Create AVD

https://stackoverflow.com/questions/43275238/how-to-set-system-images-path-when-creating-an-android-avd

Command line tools only:

https://developer.android.com/studio

C:\Users\<Usuario>\AppData\Local\Android\Sdk\tools\bin

sdkmanager –list

sdkmanager "system-images;android-23;google_apis;x86"

sdkmanager --licenses

avdmanager create avd -n test -k "system-images;android-23;google_apis;x86" -b x86 -c 100M -d 7 –f

C:\Users\<Usuario>\AppData\Local\Android\Sdk\tools

emulator -list-avds

emulator –avd test

```
C:\WINDOWS\system32\cmd.exe - emulator  -avd Nexus_6P_API_22_2

C:\Users\marce\AppData\Local\Android\Sdk\tools>emulator -list-avds
Android_Accelerated_x86_Oreo
Galaxy_Nexus_API_22
Nexus_6P_API_22
Nexus_6P_API_22_2
Nexus_S_API_22

C:\Users\marce\AppData\Local\Android\Sdk\tools>emulator -avd Nexus_6P_API_22_2
emulator: WARNING: encryption is off
Windows Hypervisor Platform accelerator is operational
Your emulator is out of date, please update by launching Android Studio:
 - Start Android Studio
 - Select menu "Tools > Android > SDK Manager"
 - Click "SDK Tools" tab
 - Check "Android Emulator" checkbox
 - Click "OK"
```

https://flutter-es.io/docs

/flutter create holamundoflutter

```
C:\WINDOWS\system32\cmd.exe                                        —  □  ✕

C:\Users\marce\laboratorio>flutter create holamundoflutter
Creating project holamundoflutter...
  holamundoflutter\.gitignore (created)
  holamundoflutter\.idea\libraries\Dart_SDK.xml (created)
  holamundoflutter\.idea\libraries\Flutter_for_Android.xml (created)
  holamundoflutter\.idea\libraries\KotlinJavaRuntime.xml (created)
  holamundoflutter\.idea\modules.xml (created)
  holamundoflutter\.idea\runConfigurations\main_dart.xml (created)
  holamundoflutter\.idea\workspace.xml (created)
  holamundoflutter\.metadata (created)
  holamundoflutter\android\app\build.gradle (created)
```

```
C:\WINDOWS\system32\cmd.exe                                        —  □  ✕

All done!
[√] Flutter is fully installed. (Channel stable, v1.9.1+hotfix.6, on Microsoft Wind
ows [Versión
    10.0.18362.476], locale es-ES)
[!] Android toolchain - develop for Android devices is partially installed; more co
mponents are
    available. (Android SDK version 28.0.3)
[√] Android Studio is fully installed. (version 3.2)
[√] VS Code is fully installed. (version 1.40.1)
[!] Connected device is not available.

Run "flutter doctor" for information about installing additional components.

In order to run your application, type:

  $ cd holamundoflutter
  $ flutter run
```

```
C:\WINDOWS\system32\cmd.exe                                        —  □  ✕

Microsoft Windows [Versión 10.0.18362.476]
(c) 2019 Microsoft Corporation. Todos los derechos reservados.

C:\Users\marce>cd laboratorio

C:\Users\marce\laboratorio>flutter devices
1 connected device:

Android SDK built for x86 • emulator-5554 • android-x86 • Android 5.1.1 (API 22) (emulator)

C:\Users\marce\laboratorio>
```

```
C:\WINDOWS\system32\cmd.exe - flutter run                          —    □    ×

C:\Users\marce\laboratorio\holamundoflutter>flutter run
Using hardware rendering with device Android SDK built for x86. If you get graphics
artifacts, consider enabling software rendering with "--enable-software-rendering".
Launching lib\main.dart on Android SDK built for x86 in debug mode...
Initializing gradle...                                          3,9s
Resolving dependencies...                                       9,0s
Running Gradle task 'assembleDebug'...
Running Gradle task 'assembleDebug'... Done                    23,1s
Built build\app\outputs\apk\debug\app-debug.apk.
Installing build\app\outputs\apk\app.apk...                    39,0s
D/OpenGLRenderer( 3832): Use EGL_SWAP_BEHAVIOR_PRESERVED: true
D/Atlas   ( 3832): Validating map...
W/art     ( 3832): Verification of io.flutter.view.AccessibilityBridge$SemanticsNode io.flut
ter.view.AccessibilityBridge.access$5800(io.flutter.view.AccessibilityBridge, int) took 230.
341ms
I/OpenGLRenderer( 3832): Initialized EGL, version 1.4
D/        ( 3832): HostConnection::get() New Host Connection established 0xa11e6830, tid 386
6
W/OpenGLRenderer( 3832): Failed to choose config with EGL_SWAP_BEHAVIOR_PRESERVED, retrying
without...
D/EGL_emulation( 3832): eglCreateContext: 0xb42b98e0: maj 2 min 0 rcv 2
D/EGL_emulation( 3832): eglMakeCurrent: 0xb42b98e0: ver 2 0
D/OpenGLRenderer( 3832): Enabling debug mode 0
Syncing files to device Android SDK built for x86...
```

```
C:\WINDOWS\system32\cmd.exe - flutter run                          —    □    ×

Syncing files to device Android SDK built for x86...
D/EGL_emulation( 3832): eglCreateContext: 0xae834c40: maj 2 min 0 rcv 2
Syncing files to device Android SDK built for x86...
D/EGL_emulation( 3832): eglMakeCurrent: 0xae834c40: ver 2 0
Syncing files to device Android SDK built for x86...
10.733ms (!)

🔥 💻  To hot reload changes while running, press "r". To hot restart (and rebuild state),
press "R".
An Observatory debugger and profiler on Android SDK built for x86 is available at:
http://127.0.0.1:60555/XN3O9Osy8oM=/
For a more detailed help message, press "h". To detach, press "d"; to quit, press "q".
I/Choreographer( 3832): Skipped 685 frames!  The application may be doing too much work on i
ts main thread.
D/EGL_emulation( 3832): eglMakeCurrent: 0xae834c40: ver 2 0
I/Choreographer( 3832): Skipped 42 frames!  The application may be doing too much work on it
s main thread.
I/Choreographer( 3832): Skipped 84 frames!  The application may be doing too much work on it
s main thread.
```
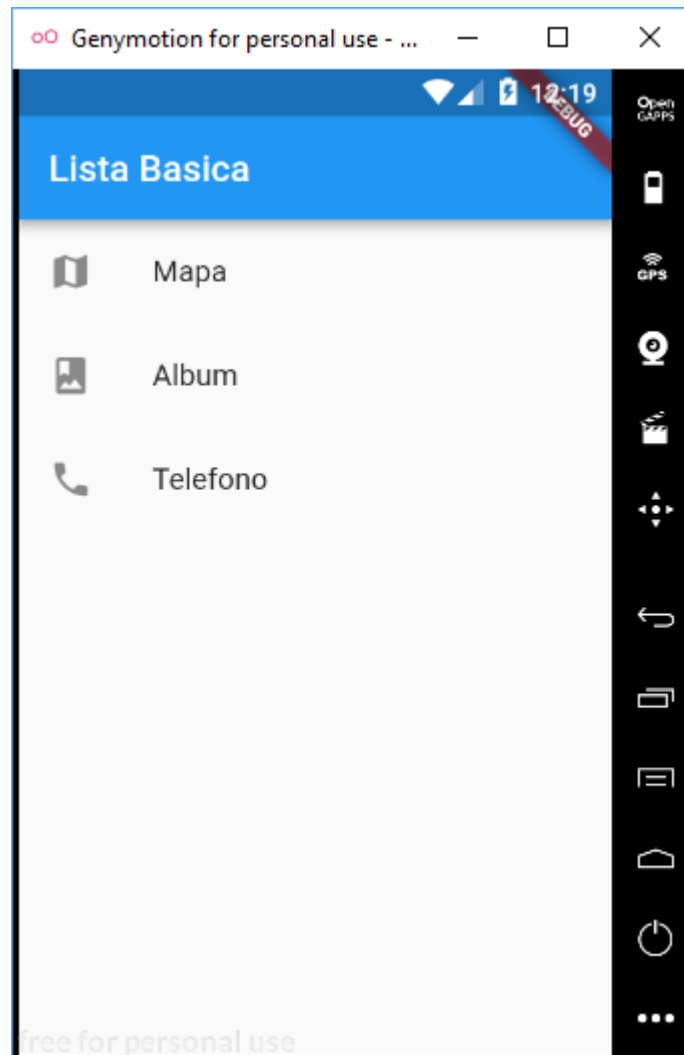
/lib/main.dart

