



Desenvolvimento de Software para Dispositivos Móveis

Aula 16 - Flutter - Introdução



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Introdução



Introdução



Introdução



	FLUTTER	REACT NATIVE
LANÇAMENTO	2017	2015
USER INTERFACE-UI	WIDGETS PRÓPRIOS	COMPONENTES NATIVOS DO SO
APARÊNCIA NATIVA	★ ★ ★ ☆ ☆	★ ★ ★ ★ ★
DESEMPENHO	★ ★ ★ ★ ★	★ ★ ★ ★ ☆
MATURIDADE	★ ☆ ☆ ☆ ☆	★ ★ ★ ★ ★
LINGUAGEM	DART	JAVASCRIPT
ADOÇÃO DA INDÚSTRIA	★ ☆ ☆ ☆ ☆	★ ★ ★ ★ ★
PRODUTIVIDADE	★ ★ ★ ★ ★	★ ★ ★ ★ ★
APIS DE HARDWARE	★ ★ ★ ★ ☆	★ ★ ★ ★ ☆
ESTRUTURA DO CÓDIGO	★ ★ ★ ★ ☆	★ ★ ★ ★ ★
COMUNIDADE	★ ★ ★ ★ ☆	★ ★ ★ ★ ★
DOCUMENTAÇÃO	★ ★ ★ ★ ★	★ ★ ★ ☆ ☆

Vantagens

- As principais vantagens de uma aplicação nativa sobre uma aplicação web mobile são:
 - Experiência do usuário fluída
 - Carregamentos em geral mais rápidos
 - Melhor integração entre funções do celular como câmera, giroscópio, etc;
 - Segurança superior;
 - Melhor performance em geral.

Vantagens

- Desenvolver para Android e iOS era algo relativamente **complexo**, pois além de ter que aprender as linguagens Objective-C (iOS) e Java (Android), o desenvolvedor não aproveitava praticamente nada do código de uma plataforma para outra, fazendo assim com que as empresas contratassem um **time de desenvolvimento** para cada sistema operacional, tornando o projeto muito lento e caro.
- Porém, com o ambientes multiplataforma, o código pode ser reaproveitado em até 100% entre as plataformas, podendo fazer com que o custo e a duração do projeto caiam pela metade

Desvantagens

- Performance ainda é melhor no nativo
- Documentação

Instalação

- Configurando o ambiente
 - <https://flutter.dev/docs/get-started/install>

The screenshot shows the Flutter documentation website. At the top, there's a navigation bar with the Flutter logo, links for Docs, Showcase, and Community, a search icon, social media icons, and a 'Get started' button. Below the navigation bar is a blue banner announcing 'Flutter 1.9 is live!'. The main content area is titled 'Install' and includes a breadcrumb trail: 'Docs > Get started > Install'. A sidebar on the left lists the 'Get started' steps: 1. Install (highlighted), 2. Set up an editor, 3. Test drive, 4. Write your first app, and 5. Learn more. Below the sidebar, there's a section for 'From another platform?' with a link for 'Flutter for Android devs'. The main content area also features a link to 'Set up an editor' and a note about Chrome OS.

Flutter

Docs Showcase Community 🔍 🐦 📺 🗣️ Get started

Flutter 1.9 is live! See what's new in [Flutter news](#) from GDD China.
Also see: [What's new on this site](#) and the revamped [Showcase](#) page.

Get started ^

1. [Install](#)

2. Set up an editor

3. Test drive

4. Write your first app

5. Learn more

▼ From another platform?

Flutter for Android
devs

Set up an editor >

Install

[Docs](#) > [Get started](#) > Install

Select the operating system on which you are installing Flutter:

Note: Are you on Chrome OS?

Instalação

- No caso do Linux

The screenshot shows the Flutter website's documentation page for installing the SDK. The page has a top navigation bar with links for Docs, Showcase, and Community, along with social media icons and a 'Get started' button. A left sidebar lists navigation options like 'Get started', '1. Install', and 'From another platform?'. The main content area is titled 'Get the Flutter SDK' and contains three numbered steps for installation on Linux. Step 1 involves downloading a specific tar.xz file, which is highlighted in a blue box. Step 2 shows terminal commands to extract the file. Step 3 shows the command to add the flutter tool to the system path. A right sidebar titled 'Contents' lists various setup topics like 'System requirements', 'Android setup', and 'Web setup'.

