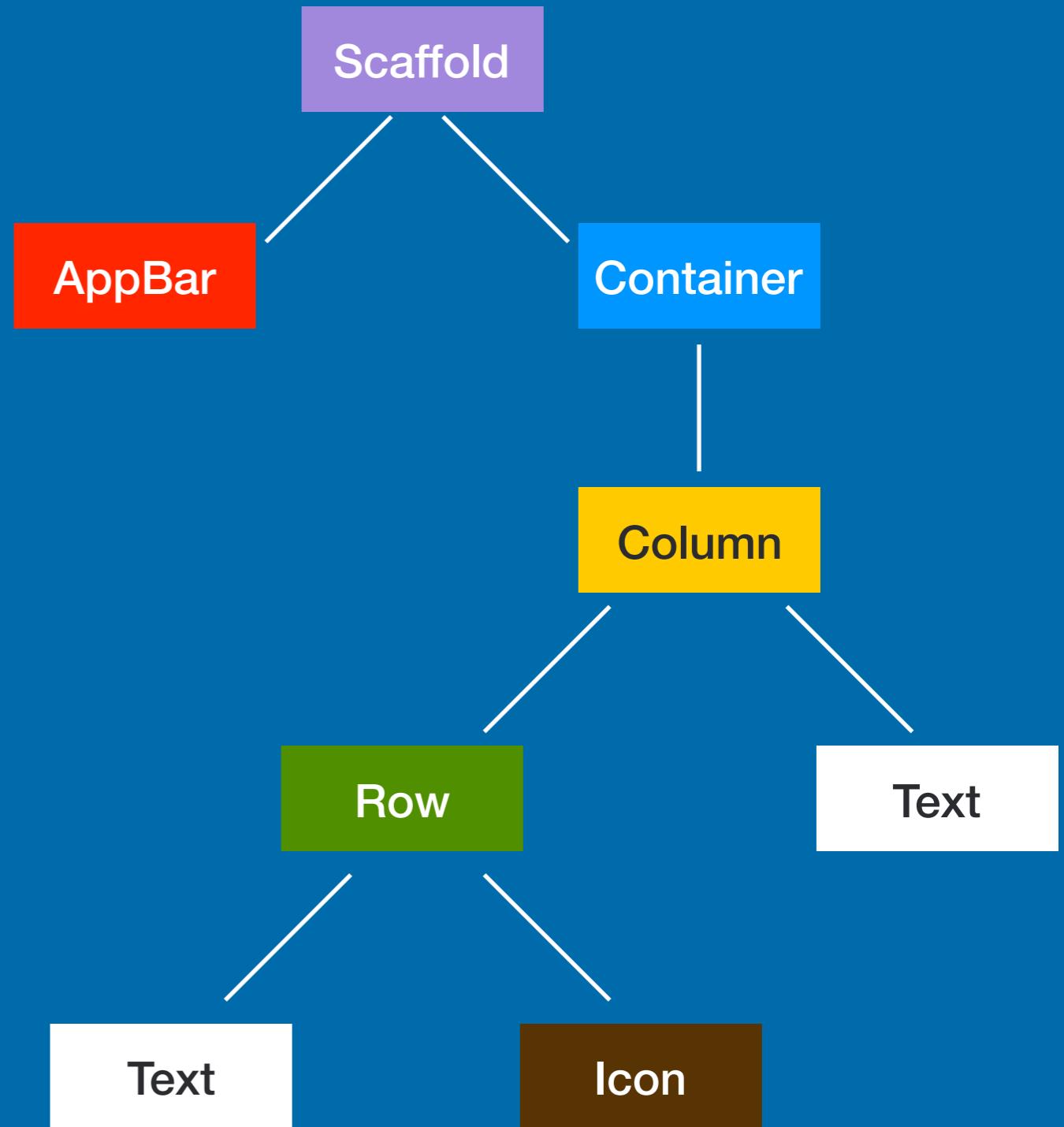
