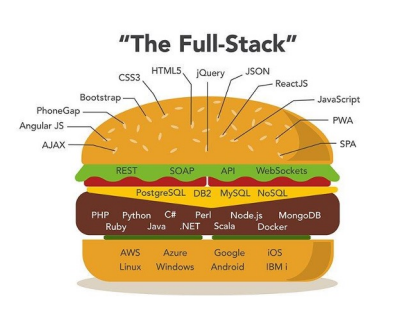
Formation : Flutter

26-28 octobre 2023

Qui suis-je ?



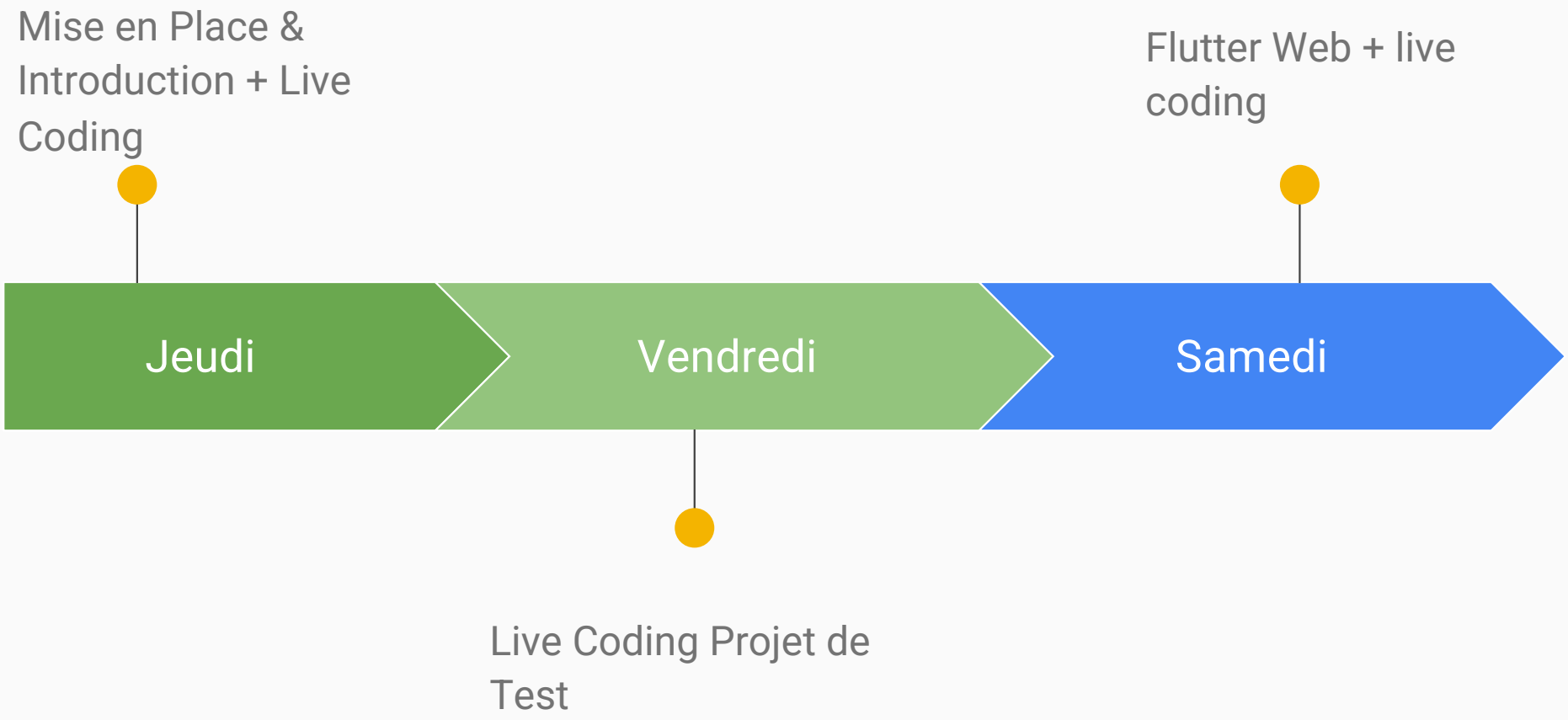
Sidaty M. Koureichy

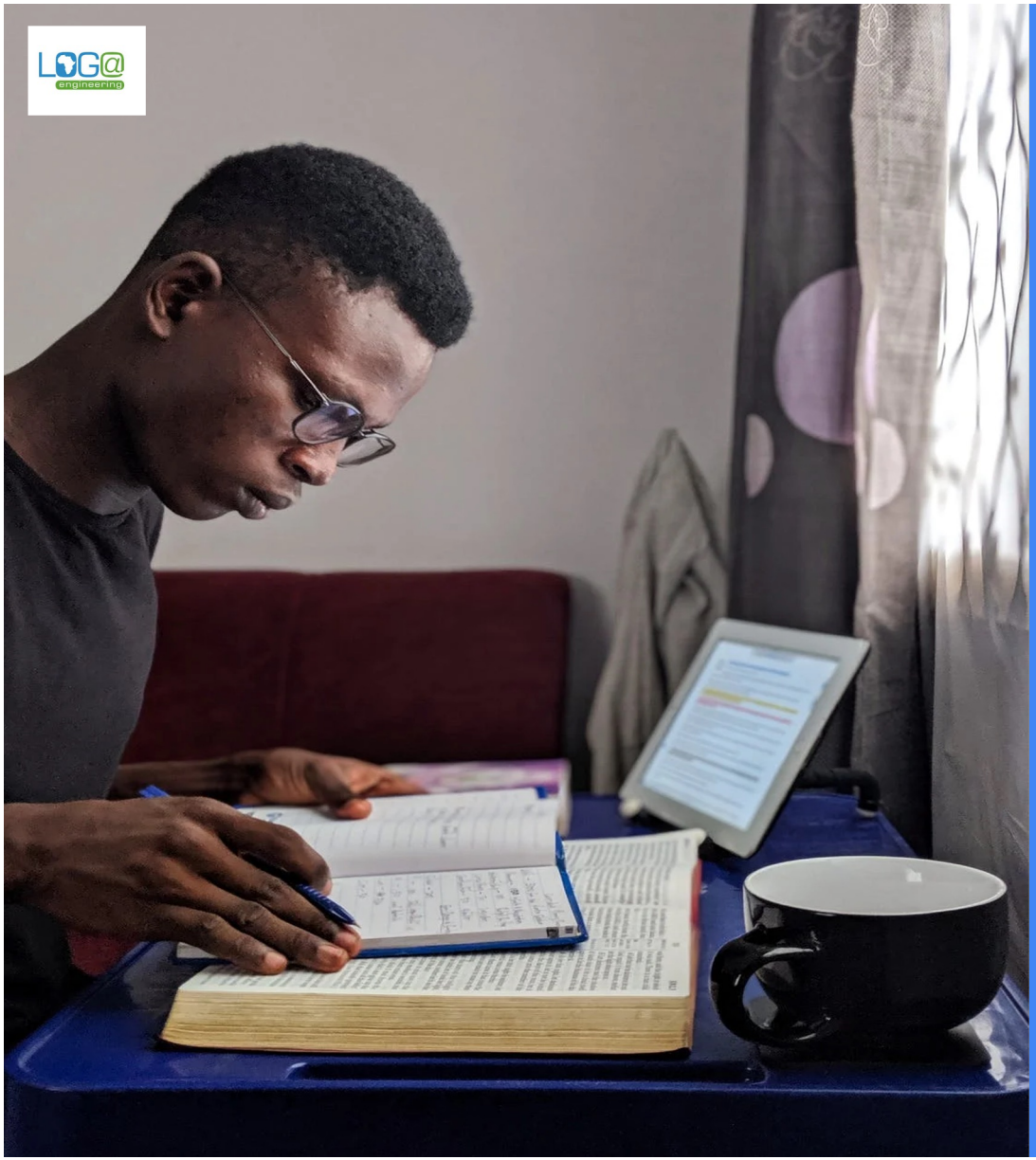
Architecte SI,
Développeur Full Stack,
Entrepreneur,

sidaty.koureichy@
loga-engineering.com

Sidaty

+ 223 76 29 91 23


Mise en Place &
Introduction + Live
Coding
Flutter Web + live
coding
Jeudi
Vendredi
Samedi
Live Coding Projet de
Test



Public

- Développeurs Mobile, Web
- Développeurs Débutants, Experts,
- 75 à 110 Stagiaires

