Flutter | Dart

Flutter is a framework/SDK that uses Dart as a programming language. By using both combined cross platform android apps, ios apps, web, desktop apps (windows, mac, linux) & embedded applications can be developed.

Flutter: https://flutter.dev/
Dart: https://dart.dev/
Flutter packages repository: https://pub.dev/

Install and setup flutter development environment for web development in Linux (Ubuntu) OS

1. Install latest SDK package for the target OS

   https://docs.flutter.dev/development/tools/sdk/releases?tab=linux

2. For linux install extract the zip bundle and setup paths

   ```
   tar xf ~/Downloads/flutter_linux_3.7.6-stable.tar.xz
   export PATH="$PATH:`pwd`/flutter/bin"
   ```

3. Update the flutter platform-specific development binaries

   ```
   flutter precache
   ```

4. Run the following command to see if there are any dependencies you need to install to complete the setup

   ```
   flutter doctor
   ```

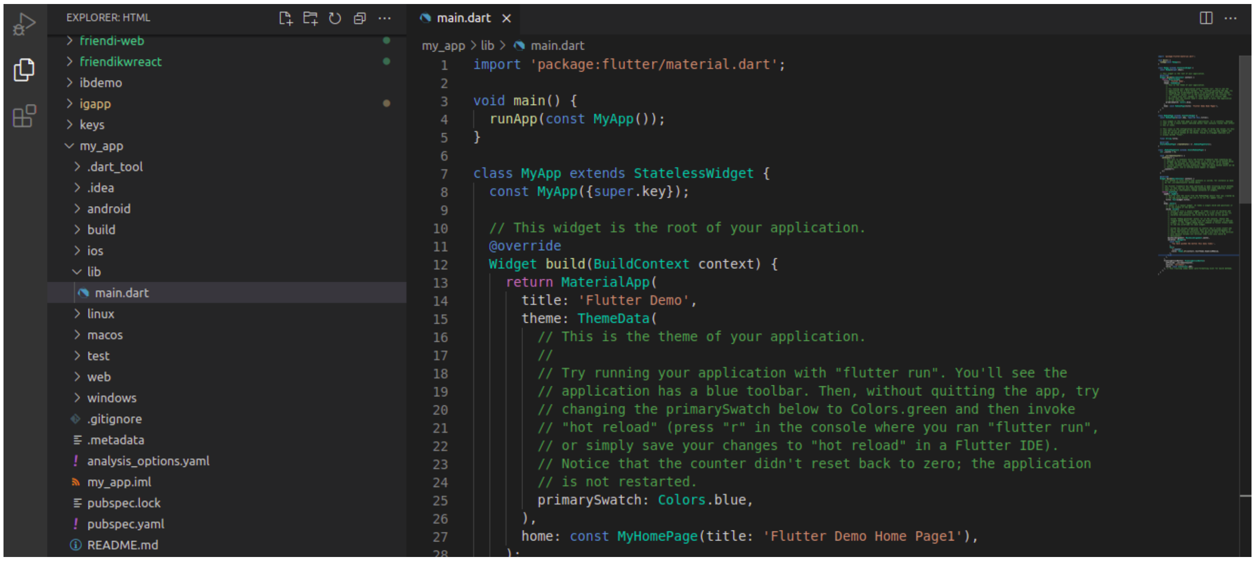
5. Run the following commands to use the latest version of the Flutter SDK:

   ```
   flutter channel stable
   flutter upgrade
   ```

6. Flutter create initial boilerplate web app

```
flutter create my_app
cd my_app
```

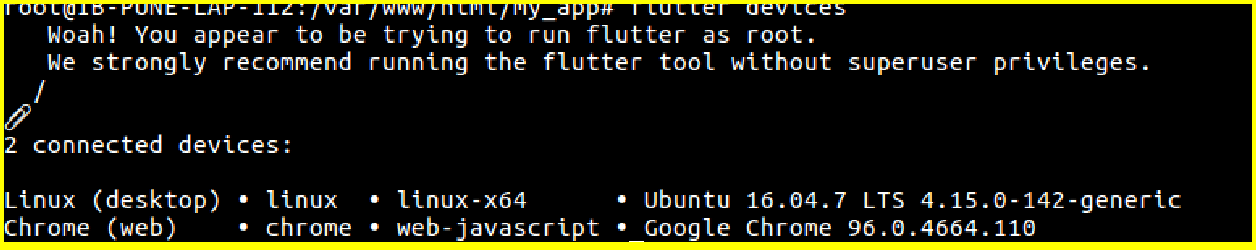
Below architecture code will be generated



```dart
import 'package:flutter/material.dart';

void main() {
  runApp(const MyApp());
}

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

  // This widget is the root of your application.
  @override
  Widget build(BuildContext context) {
    return MaterialApp(
      title: 'Flutter Demo',
      theme: ThemeData(
        // This is the theme of your application.
        //
        // Try running your application with "flutter run". You'll see the
        // application has a blue toolbar. Then, without quitting the app, try
        // changing the primarySwatch below to Colors.green and then invoke
        // "hot reload" (press "r" in the console where you ran "flutter run",
        // or simply save your changes to "hot reload" in a Flutter IDE).
        // Notice that the counter didn't reset back to zero; the application
        // is not restarted.
        primarySwatch: Colors.blue,
      ),
      home: const MyHomePage(title: 'Flutter Demo Home Page1'),
    );
```