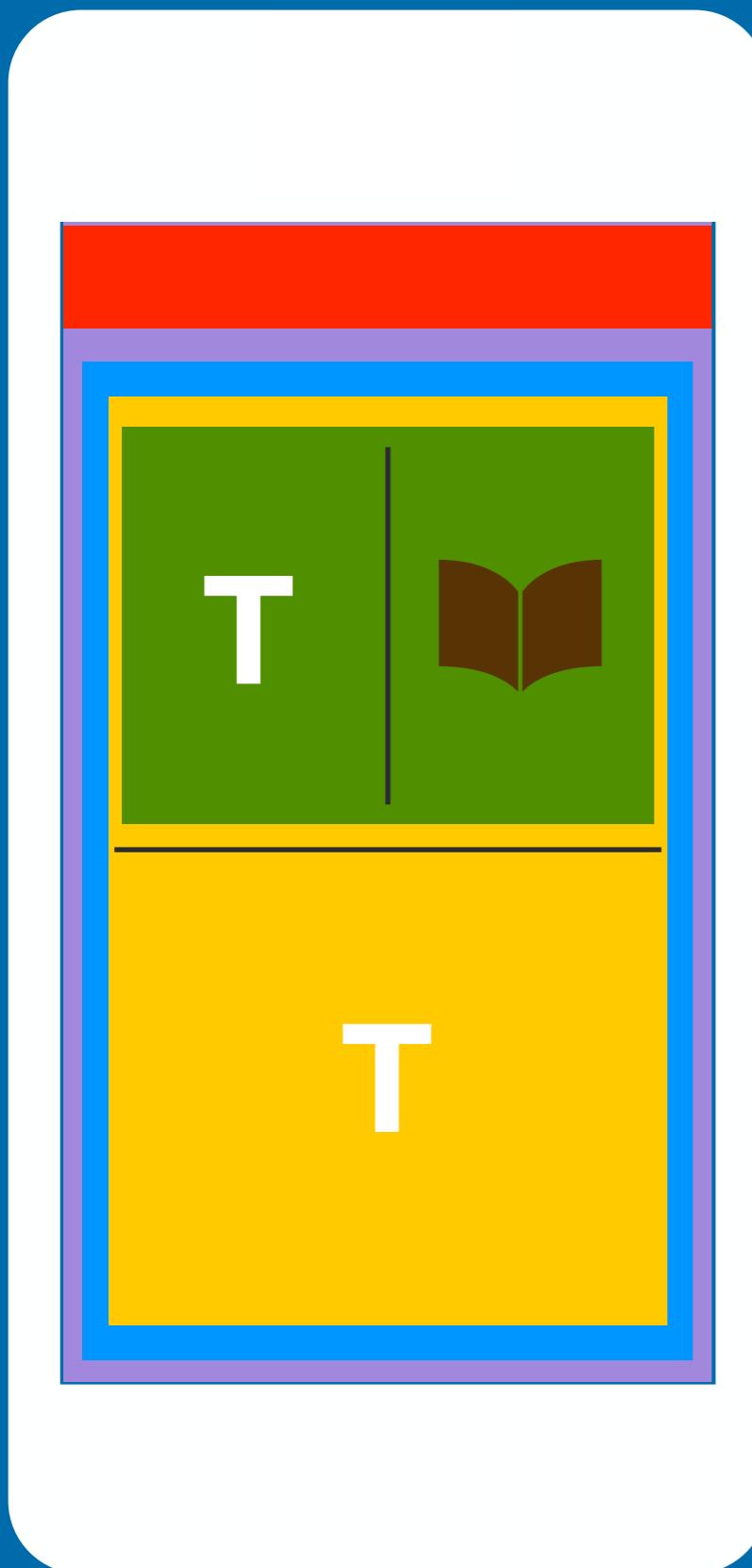
Why Use Flutter?

