

Université des Mascareignes

Faculty of Information and Communication Technology

Licence Technologique en Informatique Appliquée

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TP3

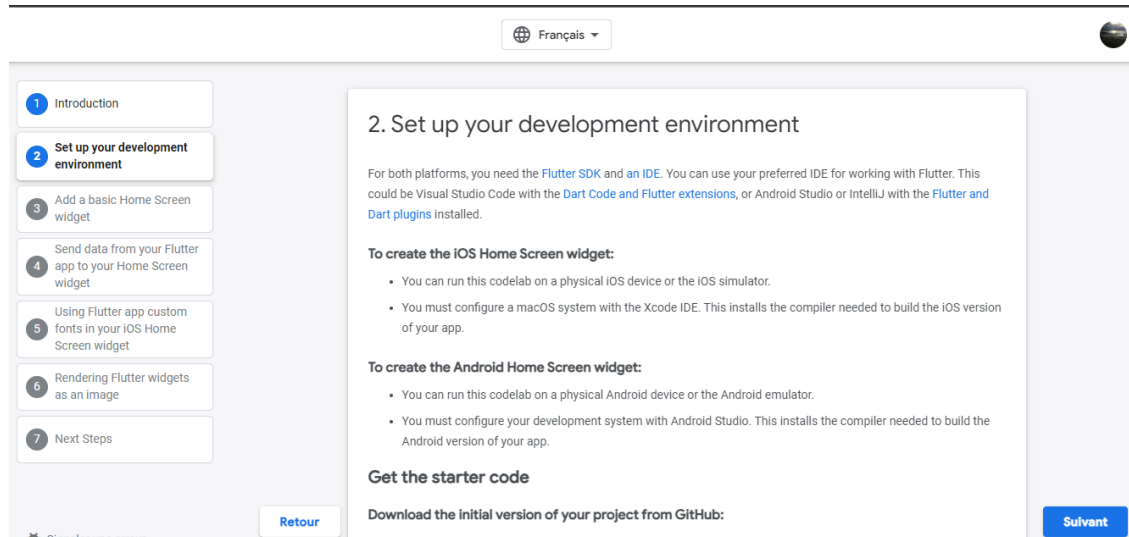
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Task 1

Home widgets serve as a quick and efficient means to relay information on a phone screen. By adhering to the code lab examples and referencing the codes on GitHub, we will construct an app designed for demonstrating the capabilities of home widgets.



The screenshot shows the Flutter Codelabs interface. At the top, there is a language selector set to 'Français' and a user profile icon. On the left, a sidebar lists the steps of the codelab: 1. Introduction, 2. Set up your development environment (selected), 3. Add a basic Home Screen widget, 4. Send data from your Flutter app to your Home Screen widget, 5. Using Flutter app custom fonts in your iOS Home Screen widget, 6. Rendering Flutter widgets as an image, and 7. Next Steps. The main content area displays the title '2. Set up your development environment' and provides instructions for setting up the development environment for both iOS and Android. It includes links to the Flutter SDK, IDEs, and plugins. Below the instructions, there are sections for 'To create the iOS Home Screen widget:', 'To create the Android Home Screen widget:', and 'Get the starter code'. At the bottom, there is a 'Retour' button and a 'Sulvant' button.

Get the starter code

Download the initial version of your project from GitHub:

From the command line, clone the GitHub repository into a flutter-codelabs directory:

```
git clone https://github.com/flutter/codelabs.git flutter-codelabs
```

After cloning the repo, you can find the code for this codelab in the flutter-codelabs/homescreen_codelab directory. This directory contains completed project code for each step in the codelab.

Open the starter app

Open the `flutter-codelabs/homescreen_codelab/step_03` directory into your preferred IDE.