Objectif

Introduire Flutter/Dart,

Comprendre la technologie Flutter,

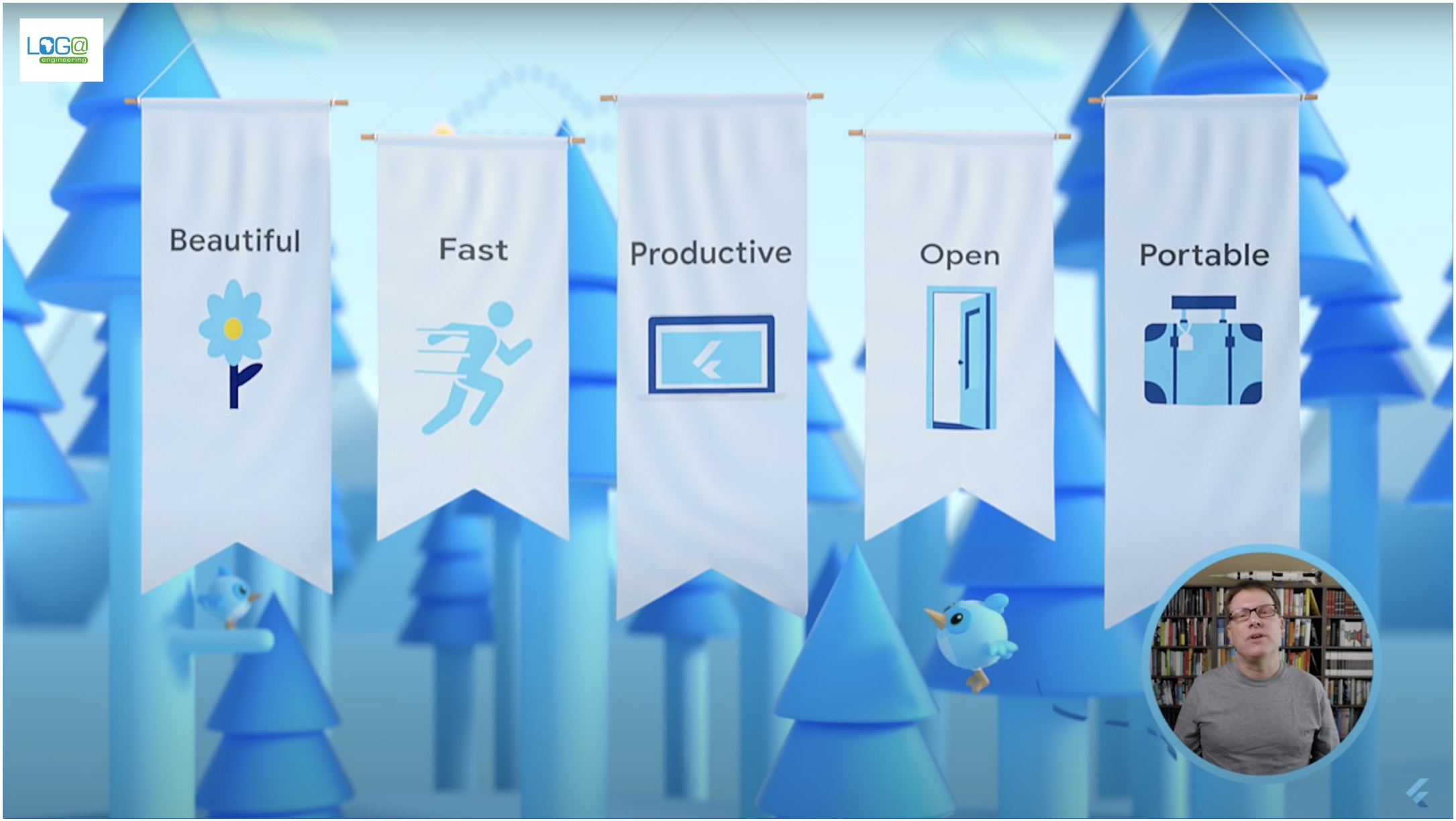
Réaliser une application Mobile (Android et iOS),

Introduire Flutter Web,

Programme

- Introduction Flutter/Dart,
- Dart (Class, Function, Interface),
- Les Widgets (Stateless, Stateful),
- Widgets Basiques et Layout,
- Form et FormField,
- Widget communs et Navigation,
- Services Interactifs, Firebase,
- State Management (BLoC),
- Animations et Intégration plateforme,
- Flutter Web,
- Design Challenge

Introduction Flutter & Dart


Beautiful
Fast
Productive
Open
Portable

Introduction Flutter & Dart

Flutter (https://flutter.dev)

1. Flutter est un SDK par Google,
2. OpenSource https://github.com/flutter/flutter,
3. Multiplateformes et inspiré du Web,
4. Solutions code base unique et natif :
   a. HTML : (Cordova,/Ionic, phonegap, etc.)
   b. React Native, Xamarin,
5. GUI Indépendantes des Plateformes,
6. Pas de pont inter-langage,
7. Rendu structurel (dessine les modifications),

Dart (sorti en 2011, https://dart.dev/)

1. Langage par Google,
2. Deux modes (AOT, JIT) : compilé ou Interprété,
3. Multiplateforme (Cli, Web, Flutter, Backend),
4. Langage typé et async (Future/Stream),
5. Syntaxe familière (Java, JavaScript, etc.),
6. Inclusion code actif (!= exclusion code mort),
7. Bibliothèque standard riche (**+15.000 pkgs**),
8. Gestionnaire de dependances (https://pub.dev/),

Introduction Flutter & Dart

Hot reload

1. Injection du nouveau code dans la VM Dart,
2. Conservation de l'état de l'application,
3. Productivité (itération rapide),

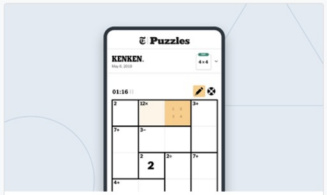
Pour qui/quoi ?

1. Les **designers**,
2. Les **prototypes** de haute qualité,
3. Les **développeurs**,

Première App Spring Boot

1. flutter doctor,
2. flutter upgrade,
3. flutter packages get,
4. flutter packages upgrade,
5. flutter format,
6. flutter analyze,
7. flutter clean,
8. flutter run,
9. flutter build,
10. flutter devices,
11. flutter channel ...

Quelques sociétés sur Flutter



The New York Times

Flutter helps bring the popular Ken Ken puzzle to life on Android, iOS, Mac, Windows, and the web.

Learn More

Square

The Flutter plugin for our Square Reader SDK enables developers to build apps for merchants that take in-person payments.

Learn more

Google Assistant

Flutter helps power an ever-growing number of Google Assistant apps.

Learn more

Who's using Flutter?

Organizations around the world are building apps with Flutter.

See what's being created

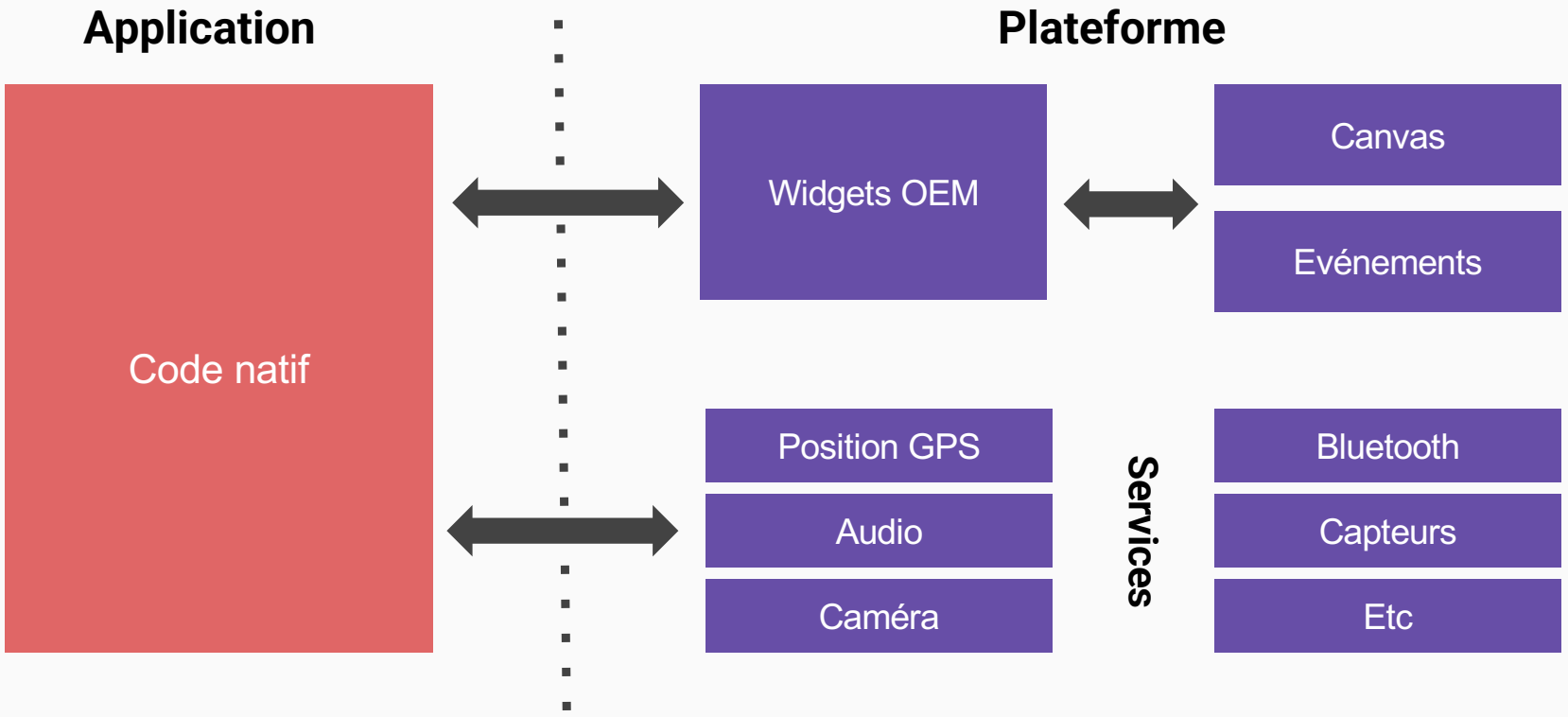
Google ebay BMW Square Alibaba Group 阿里巴巴集团 CapitalOne