- One codebase. No need to create a native iOS, Android, and web apps all in three different languages. (MacOS is currently in alpha)
- No need to use potentially complex constraints to maintain layout(s) across variety of screen sizes.
- Flutter apps are built using the Dart language which is very similar to other object-oriented programming languages.

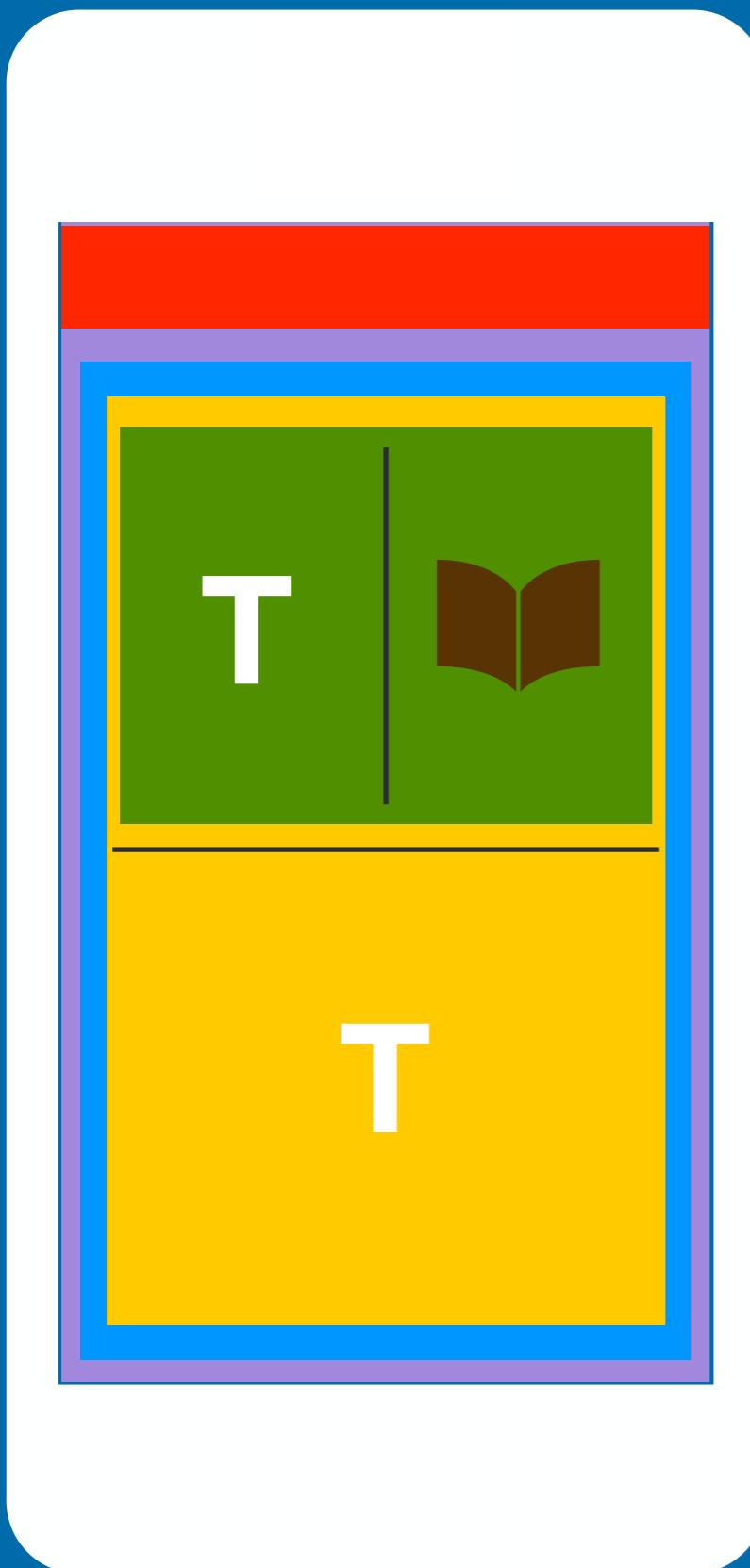
Why Use Flutter? con't

- Hot reload enables Flutter developers to build UIs and make modifications and almost instantly see any changes.
- Flutter is Open Source and you have access to the source code; no source behind proprietary wall. Which means you can customize implementation (i.e. you wanted rounder edges on a button).

Structure of a Flutter App



Structure of a Flutter App



```
Scaffold(  
  appBar: AppBar(),  
  body: Container(  
    child: Column(  
      children: [  
        Row(  
          Text(),  
          Icon(),  
        ),  
        Text(),  
      ]  
    ),  
  ),  
)
```

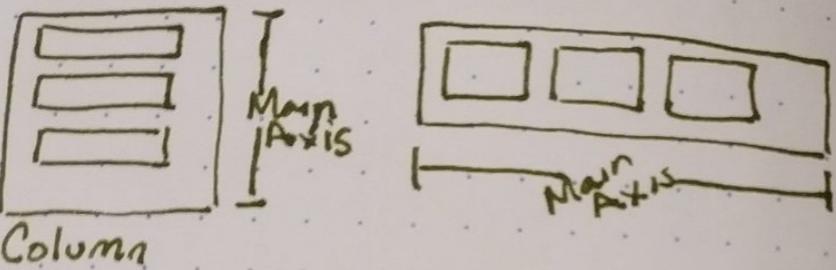
Demo Time

Axis Alignment

Main Axis Alignment

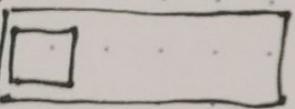
How the children should be placed along the main axis of a flex layout.

