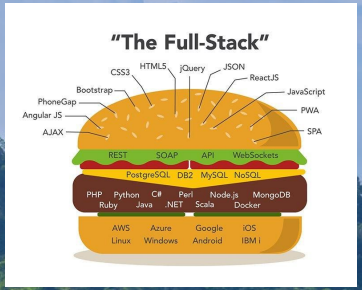
Formation : Flutter

25-27 mars 2021

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

Objectifs

Introduire Flutter/Dart,

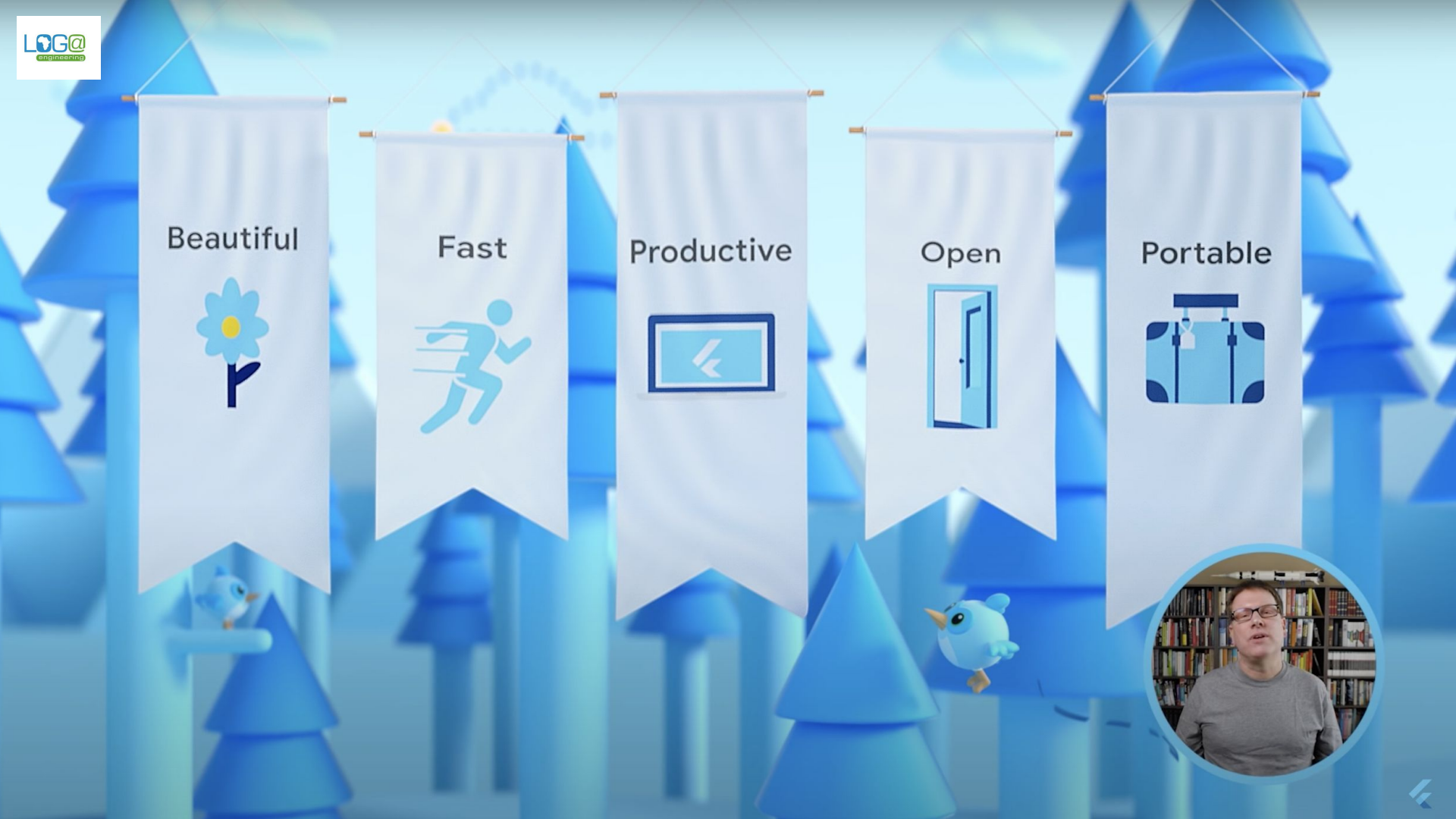
Comprendre la technologie Flutter,

Réaliser une application Mobile (Android et iOS, 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),

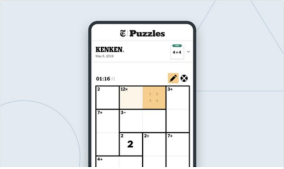
Pour qui/quoi ?

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

Quelques commandes flutter

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

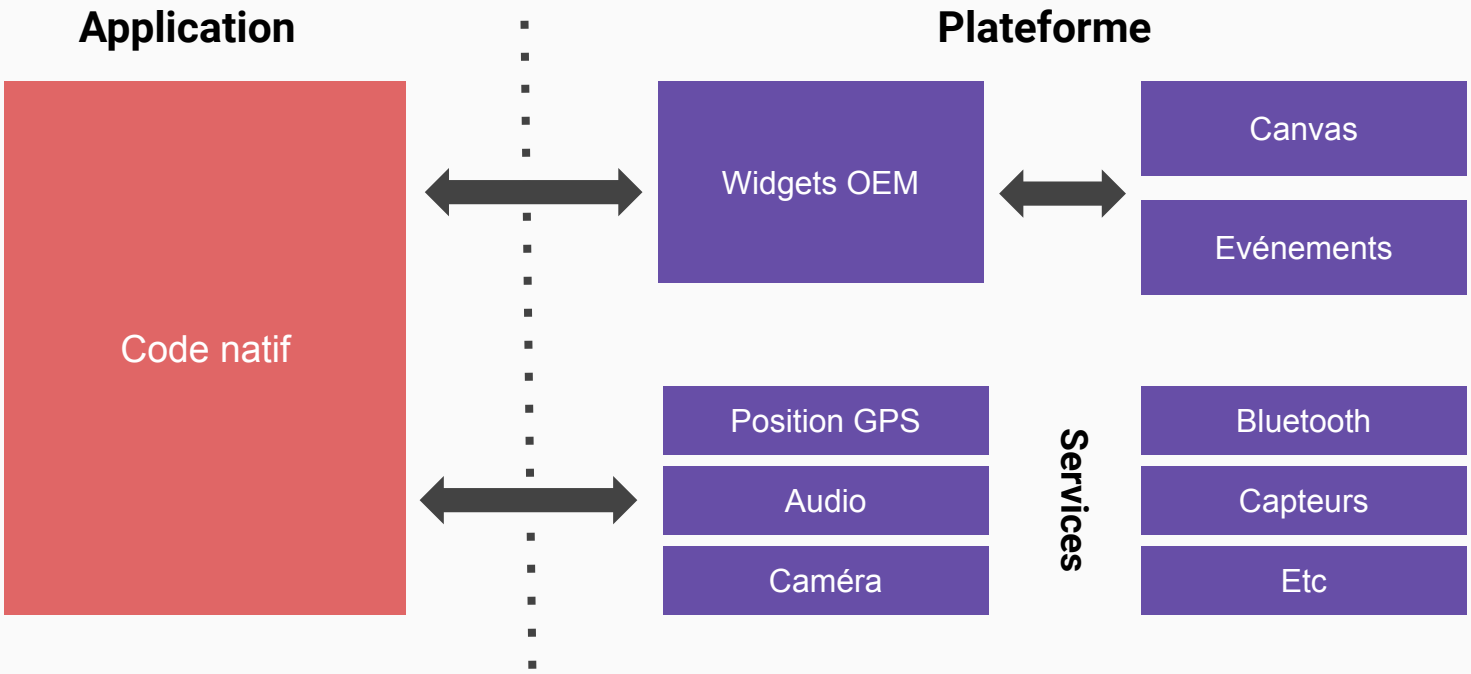
Google ebay BMW Square Alibaba Group 阿里巴巴集团 Capital One