Flutter

Docs Showcase Community 🔍 🐦 📺 🔄

Get started

Get started ^

1. Install

2. Set up an editor

3. Test drive

4. Write your first app

5. Learn more

▼ From another platform?

Flutter for Android devs

Flutter for iOS devs

Flutter for React Native devs

Flutter for web devs

Flutter for
Xamarin.Forms devs

Get the Flutter SDK

1. Download the following installation bundle to get the latest stable release of the Flutter SDK:

`flutter_linux_v1.9.1+hotfix.5-stable.tar.xz`

For other release channels, and older builds, see the [SDK archive](#) page.

2. Extract the file in the desired location, for example:

```
$ cd ~/development
$ tar xf ~/Downloads/flutter_linux_v1.9.1+hotfix.5-stable.tar.xz
```

3. Add the `flutter` tool to your path:

```
$ export PATH="$PATH:`pwd`/flutter/bin"
```

Contents

System requirements

[Get the Flutter SDK](#)

[Run flutter doctor](#)

[Update your path](#)

[Update path directly](#)

Android setup

[Install Android Studio](#)

[Set up your Android device](#)

[Set up the Android emulator](#)

Web setup

[Next step](#)

Instalação

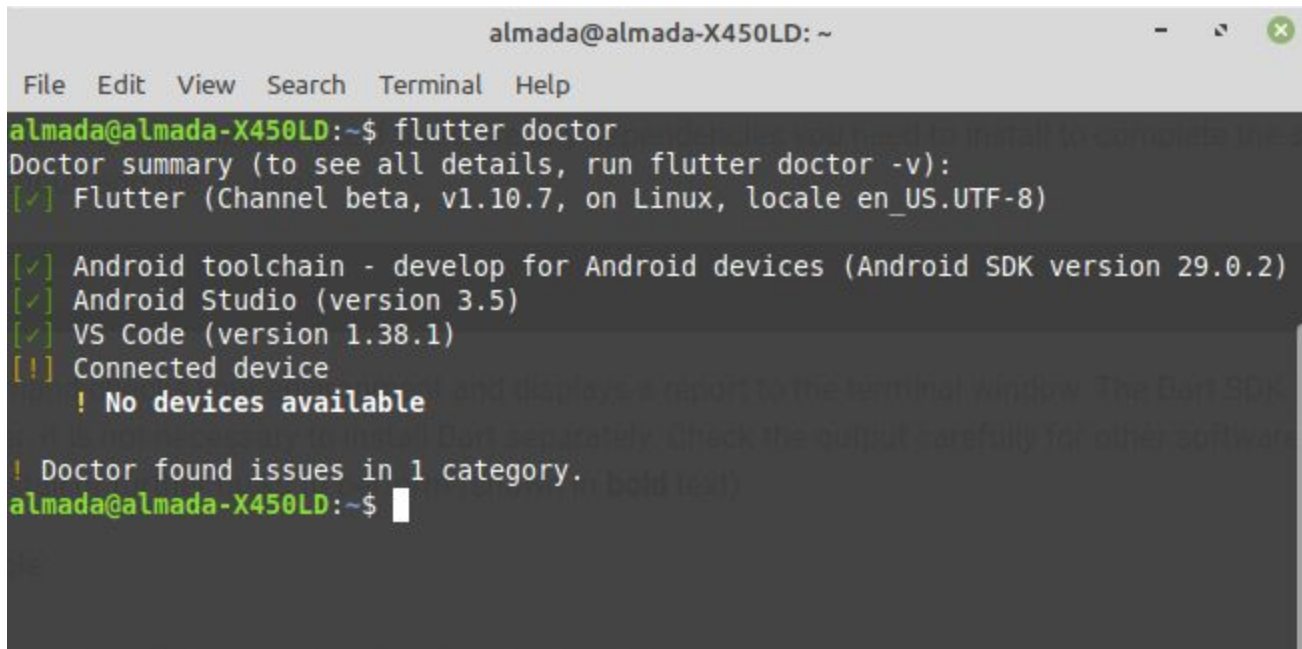
- Pré-requisito
 - Instalação do Android SDK no sistema
 - (Opcionalmente) Criação de um emulador pelo AVD