Tencent 腾讯

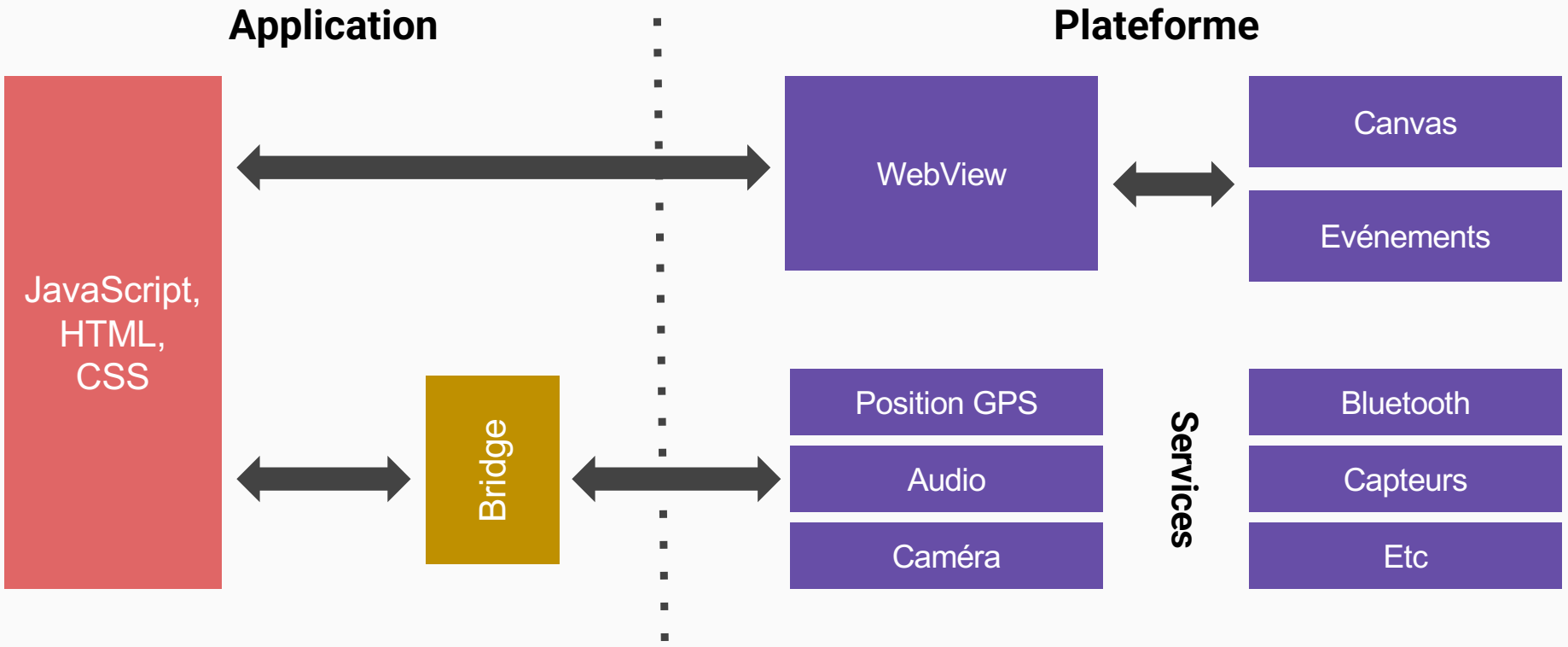
Tencent uses Flutter throughout the company for several apps including AITeacher, Now Live, K12, Mr. Translator, QiDian, and DingDang.

Watch video

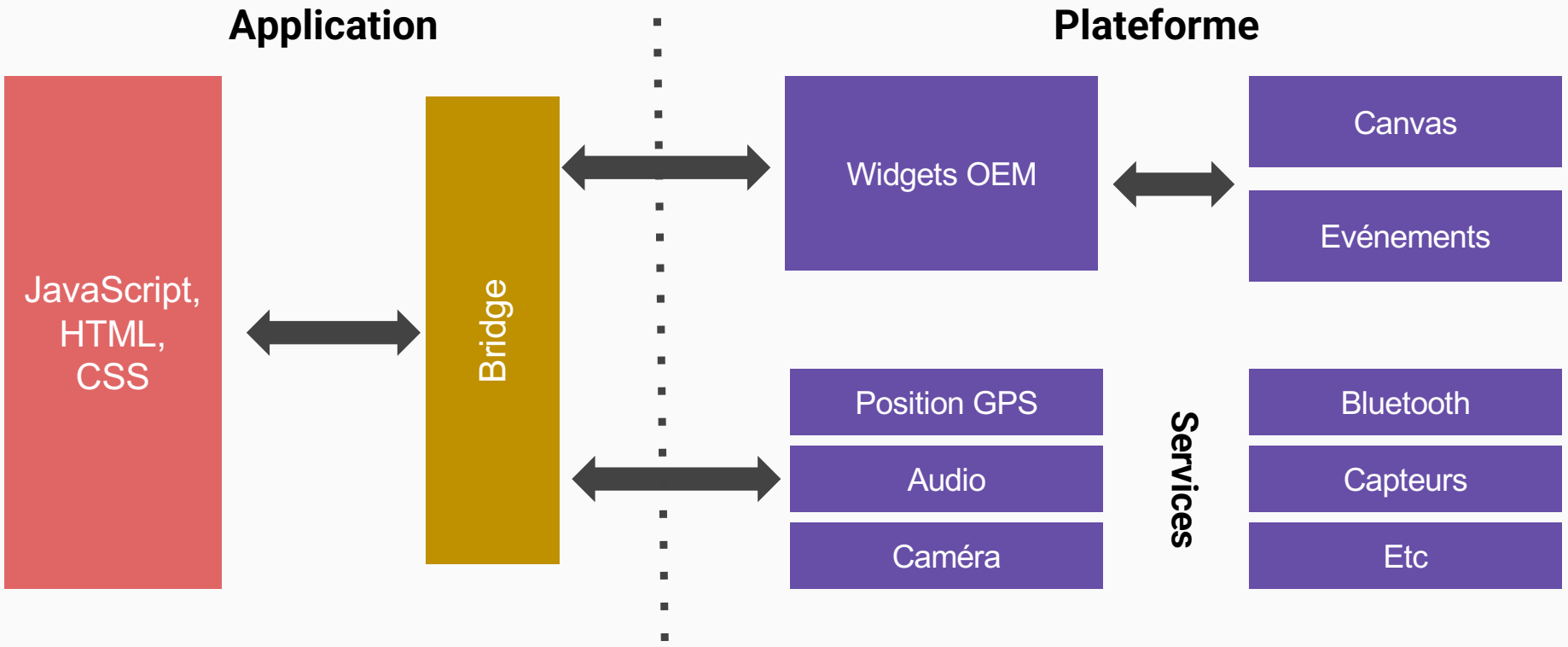
Application native



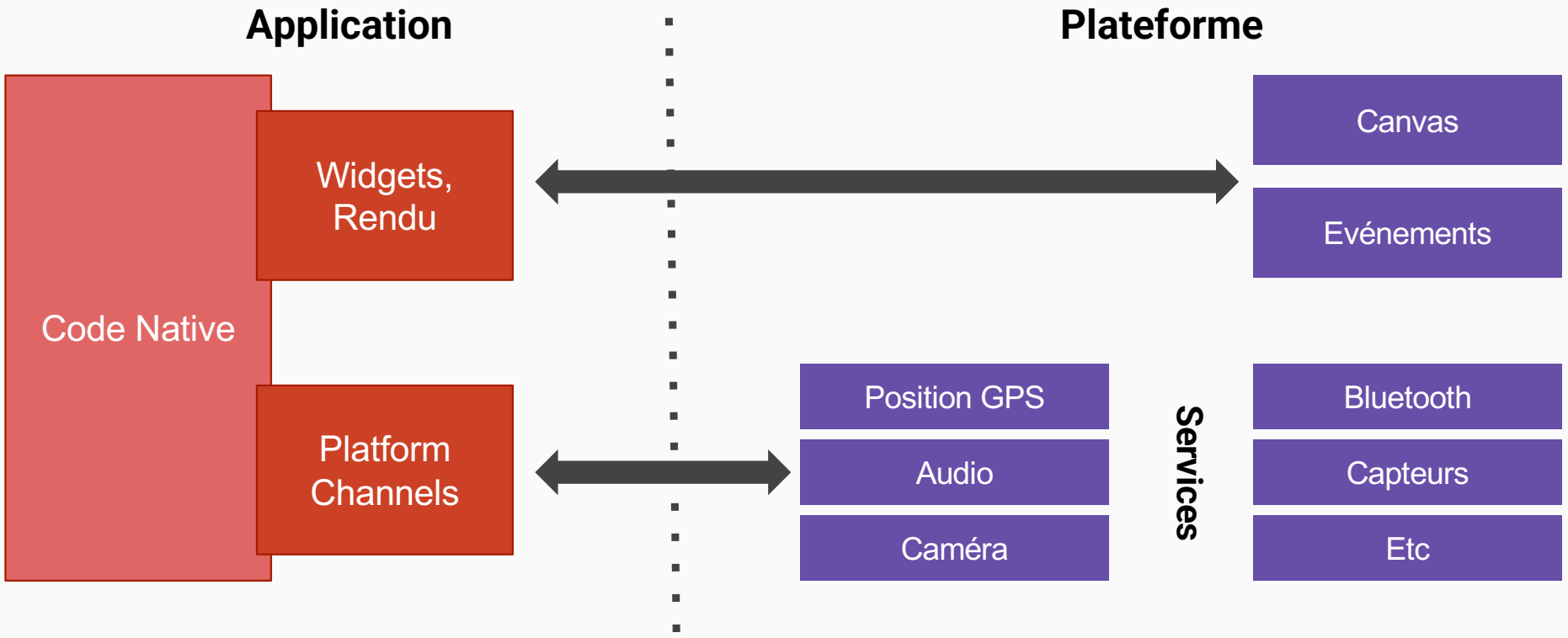
WebView (Ionic, Cordova, ...)