Tencent 腾讯

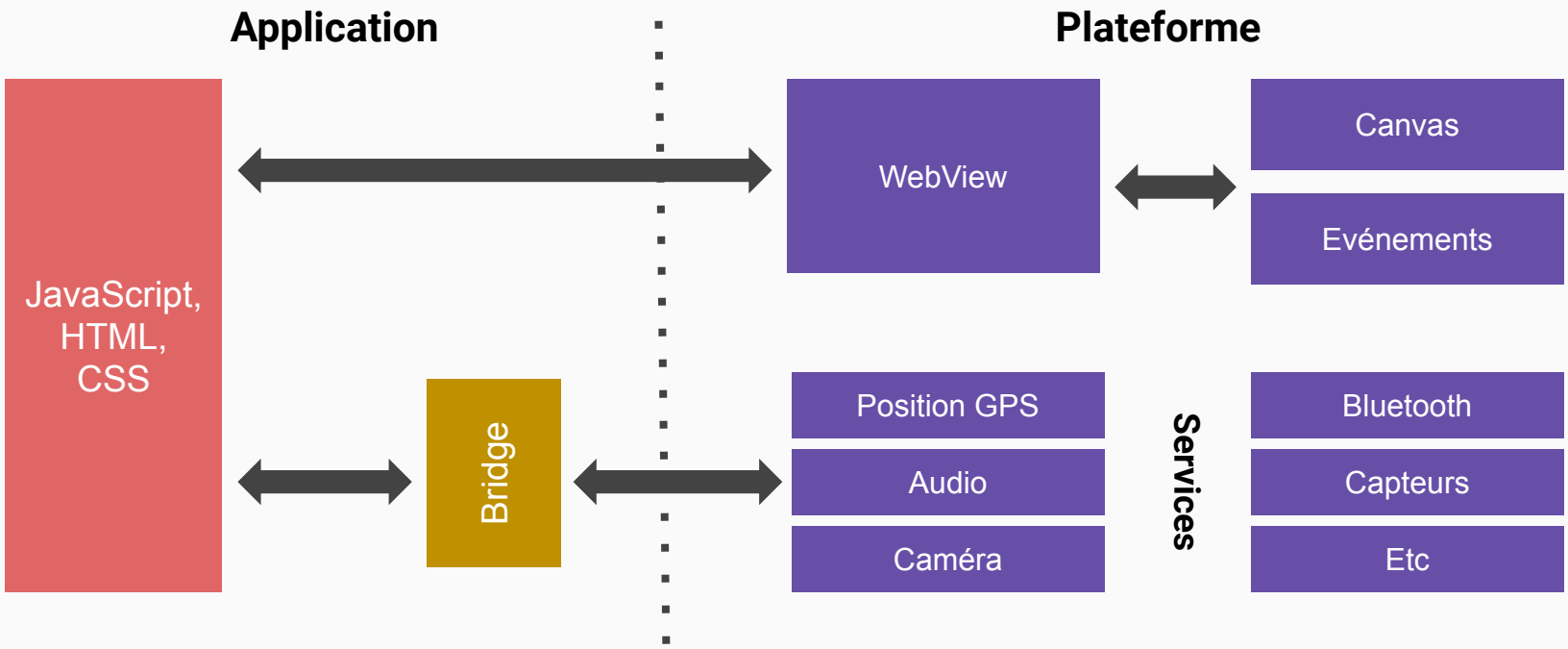
Tencent uses Flutter throughout the company for several apps including AITeacher, Now Live, K12, Mr. Translator, QiDian, and DingDang.