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

void main() => runApp(MyApp());

class MyApp extends StatelessWidget {
  @override
  Widget build(BuildContext context) {
    return MaterialApp(
      title: 'Bienvenido a Flutter',
      home: Scaffold(
        appBar: AppBar(
          title: Text('Bienvenido a Flutter'),
        ),
        body: Center(
          child: Text('Hola Mundo'),
        ),
      ),
    );
  }
}
```
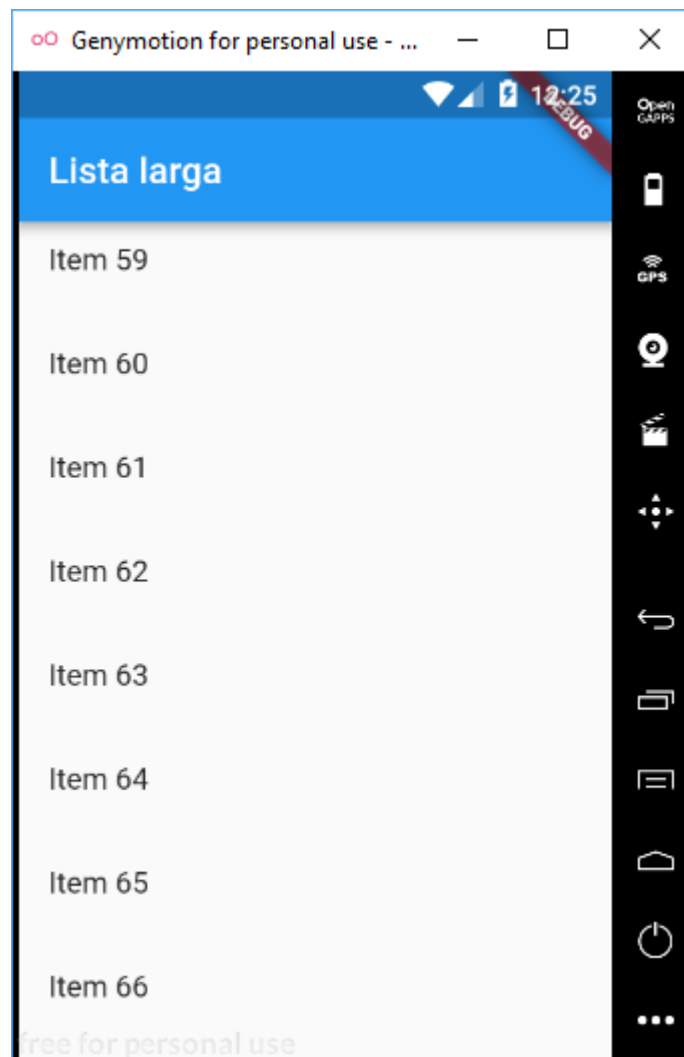
Lista Básica

/lib/main.dart

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

void main() => runApp(MyApp());

class MyApp extends StatelessWidget {
  @override
  Widget build(BuildContext context) {
    final title = 'Lista Basica';

    return MaterialApp(
      title: title,
      home: Scaffold(
        appBar: AppBar(
          title: Text(title),
        ),
        body: ListView(
          children: <Widget>[
            ListTile(
              leading: Icon(Icons.map),
              title: Text('Mapa'),
            ),
            ListTile(
              leading: Icon(Icons.photo_album),
              title: Text('Album'),
            ),
            ListTile(
              leading: Icon(Icons.phone),
              title: Text('Telefono'),
            ),
          ],
        ),
      ),
    );
  }
}
```

Lista larga

/lib/main.dart

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

void main() {
  runApp(MyApp(
    items: List<String>.generate(10000, (i) => "Item $i"),
  ));
}

class MyApp extends StatelessWidget {
  final List<String> items;

  MyApp({Key key, @required this.items}) : super(key: key);

  @override
  Widget build(BuildContext context) {
    final title = 'Lista larga';