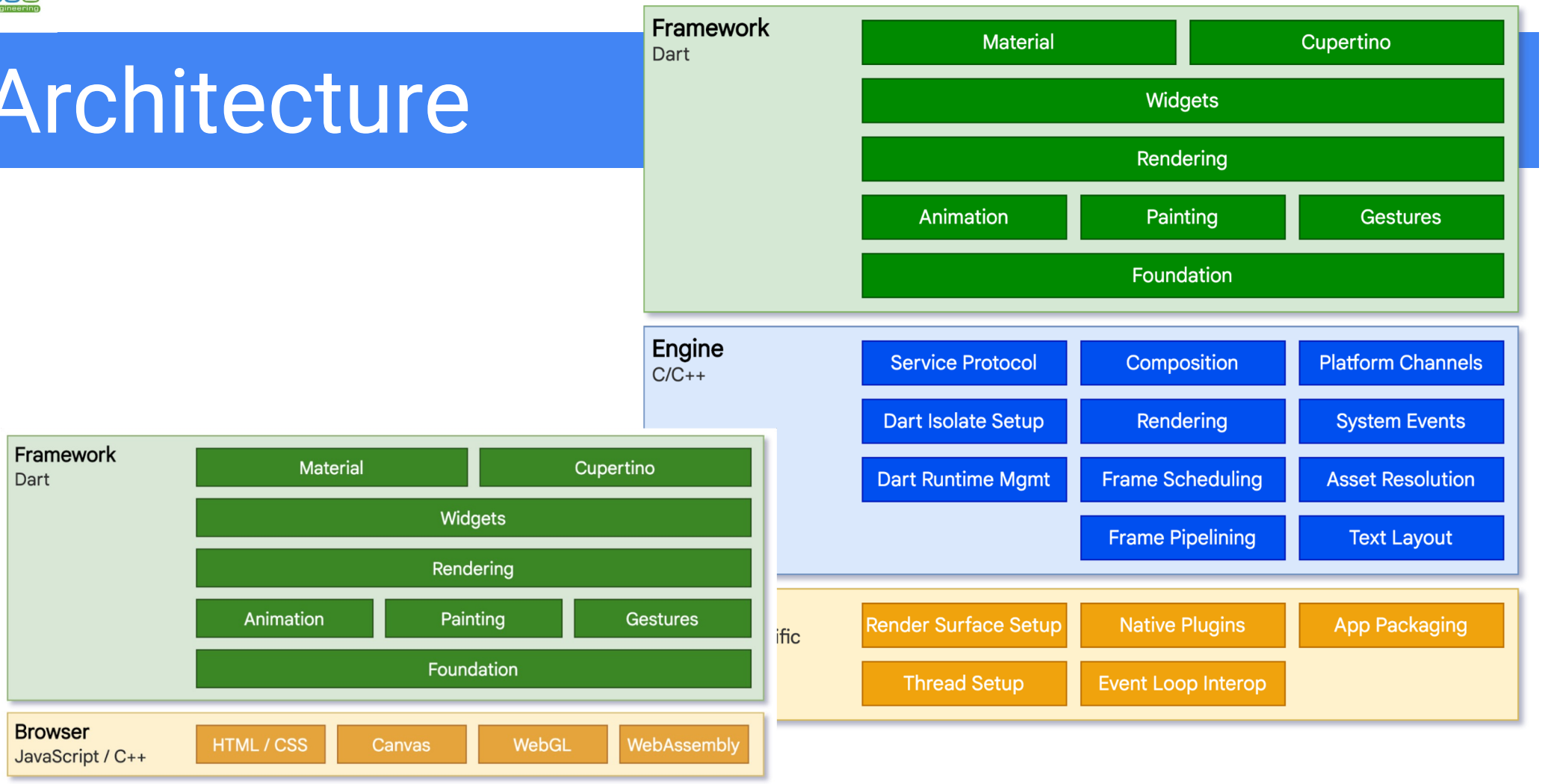
React Native



Flutter


Application
Plateforme
Code Native
Widgets, Rendu
Platform Channels
Canvas
Evénements
Position GPS
Audio
Caméra
Services
Bluetooth
Capteurs
Etc

Architecture



Les Widgets

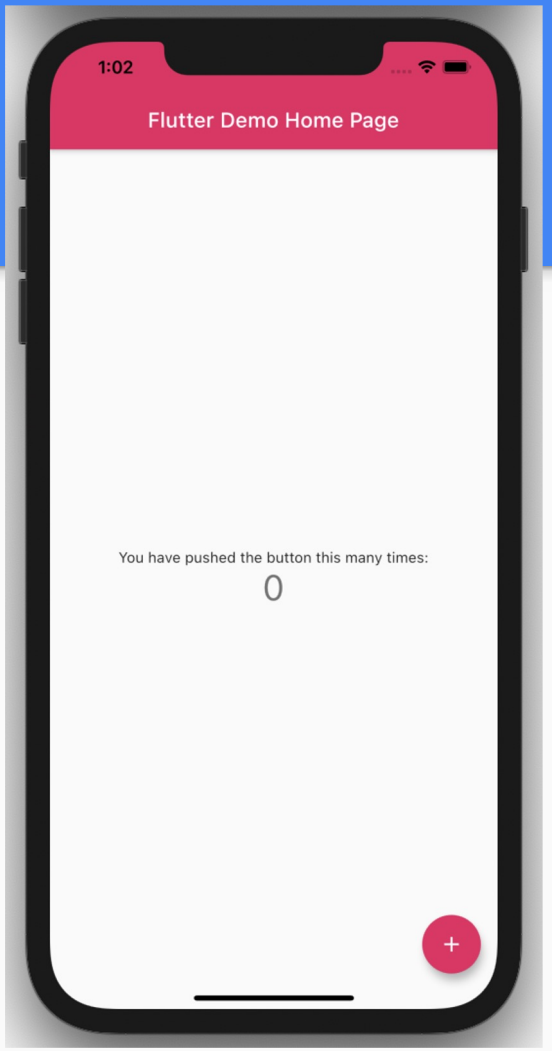
“Tout est Widget”

“Composition au lieu de l'héritage”

Les Widgets

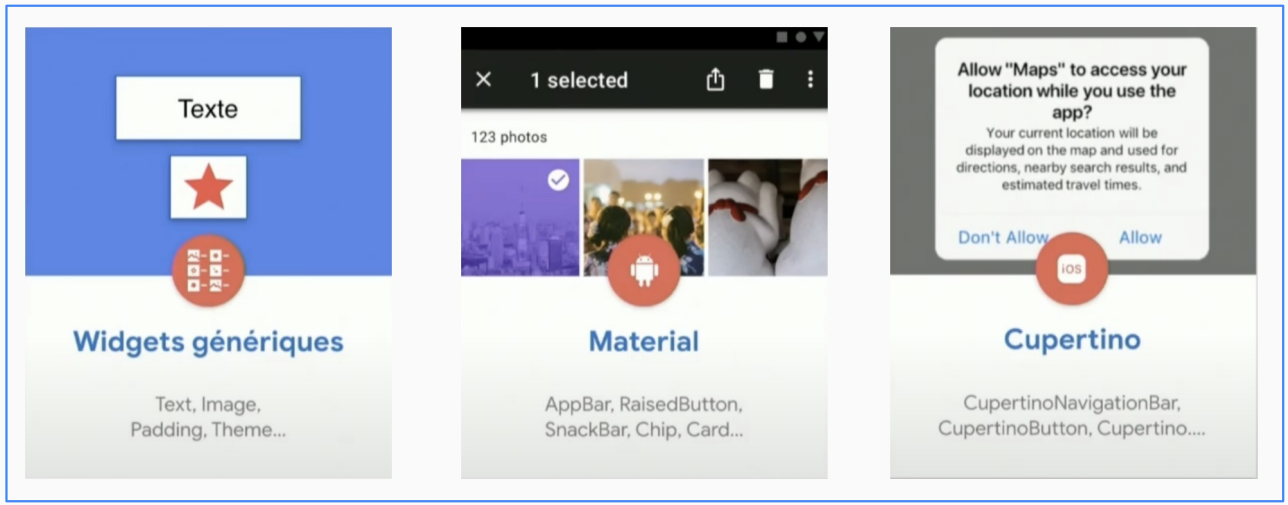
Caractéristiques

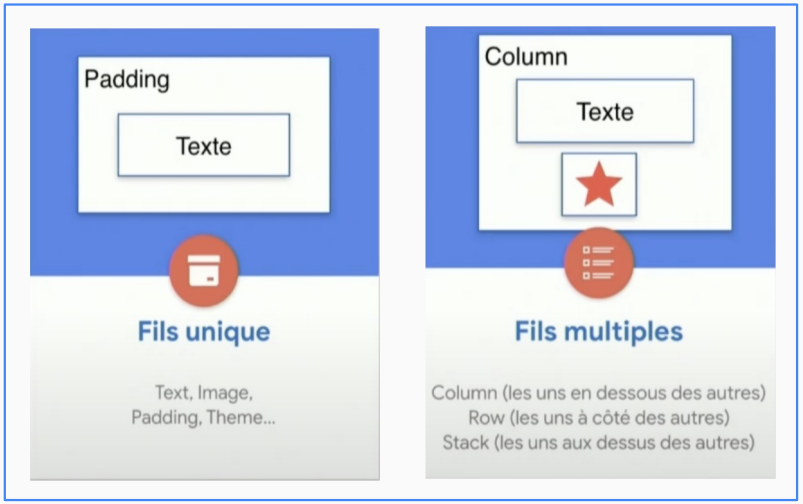
1. Affichages, Thèmes, Positionnements, Animations, etc.
2. Ils ne font que ce qu'ils doivent faire (ex: **Text** n'affiche du text pas de padding, **Padding** fait du padding),
3. UI is Code (tout est dans le code),



