



What is Flutter?

Lets take an example of Mr. Bob

He is an iOS Developer, he developed an app
Which detect food



PROBLEM: its only on iOS

When is it coming to Android?

When is it coming to Android?

When is it coming to Android?

When is it coming to Android?

When is it coming to Android?

When is it coming to Android?

When is it coming to Android?

When is it coming to Android?

When is it coming to Android?

He learn Android and made an Android app

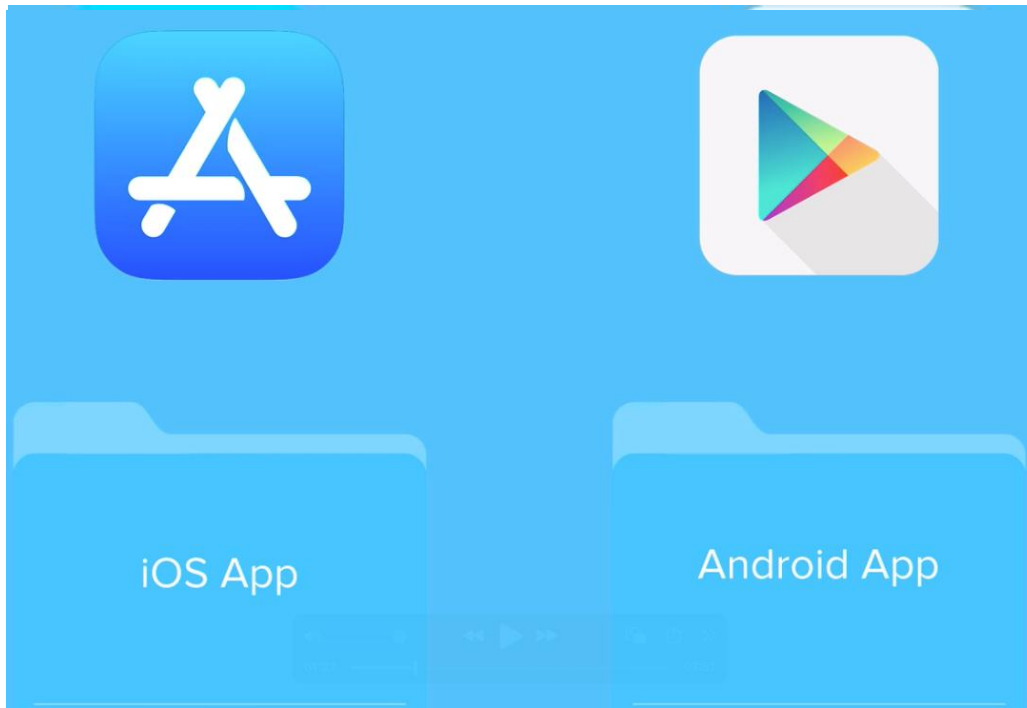
Launch on both market place



PROBLEM

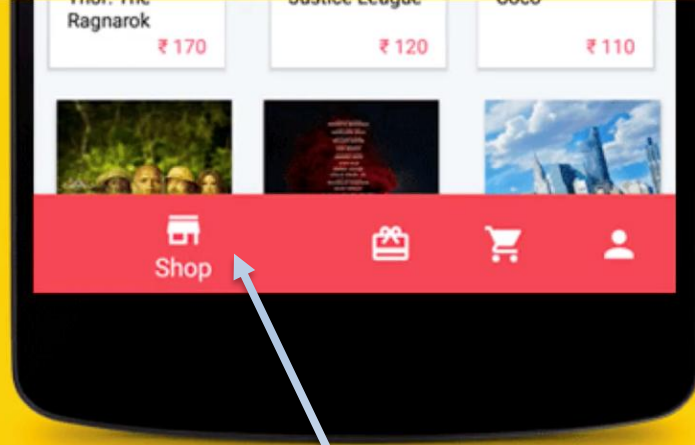
When he has updates he wants to make to the app or fix bugs he has to push the code
Both PlayStore and AppStore

And he has to maintained two Codebases



THAT'S DOUBLE THE AMOUNT
OF WORK

PROBLEM: THAT'S NOT ALL



Why this button twice the size of everything else

He gets complaints that in your app, some of the layouts look weird





He need to take care of different sizes
of iOS supported devices layout

AS WELL AS



He need to take care of different sizes
of Android supported devices layout

**PROBLEM: TO KEEP UP
WITH ALL DESIGNS AND
VARIOUS SIZES OF
SCREENS**



Flutter

Here's Flutter comes inn.

Question in mind that there are lot of
screens

Such as

Screens on Fridges

Screens on Bus Stations



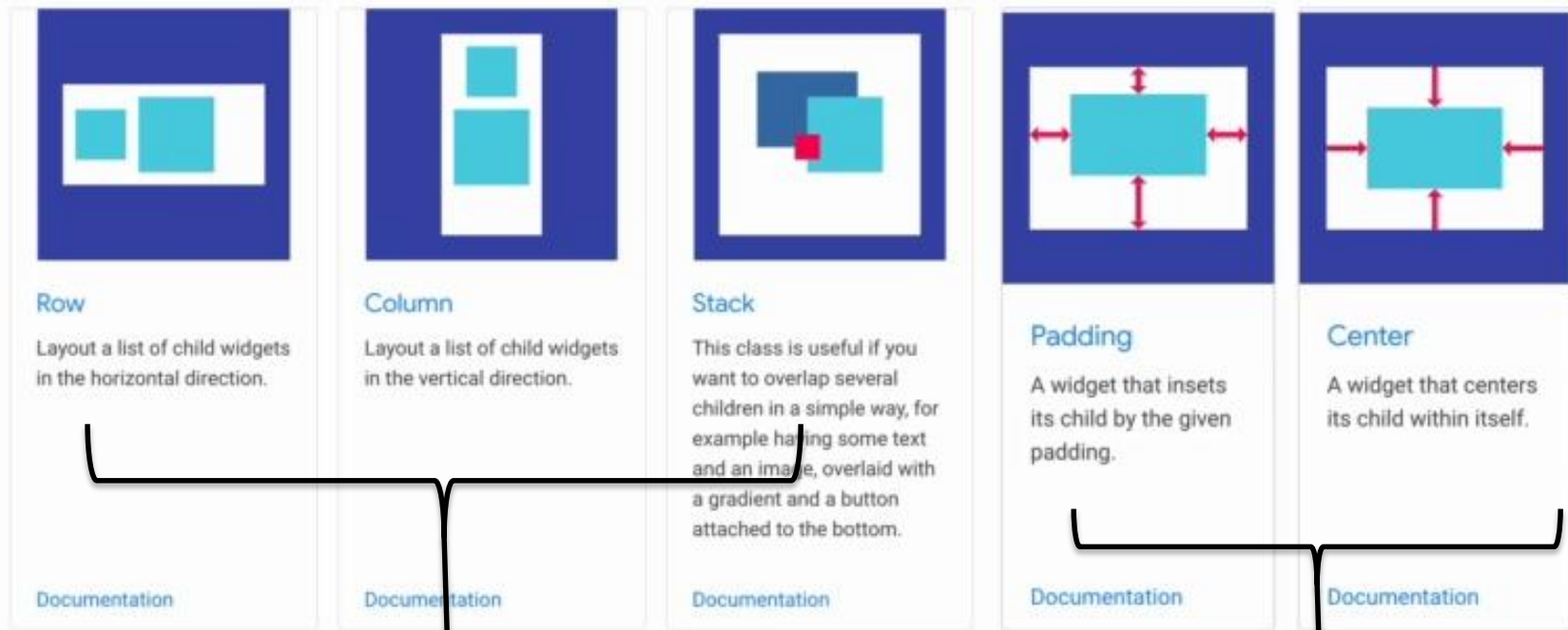


Screens on Mirrors

Different aspect ratios and various screen sizes



Flutter is simply a ToolKit, that makes easy for the developer to design Beautiful interfaces for all sort of screen sizes and devices