    return MaterialApp(
      title: title,
      home: Scaffold(
        appBar: AppBar(
          title: Text(title),
        ),
        body: ListView.builder(
          itemCount: items.length,
          itemBuilder: (context, index) {
            return ListTile(
              title: Text('${items[index]}'),
            );
          },
        ),
      ),
    );
  }
}
```
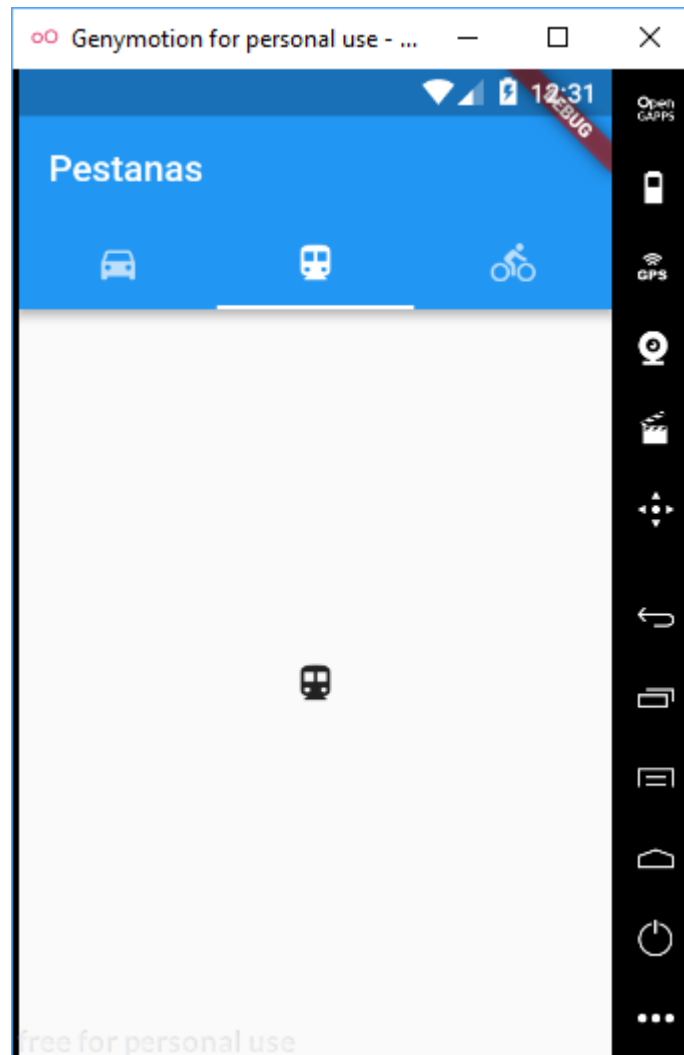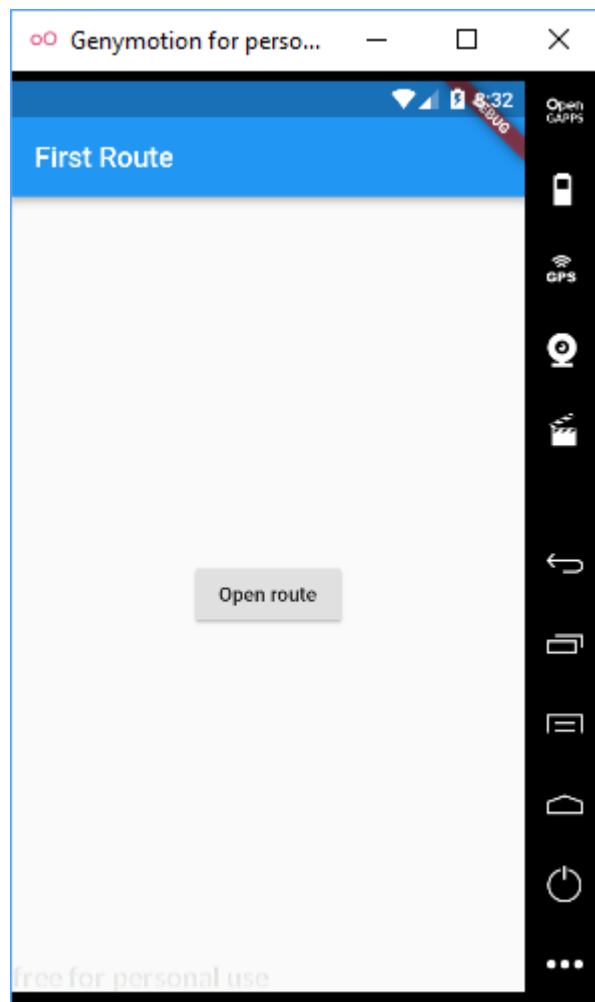
Tabs

/lib/main.dart

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

void main() {
  runApp(TabBarDemo());
}

class TabBarDemo extends StatelessWidget {
  @override
  Widget build(BuildContext context) {
    return MaterialApp(
      home: DefaultTabController(
        length: 3,
        child: Scaffold(
          appBar: AppBar(
            bottom: TabBar(
              tabs: [
                Tab(icon: Icon(Icons.directions_car)),
                Tab(icon: Icon(Icons.directions_transit)),
                Tab(icon: Icon(Icons.directions_bike)),
              ],
            ),
            title: Text('Pestanas'),
          ),
          body: TabBarView(
            children: [
              Icon(Icons.directions_car),
              Icon(Icons.directions_transit),
              Icon(Icons.directions_bike),
            ],
          ),
        ),
      ),
    );
  }
}
```

Navegación y rutas

/lib/main.dart

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

void main() {
  runApp(MaterialApp(
    title: 'Navegacion Basica',
    home: PrimeraRuta(),
  ));
}