Watch video

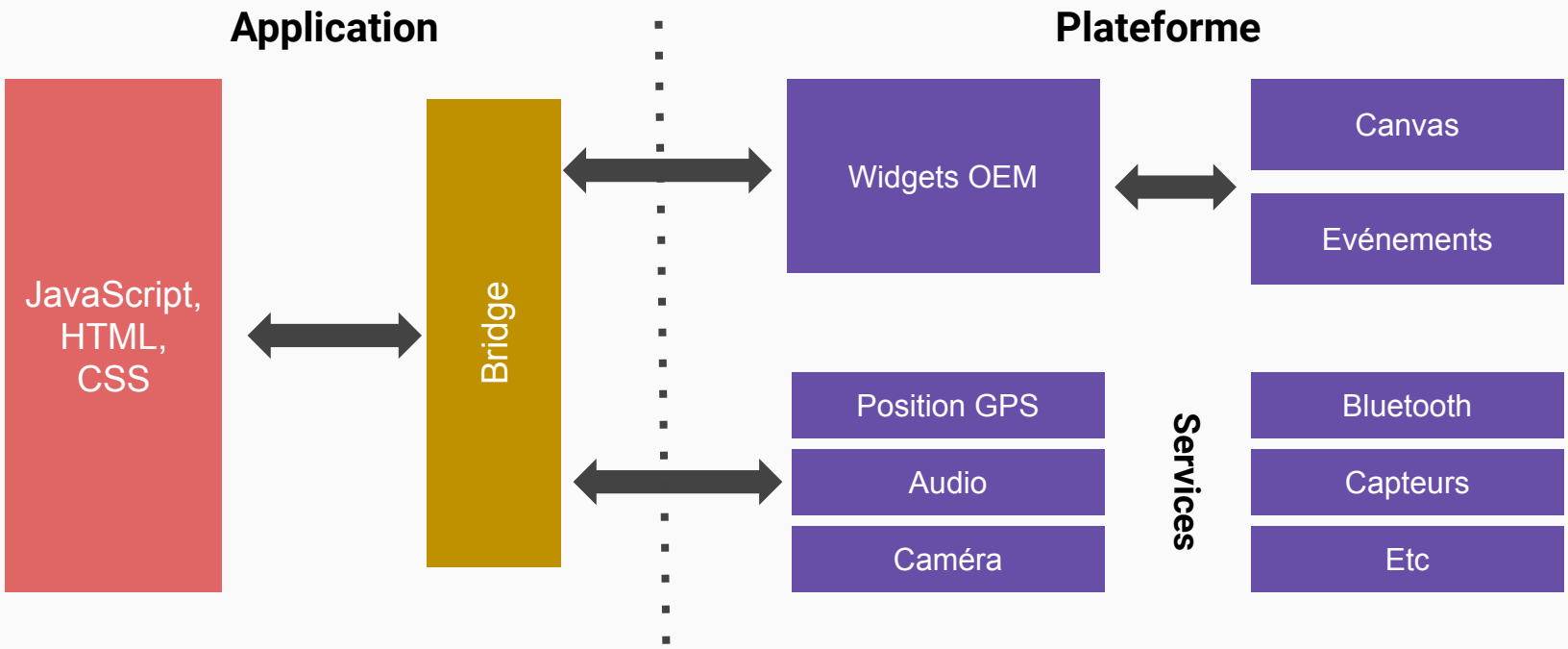
Application native



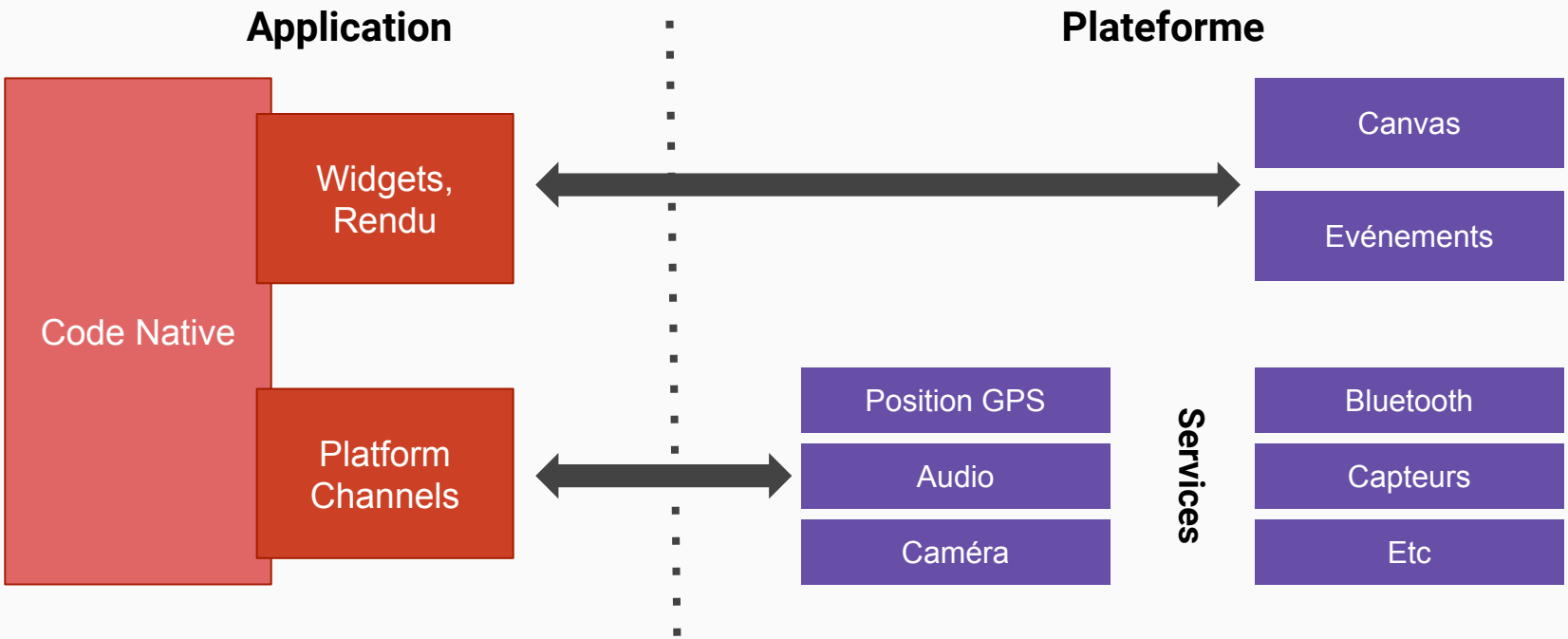
WebView (Ionic, Cordova, ...)



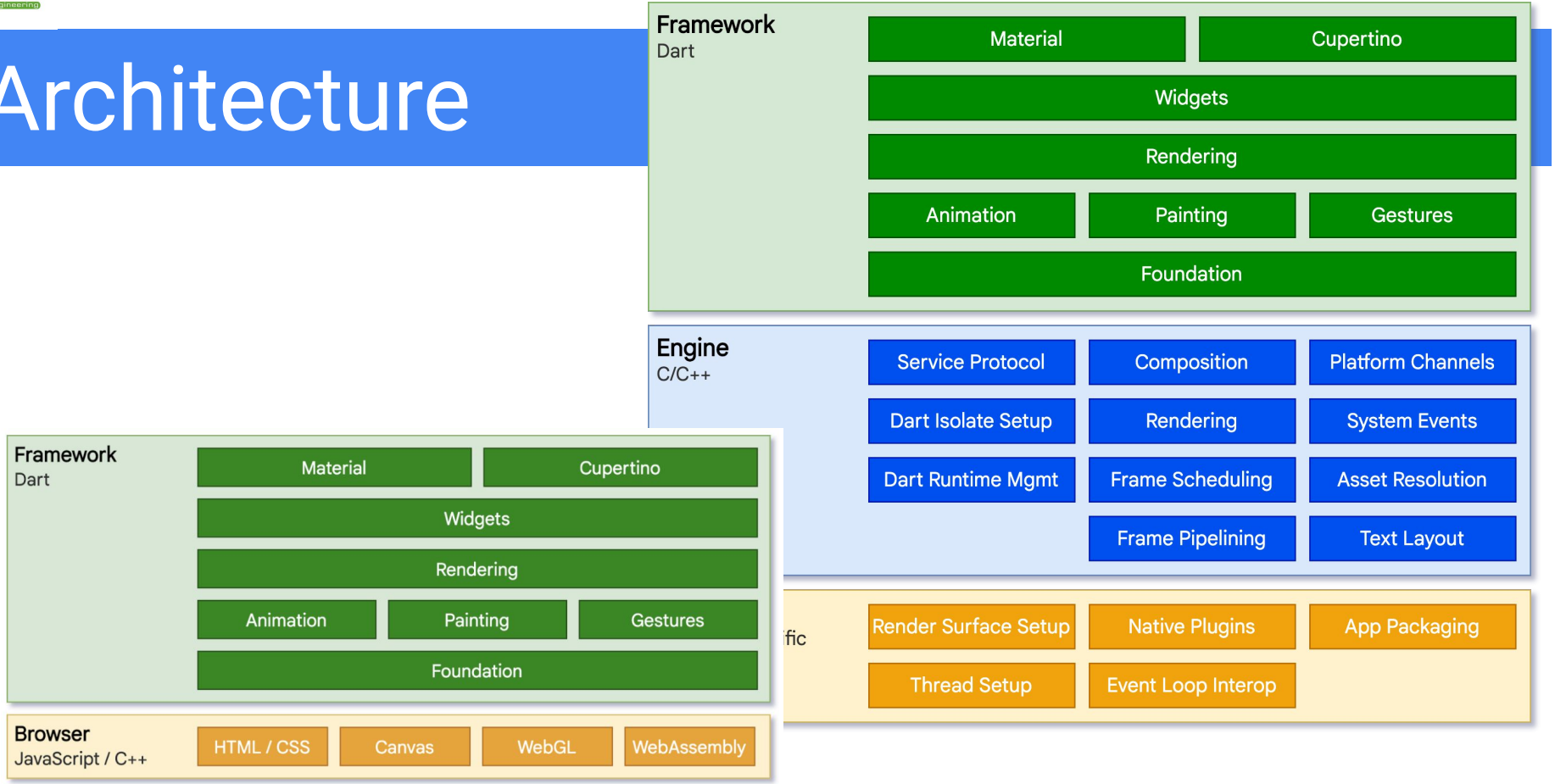
React Native



Flutter


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

Architecture



Les Widgets

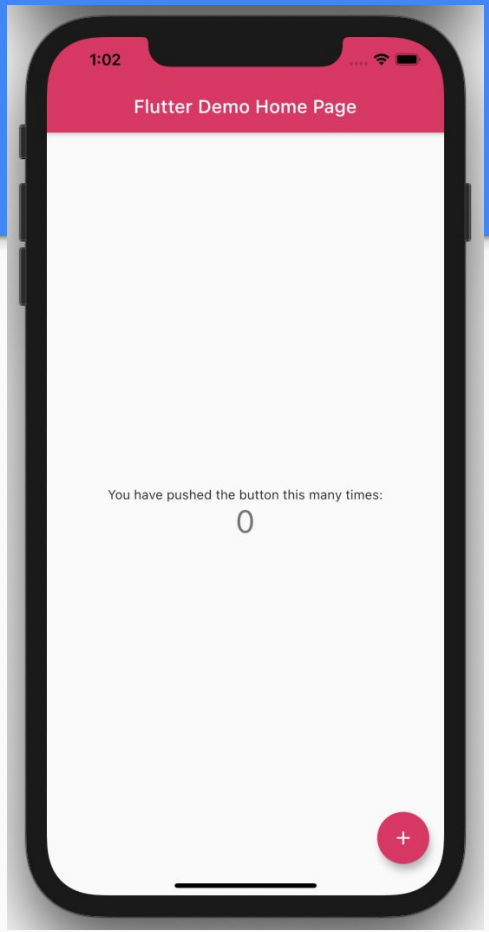
“Tout est Widget”

“Composition au lieu de l'héritage”

Les Widgets

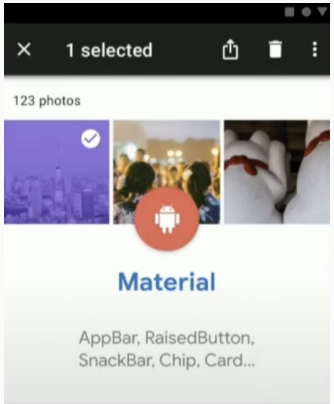
Caractéristiques

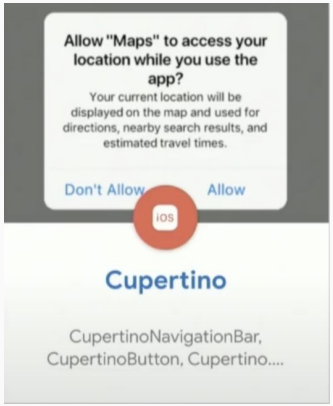
1. Affichages, Thèmes, Positionnements, Animations, etc.
2. Ils ne font que ce qu'ils doivent faire (ex: **Text** n'affiche du text pas de padding, **Padding** fait du padding),
3. UI is Code (tout est dans le code),