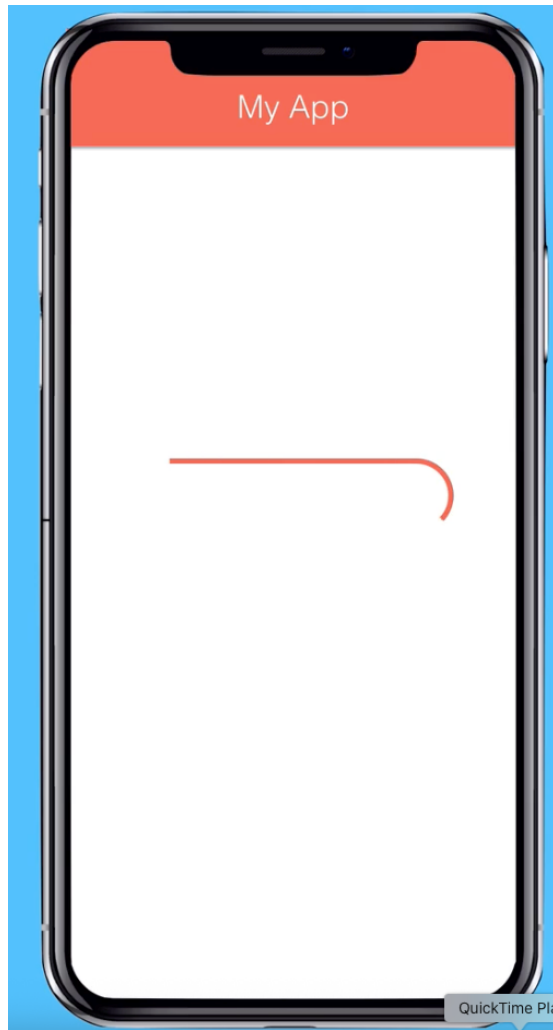
Flutter comes with whole bunch of pre-built widgets, that make it easy to layout of app

Straight forward widgets
Such as
Row
Column
Stack

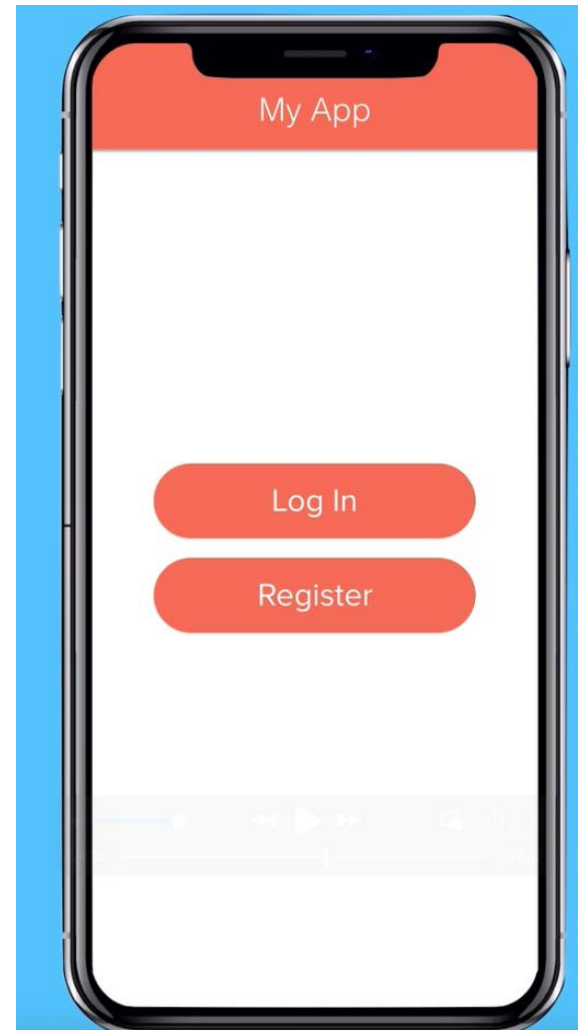
Borrow some of the
widgets from Web
designing such as
Padding
Center



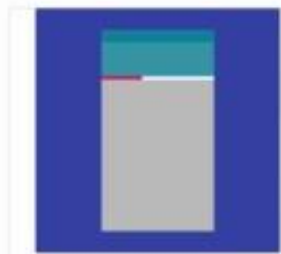
Flutter ask for blank screen



It will draw on to that blank window, whatever is it need to be render



All painted on by Flutter



LinearProgressIndicator

A material design linear progress indicator, also known as a progress bar.

[Documentation](#)



Stepper

A Material Design stepper widget that displays progress through a sequence of steps.

[Documentation](#)



FloatingActionButton

A floating action button is a circular icon button that hovers over content to promote a primary action in the application. Floating action buttons are most commonly used in the Scaffold.floatingActionButton field.

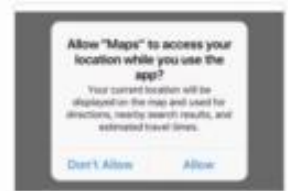
[Documentation](#)



AlertDialog

Alerts are urgent interruptions requiring acknowledgement that inform the user about a situation. The AlertDialog widget implements this component.

[Documentation](#)