class PrimeraRuta extends StatelessWidget {
  @override
  Widget build(BuildContext context) {
    return Scaffold(
      appBar: AppBar(
        title: Text('Primera Ruta'),
      ),
      body: Center(
        child: RaisedButton(
          child: Text('Abrir segunda ruta'),
          onPressed: () {
            Navigator.push(
              context,
              MaterialPageRoute(builder: (context) => SegundaRuta()),
            );
          },
        ),
      ),
    );
  }
}
```
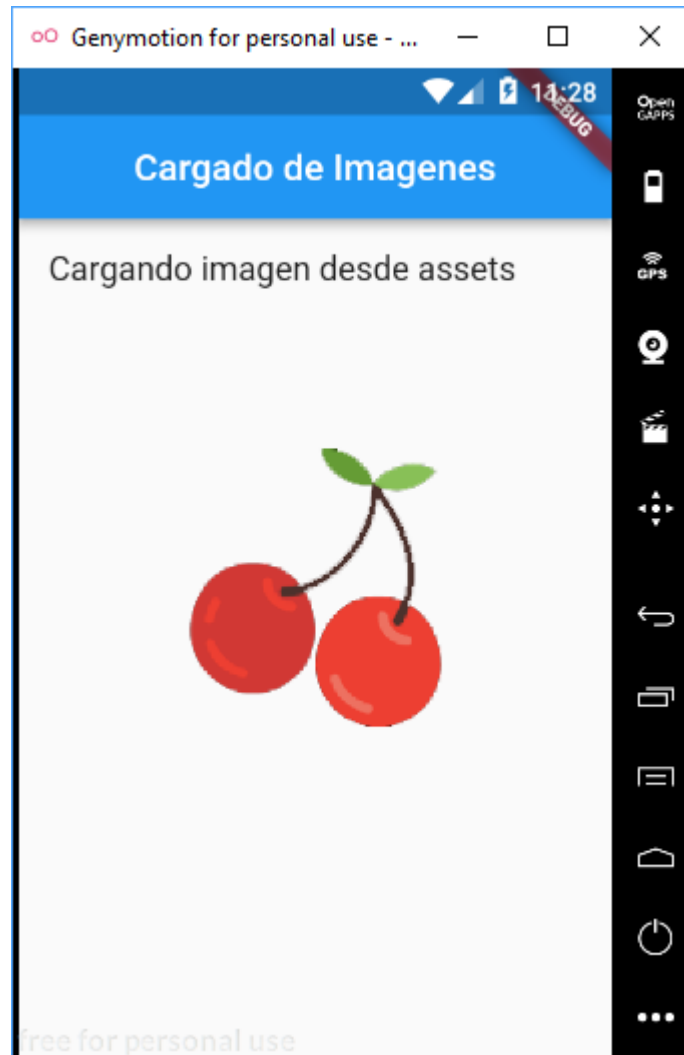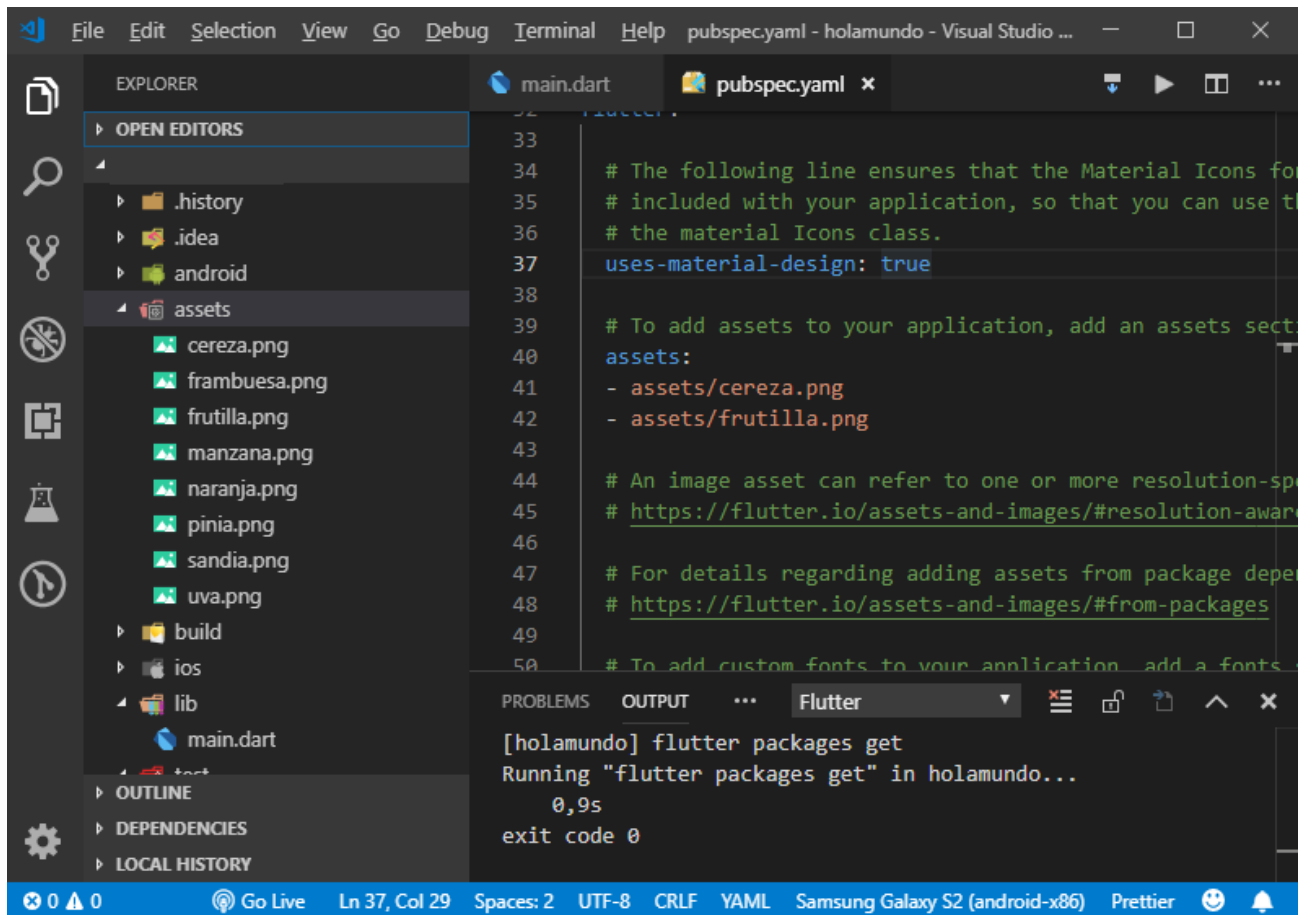
```
class SegundaRuta extends StatelessWidget {
  @override
  Widget build(BuildContext context) {
    return Scaffold(
      appBar: AppBar(
        title: Text("Segunda Ruta"),
      ),
      body: Center(
        child: RaisedButton(
          onPressed: () {
            Navigator.pop(context);
          },
          child: Text('Volver a la primera ruta'),
        ),
      ),
    );
  }
}
```
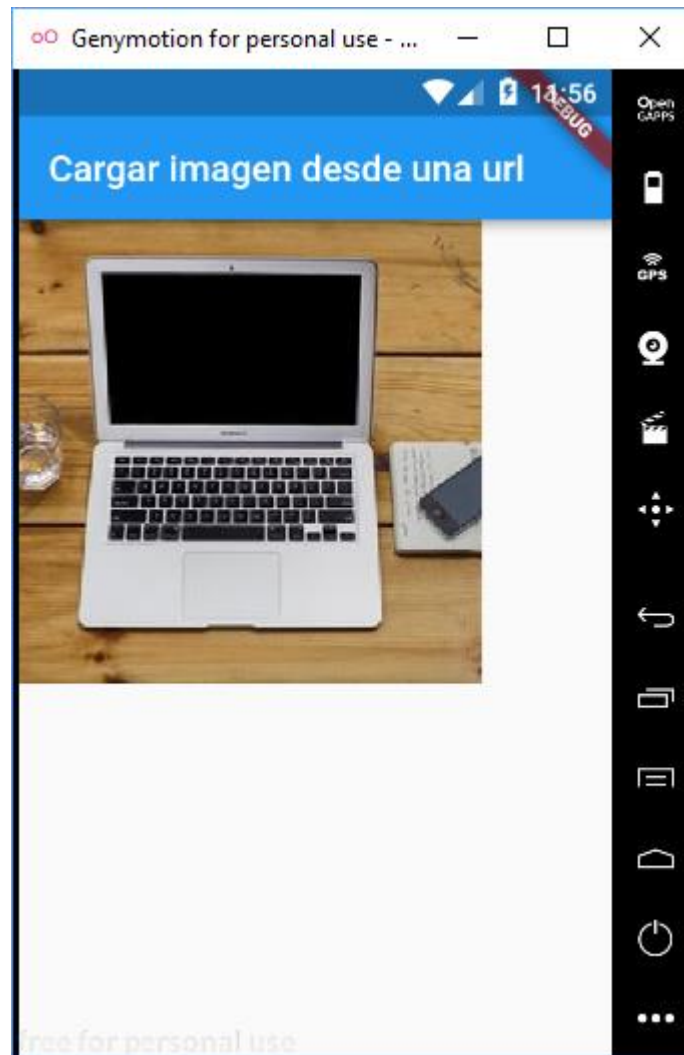
Cargando imágenes locales

/lib/main.dart

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

void main() => runApp(MyApp());
class MyApp extends StatelessWidget {
  @override
  Widget build(BuildContext context) {
    return MaterialApp(
      title: 'Cargando de Imagenes',
      home: HomePage(),
    );
  }
}
class HomePage extends StatelessWidget {
  @override
  Widget build(BuildContext context) {
    return Scaffold(
      appBar: AppBar(
        backgroundColor: Colors.blue,
        title: Text('Cargado de Imagenes'),
        centerTitle: true,
      ),
      body: Container(
        padding: EdgeInsets.all(16.0),
        child: Column(
          crossAxisAlignment: CrossAxisAlignment.stretch,
          children: <Widget>[
            Text('Cargando imagen desde assets', style: TextStyle(fontSize: 18.0),),
            Padding(padding: EdgeInsets.only(bottom: 18.0),),
            Image.asset('assets/cereza.png'),
            Padding(padding: EdgeInsets.only(bottom: 18.0),),
          ],
        ),
      ),
    );
  }
}
```
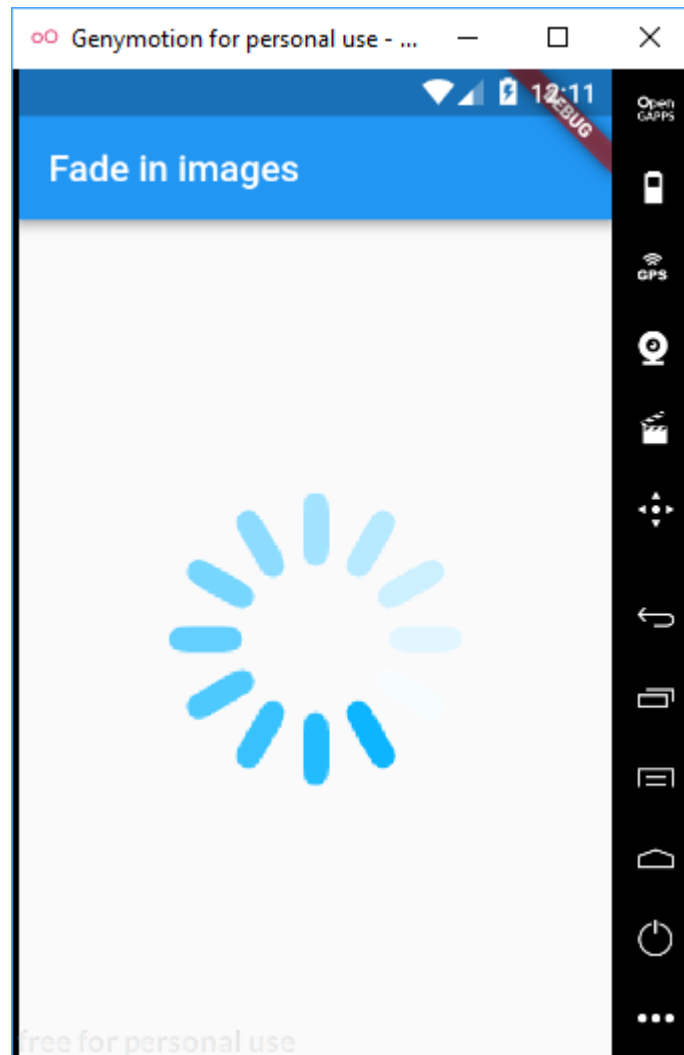
Cargar imagen desde una url