Instalação

- Baixe o arquivo Flutter SDK
- Extraia o arquivo
 - `tar xf ~/Downloads/flutter_linux_v1.9.1+hotfix.5-stable.tar.xz`
- Adicione a pasta bin do flutter no PATH do sistema
 - `sudo gedit /etc/environment`
 - `source /etc/environment`

Verificação do ambiente

- Rode o seguinte comando no terminal
 - flutter doctor



```
almada@almada-X450LD: ~  
File Edit View Search Terminal Help  
almada@almada-X450LD:~$ flutter doctor  
Doctor summary (to see all details, run flutter doctor -v):  
[✓] Flutter (Channel beta, v1.10.7, on Linux, locale en_US.UTF-8)  
  
[✓] Android toolchain - develop for Android devices (Android SDK version 29.0.2)  
[✓] Android Studio (version 3.5)  
[✓] VS Code (version 1.38.1)  
[!] Connected device  
    ! No devices available  
  
! Doctor found issues in 1 category.  
almada@almada-X450LD:~$
```

Visual Studio Code

- Inicie o VS Code.
- Clique em View > Command Palette
- Digite “install” e selecione **Extensions: Install Extensions**.
- Digite “flutter”, selecione e instale

Visual Studio Code

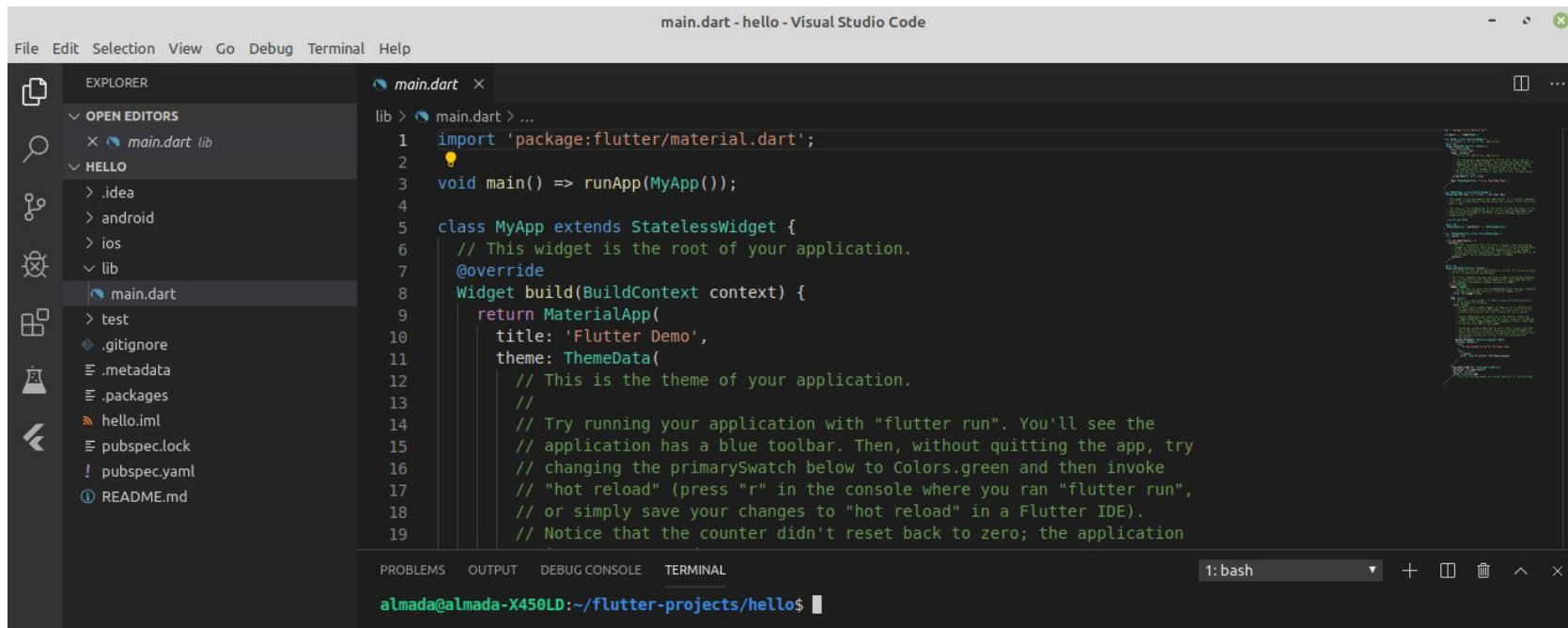
- Para testar
 - Clique em View > Command Palette
 - Digite “doctor”
 - Selecione Flutter: Run Flutter Doctor.