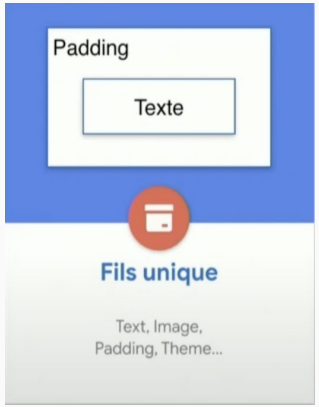


https://flutter.dev/docs/development/ui/widgets

Catégories de Widgets



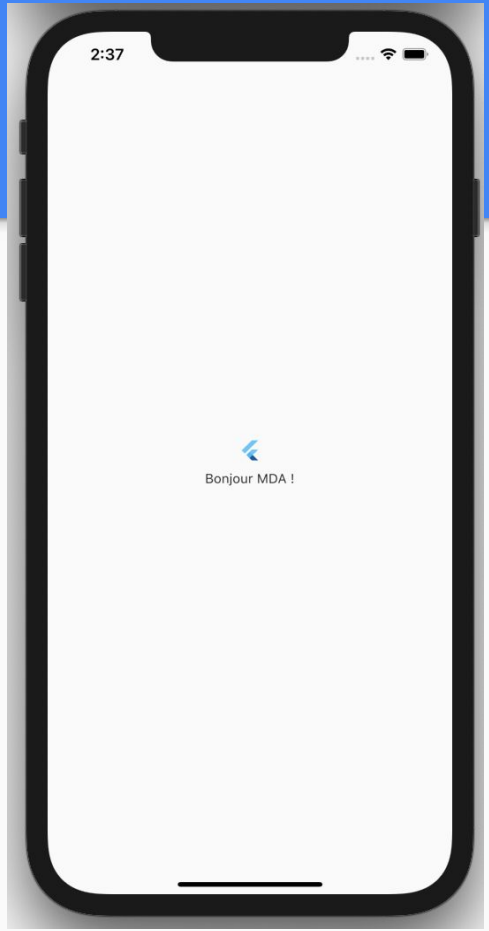




Widgets (Code)

flutter_app – main.dart [flutter_app]

```
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

flutter_app – main.dart [flutter_app]

```
class MyStatelessWidget extends StatelessWidget {
  @override
  Widget build(BuildContext context) {
    return Text('Bonjour MDA !');
  }
}
```

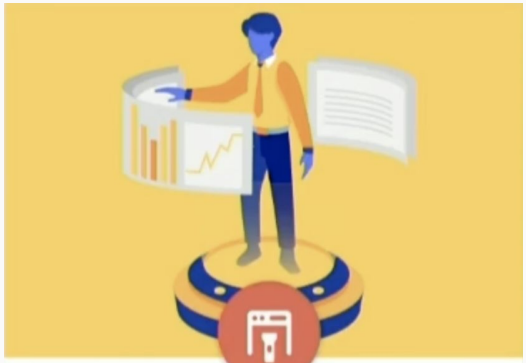
StatefulWidget

flutter_app – main.dart [flutter_app]

```
class MyStatefulWidget extends StatefulWidget {
  @override
  _MyStatefulWidgetState createState() => _MyStatefulWidgetState();
}