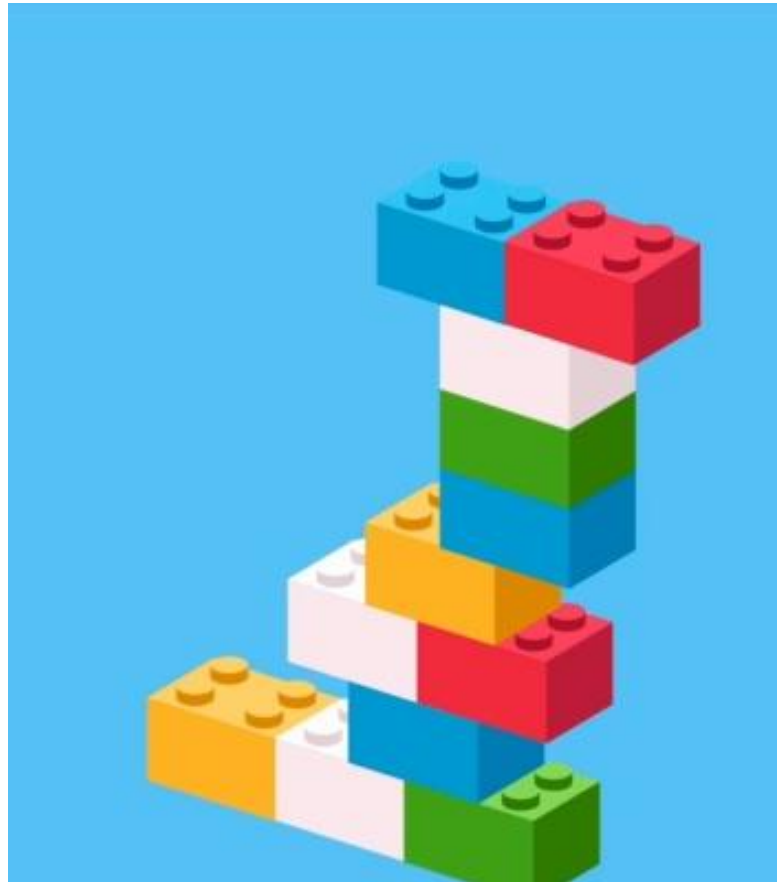
CupertinoAlertDialog

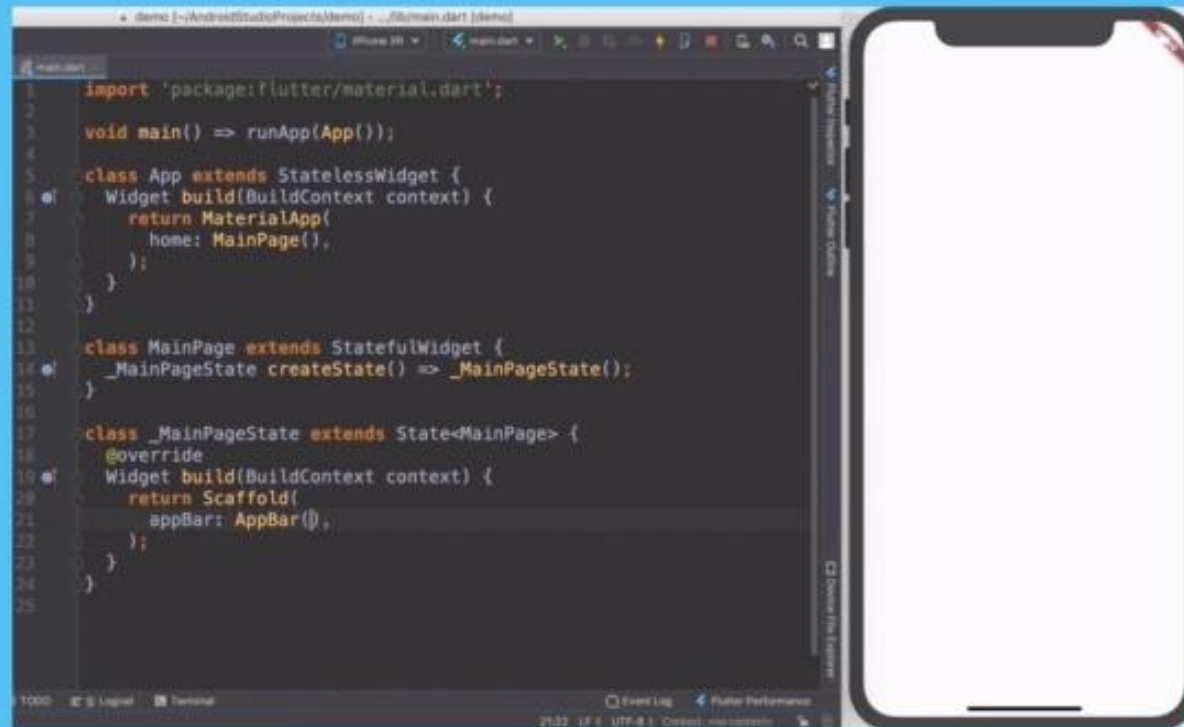
An iOS-style alert dialog.

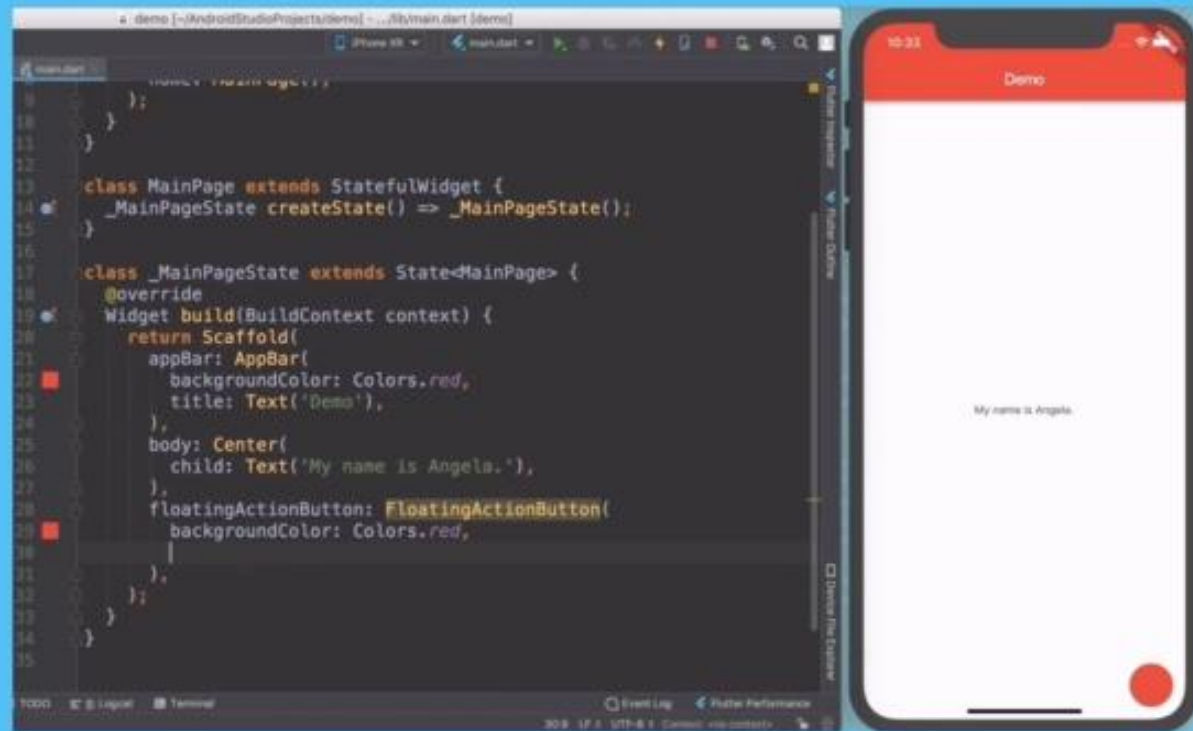
[Documentation](#)