Criando a primeira aplicação

- Selecione View > Command Palette.
- Digite “flutter” e selecione **Flutter: New Project**
- Digite o nome do projeto (myapp) e pressione Enter
- Crie ou selecione uma pasta para o projeto ser salvo

Criando a primeira aplicação

- Espere pela criação do projeto e o arquivo principal irá ser mostrado (main.dart)



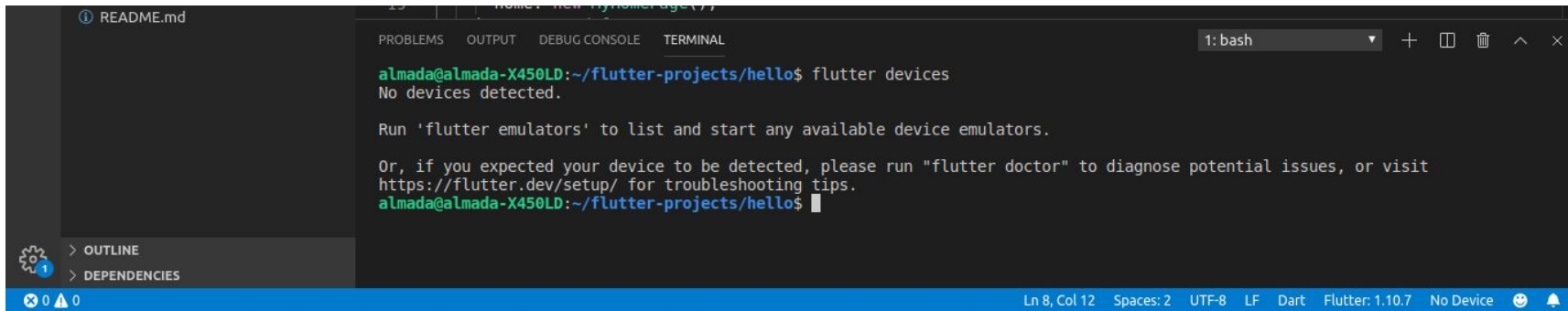
The screenshot shows the Visual Studio Code interface with the 'main.dart' file open. The Explorer panel on the left shows the project structure, including the 'lib' directory and the 'main.dart' file. The main editor displays the following Dart code:

```
lib > main.dart > ...
1 import 'package:flutter/material.dart';
2
3 void main() => runApp(MyApp());
4
5 class MyApp extends StatelessWidget {
6   // This widget is the root of your application.
7   @override
8   Widget build(BuildContext context) {
9     return MaterialApp(
10       title: 'Flutter Demo',
11       theme: ThemeData(
12         // This is the theme of your application.
13         //
14         // Try running your application with "flutter run". You'll see the
15         // application has a blue toolbar. Then, without quitting the app, try
16         // changing the primarySwatch below to Colors.green and then invoke
17         // "hot reload" (press "r" in the console where you ran "flutter run",
18         // or simply save your changes to "hot reload" in a Flutter IDE).
19         // Notice that the counter didn't reset back to zero; the application
```

The bottom of the screen shows the 'TERMINAL' panel with the command prompt 'almda@almda-X450LD:~/flutter-projects/hello\$'.