/lib/main.dart

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

void main() => runApp(MyApp());

class MyApp extends StatelessWidget {
  @override
  Widget build(BuildContext context) {
    var title = 'Cargar imagen desde una url';

    return MaterialApp(
      title: title,
      home: Scaffold(
        appBar: AppBar(
          title: Text(title),
        ),
        body: Image.network(
          'https://picsum.photos/250?image=9',
        ),
      ),
    );
  }
}
```

Cargando imagen


```
assets:
  - assets/loading.gif
```

/lib/main.dart

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

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

class MyApp extends StatelessWidget {
  @override
  Widget build(BuildContext context) {
    final title = 'Fade in images';

    return MaterialApp(
      title: title,
      home: Scaffold(
        appBar: AppBar(
          title: Text(title),
        ),
        body: Center(
          child: FadeInImage.assetNetwork(
            placeholder: 'assets/loading.gif',
            image: 'https://picsum.photos/250?image=9',
          ),
        ),
      ),
    );
  }
}
```
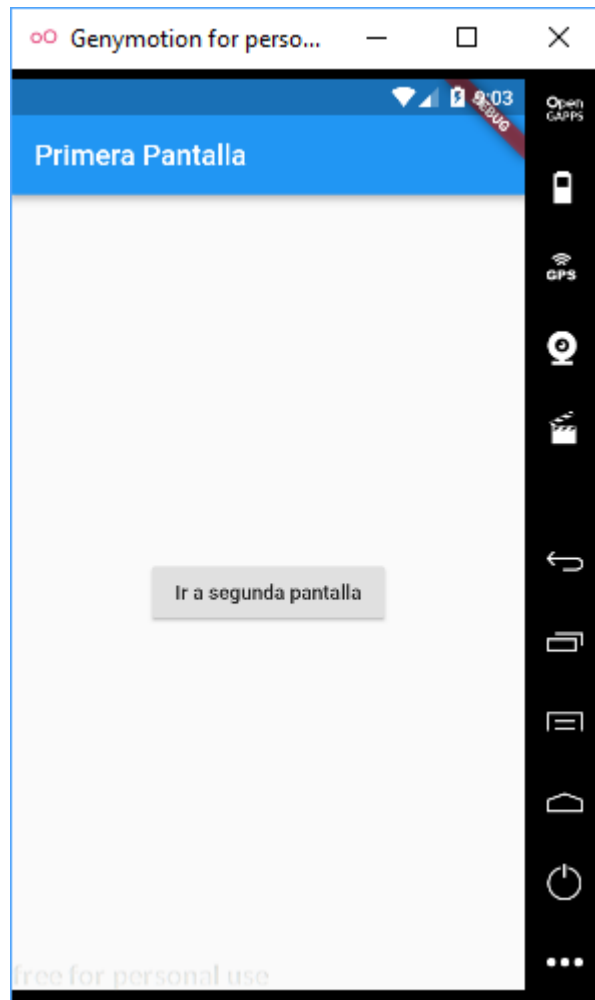
Navegación

/lib/main.dart

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

void main() {
  runApp(MaterialApp(
    title: 'Laboratorio de navegación',
    initialRoute: '/',
    routes: {
      '/': (context) => PrimeraPantalla(),
      '/segundo': (context) => SegundaPantalla(),
    },
  ));
}

