FLUTTER WORKSHOP

Agenda

Installation and set-up

What is Flutter?

Why Flutter?

Overview of Flutter architecture

Quick review of Functions, Classes, and Objects - *Demo*

What is Flutter?

Mobile UI for creating apps for both iOS and Android systems

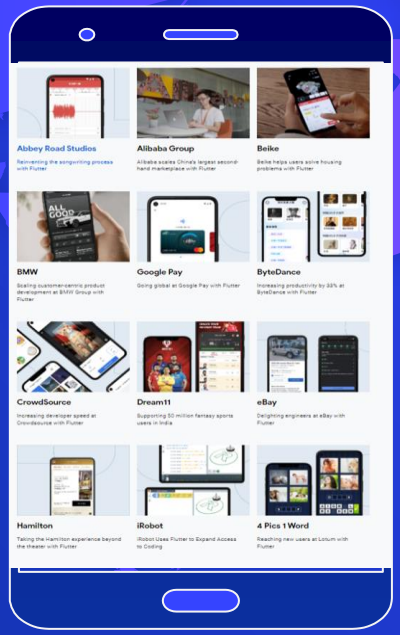
One code-base for both operating systems

Uses Dart as a programming language

Why use Flutter?

- Easy-to-use with only 1 code base
- Has great documentation and guides
- Integrates with Firebase (Online Database often used as a backend service)
- It is an open-source framework
- Flexible to allow user to customize design

Apps currently made with Flutter



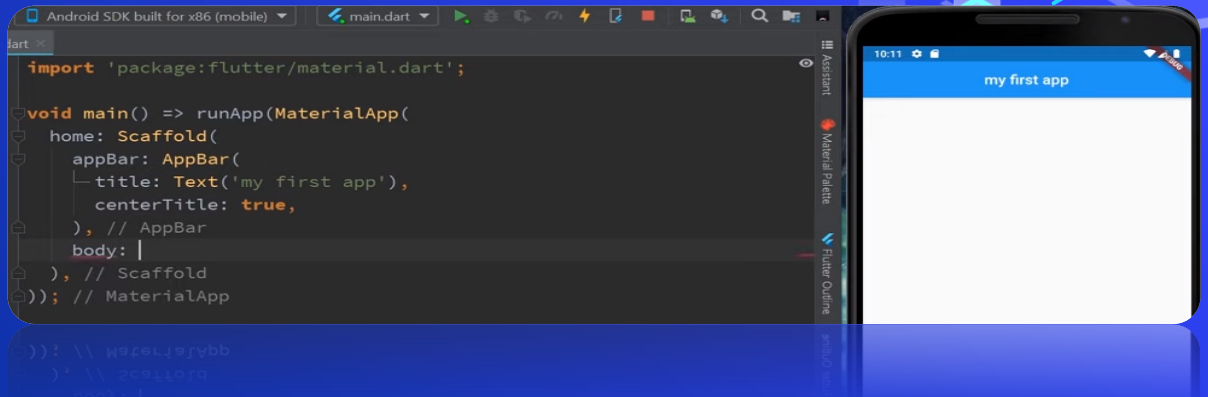
- JD Finance
- Pairing
- Meeve
- n8
- Music Tutor
- Topline
- Google Ads
- SG Bus tracker

How does Flutter operate?

- A combination of widgets
- Common widgets that are used include:
  - Text widget
  - Button widget
  - Row widget
  - Column widget
  - Image widget