class _MyStatefulWidgetState extends State<MyStatefulWidget> {
  int _counter = 0;
  void increment() => setState(() => _counter++);
  @override
  Widget build(BuildContext context) {
    return Column(
      children: [
        Text('Bonjour $_counter fois'),
        ElevatedButton(onPressed: increment, child: Icon(Icons.add)),
      ],
    );  // Column
  }
}
```

Les trois arbres de Flutter

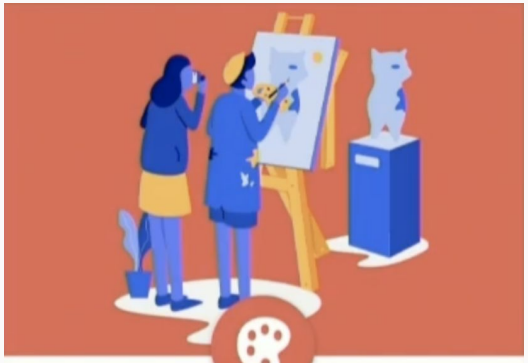


Arbre de widgets

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

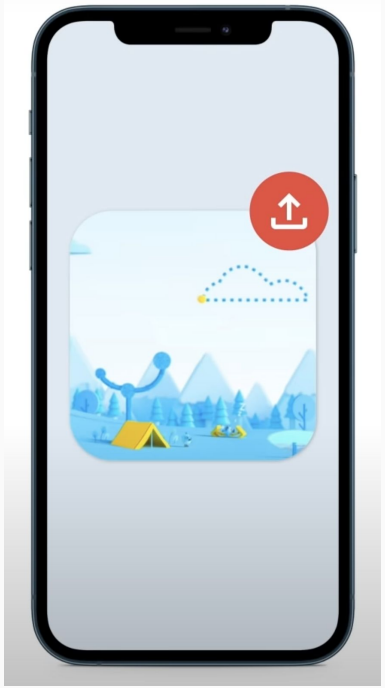
Les annonces de Flutter 2

Window

macOS

Linux

Web

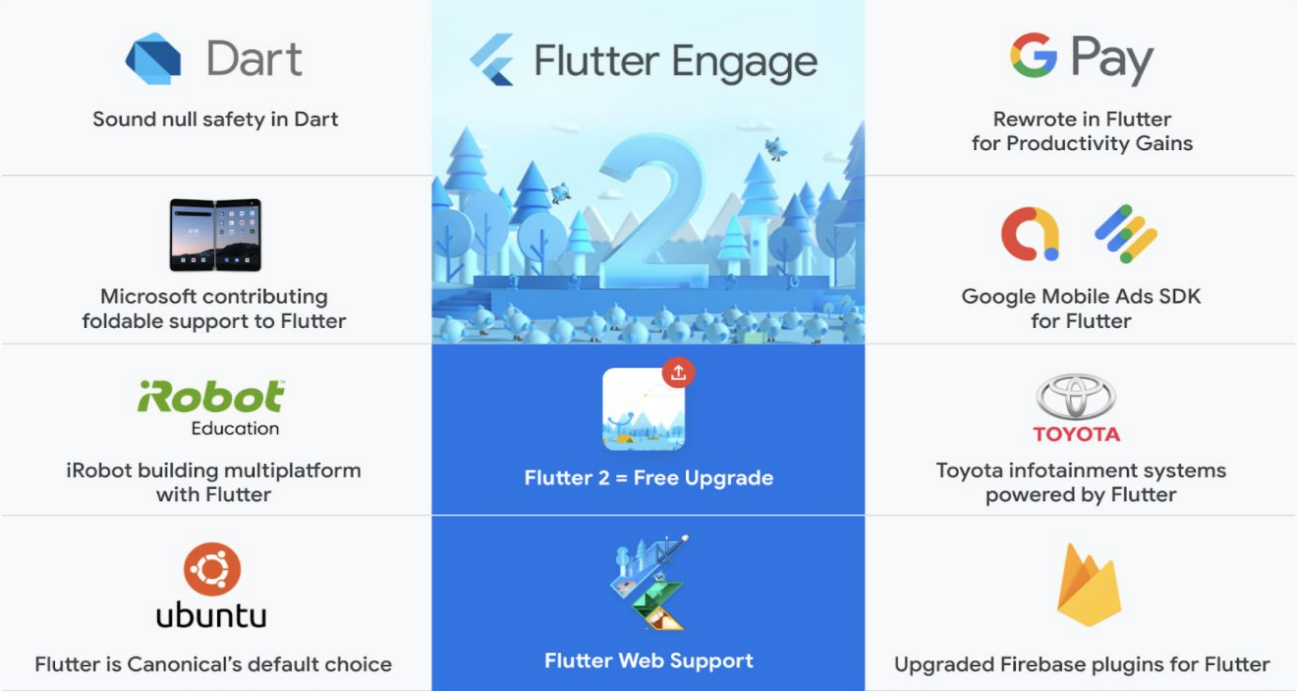


Android

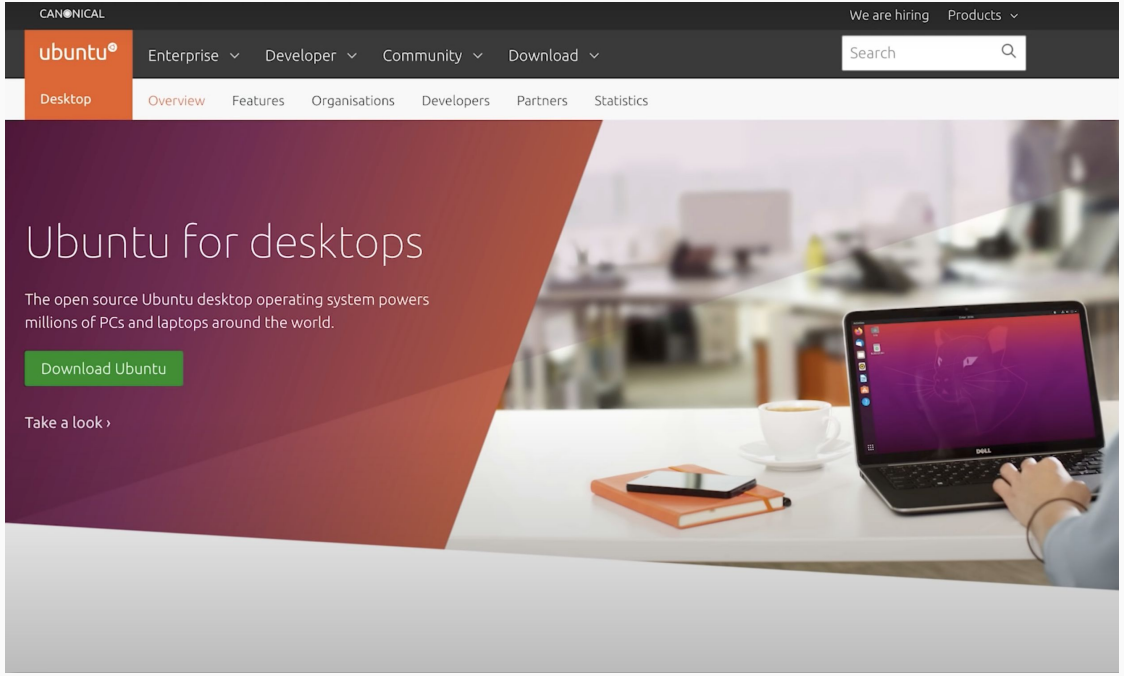
iOS

Les annonces de Flutter 2

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



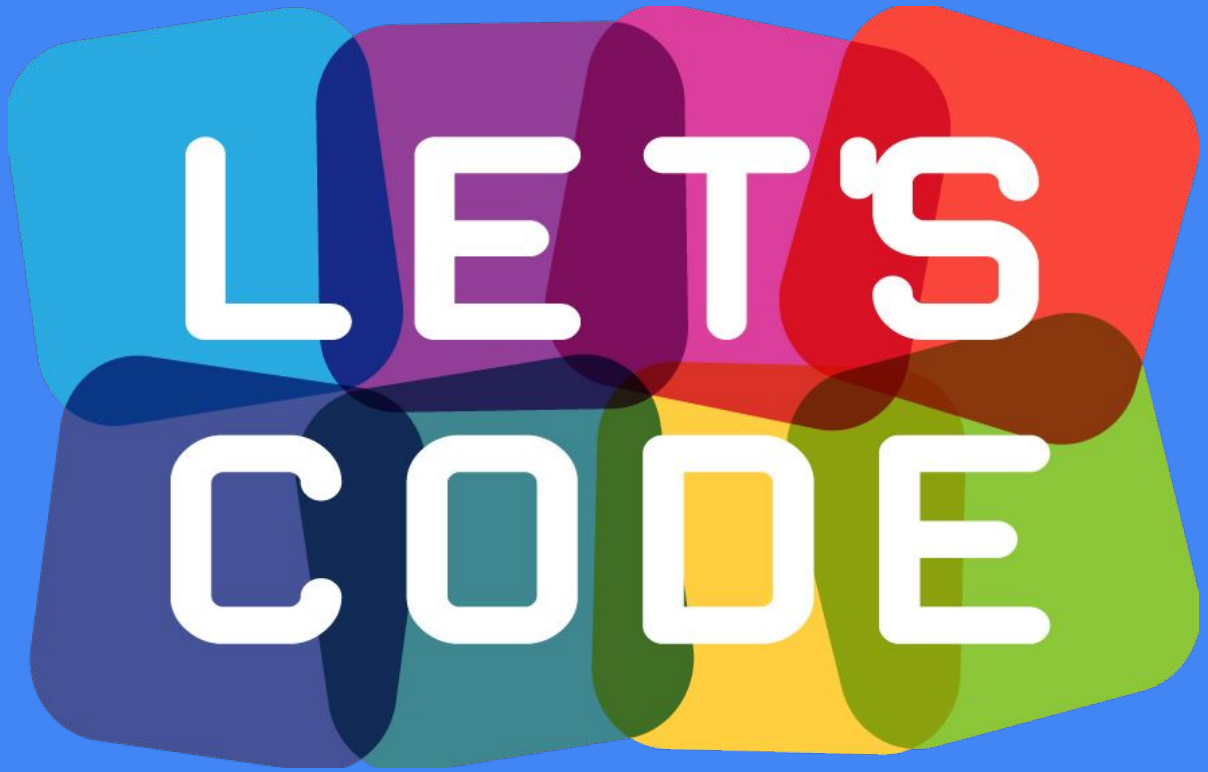
Les annonces de Flutter 2

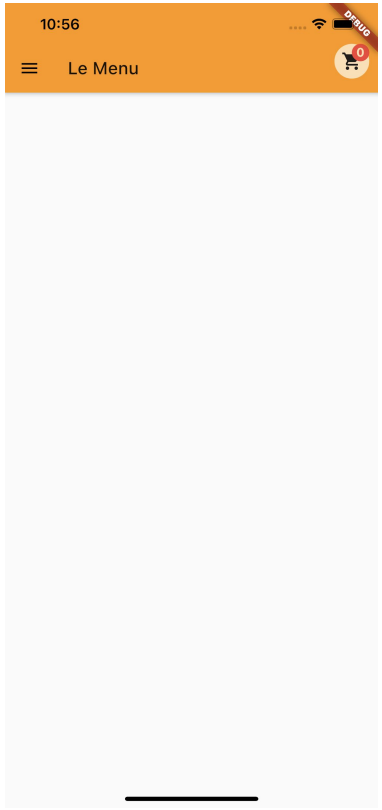


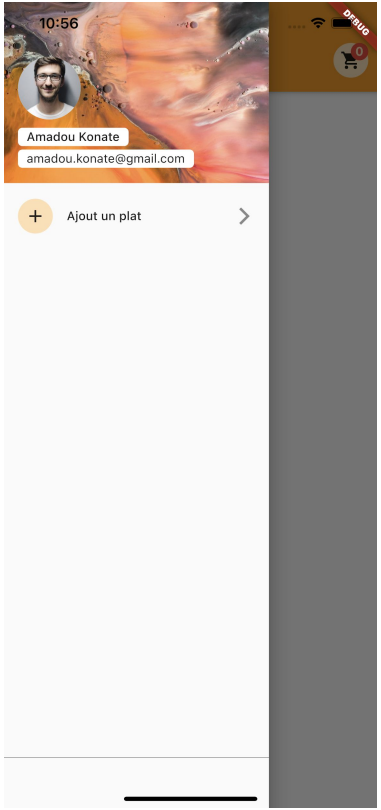
Flutter Engage

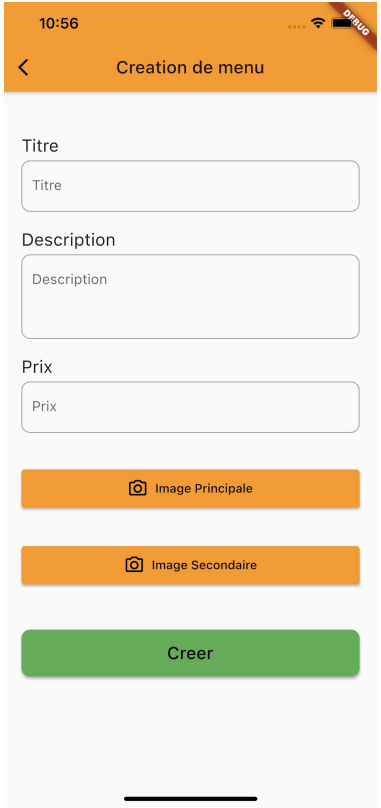
1. Flutter 2 = Free Upgrade
2. Rewrote in Flutter for Productivity Gains