class PrimeraPantalla extends StatelessWidget {
  @override
  Widget build(BuildContext context) {
    return Scaffold(
      appBar: AppBar(
        title: Text('Primera Pantalla'),
      ),
      body: Center(
        child: RaisedButton(
          child: Text('Ir a segunda pantalla'),
          onPressed: () {
            Navigator.pushNamed(context, '/segundo');
          },
        ),
      ),
    );
  }
}
```
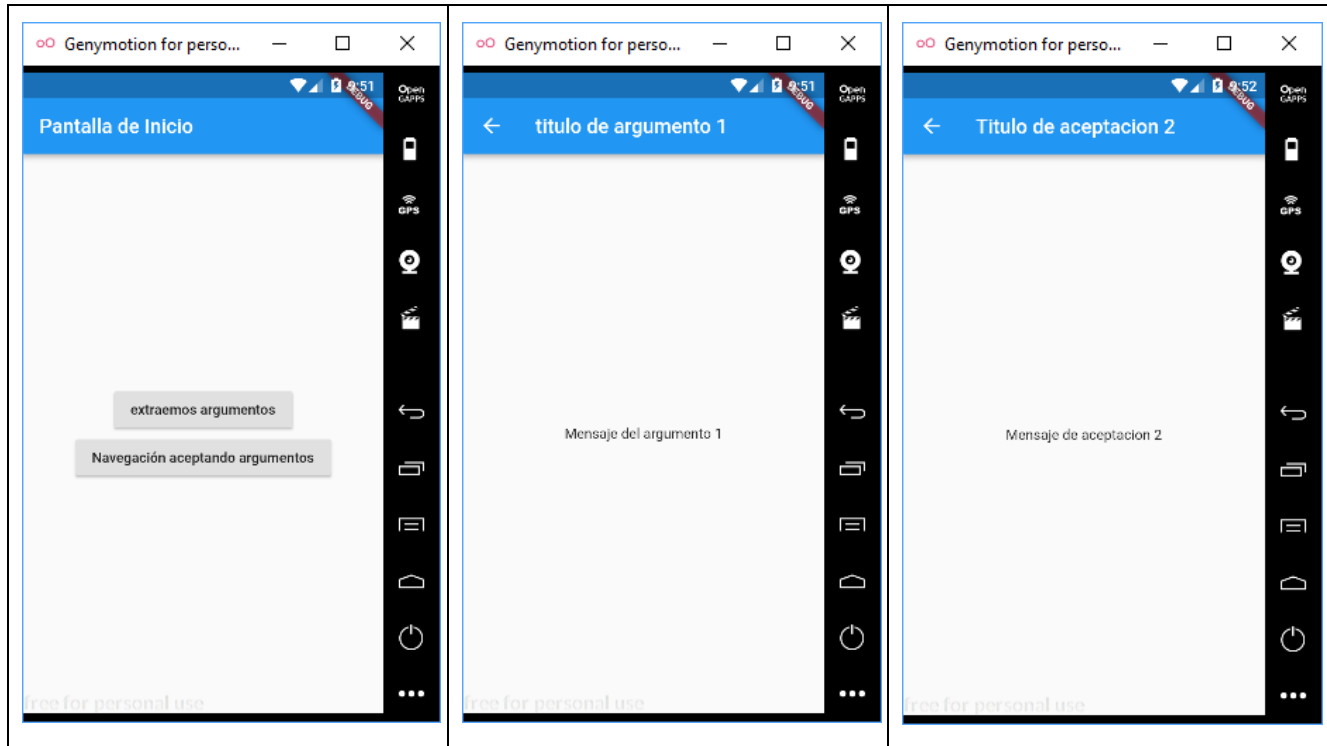
```
class SegundaPantalla extends StatelessWidget {
  @override
  Widget build(BuildContext context) {
    return Scaffold(
      appBar: AppBar(
        title: Text("Segunda Pantalla"),
      ),
      body: Center(
        child: RaisedButton(
          onPressed: () {
            Navigator.pop(context);
          },
          child: Text('Volver a la primera pantalla'),
        ),
      ),
    );
  }
}
```

Navegación con argumentos

/lib/main.dart

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

void main() => runApp(MyApp());

class MyApp extends StatelessWidget {
  @override
  Widget build(BuildContext context) {
    return MaterialApp(
      onGenerateRoute: (settings) {

        if (settings.name == PasarArgumentos.routeName) {
          final PantallaArgumentos args = settings.arguments;

          return MaterialPageRoute(
            builder: (context) {
              return PasarArgumentos(
                titulo: args.titulo,
                mensaje: args.mensaje,
              );
            },
          );
        }
      },
      title: 'Navegación con argumentos',
      home: InicioPantalla(),
    );
  }
}
```

```dart
class InicioPantalla extends StatelessWidget {
  @override
  Widget build(BuildContext context) {
    return Scaffold(
      appBar: AppBar(
        title: Text('Pantalla de Inicio'),
      ),
      body: Center(
        child: Column(
          mainAxisAlignment: MainAxisAlignment.center,
          children: <Widget>[
            RaisedButton(
              child: Text("extraemos argumentos"),
              onPressed: () {
                Navigator.push(
                  context,
                  MaterialPageRoute(
                    builder: (context) => ObtenerArgumentos(),
                    settings: RouteSettings(
                      arguments: PantallaArgumentos(
                        'titulo de argumento 1',
                        'Mensaje del argumento 1',
                      ),
                    ),
                  ),
                );
              },
            ),
            RaisedButton(
              child: Text("Navegación aceptando argumentos"),
              onPressed: () {
                Navigator.pushNamed(
                  context,
                  PasarArgumentos.routeName,
                  arguments: PantallaArgumentos(
                    'Titulo de aceptacion 2',
                    'Mensaje de aceptacion 2',
                  ),
                );
              },
            ),
```

```dart
        ],
      ),
    ),
  );
  }
}

class PasarArgumentos extends StatelessWidget {
  static const routeName = '/passArguments';

  final String titulo;
  final String mensaje;

  const PasarArgumentos({
    Key key,
    @required this.titulo,
    @required this.mensaje,
  }) : super(key: key);

  @override
  Widget build(BuildContext context) {
    return Scaffold(
      appBar: AppBar(
        title: Text(titulo),
      ),
      body: Center(
        child: Text(mensaje),
      ),
    );
  }
}
```
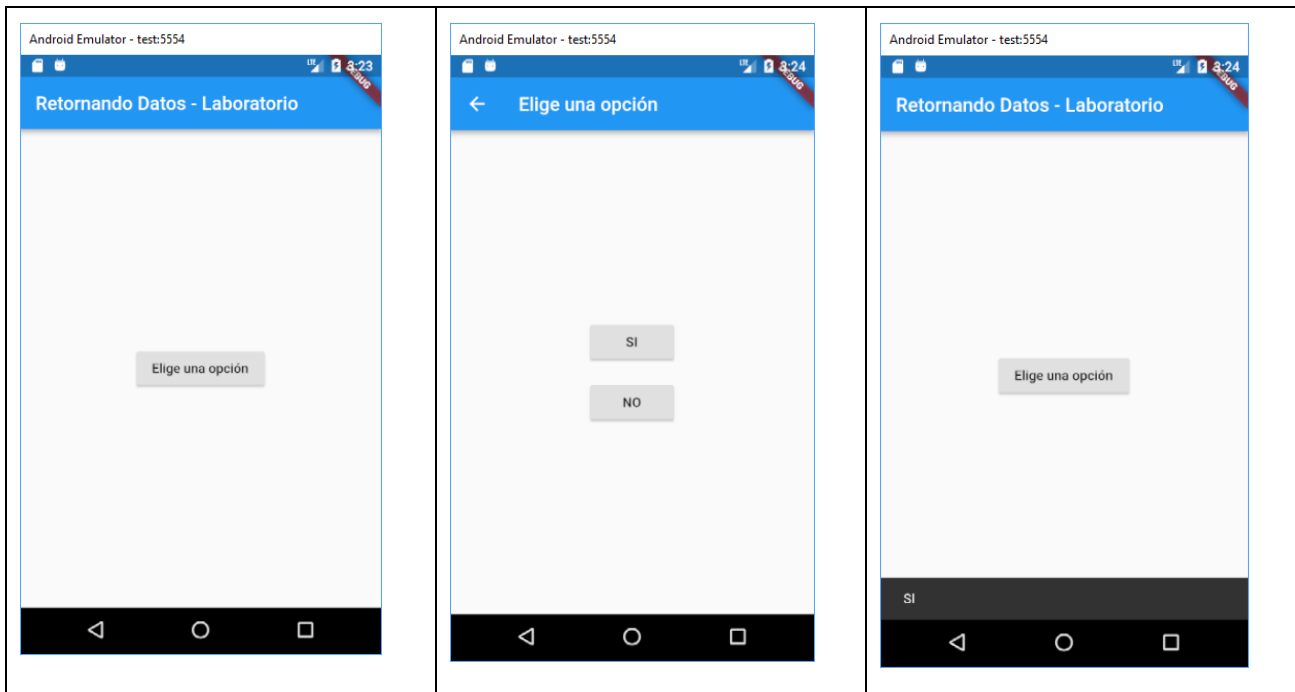
```dart
class ObtenerArgumentos extends StatelessWidget {
  static const routeName = '/extractArguments';

  @override
  Widget build(BuildContext context) {
    // Extract the arguments from the current ModalRoute settings and cast
    // them as ScreenArguments.
    final PantallaArgumentos args = ModalRoute.of(context).settings.arguments;

    return Scaffold(
      appBar: AppBar(
        title: Text(args.titulo),
      ),
      body: Center(
        child: Text(args.mensaje),
      ),
    );
  }
}

class PantallaArgumentos {
  final String titulo;
  final String mensaje;

  PantallaArgumentos(this.titulo, this.mensaje);
}
```