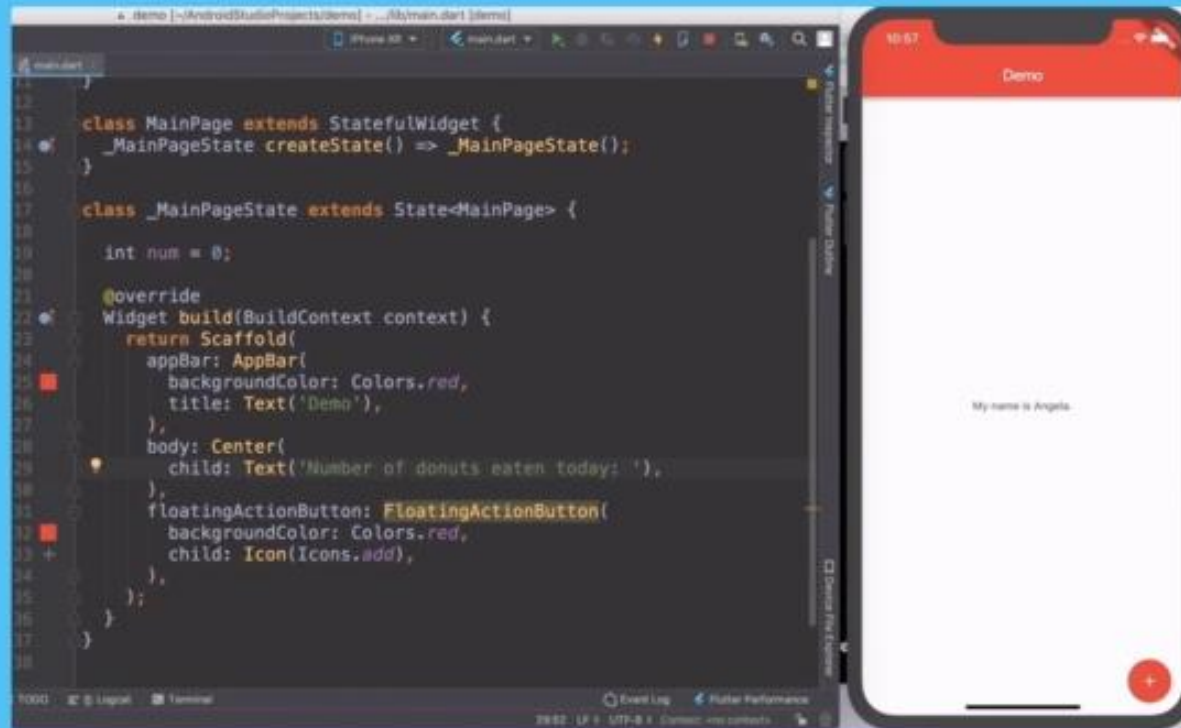
Instead develop app in two different ways Apple or Android
Use Flutter to develop app in one place and deploy on both platform
Even we can customize the layout e.g. by default AlertDialog looks like
If platform is iOS we can customize the alert dialog as

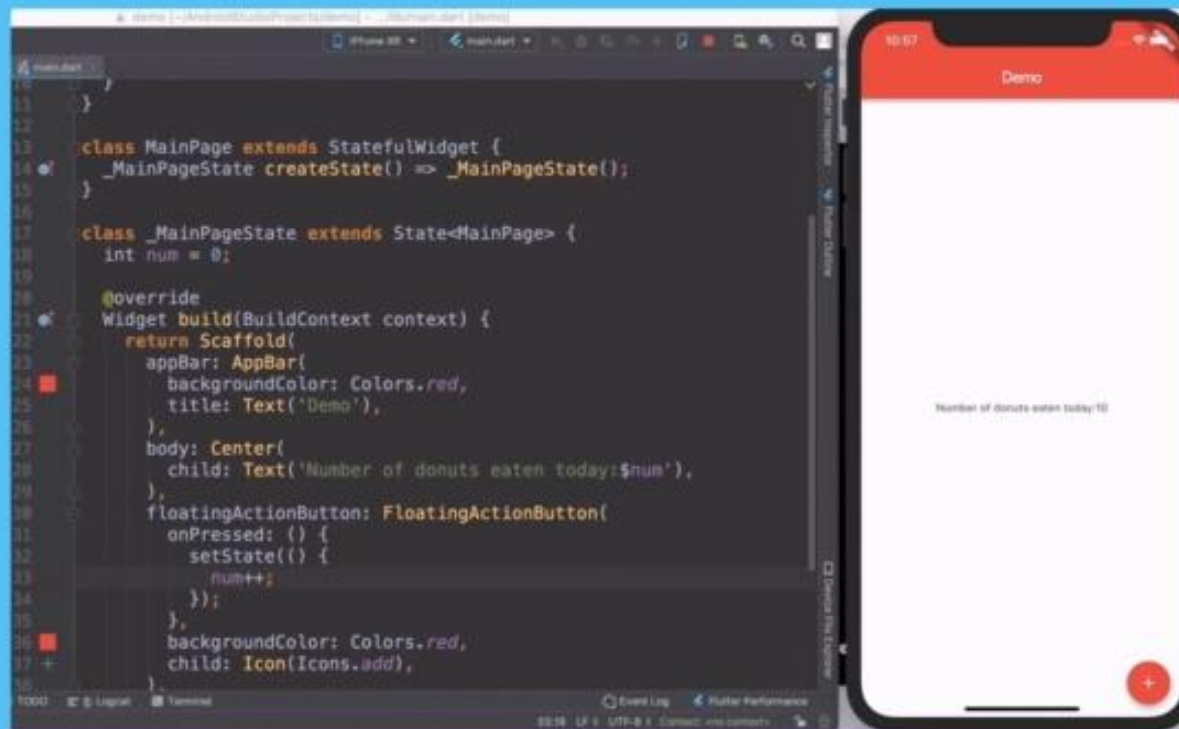
AT ONE PLACE











Deploy Everywhere





Why Flutter?

- One place to debug, and one place to update, and one place to maintain

JUST NEED TO LEARN



Dart

- Powerful language that's actually quite easy to work with.
- You can use it to create iOS apps, Android apps, Web apps, and Window apps.
- Dart is actually very similar to modern object-oriented programming languages