Scaffold Widget

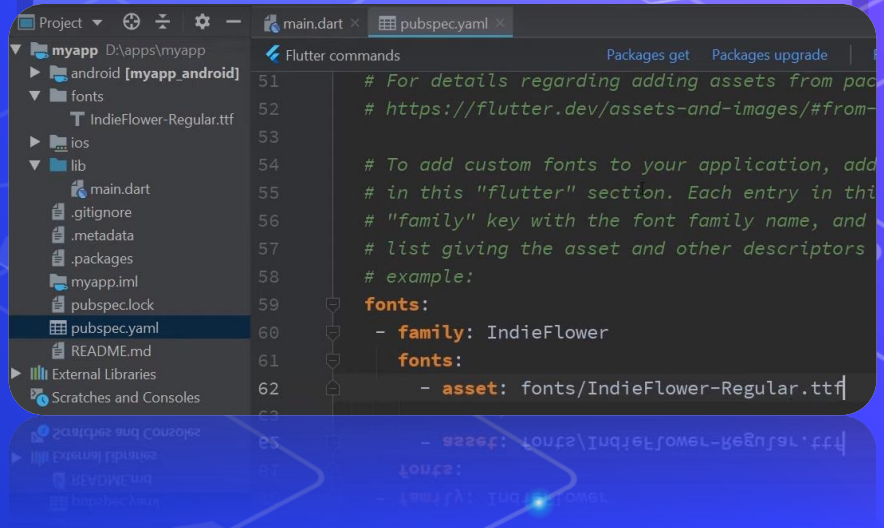
- A **Scaffold Widget** is basically a wrapper to a few different layout widgets.
- For example, the app bar, the body, and a floating action button.
- Provides a framework which implements the basic material



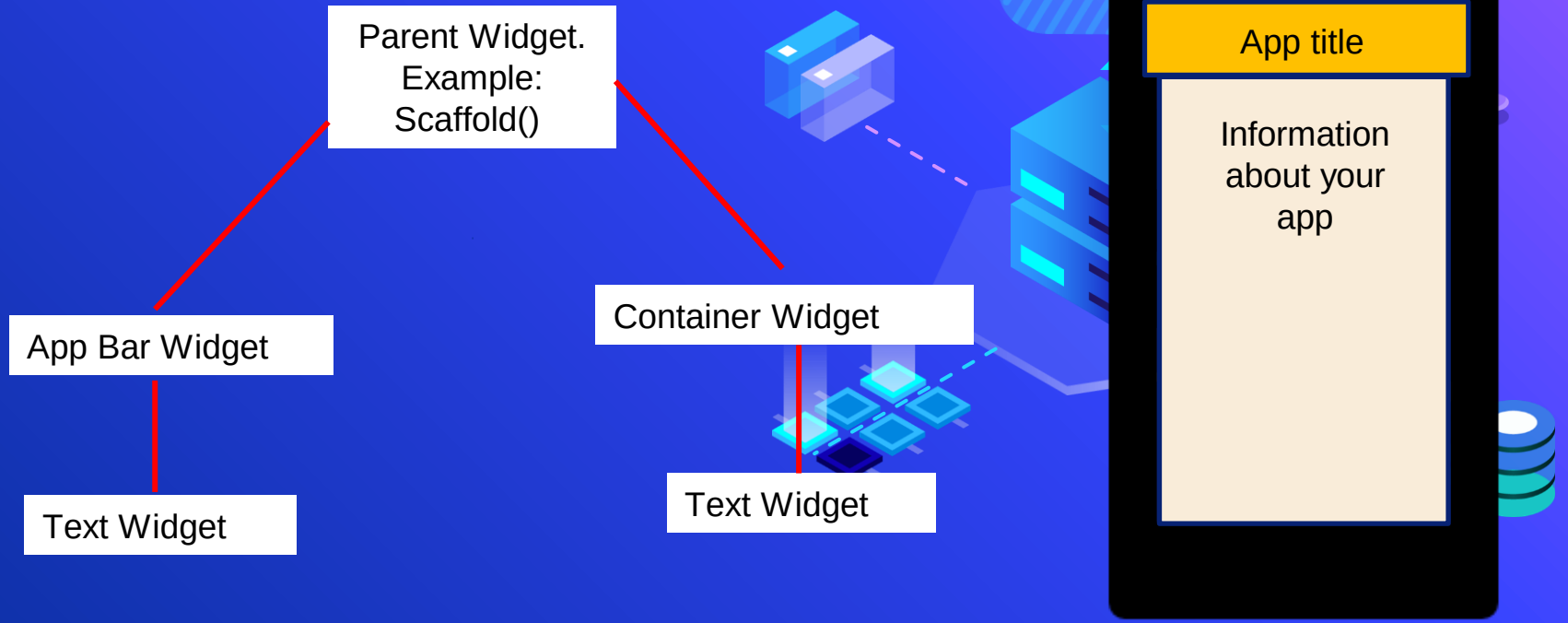
Text Style Widget

- Allows you to customize text
- Allows you to change text:
  - Font size
  - Ability to bold text
  - Letter spacing
  - Color
  - Font

```
style: TextStyle(
  fontSize: 20.0,
  fontWeight: FontWeight.bold,
  letterSpacing: 2.0,
  color: Colors.grey[600],
```



How does Flutter operate?