https://flutter.dev/docs/development/ui/widgets

Catégories de Widgets

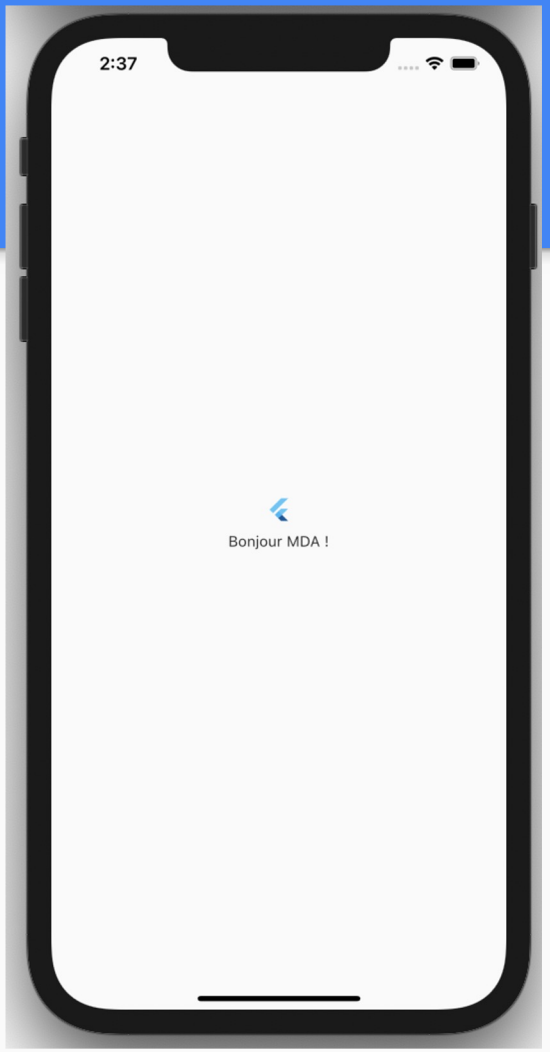




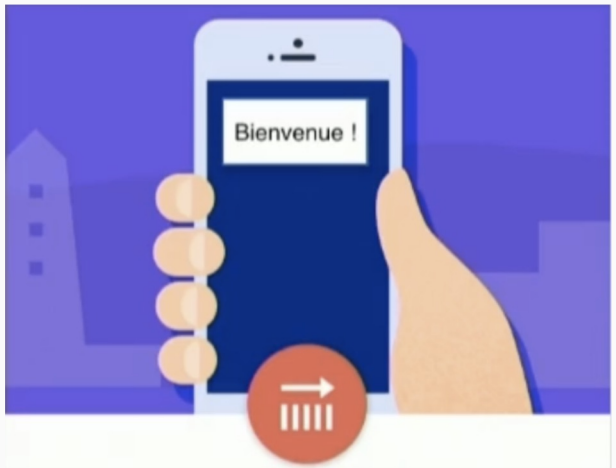
Widgets (Code)

flutter_app – main.dart [flutter_app]

```dart
class MyWidget extends StatelessWidget {
  @override
  Widget build(BuildContext context) {
    return Scaffold(
      body: Center(
        child: Column(
          mainAxisSize: MainAxisSize.min,
          children: [
            FlutterLogo(),
            SizedBox(height: 10.0),
            Text('Bonjour MDA !')
          ],
        ),  // Column
      ),  // Center
    );  // Scaffold
  }
}
```

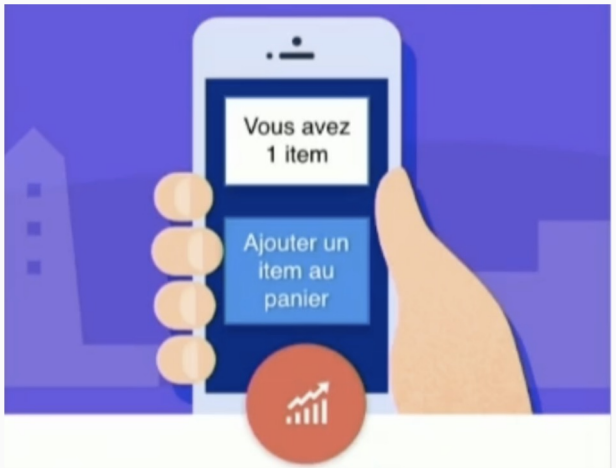


StatelessWidget et StatefulWidget



StatelessWidget

Son état n'évolue pas au fil du temps

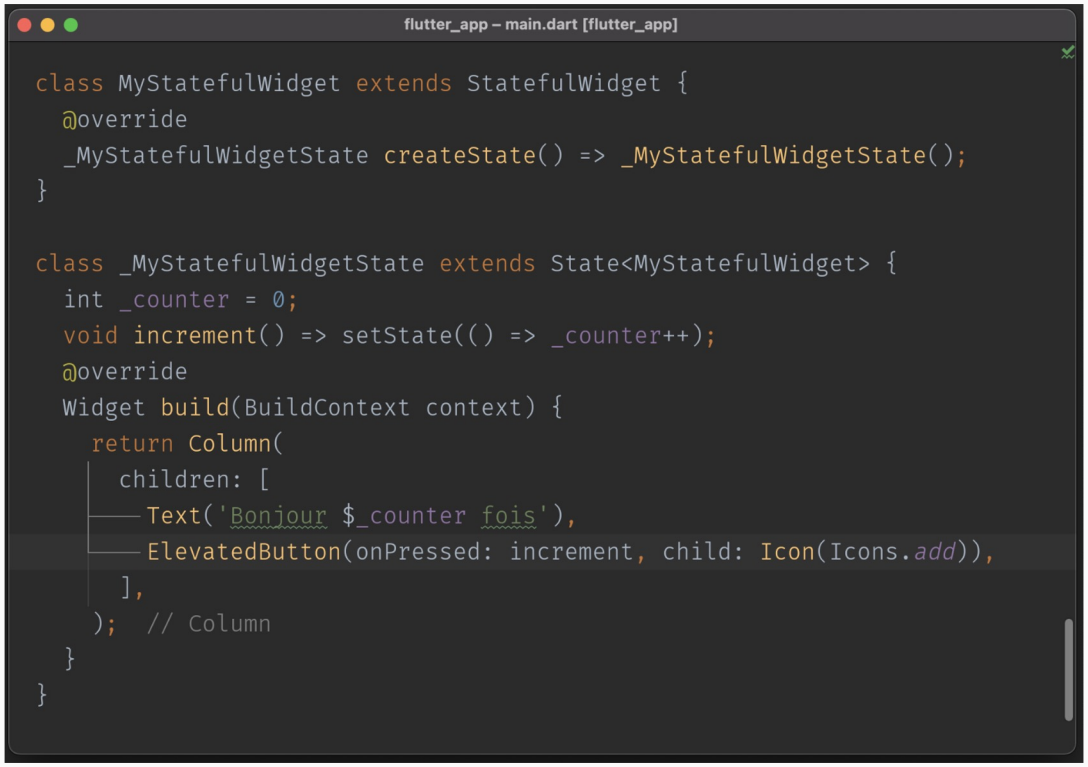


StatefulWidget

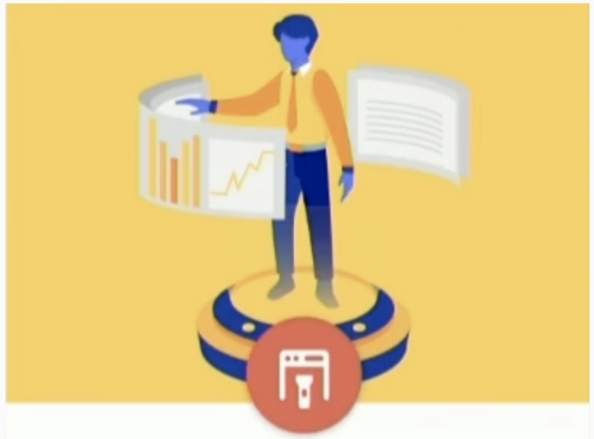
Widget attaché à un état (State) qui peut évoluer au fil du temps

StatelessWidget

StatefulWidget

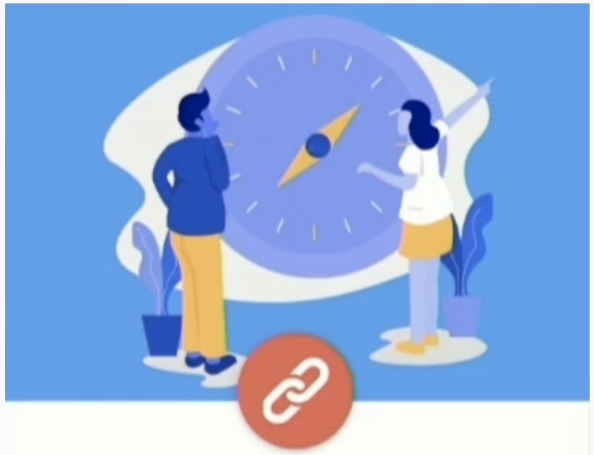


Les trois arbres de Flutter



Arbre de widgets

Arbre qui décrit les composants et leurs valeurs



Arbre des éléments

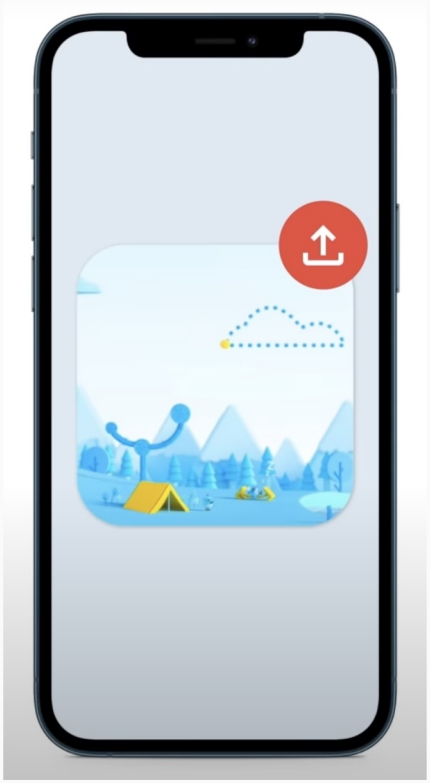
Arbre mutable qui fait le lien entre un Widget et son *RenderObject*

Arbre de rendu

Arbre mutable de *RenderObjects* qui s'occupent de gérer le layout, le dessin et la gestion du touch