Executando a aplicação

- Digite o comando **flutter devices** no terminal



The screenshot shows an IDE interface with a terminal window open. The terminal title is '1: bash'. The prompt is 'almada@almada-X450LD:~/flutter-projects/hello\$'. The command entered is 'flutter devices'. The output is 'No devices detected.' followed by instructions to run 'flutter emulators' or 'flutter doctor'. The status bar at the bottom indicates 'Ln 8, Col 12', 'Spaces: 2', 'UTF-8', 'LF', 'Dart', 'Flutter: 1.10.7', and 'No Device'.

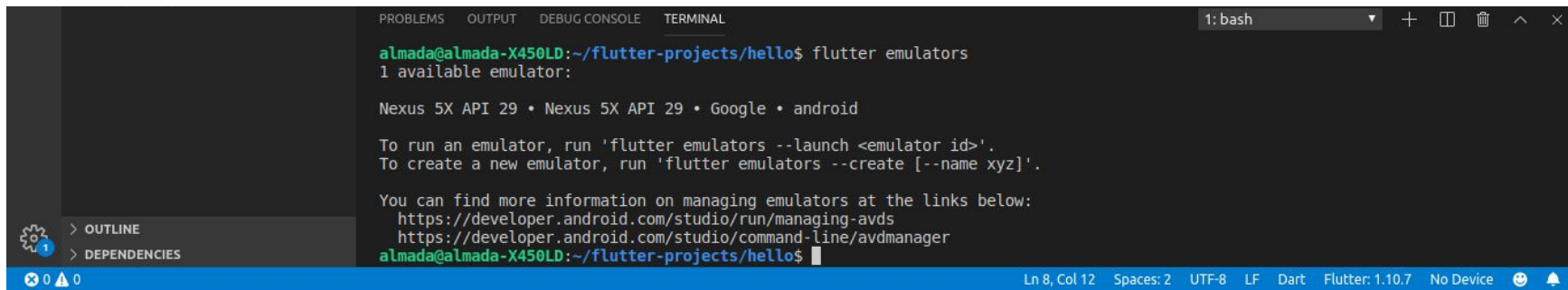
```
almada@almada-X450LD:~/flutter-projects/hello$ flutter devices
No devices detected.

Run 'flutter emulators' to list and start any available device emulators.

Or, if you expected your device to be detected, please run "flutter doctor" to diagnose potential issues, or visit
https://flutter.dev/setup/ for troubleshooting tips.
almada@almada-X450LD:~/flutter-projects/hello$
```

Executando a aplicação

- Execute algum emulador ou conecte um dispositivo
- Se for emulador, execute o comando: **flutter emulators**



```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL 1: bash
almada@almada-X450LD:~/flutter-projects/hello$ flutter emulators
1 available emulator:

Nexus 5X API 29 • Nexus 5X API 29 • Google • android

To run an emulator, run 'flutter emulators --launch <emulator id>'.
To create a new emulator, run 'flutter emulators --create [--name xyz]'.

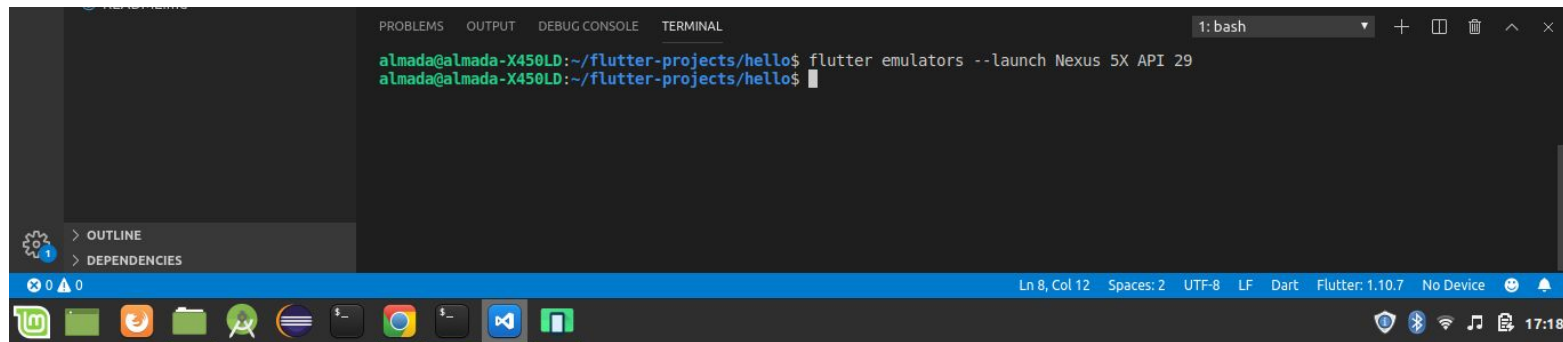
You can find more information on managing emulators at the links below:
https://developer.android.com/studio/run/managing-avds
https://developer.android.com/studio/command-line/avdmanager
almada@almada-X450LD:~/flutter-projects/hello$
```