Hot Reload & Hot Restart

- Hot Reload
  - Reloads that app but saves the environment variables.
- Hot Reload feature helps you quickly
  - Easily experiment
  - Build User Interfaces’
  - Add features
  - Fix bugs

- Hot Restart
  - Reloads the entire app

Scaffolding and AppBar Demo

Image widget

- Images can be added via online links or files from your desktop.

```
body: Center(
  child: Image(
    image: NetworkImage('https://images.unsplash.com/photo-1501549
```

- NetworkImage()
  - displays images from the internet
  - You can copy a url by right clicking an image online and clicking “copy image url”

```
body: Center(
  child: Image(
    image: AssetImage('assets/space-3.jpg')
```

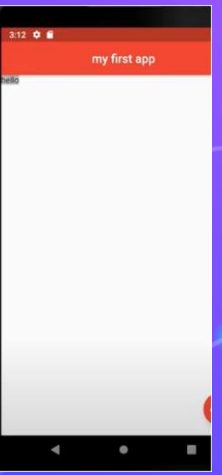
- Assetimage()
  - Inputs local image on your personal computer.

Container

- Container widget: it helps contains all of the widgets and it comes with properties like padding, margin and color

- Body: Container (container for the widgets
  - Color: Color. grey[400] (this is the color of the container)

```dart
class Home extends StatelessWidget {
  @override
  Widget build(BuildContext context) {
    return Scaffold(
      appBar: AppBar(
        title: Text('my first app'),
        centerTitle: true,
        backgroundColor: Colors.red[600],
      ), // AppBar
      body: Container(
        color: Colors.grey[400],
        child: Text('hello'),
      ), // Container
      floatingActionButton: FloatingActionButton(
        onPressed: () {},
        child: Text('click'),
        backgroundColor: Colors.red[600],
      ), // FloatingActionButton
    ); // Scaffold
  }
}
```