YOU CAN BUILD

iOS



Web



Desktop



Android

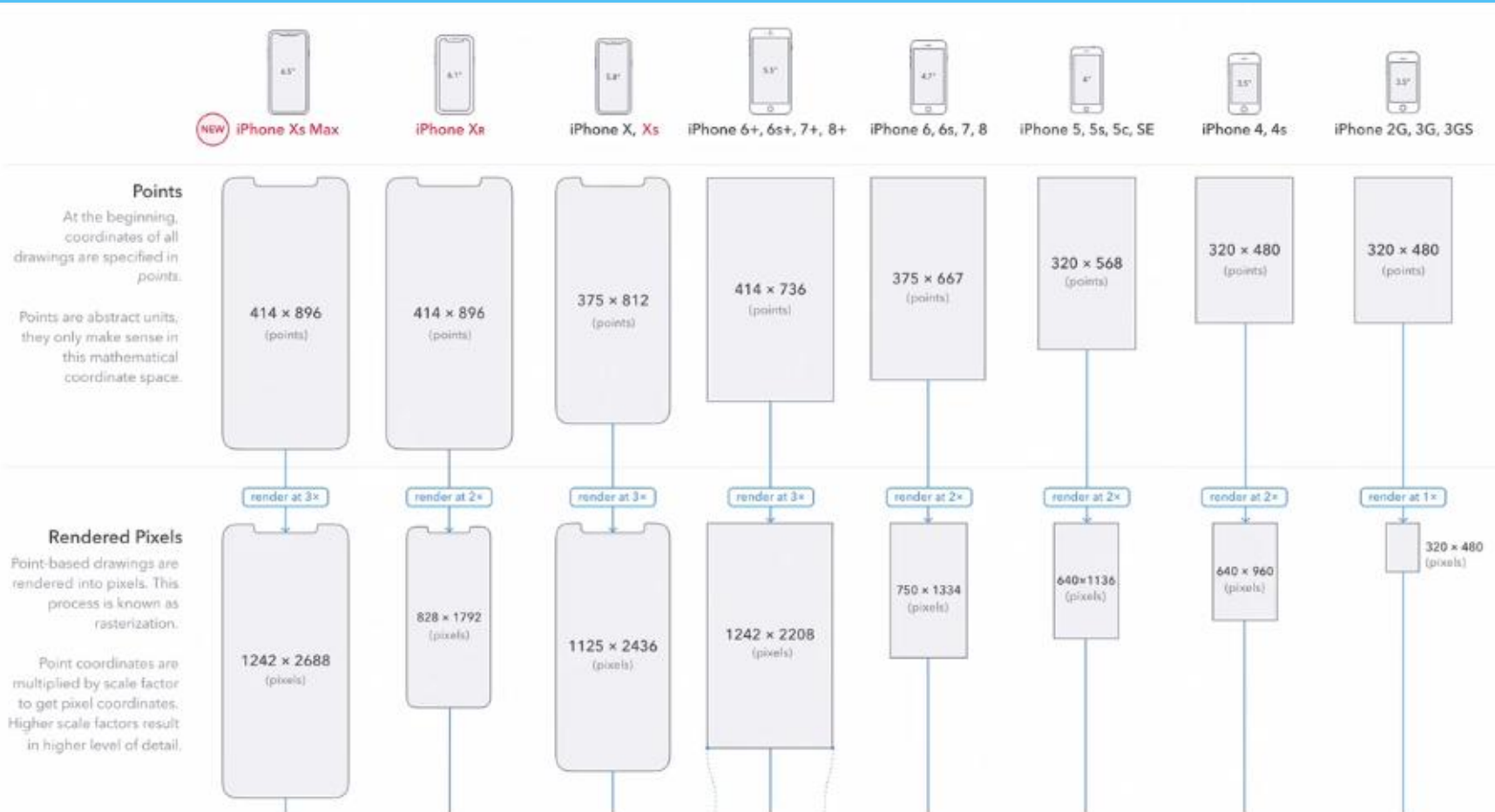


Flutter





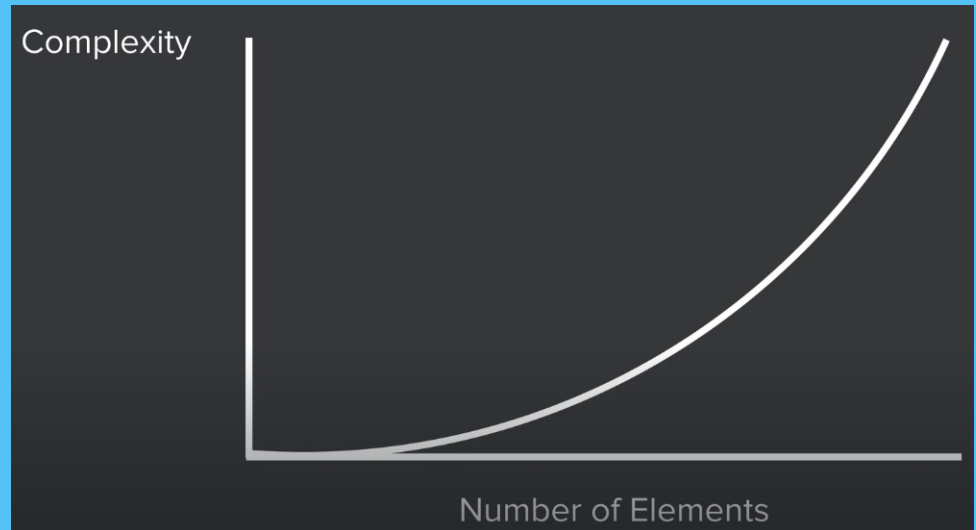
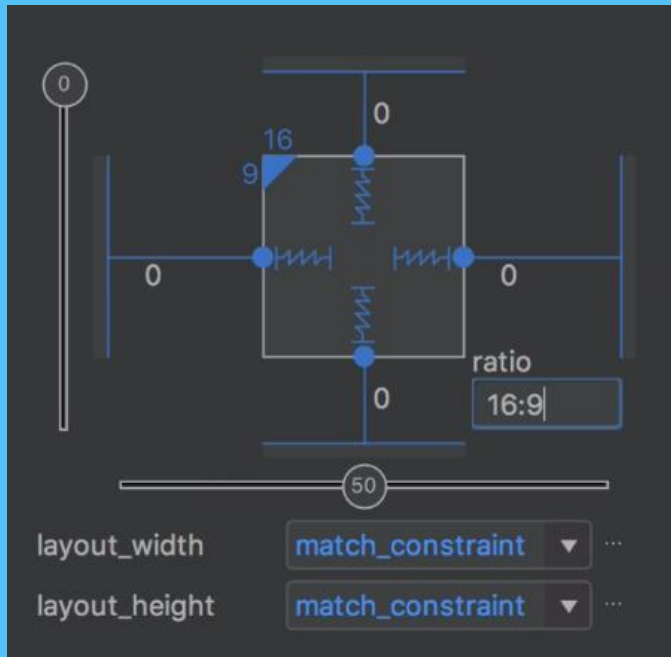
Various Screen Sizes





Constraints!

- In order to cover all sizes; both Android and iOS, we now use constraints



- Constraints gets more complex as the number of elements increases; its easy when we have limited amount of elements on the screen like 4 or 5