Les annonces de Flutter 3.3

- Window
- macOS
- Linux
- Web



- Android
- iOS

Les annonces de Flutter 2

https://www.youtube.com/watch?v=A3ltMaM6noM

Dart

Sound null safety in Dart

Flutter Engage

Pay

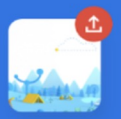
Rewrote in Flutter
for Productivity Gains

Microsoft contributing
foldable support to Flutter

Google Mobile Ads SDK
for Flutter

iRobot Education

iRobot building multiplatform
with Flutter



Flutter 2 = Free Upgrade

TOYOTA

Toyota infotainment systems
powered by Flutter

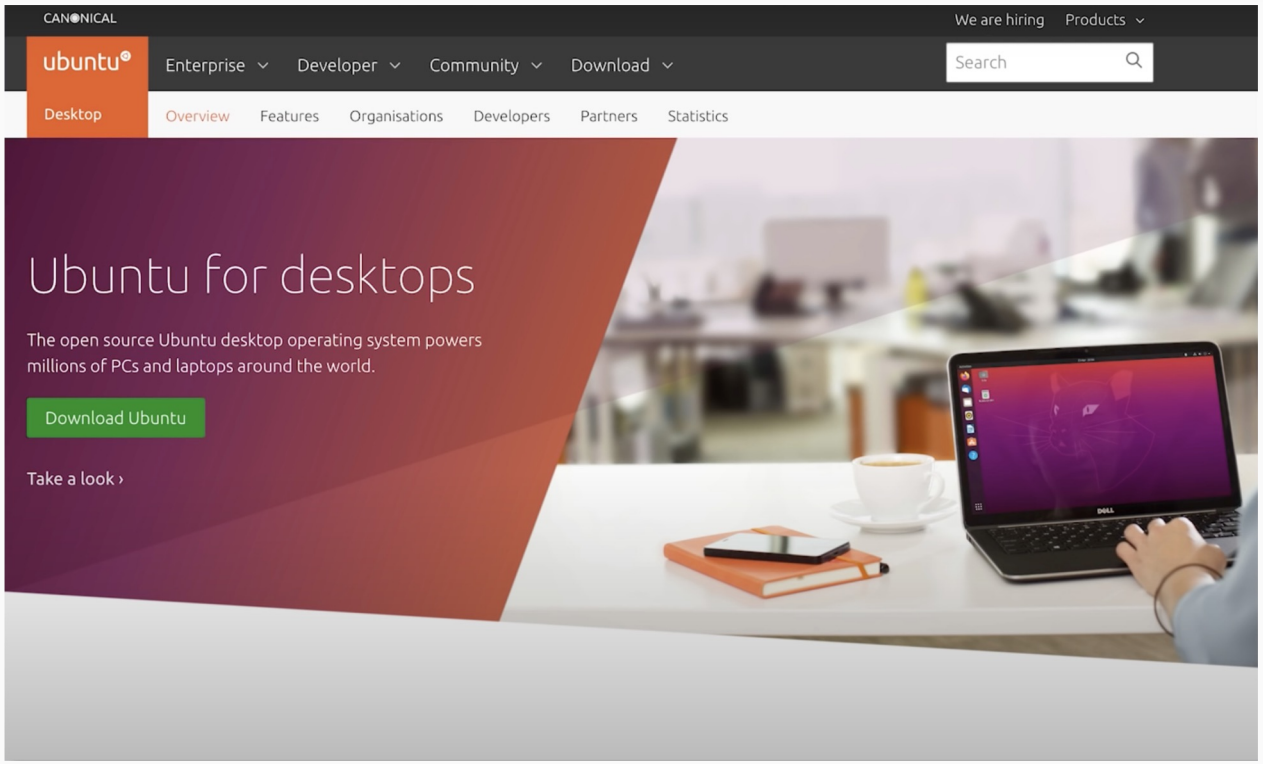
ubuntu

Flutter is Canonical's default choice

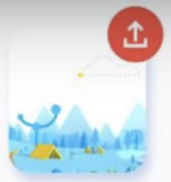
Flutter Web Support

Upgraded Firebase plugins for Flutter

Les annonces de Flutter 2



Flutter Engage

1. 

   Flutter 2 = Free Upgrade

2. G Pay

   Rewrote in Flutter
   for Productivity Gains

3. 

   Microsoft contributing
   foldables support to Flutter

4. 

   Flutter Web Support

5. iRobot Education

   iRobot building multiplatform
   with Flutter

6. ubuntu

   Flutter is Canonical's default choice

7. TOYOTA

   Toyota infotainment systems
   powered by Flutter

8. Dart

   Sound null safety in Dart

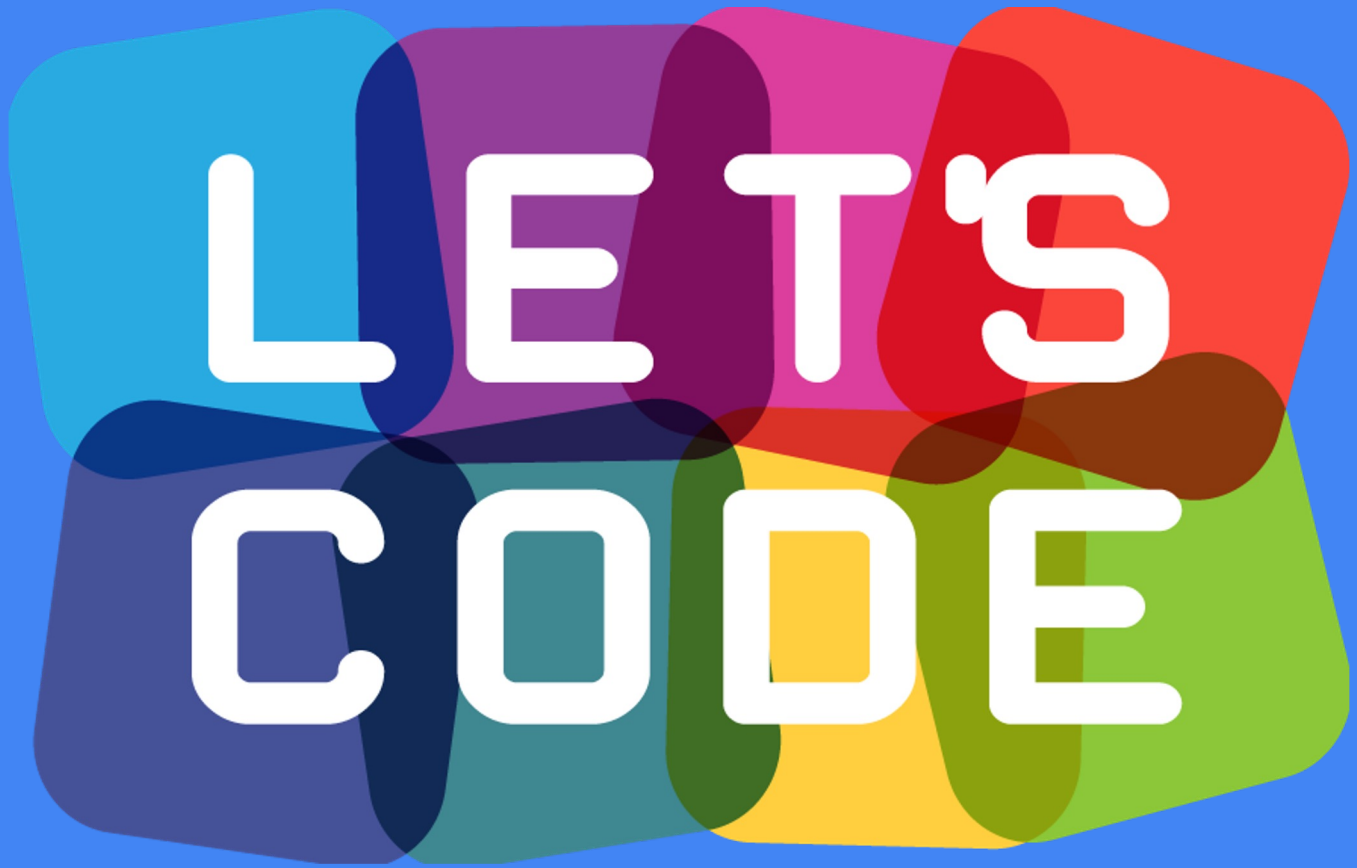
9. 

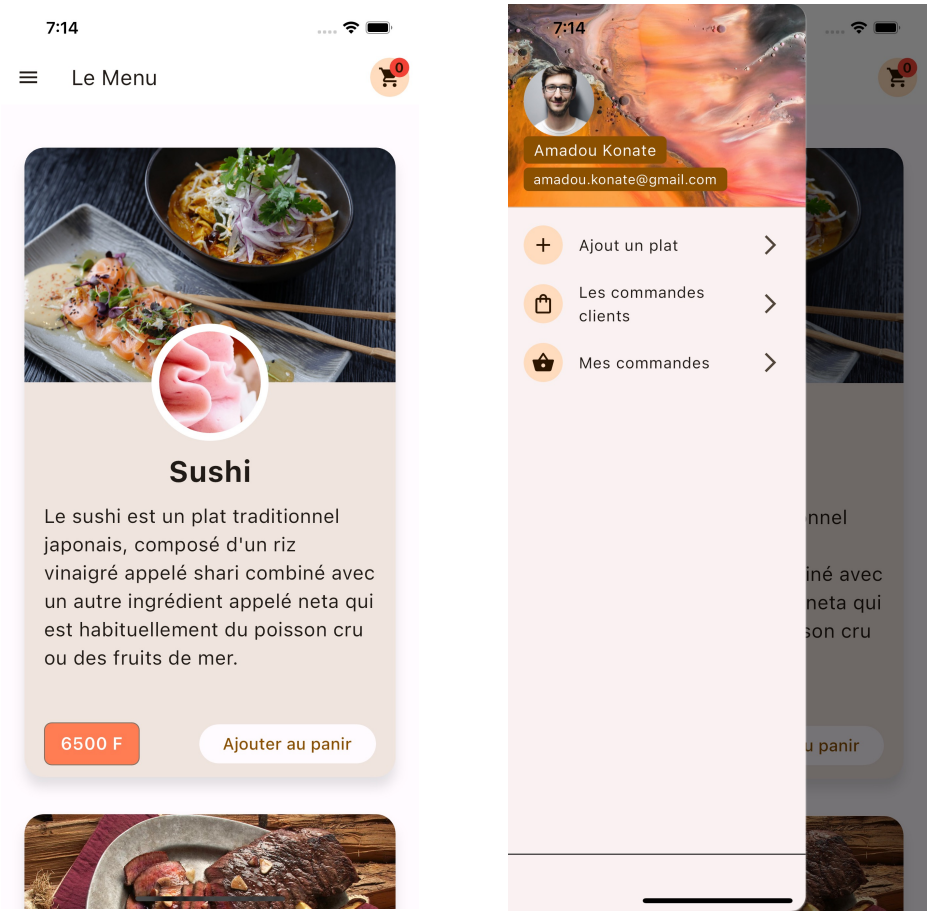
   Upgraded Firebase plugins
   for Flutter

10. 