The container is only confined to the child widget text “hello”

```dart
class Home extends StatelessWidget {
  @override
  Widget build(BuildContext context) {
    return Scaffold(
      appBar: AppBar(
        title: Text('my first app'),
        centerTitle: true,
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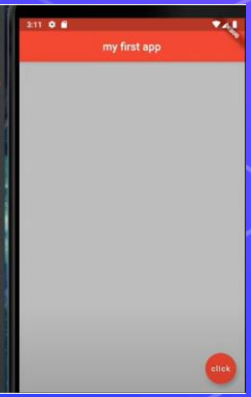
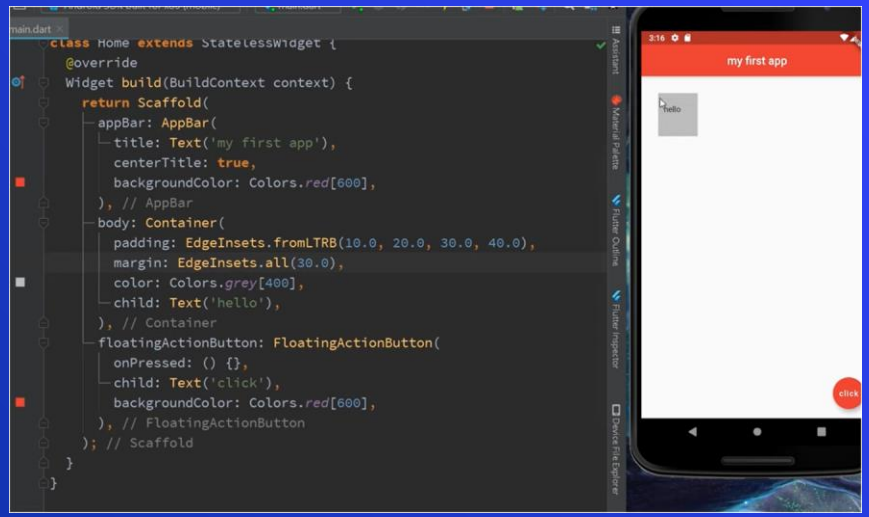
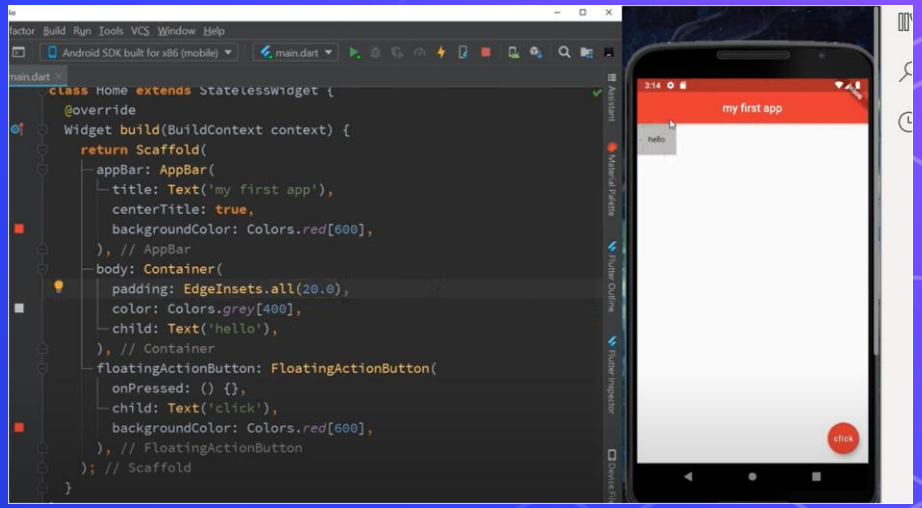


This makes the container grey , which is represented by the whole rectangle

Padding & Margin

- Can be used to change the container to whatever shape and size
- **Function:** Edgeinsets()
  - this is how you control padding and margin inside flutter





Margin: is around the container

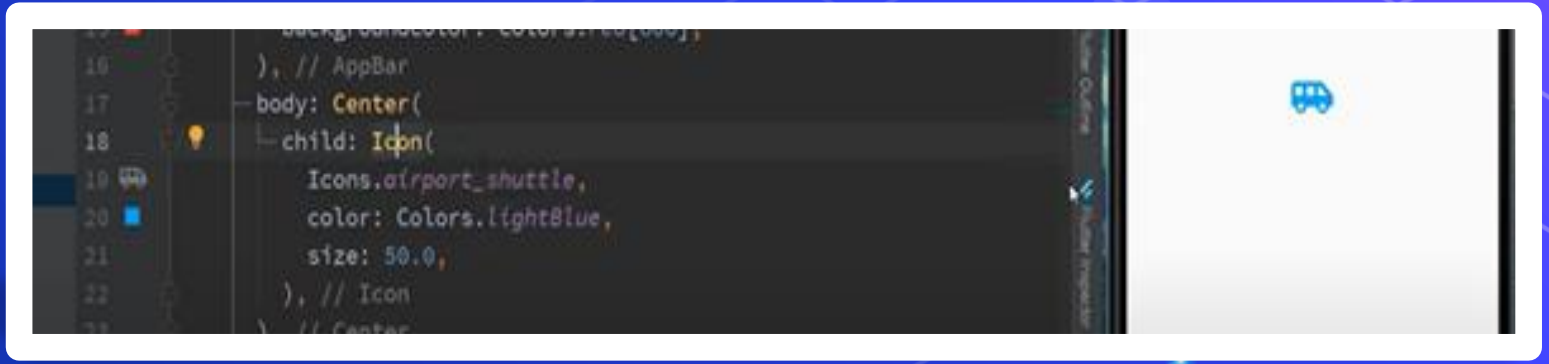