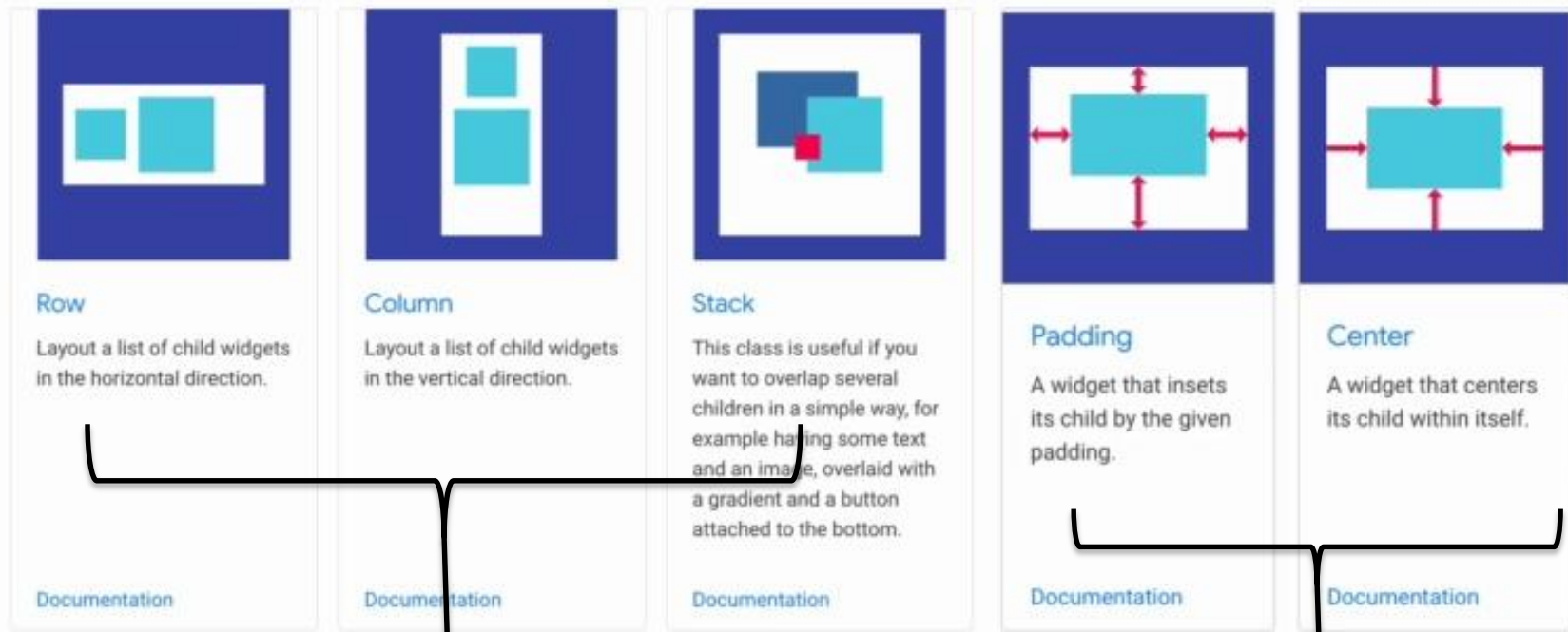
Constraints!

- But now we are in the era where phone screens sizes are getting big, and bigger.
- So, constraints will be more complex; here the flutter comes with the solution to such problem

Flutter Inspiration

- A lot of it comes from the web, because this one place where they've actually had to adapt to various different sizes, because people pull up websites on mobile, on iPads, on tablets, on large desktop

SUCH AS RESPONSIVE WEBSITES created using **Bootstrap**



Flutter comes with whole bunch of pre-built widgets, that make it easy to layout of app

Straight forward widgets
Such as
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Column
Stack

Borrow some of the
widgets from Web
designing such as
Padding
Center



Why Flutter – HOT RELOAD

- One of the biggest pains is when you have to run the app because often on iOS, it can take 10 and 30 seconds between saving code, running app, compiling it and finally seeing it on screen
- But in Flutter, as you hit save or hit 'r' on terminal your code will be updated, your app interface changes in front of your eyes in a fraction of a second



Why Flutter – Last thing to mention



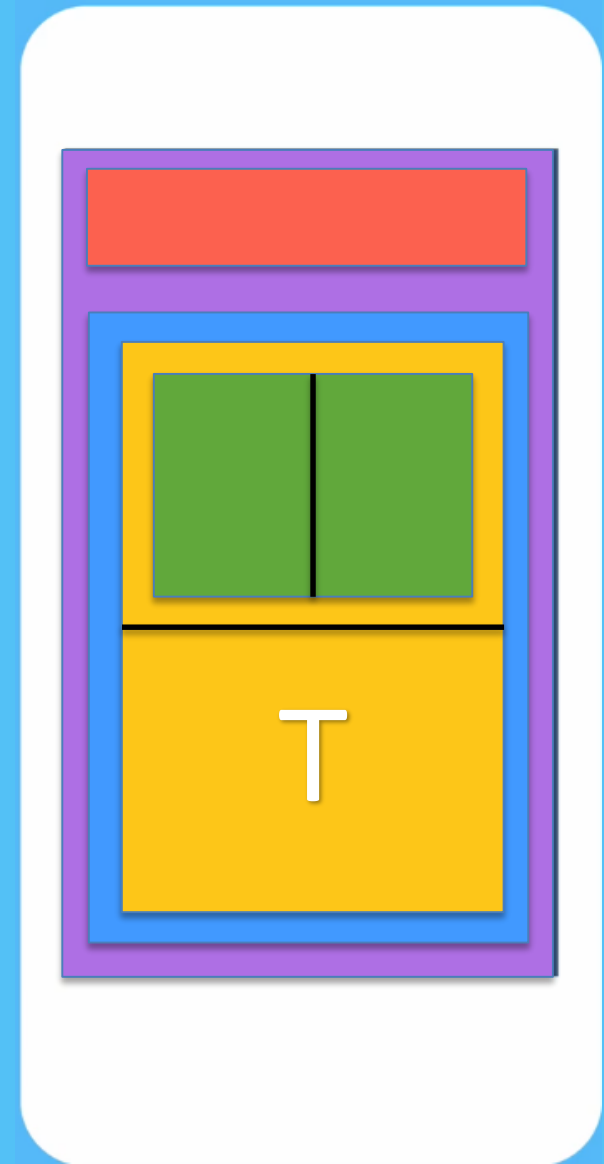
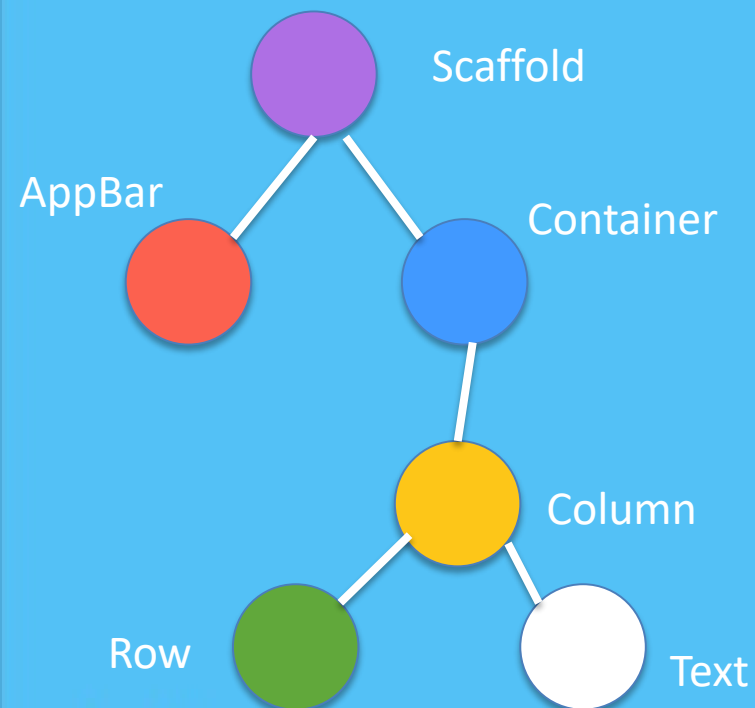
Access to Original Source Code

