# Flutter + Flame course

We will build a 2d Minecraft

## Flutter commands to remember

Create a new project :`flutter create {PROJECT_NAME}` Add a package: `flutter pub add {PACKAGE_NAME}`

## Creating first Flame widget

In this project we will use the Flame Engine to create a Minecraft 2d version

first we create a `MainGame` instance in `main-game.dart`:

```
import 'package:flame/game.dart';

class MainGame extends FlameGame {}
```

then, in `main.dart` we must ensure that flutter binds are initialized (normal when use a external lib at the begining of the projetc like this):

```
import 'package:flame/game.dart';
import 'package:flutter/material.dart';
import 'package:minecraft_2d/main-game.dart';

void main() {
  WidgetsFlutterBinding.ensureInitialized();
  runApp(GameWidget(game: MainGame()));
}
```

## Create the game

Accordly to de Game Design document: we should change `main.dart` to :

```
void main() {
  WidgetsFlutterBinding.ensureInitialized();
  runApp(const MaterialApp(
    home: GameLayout(),
    debugShowCheckedModeBanner: false,
  ));
}
```

create a `GameLayout Widget`:

```
...

class GameLayout extends StatelessWidget {
  const GameLayout({super.key});

  @override
  Widget build(BuildContext context) {
    return Stack(
      children: [
        //the game logic
        GameWidget(game: MainGame()),
        //HUDs
        const ControllerWidget()
      ],
    );
  }
}
```

## Creating the ControllerWidget

Theres is not diferente here from a normal Fluter app. Just create a statefull Widget as placeholder e manager of buttons actions for the buttons and another widget with the buttons

## Creating the player

For the player creation we will use some components from Flame library

```
import 'package:flame/components.dart';
import 'package:flame/flame.dart';
import 'package:flame/sprite.dart';

class Player extends SpriteAnimationComponent {
  @override
  Future<void> onLoad() async {
    super.onLoad();

    SpriteSheet playSpriteSheet = SpriteSheet(
      image: await Flame.images
          .load('sprite_sheets/player/player_walking_sprite_sheet.png'),
      // srcSize: Vector2(60, 60),
      srcSize: Vector2.all(60),
    );

    animation = playSpriteSheet.createAnimation(
      row: 0,
      stepTime: 0.1,
    );
```

```
    size = Vector2(100, 100);
  }

  @override
  void update(double dt) {
    super.update(dt);
    position.x += 1;
    position.y += 1;
  }
}
```

the `SpriteAnimationComponent` is a component that animates a `SpriteSheet`

first we need to create an `onLoad` function that will define the sprite sheet used and its dimensions

An SpriteSheet is a grided image with diferents positions for the player to be animated.

in the animation property of the load function of the `SpriteAnimationComponent` we must define the dimension of the grid (60px in the case) and the row, that is the row in the grided image. then we create a `update` functions that will control the possition of the player on screen in a update

**NOTES: This tutotial is from Create a Minecraft game with Flutter + Flame ministred by Aadhi Arun in Udemy platform**

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