The screenshot shows the Android Studio interface with the terminal window open. The terminal displays the command `flutter emulators` and its output, which lists available emulators and provides instructions on how to run or create them. The status bar at the bottom indicates the current line and column (Ln 8, Col 12) and the Flutter version (Flutter: 1.10.7).

Executando a aplicação

- Para iniciar o emulador, no meu caso, o comando é:

flutter emulators --launch Nexus 5X API 29



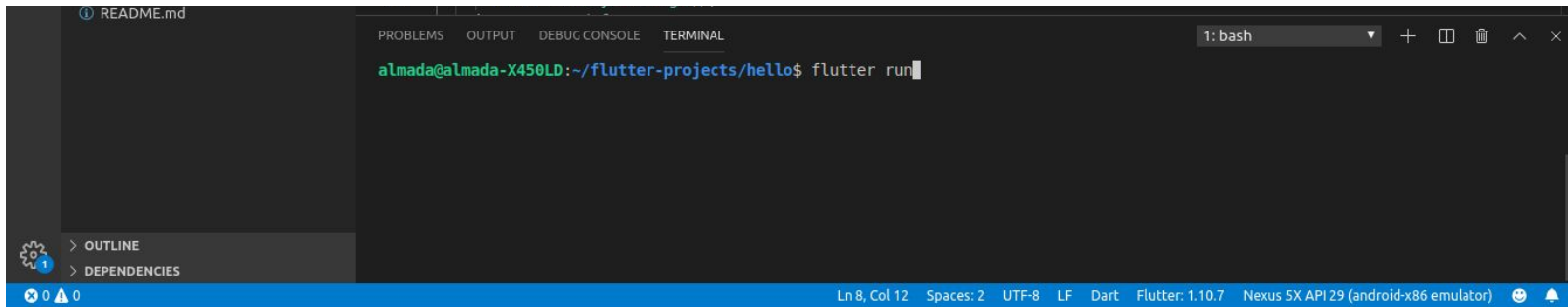
The screenshot shows an IDE interface with a terminal window open. The terminal displays the command `flutter emulators --launch Nexus 5X API 29` being executed. The IDE's status bar at the bottom indicates the current file is at line 8, column 12, and the Flutter version is 1.10.7. The system tray shows the time as 17:18.