3. Microsoft contributing foldables support to Flutter
4. Flutter Web Support
5. iRobot Education — iRobot building multiplatform with Flutter
6. ubuntu — Flutter is Canonical's default choice
7. TOYOTA — Toyota infotainment systems powered by Flutter
8. Dart — Sound null safety in Dart
9. Upgraded Firebase plugins for Flutter
10. Google Mobile Ads SDK for Flutter

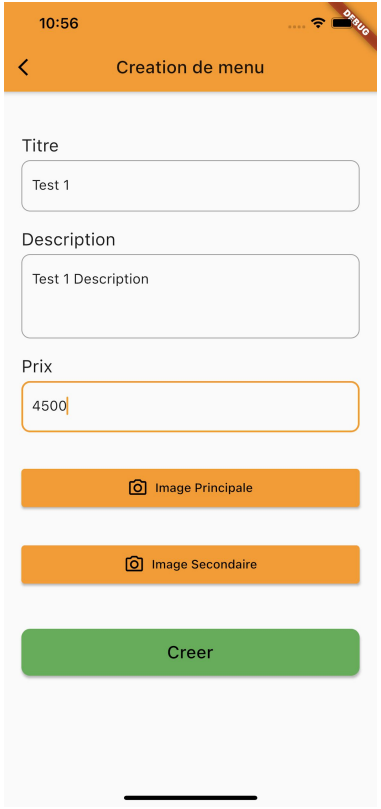
Merci




10:56
DEBUG
Le Menu
0

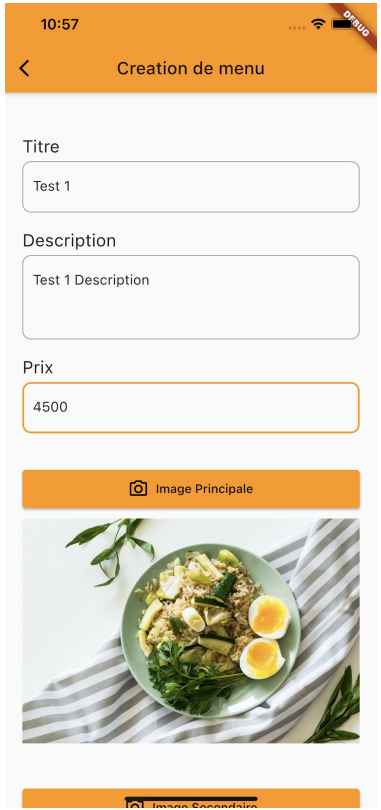

10:56
DEBUG
Amadou Konate
amadou.konate@gmail.com
Ajout un plat


10:56
DEBUG
Creation de menu
Titre
Titre
Description
Description
Prix
Prix
Image Principale
Image Secondaire
Creer


10:56
DEBUG
Creation de menu
Titre
Test 1
Description
Test 1 Description
Prix
4500
Image Principale
Image Secondaire
Creer

10:56
DEBUG
Image Selector

10:57
DEBUG
Image Selector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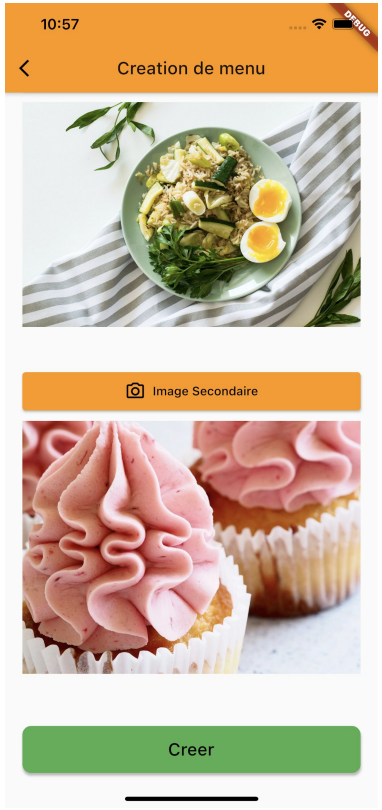
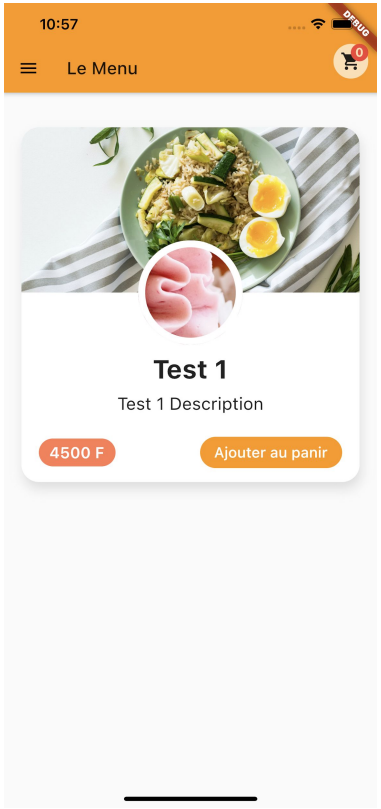
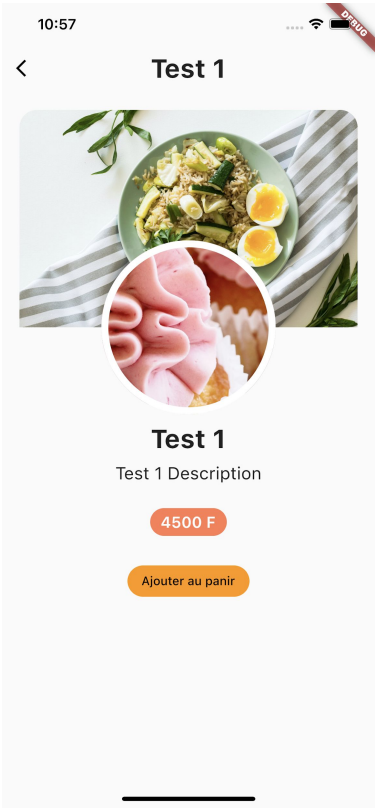
DEBUG
Creation de menu
Titre
Test 1
Description
Test 1 Description
Prix
4500