Install packages

All required packages were added to the project's pubspec.yaml file. To retrieve the project dependencies, run the following command:

```
flutter pub get
```

Regrettably, the homescreen_codelab did not function as expected, and I encountered numerous issues with the Flutter codelabs' GitHub codes. Even attempting to clone the repository proved unsuccessful, leading me to manually replicate the process.

```

PROBLEMS 3 OUTPUT TERMINAL PORTS SEARCH ERROR COMMENTS DEBUG CONSOLE EXPLORER

PS C:\Users\User\OneDrive\Documents\flutter projects\sos\home_widget_app> flutter pub get
Resolving dependencies... (1.1s)
  flutter_lints 2.0.3 (3.0.1 available)
  lints 2.1.1 (3.0.0 available)
  matcher 0.12.16 (0.12.16+1 available)
  material_color_utilities 0.5.0 (0.8.0 available)
  meta 1.10.0 (1.11.0 available)
  path 1.8.3 (1.9.0 available)
  test_api 0.6.1 (0.7.0 available)
  web 0.3.0 (0.4.0 available)
Got dependencies!
8 packages have newer versions incompatible with dependency constraints.
Try `flutter pub outdated` for more information.
PS C:\Users\User\OneDrive\Documents\flutter projects\sos\home_widget_app> 

```

Inspect the sample code

When you submit the form, Android Studio creates and updates several files. The changes relevant for this codelab are listed in the table below

Action	Target File	Change
Update	AndroidManifest.xml	Adds a new receiver which registers the NewsWidget.
Create	res/layout/news_widget.xml	Defines Home Screen widget UI.
Create	res/xml/news_widget_info.xml	Defines your Home Screen widget configuration. You can adjust the dimensions or name of your widget in this file.
Create	java/com/example/homescreen_widgets/NewsWidget.kt	Contains your Kotlin code to add functionality to your Home Screen widget.

You can find more detail on these files throughout this codelab.

In the "lib" folder, four pages have been established: 1. main.dart, 2. Home_screen.dart, 3. Article_screen.dart, and 4. News_screen.dart. The widgets were designed to facilitate the viewing of news available on the News_screen.dart through a home widget displayed on the home screen of the emulator.

```
main.dart x build.gradle news_screen.dart home_screen.dart 2 article_scre
b > main.dart > MyApp
Click here to ask Blackbox to help you code faster |
import 'package:flutter/material.dart';
import 'home_screen.dart';

Run | Debug | Profile | Comment Code
void main() {
  WidgetsFlutterBinding.ensureInitialized();
  runApp(const MyApp());
}

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

  @override
  Widget build(BuildContext context) {
    return MaterialApp(
      theme: ThemeData(
        useMaterial3: true,
        appBarTheme: AppBarTheme(
          backgroundColor: ColorScheme.fromSeed(seedColor: Colors.deepPurple
            .primaryContainer,
        ), // AppBarTheme
        textTheme: const TextTheme(
          titleMedium: TextStyle(
            fontFamily: 'Chewy',
            fontSize: 20,
          ), // TextStyle
        ), // TextTheme
      ), // ThemeData
      home: const MyHomePage(),
    ); // MaterialApp
  }
}
```

```
home_screen.dart 2
Click here to ask Blackbox to help you code faster |
import 'package:flutter/material.dart';
// New: Add this import
import 'package:home_widget/home_widget.dart';

import 'article_screen.dart';
import 'news_screen.dart';

// New: Add these constants
// TO DO: Replace with your App Group ID
const String appGroupId = '<YOUR_APP_GROUP>';
const String iOSWidgetName = 'NewsWidgets';
const String androidWidgetName = 'NewsWidget';

Comment Code
class MyHomePage extends StatefulWidget {
  const MyHomePage({super.key});
  @override
  State<MyHomePage> createState() => _MyHomePageState();
}

// New: add this function
Comment Code
void updateHeadline(NewsArticle newHeadline) {
  // Save the headline data to the widget
  HomeWidget.saveWidgetData<String>('headline_title', newHeadline.title);
  HomeWidget.saveWidgetData<String>(
    'headline_description', newHeadline.description);
  HomeWidget.updateWidget(
    iOSName: iOSWidgetName,
    androidName: androidWidgetName,
  );
}

Comment Code
class _MyHomePageState extends State<MyHomePage> {
  // New: Add initState
  @override
```