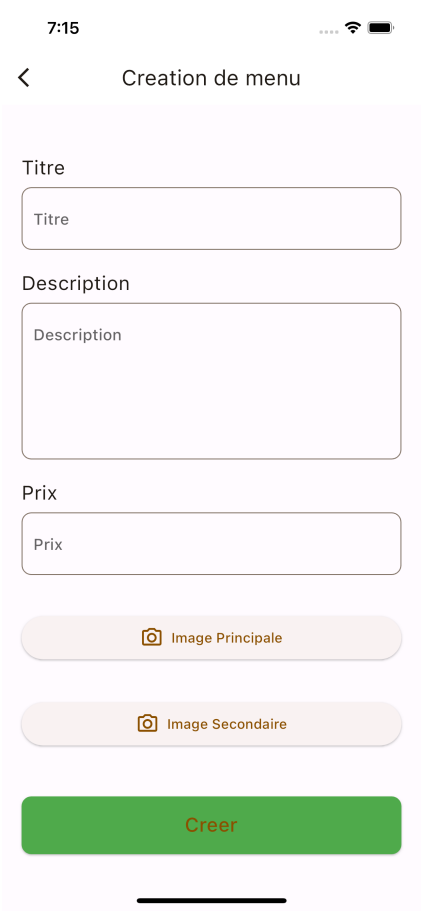
    Google Mobile Ads SDK
    for Flutter

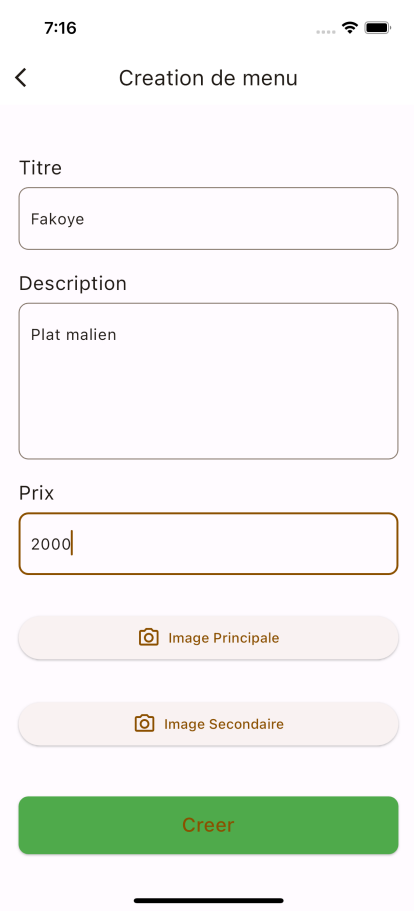
Merci

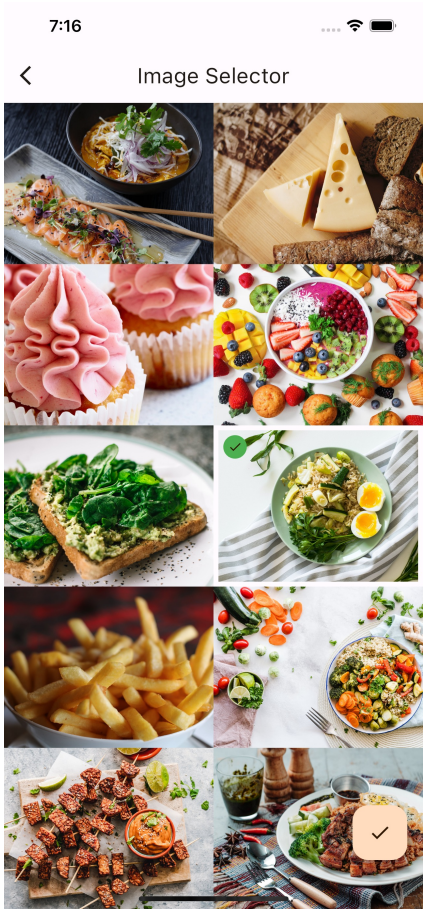


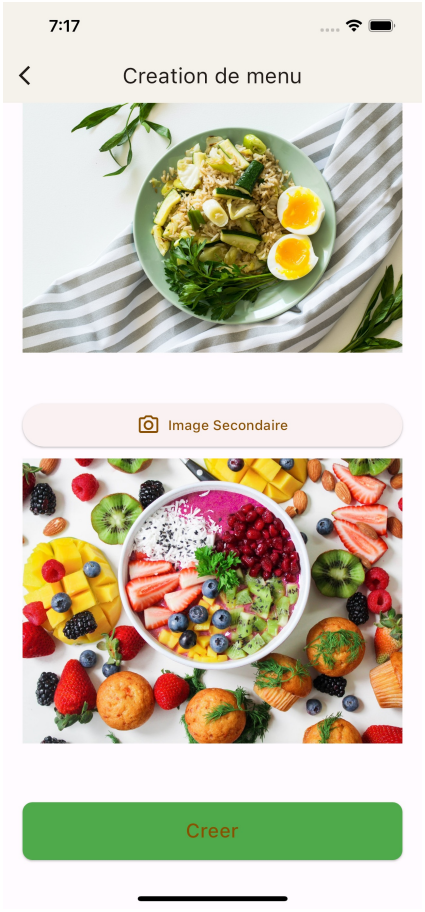

7:14
Le Menu
0
Sushi
Le sushi est un plat traditionnel japonais, composé d'un riz vinaigré appelé shari combiné avec un autre ingrédient appelé neta qui est habituellement du poisson cru ou des fruits de mer.
6500 F
Ajouter au panir

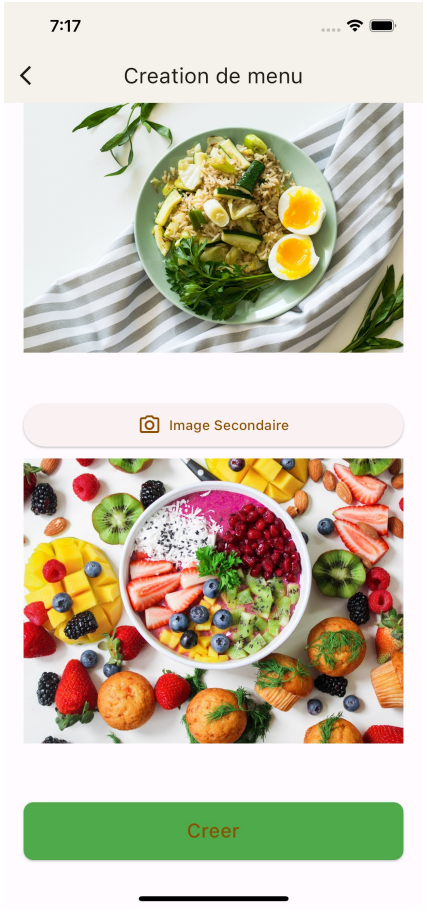
7:14
Amadou Konate
amadou.konate@gmail.com
Ajout un plat
Les commandes clients
Mes commandes


7:15
Creation de menu
Titre
Titre
Description
Description
Prix
Prix
Image Principale
Image Secondaire
Creer


7:16
Creation de menu
Titre
Fakoye
Description
Plat malien
Prix
2000
Image Principale
Image Secondaire
Creer


7:16
Image Selector


7:17
Creation de menu
Image Secondaire
Creer


7:17
Creation de menu
Image Secondaire
Creer


7:17
Le Menu
Régler le barbecue à puissance élevée. Huiler la grille. Griller les brochettes 4 minutes de chaque côté ou jusqu'à cuisson saignante ou rosée.
Saler légèrement (car la marinade est déjà salée).
4500 F
Ajouter au panir
Fakoye
Plat malien
2000 F
Ajouter au panir

7:26

Le Menu

Régler le barbecue à puissance élevée. Huiler la grille. Griller les brochettes 4 minutes de chaque côté ou jusqu'à cuisson saignante ou rosée.

Saler légèrement (car la marinade est déjà salée).

4500 F

Ajouter au panir

Fakoye

Plat malien

2000 F

Ajouter au panir

7:15

Sushi

Sushi

Le sushi est un plat traditionnel japonais, composé d'un riz vinaigré appelé shari combiné avec un autre ingrédient appelé neta qui est habituellement du poisson cru ou des fruits de mer.

6500 F

Ajouter au panir

7:17

Panier

Fakoye

Plat malien

2000 F

Brochettes de bœuf

Dans un grand bol, mélanger l'huile, la sauce soya, le vin...