Padding : EdgeInset.all(20) will add 20 pixels of padding around all edges

Containers Demo

Icons

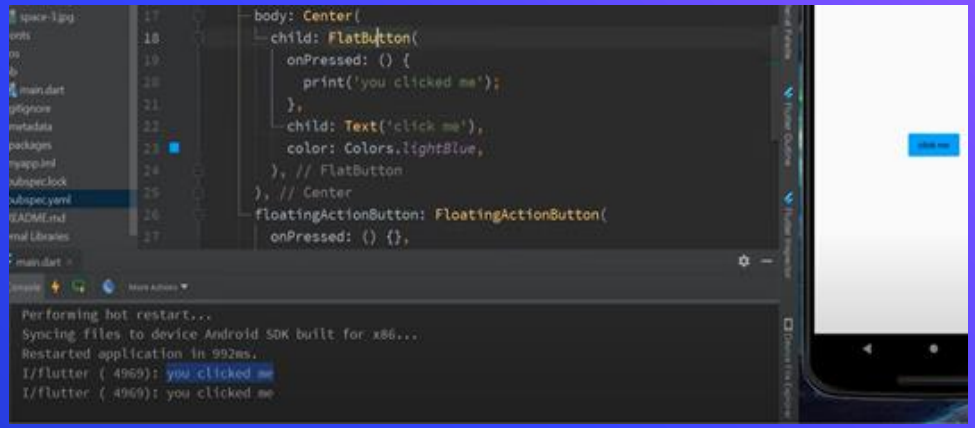
Icon is a widget that can be added to the app to show symbols. To do this set Icon as a child class

Within the child class of icon, you can specify which icon you want, the color, size etc.



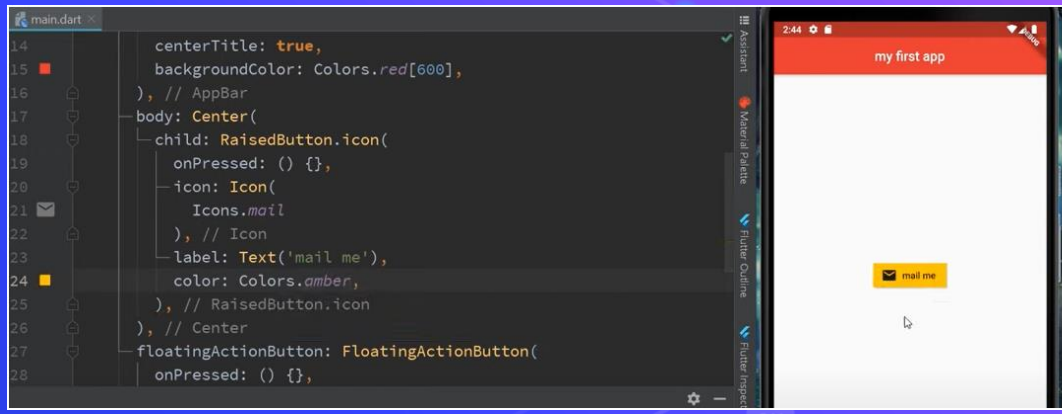
Button

Create a child class and specify what type of button you want. It can be a flat button or a raised button
onPressed : When the button is pressed a functions will be executed. This case it will state you clicked me
Child: text (*will appear in the button)*
Color: can use any color you want
If you press Control +Q it will list all the other attributes that can be apart of the button class

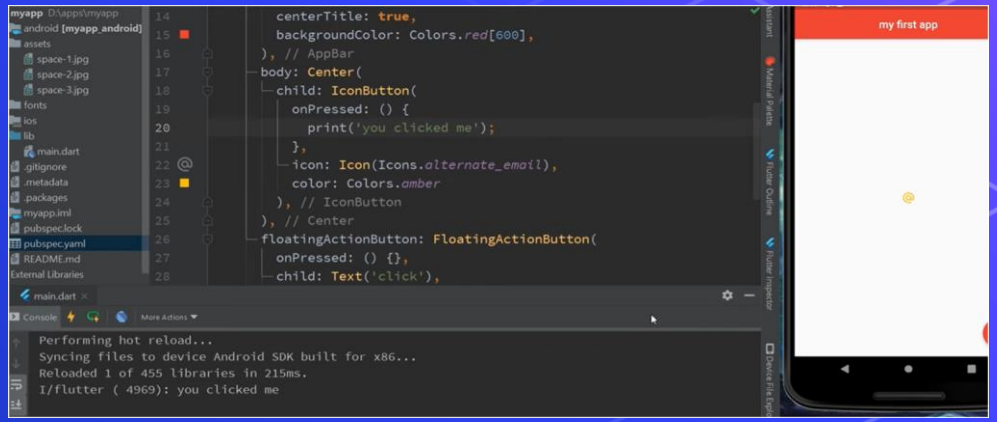