/lib/main.dart

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

void main() {
  runApp(MaterialApp(
    title: 'Retornando datos',
    home: HomeScreen(),
  ));
}
```

```
class HomeScreen extends StatelessWidget {
  @override
  Widget build(BuildContext context) {
    return Scaffold(
      appBar: AppBar(
        title: Text('Retornando Datos - Laboratorio'),
      ),
      body: Center(child: SelectionButton()),
    );
  }
}

class SelectionButton extends StatelessWidget {
  @override
  Widget build(BuildContext context) {
    return RaisedButton(
      onPressed: () {
        _navigateAndDisplaySelection(context);
      },
      child: Text('Elige una opción'),
    );
  }

  _navigateAndDisplaySelection(BuildContext context) async {

    final result = await Navigator.push(
      context,
      MaterialPageRoute(builder: (context) => SelectionScreen()),
    );

    Scaffold.of(context)
      ..removeCurrentSnackBar()
      ..showSnackBar(SnackBar(content: Text("$result")));
  }
}
```
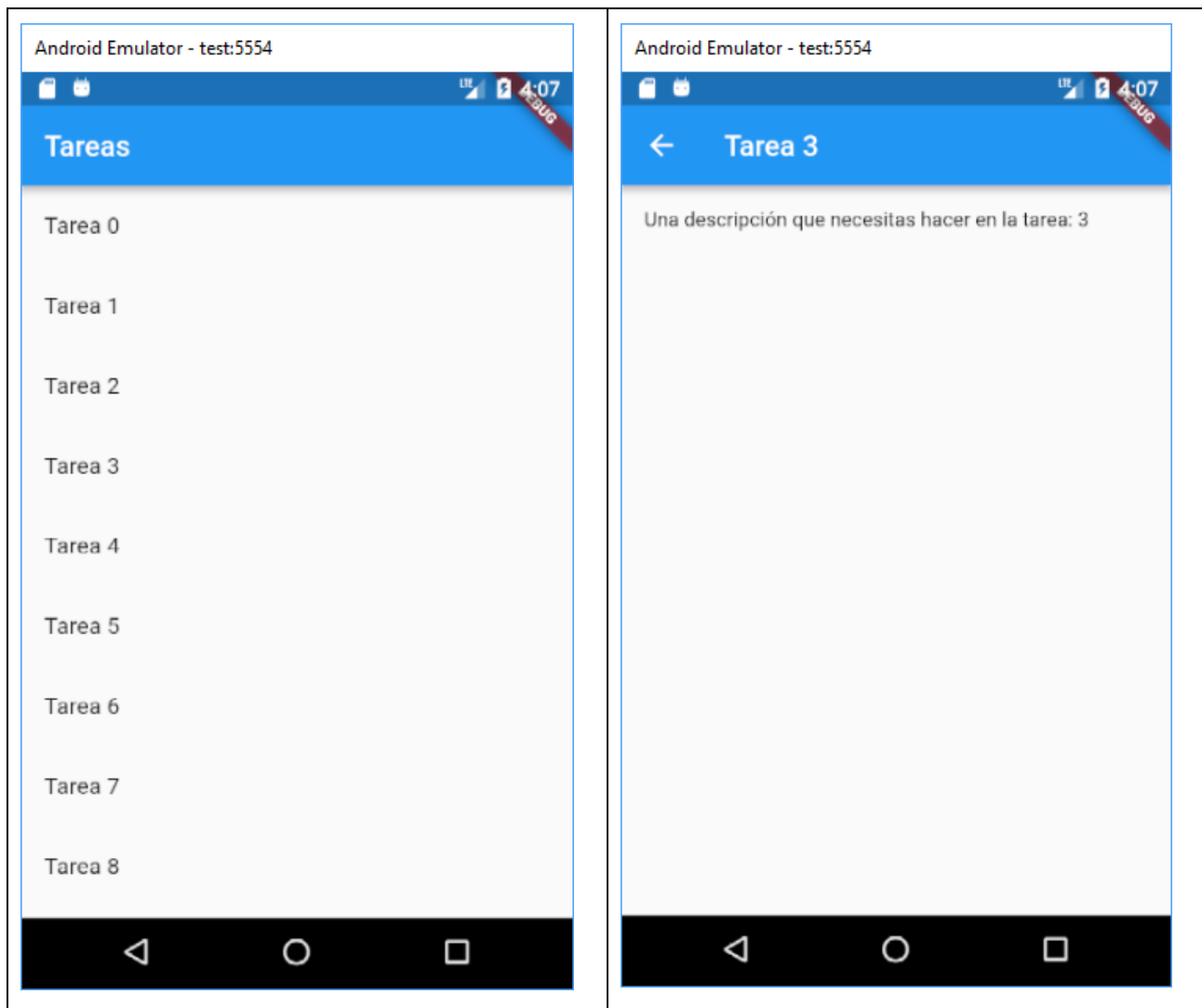
```dart
class SelectionScreen extends StatelessWidget {
  @override
  Widget build(BuildContext context) {
    return Scaffold(
      appBar: AppBar(
        title: Text('Elige una opción'),
      ),
      body: Center(
        child: Column(
          mainAxisAlignment: MainAxisAlignment.center,
          children: <Widget>[
            Padding(
              padding: const EdgeInsets.all(8.0),
              child: RaisedButton(
                onPressed: () {
                  Navigator.pop(context, 'SI');
                },
                child: Text('SI'),
              ),
            ),
            Padding(
              padding: const EdgeInsets.all(8.0),
              child: RaisedButton(
                onPressed: () {
                  Navigator.pop(context, 'NO');
                },
                child: Text('NO'),
              ),
            )
          ],
        ),
      ),
    );
  }
}
```

Envió de datos con ListView