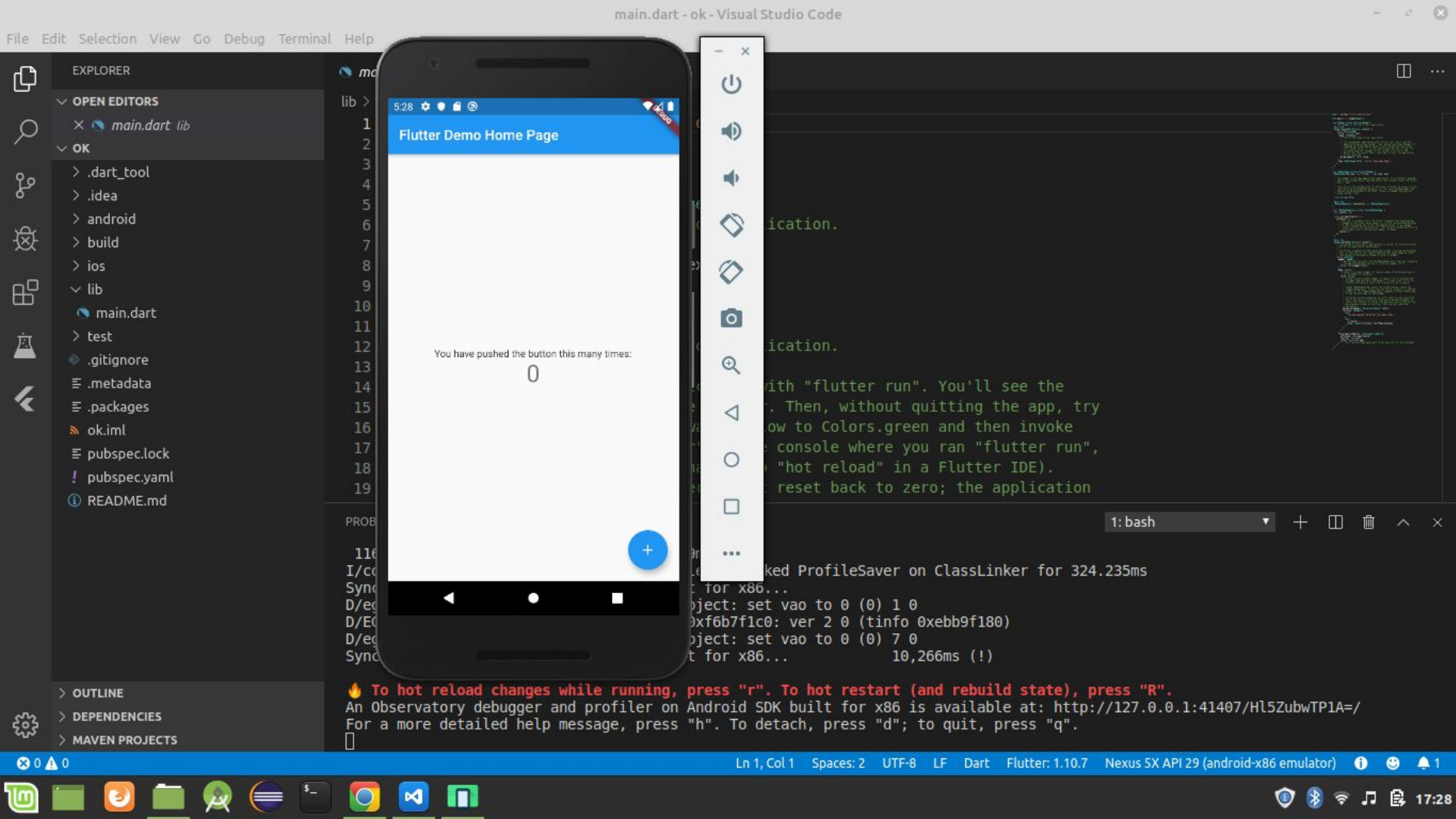
```
almada@almada-X450LD:~/flutter-projects/hello$ flutter emulators --launch Nexus 5X API 29
almada@almada-X450LD:~/flutter-projects/hello$
```

Executando a aplicação

- Para iniciar a aplicação, o comando é:

flutter run





Atualizando a aplicação

- Para atualizar a aplicação (hot reload), basta pressionar r
- Para atualizar a aplicação, em relação ao estado (hot restart), basta pressionar R

Links importantes

- <https://flutter.dev/>
- <https://www.thedroidsonroids.com/blog/flutter-vs-react-native-what-to-choose-in-2019>
- https://www.youtube.com/watch?v=dA8Bbzw0_lo&list=PLHlHvK2lnJndhgbqLI5DNEvKQg5F4ZenQ



Dúvidas??

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