Adding an Icon to the Button

- Child: Raisedbutton.icon *(this means want an icon inside the button)*
- Same rules apply as earlier shown earlier
- Or you can make the icon as a button shown in the bottom figure



Making the icon appear in the button



You can have an Icon Button

Icons and Buttons Demo

Rows

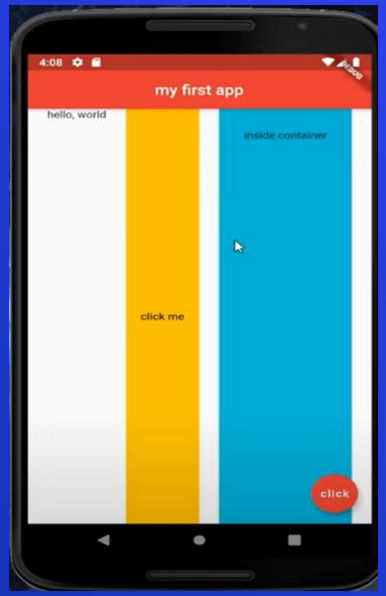


Figure: CrossAxisAlignment.stretch stretches the widget across the vertical axis

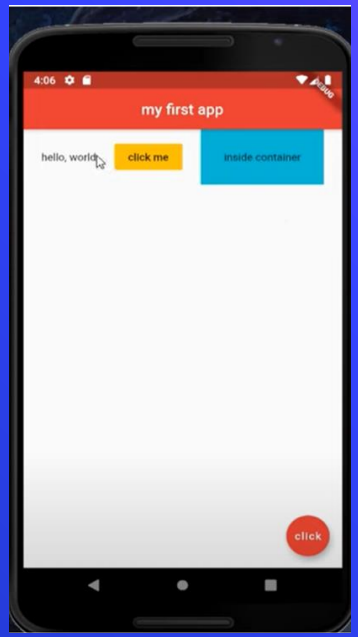


Figure: MainAxisAlignment.space Evenly places the widgets evenly along the horizontal axis

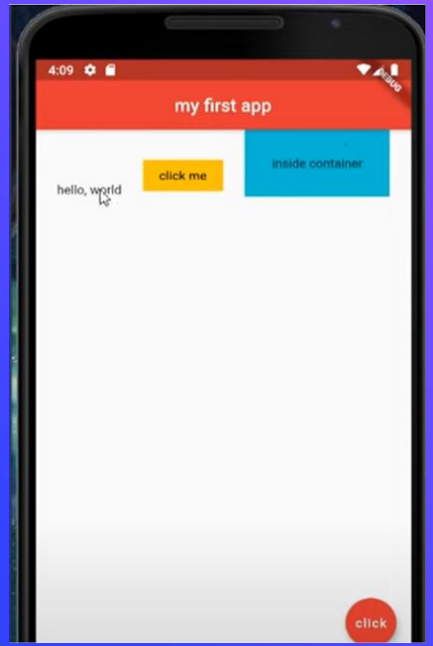


Figure: CrossAxisAlignment.end allows the smallest widget to be at the bottom of the highest widget along the vertical axis

Rows

Row is a widget itself