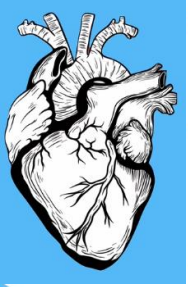
- Because Flutter is open-source, you can click on any widget, you will see how the Google-Developer wrote the code of that widget



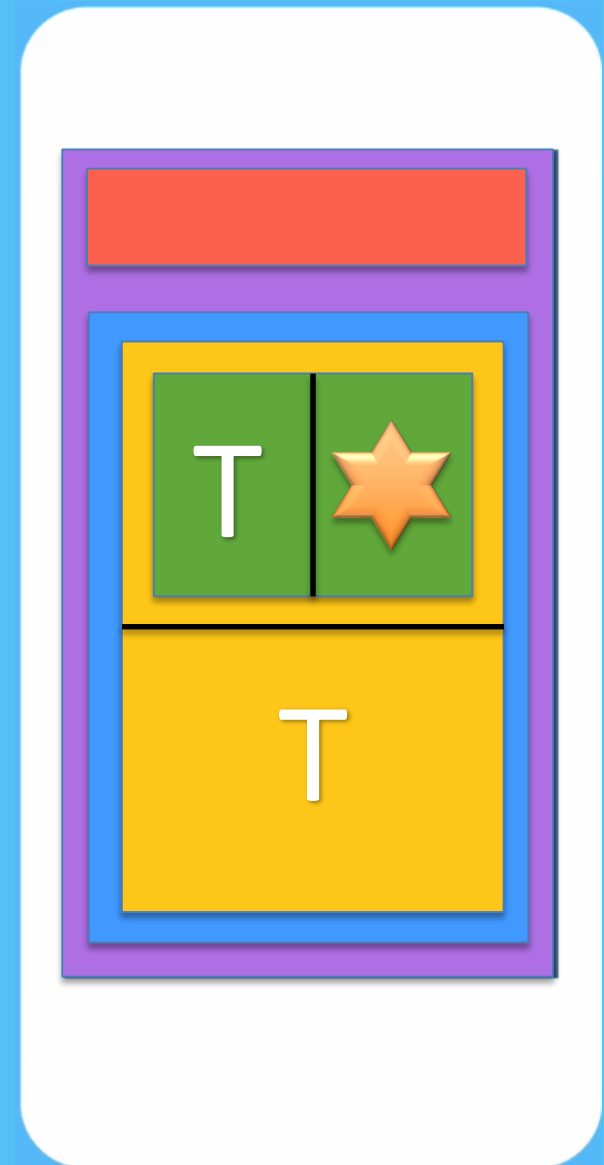
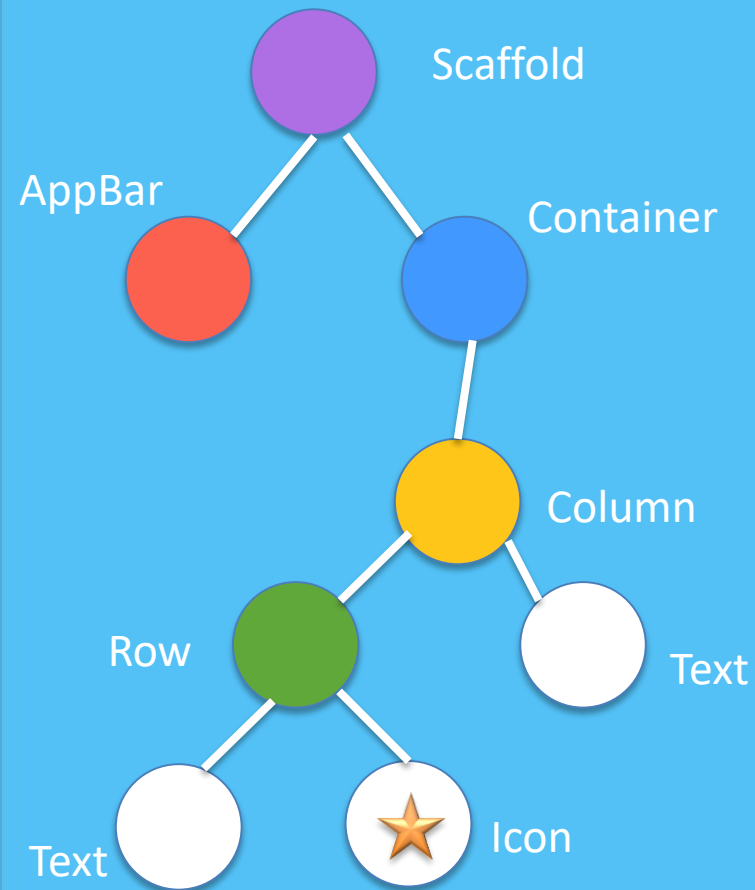
Anatomy of a Flutter App

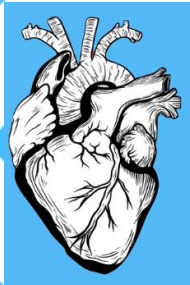
- Flutter app is a widget and we build widgets upon widgets, just like lego blocks on lego blocks in order to create app
- First thing we create is scaffold