9000 F

Valider

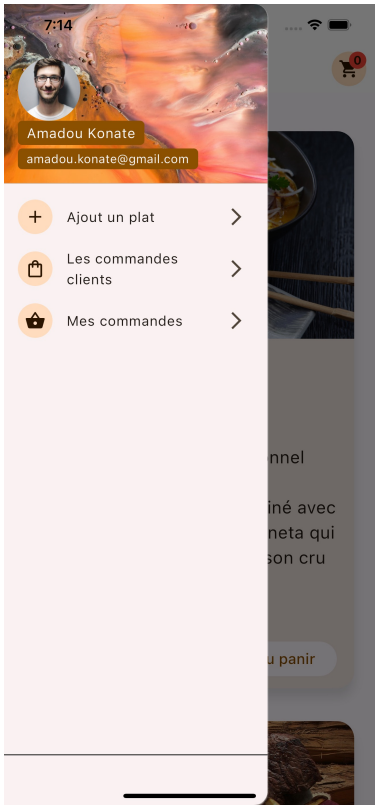
11000 F

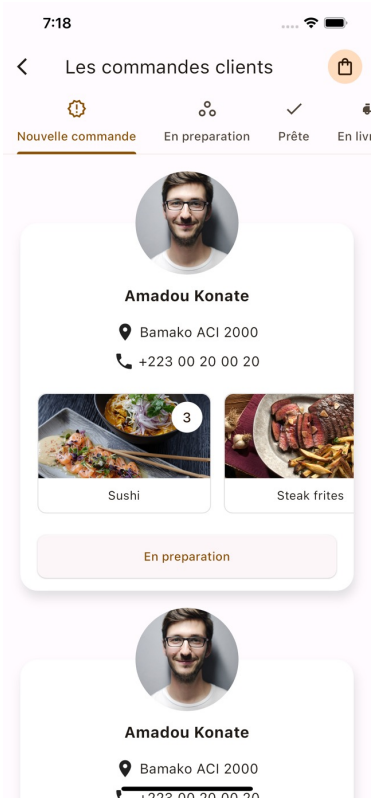
7:28

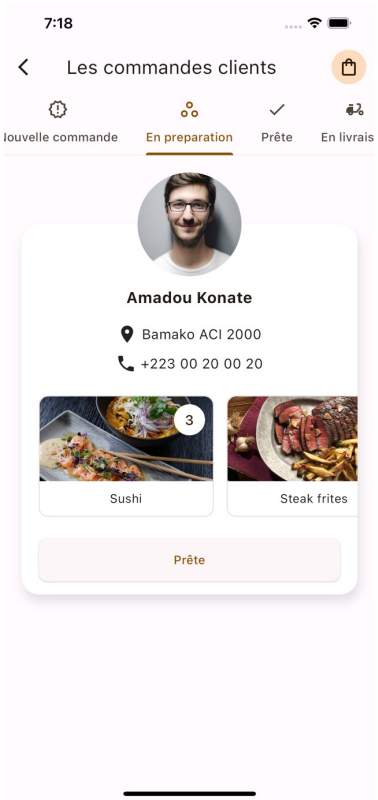
Panier

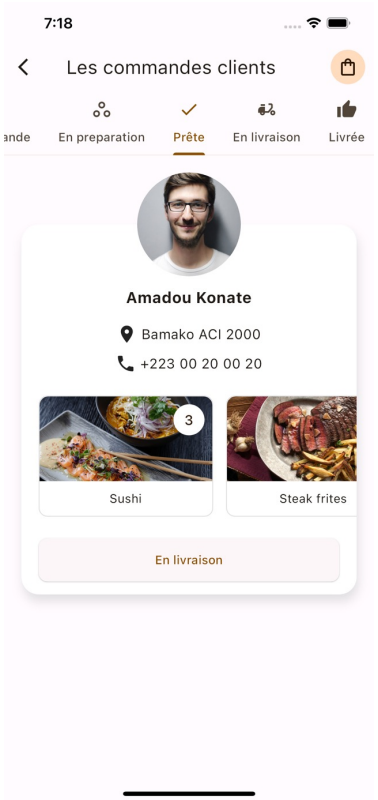
Valider

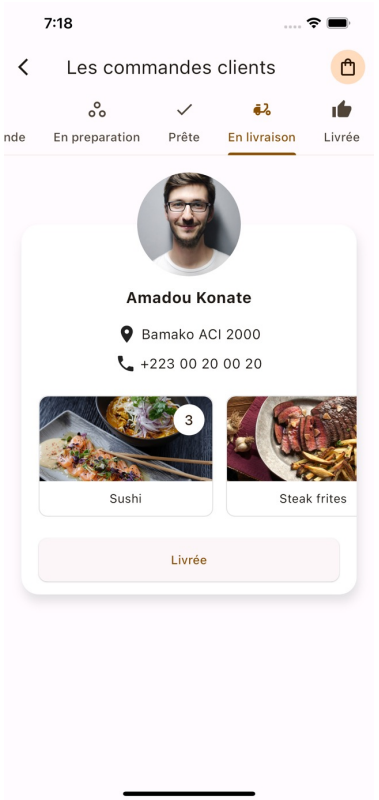
0 F

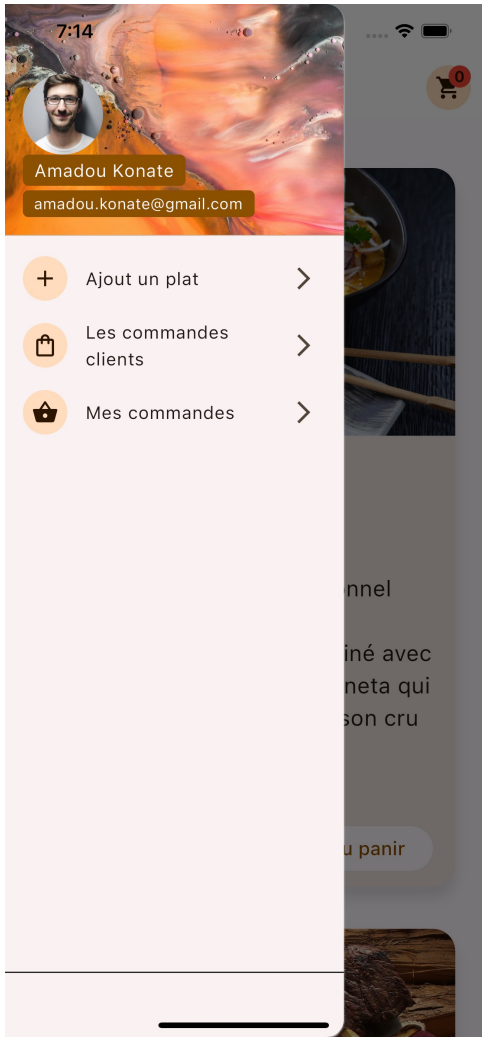

7:14
Amadou Konate
amadou.konate@gmail.com
Ajout un plat
Les commandes clients
Mes commandes


7:18
Les commandes clients
Nouvelle commande
En preparation
Prête
Amadou Konate
Bamako ACI 2000
+223 00 20 00 20
3
Sushi
Steak frites
En preparation
Amadou Konate
Bamako ACI 2000


7:18
Les commandes clients
Nouvelle commande
En preparation
Prête
En livrais
Amadou Konate
Bamako ACI 2000
+223 00 20 00 20
3
Sushi
Steak frites
Prête


7:18
Les commandes clients
En preparation
Prête
En livraison
Livrée
Amadou Konate
Bamako ACI 2000
+223 00 20 00 20
3
Sushi
Steak frites
En livraison


7:18
Les commandes clients
En preparation
Prête
En livraison
Livrée
Amadou Konate
Bamako ACI 2000
+223 00 20 00 20
3
Sushi
Steak frites
Livrée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Ajout un plat
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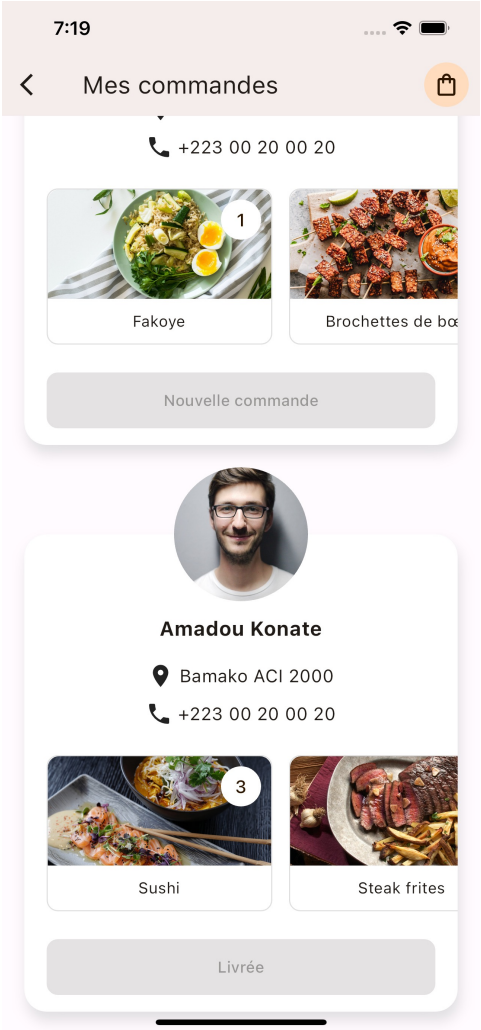
Mes commandes


7:19
Mes commandes
+223 00 20 00 20
1
Fakoye
Brochettes de bœ
Nouvelle commande
Amadou Konate
Bamako ACI 2000
+223 00 20 00 20
3
Sushi
Steak frites
Livrée

Jour 2

Matin:

1. Afficher Image (Assets, Network) →
2. GridView →
3. StatefullWidget →
4. Stack →
5. Sélectionner l’image →
6. Récupérer les valeurs saisies →

Apres midi:

1. Créer la classe MenuData,
2. Afficher les Menu,

Jour 3

Matin:

1. Gestion du panier,
2. Valider le panier,
3. Page mes commandes,
4. Gestion d’état global avec Bloc