Image Principale


10:57
DEBUG
Creation de menu
Image Secondaire
Creer


10:57
DEBUG
Le Menu
0
Test 1
Test 1 Description
4500 F
Ajouter au panir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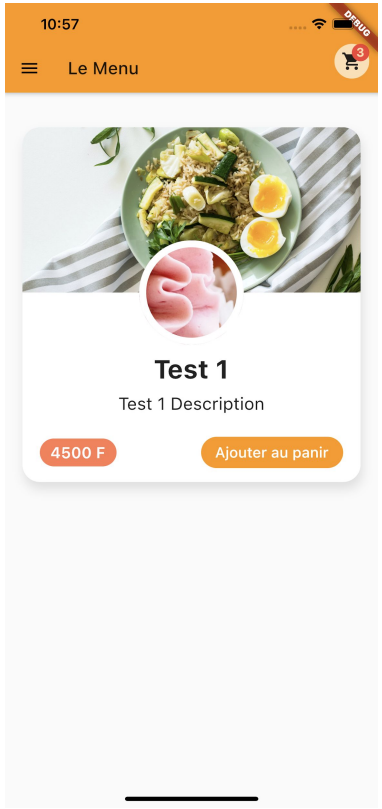
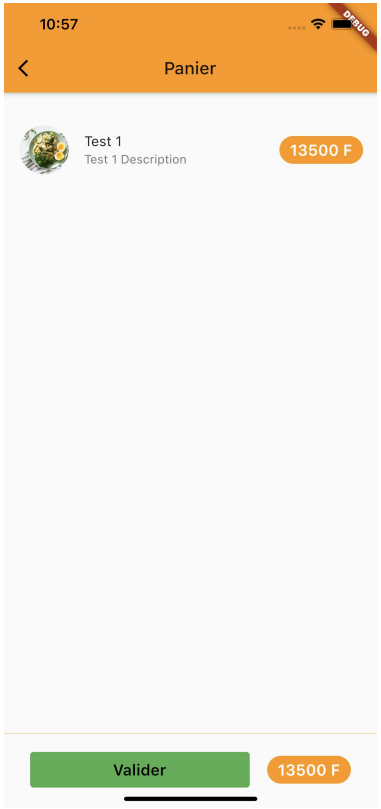
DEBUG
Test 1
Test 1
Test 1 Description
4500 F
Ajouter au panir


10:57
DEBUG
Le Menu
3
Test 1
Test 1 Description
4500 F
Ajouter au panir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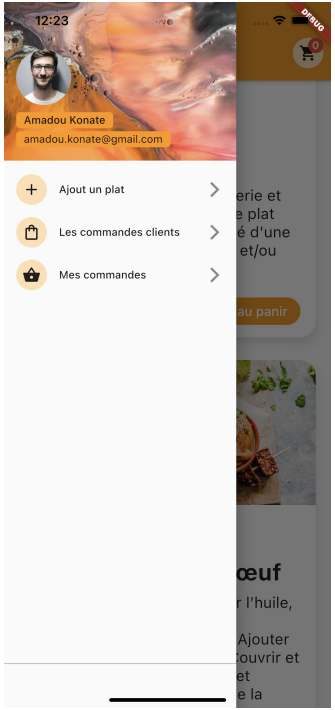
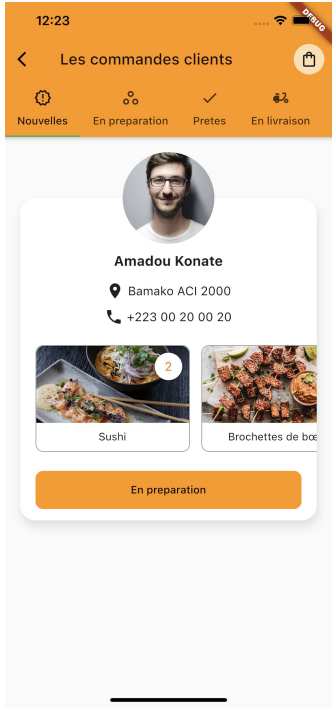
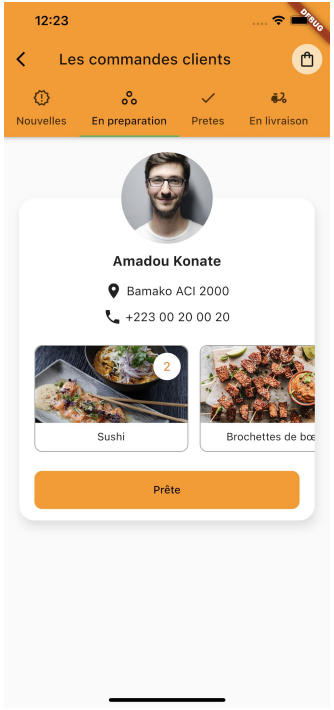
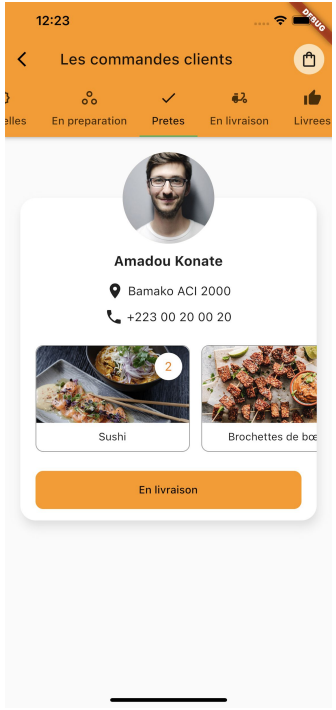
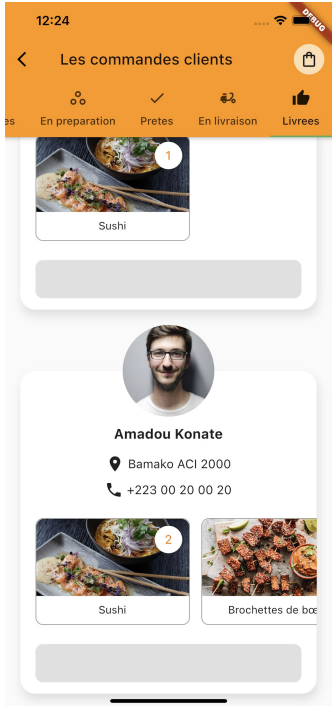
DEBUG
Panier
Test 1
Test 1 Description
13500 F
Valider
13500 F

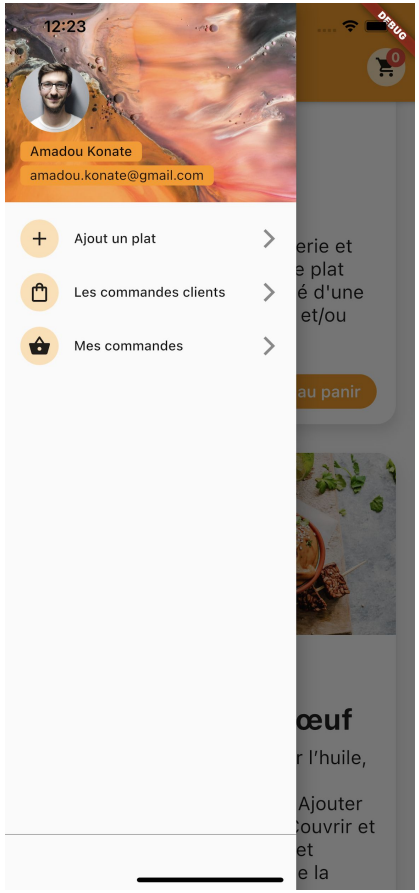

12:23
Amadou Konate
amadou.konate@gmail.com
Ajout un plat
Les commandes clients
Mes commandes

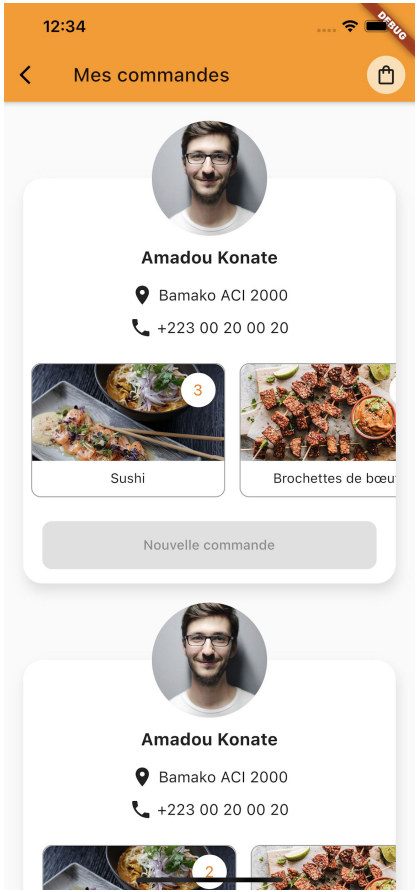

12:23
Les commandes clients
Nouvelles
En preparation
Pretes
En livraison
Amadou Konate
Bamako ACI 2000
+223 00 20 00 20
2
Sushi
Brochettes de bœ
En preparation