7. Check available connect devices for that development can be targeted

```
flutter devices
```

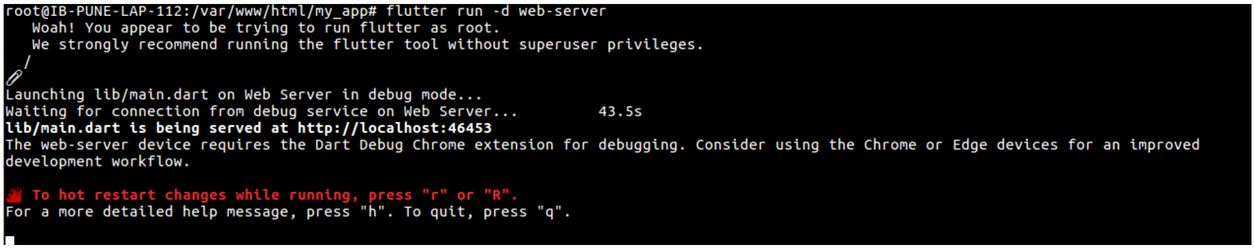


```
root@IB-PUNE-LAP-112:/var/www/html/my_app# flutter devices
   Woah! You appear to be trying to run flutter as root.
   We strongly recommend running the flutter tool without superuser privileges.
  /
📎

2 connected devices:

Linux (desktop) • linux  • linux-x64      • Ubuntu 16.04.7 LTS 4.15.0-142-generic
Chrome (web)    • chrome • web-javascript • Google Chrome 96.0.4664.110
```

8. Run flutter web app

```
flutter run -d web-server
```

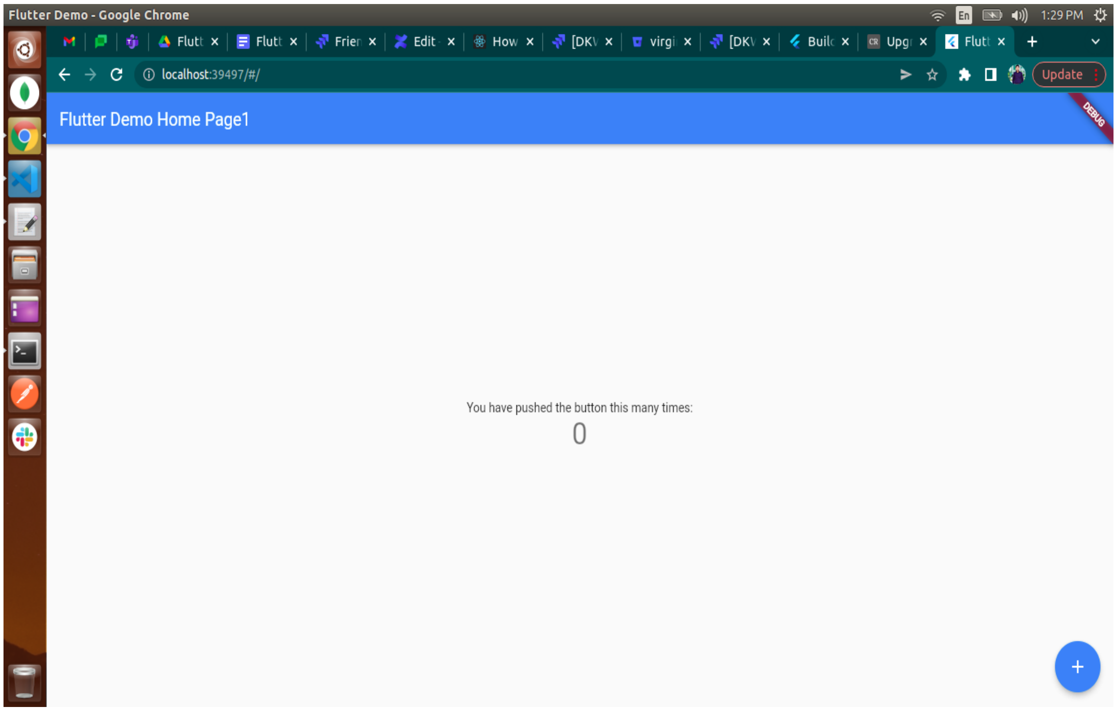
It will show a url with port number, open in a web browser and see a web app.



```
root@IB-PUNE-LAP-112:/var/www/html/my_app# flutter run -d web-server
   Woah! You appear to be trying to run flutter as root.
   We strongly recommend running the flutter tool without superuser privileges.
  /
📎
Launching lib/main.dart on Web Server in debug mode...
Waiting for connection from debug service on Web Server...         43.5s
lib/main.dart is being served at http://localhost:46453
The web-server device requires the Dart Debug Chrome extension for debugging. Consider using the Chrome or Edge devices for an improved
development workflow.

🔥  To hot restart changes while running, press "r" or "R".
For a more detailed help message, press "h". To quit, press "q".
```

Like below

lib/main.dart is being served at http://localhost:46453



Flutter Demo - Google Chrome

localhost:39497/#/

Flutter Demo Home Page1

You have pushed the button this many times:

0

9. Make changes in Dart project files and reload | refresh the changes, Hot browser reload is not supported but for refreshing the changes in the project. To reload just press ‘r’ in running

    ```
    r
    ```

10. Building the production build

    ```
    flutter build web
    ```

    This populates a build/web directory with built files, including an assets directory, which need to be served together.

Install add/update packages from flutter repository

Like other programming languages & frameworks, Flutter has its package repository which is pub.dev, for managing packages in project a file (**pubspec.yaml**) created, that has all the dependencies defined in this.

For adding a new package

```
flutter pub add package_name
```

For removing a package

```
flutter pub remove package_name
```

Update | Install

```
flutter pub get
```