Affects: Column, Row, Flex

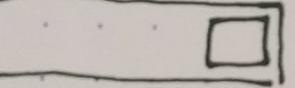


Constraints:

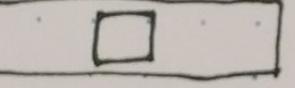
start



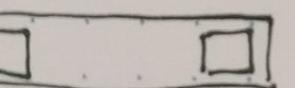
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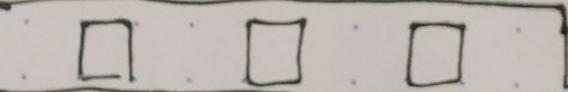
center



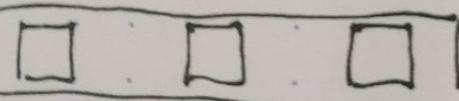
spaceBetween



spaceEvenly



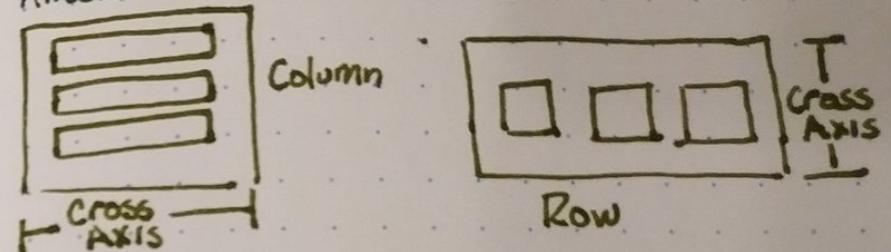
spaceAround



Cross Axis Alignment

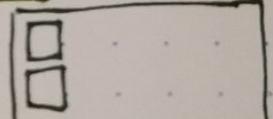
How the children should be placed along the cross axis of a flex layout.

Affects: Column, Row, Flex

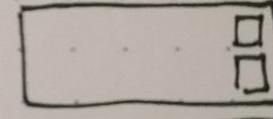


Constraints:

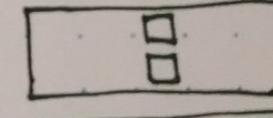
start



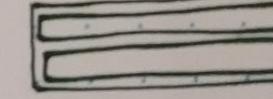
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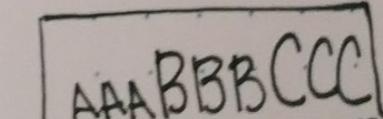
center



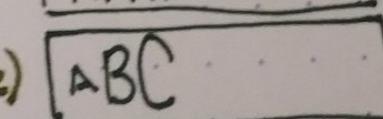
stretch



baseline



(no baseline)



List of Resources

- Getting Started with Flutter: <http://flutter.dev>
- Flutter [API reference documentation](#)
- Widget catalog: <https://flutter.dev/docs/development/ui/widgets>
- Use <https://dartpad.dev/flutter> to code without installing; drop /flutter to just use Dart
- *Coming from another platform?* Docs can be found each of these platforms: [iOS](#), [Android](#), [Web](#), [React Native](#), [Xamarin](#)

List of Resources con't

- Visit Google's Flutter Developers' [YouTube playlist](#)
- Flutter Developers' [Widget of the Week](#) series
- Information about [Flutter's iOS Application Bundle](#)
- Material Design Library [documentation](#)
- Flutter samples can be found on GitHub at <https://github.com/flutter/samples/blob/master/INDEX.md>

List of Resources con't

- Dart Packages - Find and use packages to build Dart and Flutter apps.
- ListView Cheat Sheet- show a list of items
- ListTile Cheat Sheet ListTile, an alternative to ListView
- Flutter Layout Cheat Sheet, in more detail than above
- Flutter Animations Cheat Sheet or expanded at Codemagic

List of Resources con't

- *London App Brewery* UDEMY course, co-developed with Google.
- *London App Brewery* course resources on GitHub
- Pawan Kumar, a Flutter GDE, created a YouTube video series called Learn Flutter Like A PRO By Building Apps
- *Flutter Community* sites

Platforms supported

Flutter

- iOS
- Android
- Web (in beta)
- MacOS (in alpha)
- Windows (in dev)
- Linux (in dev)

SwiftUI

- Apple platforms only

Questions?

Stef's contact info

- Twitter: @GeekMeSpeakStef
- Email: stephanie@GeekMeSpeak.com
- Demo resources:
 - Gists: <https://gist.github.com/Stef-GMS>
 - App: https://github.com/Stef-GMS/pdx_cocoaheads_demo_flutter_2020_01_08