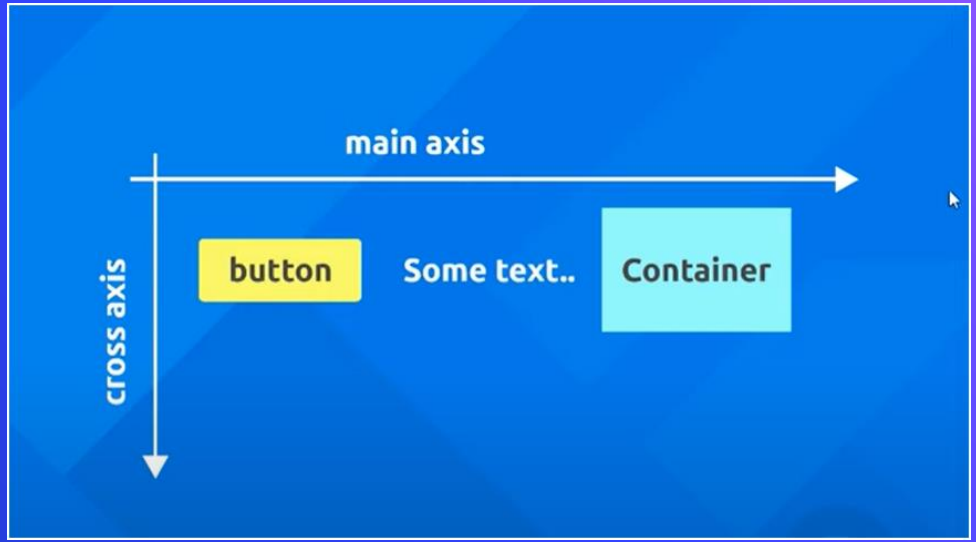
- Therefore you can stack multiple widgets within a row
- You call upon the children[] property which puts all the widgets in a list

Main axis

- Allows for a horizontal shift
- Function : MainAxisAlignement.()

Cross Axis

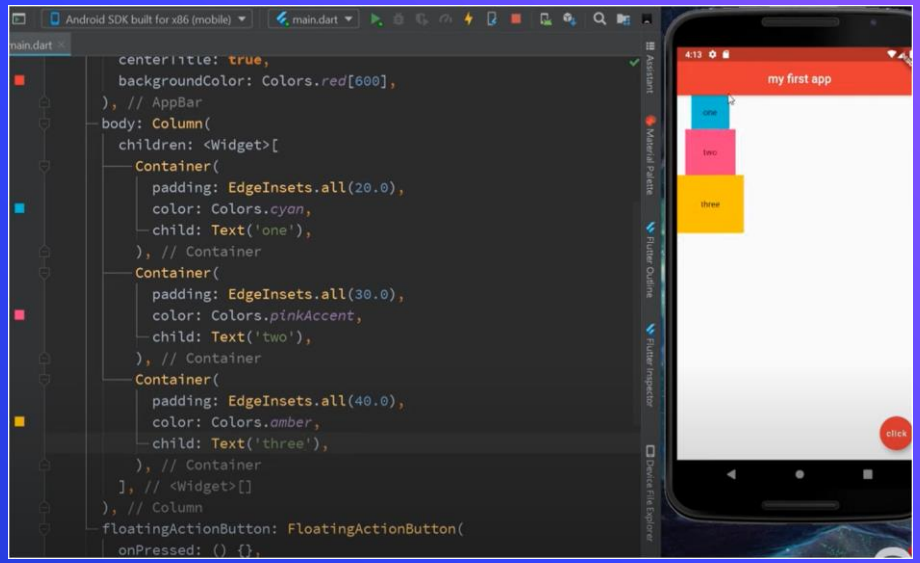
- Allows for a vertical shift
- Function: CrossAxisAlignment.()



Columns

Elements stacking on top of the other
Main axis
Allows for a vertical shift
Function: CrossAxisAlignment.()

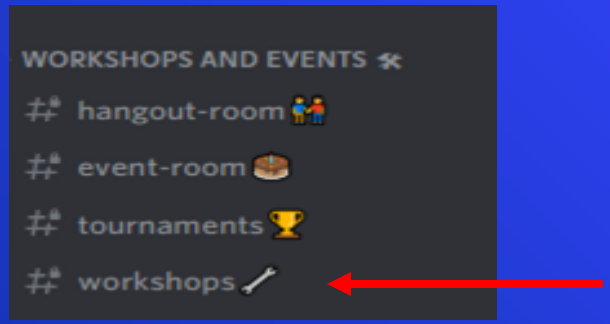
Cross Axis
Allows for a horizontal shift
Function : MainAxisAlignement.()



Rows & Columns Demo

Questions ?

You can contact us on Discord and ask questions in the *#workshops* channel:



Exit Survey Password:
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