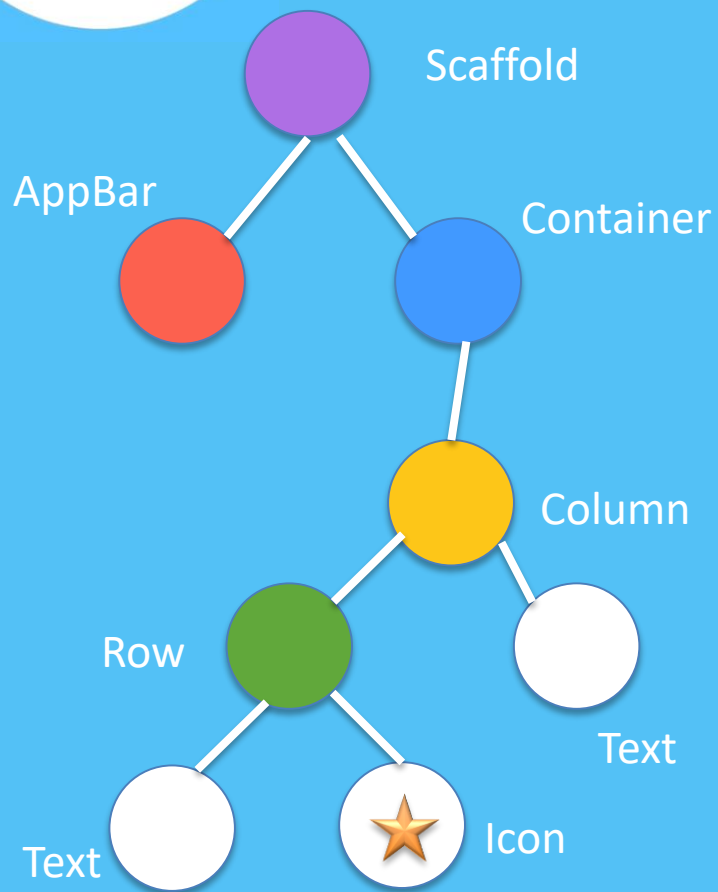
Anatomy of a Flutter App





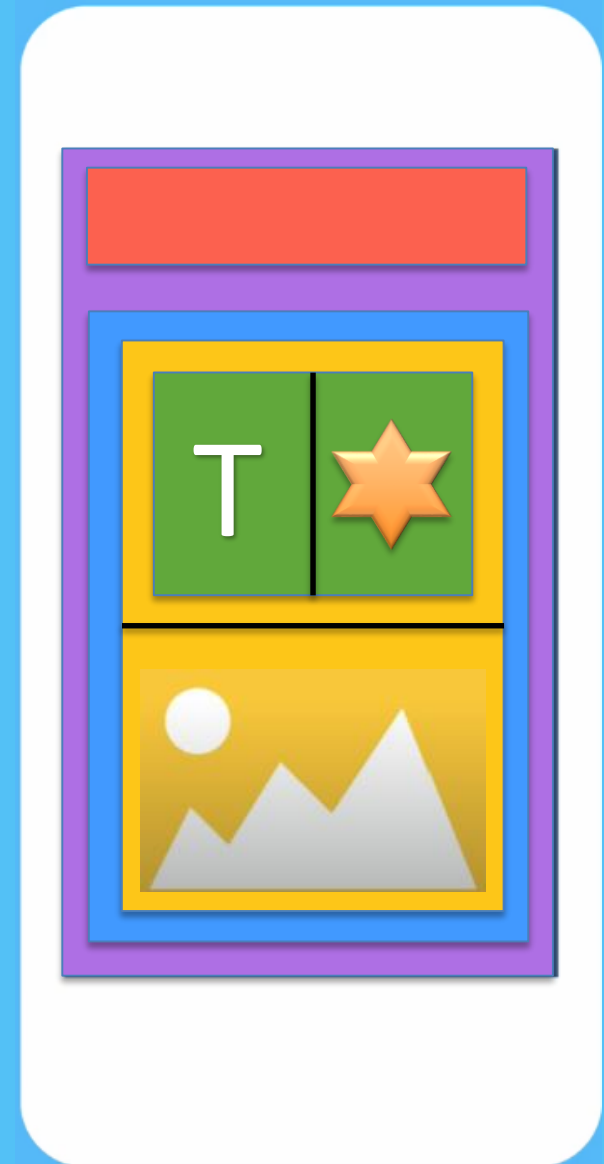
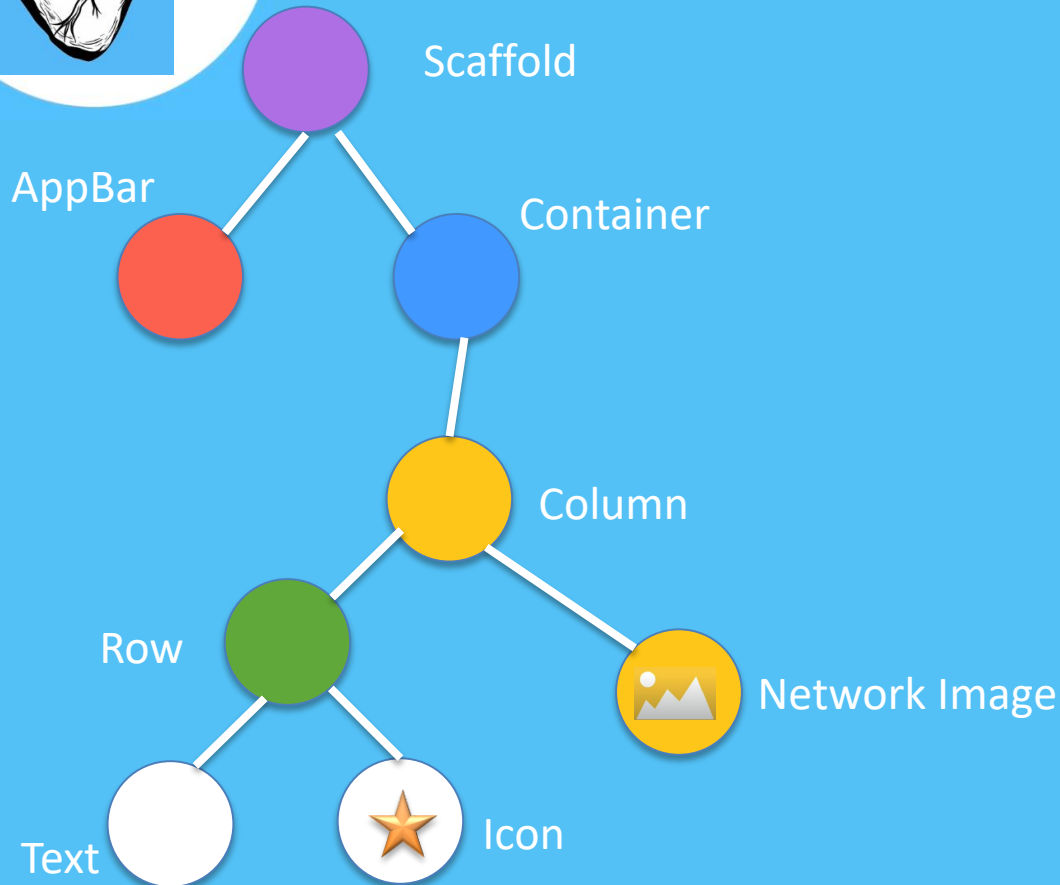
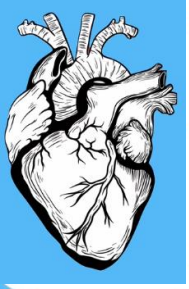
Anatomy of a Flutter App

Widget Tree



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

Anatomy of a Flutter App



These are UI Widgets

There are other widgets such show pictures from Internet



Think as LEGO Technic





Installation and Setup for Flutter Development

For Windows:

- Install Flutter SDK <https://docs.flutter.dev/install/manual>
 - Install Android Studio
https://developer.android.com/studio/?gclid=Cj0KCQiAjJOQBhCkARIsAEKMtO3zEhdK4_I0CEZic3UH4dl-9gVXuHFR9dCl3TOHKjmv3xWLU3UxfhYaApfAEALw_wcB&gclsrc=aw.ds
 - Install the Android Emulator
 - Classpath settings:
 - Path:
 - D:\flutter
 - D:\flutter\bin
 - ANDROID_HOME
 - D:\android_sdk
- If you are using internet behind the Proxy Server then flutter needs these two
- HTTP_PROXY
 - http://<proxy server ip>:<port>
 - HTTPS_PROXY
 - http://<proxy server ip>:<port>



Installation and Setup for Flutter Development

For Mac:

- Install Flutter SDK <https://docs.flutter.dev/install/manual>
- Install Android Studio
https://developer.android.com/studio/?gclid=Cj0KCQiAjJOQBhCkARIsAEKMtO3zEhdK4_I0CEZic3UH4dl-9gVXuHFR9dCl3TOHKjmv3xWLU3UxfhYaApfAEALw_wcB&gclsrc=aw.ds
- Install the Android Emulator
- Install Xcode and command-line tools
- Test the iOS Simulator