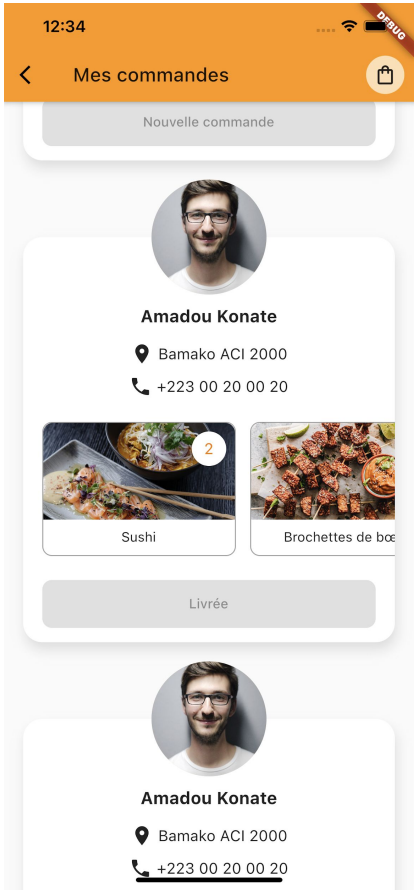

12:23
Les commandes clients
Nouvelles
En preparation
Pretes
En livraison
Amadou Konate
Bamako ACI 2000
+223 00 20 00 20
2
Sushi
Brochettes de bœ
Prête


12:23
Les commandes clients
En preparation
Pretes
En livraison
Livrees
Amadou Konate
Bamako ACI 2000
+223 00 20 00 20
2
Sushi
Brochettes de bœ
En livraison

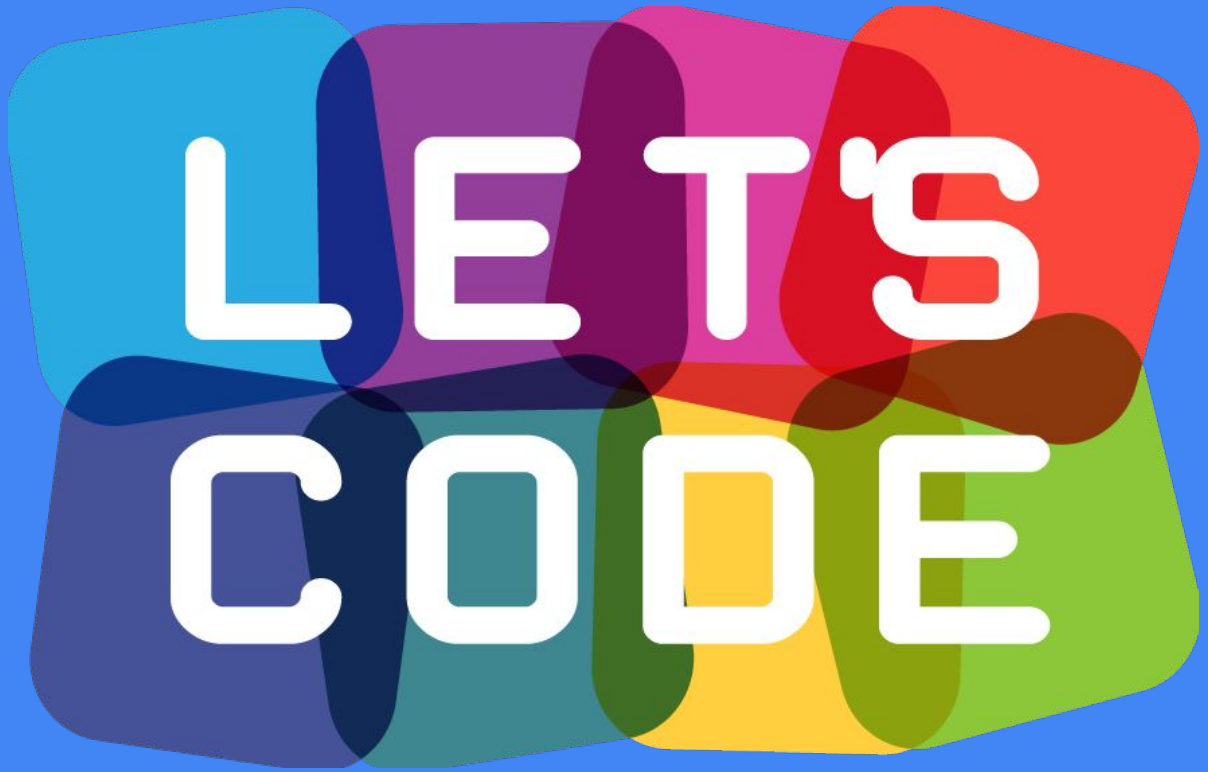

12:24
Les commandes clients
En preparation
Pretes
En livraison
Livrees
1
Sushi
Amadou Konate
Bamako ACI 2000
+223 00 20 00 20
2
Sushi
Brochettes de bœ

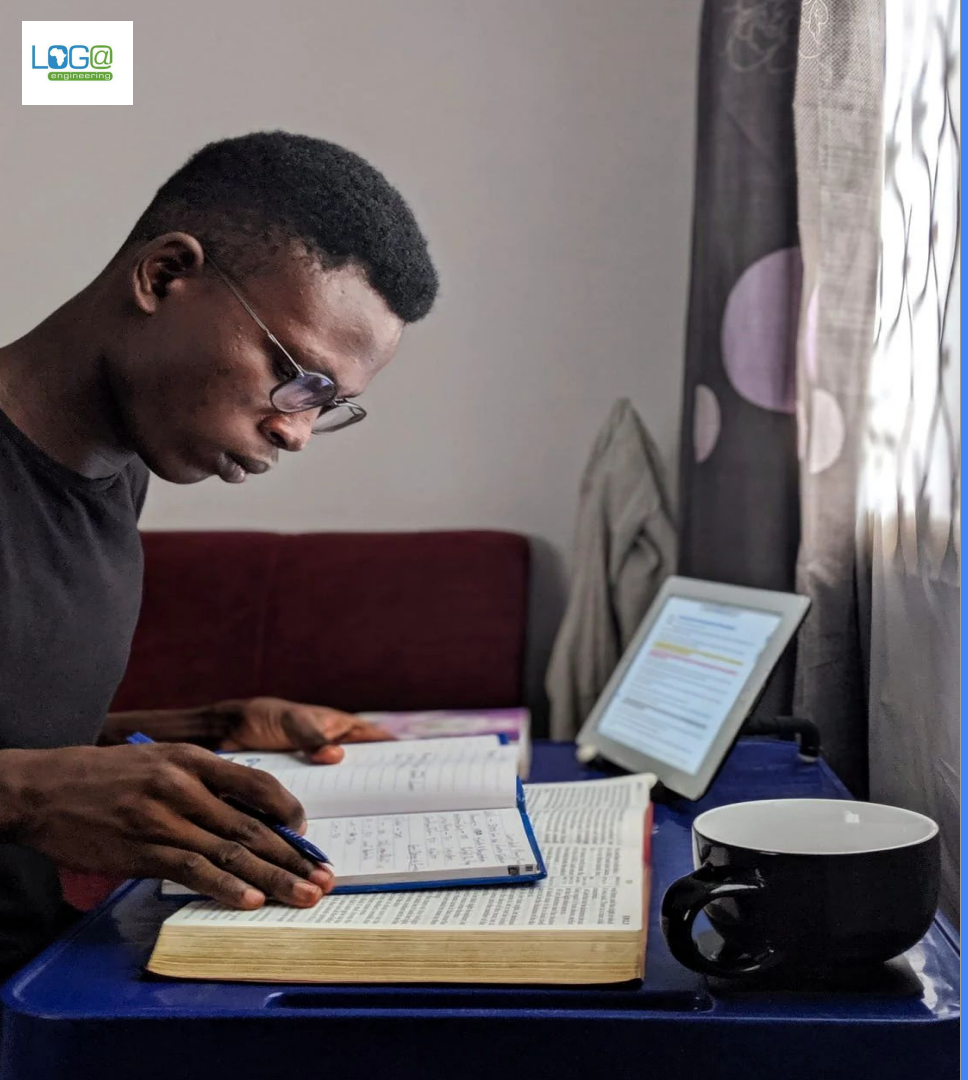

12:23
DEBUG
Amadou Konate
amadou.konate@gmail.com
Ajout un plat
Les commandes clients
Mes commandes


12:34
DEBUG
Mes commandes
Amadou Konate
Bamako ACI 2000
+223 00 20 00 20
3
Sushi
Brochettes de bœu
Nouvelle commande
Amadou Konate
Bamako ACI 2000
+223 00 20 00 20


12:34
DEBUG
Mes commandes
Nouvelle commande
Amadou Konate
Bamako ACI 2000
+223 00 20 00 20
2
Sushi
Brochettes de bœ
Livrée
Amadou Konate
Bamako ACI 2000
+223 00 20 00 20

Merci





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