```
C:\WINDOWS\system32\cmd.exe - flutter run

D:\marcelomos\laboratorios\flutter>flutter create --org com.cognos enviodatos
Creating project enviodatos...
  enviodatos\.gitignore (created)
  enviodatos\.idea\libraries\Dart_SDK.xml (created)
  enviodatos\.idea\libraries\Flutter_for_Android.xml (created)
  enviodatos\.idea\libraries\KotlinJavaRuntime.xml (created)
  enviodatos\.idea\modules.xml (created)
  enviodatos\.idea\runConfigurations\main_dart.xml (created)
  enviodatos\.idea\workspace.xml (created)
  enviodatos\.metadata (created)
  enviodatos\android\app\build.gradle (created)
  enviodatos\android\app\src\main\java\com\cognos\enviodatos\MainActivity.java (created)
```

/lib/main.dart

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

class Tarea {
  final String titulo;
  final String descripcion;

  Tarea(this.titulo, this.descripcion);
}

void main() {
  runApp(MaterialApp(
    title: 'Pasar Datos',
    home: TareasScreen(
      tareas: List.generate(
        20,
        (i) => Tarea(
              'Tarea $i',
              'Una descripción que necesitas hacer en la tarea: $i',
            ),
      ),
    ),
  ));
}
```
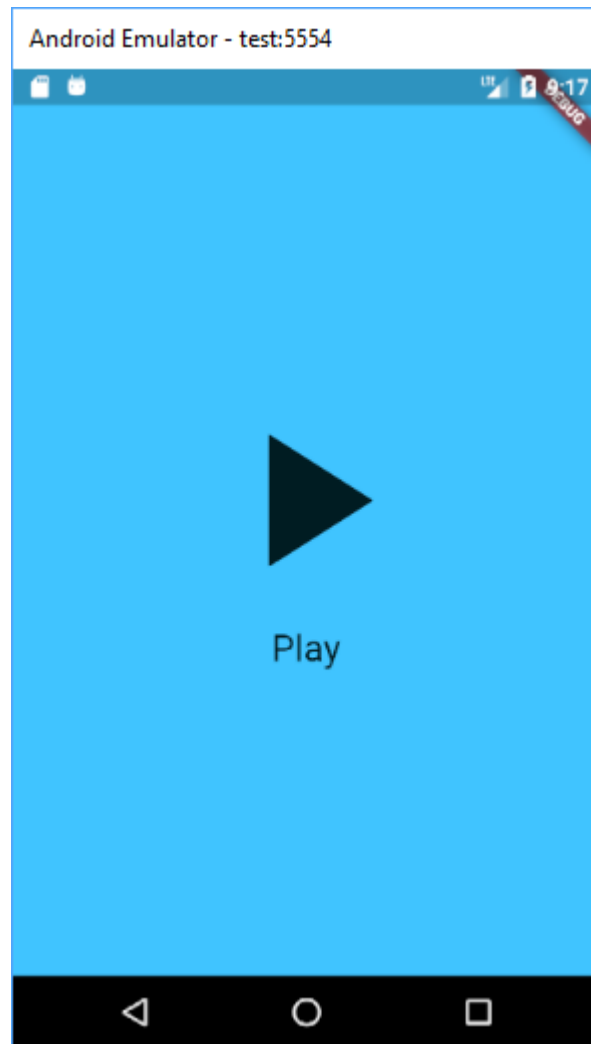
```dart
class TareasScreen extends StatelessWidget {
  final List<Tarea> tareas;

  TareasScreen({Key key, @required this.tareas}) : super(key: key);

  @override
  Widget build(BuildContext context) {
    return Scaffold(
      appBar: AppBar(
        title: Text('Tareas'),
      ),
      body: ListView.builder(
        itemCount: tareas.length,
        itemBuilder: (context, index) {
          return ListTile(
            title: Text(tareas[index].titulo),
            onTap: () {
              Navigator.push(
                context,
                MaterialPageRoute(
                  builder: (context) => DetalleScreen(tarea: tareas[index]),
                ),
              );
            },
          );
        },
      ),
    );
  }
}
```

```dart
class DetalleScreen extends StatelessWidget {

  final Tarea tarea;

  DetalleScreen({Key key, @required this.tarea}) : super(key: key);

  @override
  Widget build(BuildContext context) {

    return Scaffold(
      appBar: AppBar(
        title: Text(tarea.titulo),
      ),
      body: Padding(
        padding: EdgeInsets.all(16.0),
        child: Text(tarea.descripcion),
      ),
    );
  }
}
```
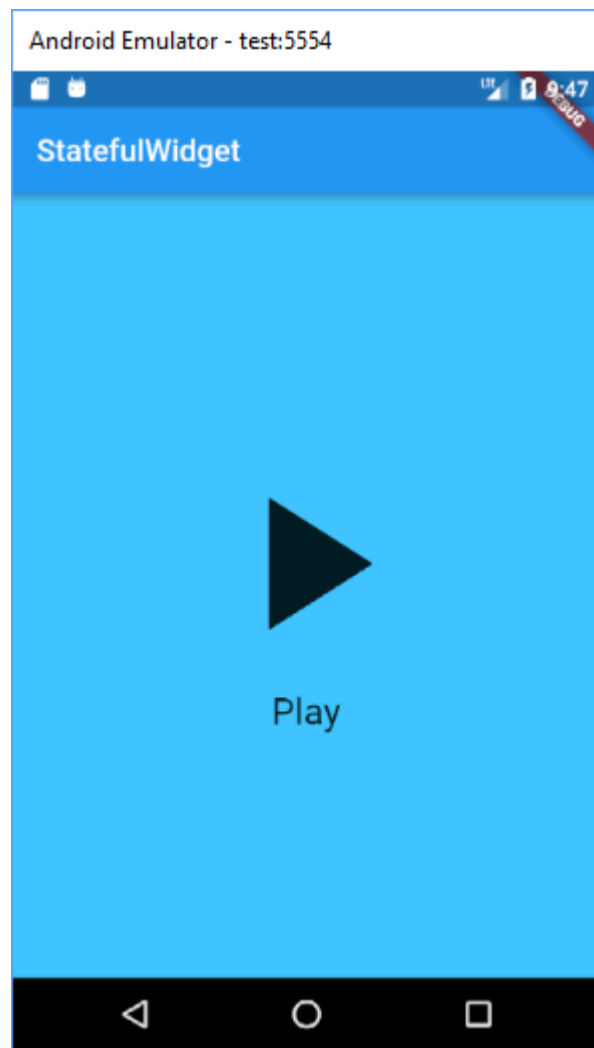
StatelessWidget y StatefulWidget

/lib/main.dart

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

void main() => runApp(MyApp());

class MyApp extends StatelessWidget {
  @override
  Widget build(BuildContext context) {
    return MaterialApp(
        title: 'StatelessWidget',
        home: Scaffold(
            body: Center(
                child: PlayerWidget()
            )
        )
    );
  }
}

class PlayerWidget extends StatelessWidget {
  @override
  Widget build(BuildContext context) {
    return Container(
      color: Colors.lightBlueAccent,
      width: double.infinity,
      child: Column(
        mainAxisAlignment: MainAxisAlignment.center,
        children: <Widget>[
          IconButton(
              icon: Icon(Icons.play_arrow),
              iconSize: 150.0,
              onPressed: () {}),
          Text('Play',style: new TextStyle(fontSize: 24.0),)
        ],
      )
    );
  }
}
```

/lib/main.dart

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

void main() => runApp(MyApp());

class MyApp extends StatelessWidget {
  @override
  Widget build(BuildContext context) {
    return MaterialApp(
        title: 'StatefulWidget',
        home: Scaffold(
            appBar: AppBar(
              title: Text('StatefulWidget'),
            ),
            body: Center(child: PlayerWidget())));
  }
}

class PlayerWidget extends StatefulWidget {
  @override
  State<PlayerWidget> createState() {
    return new PlayerWidgetState();
  }
}
```
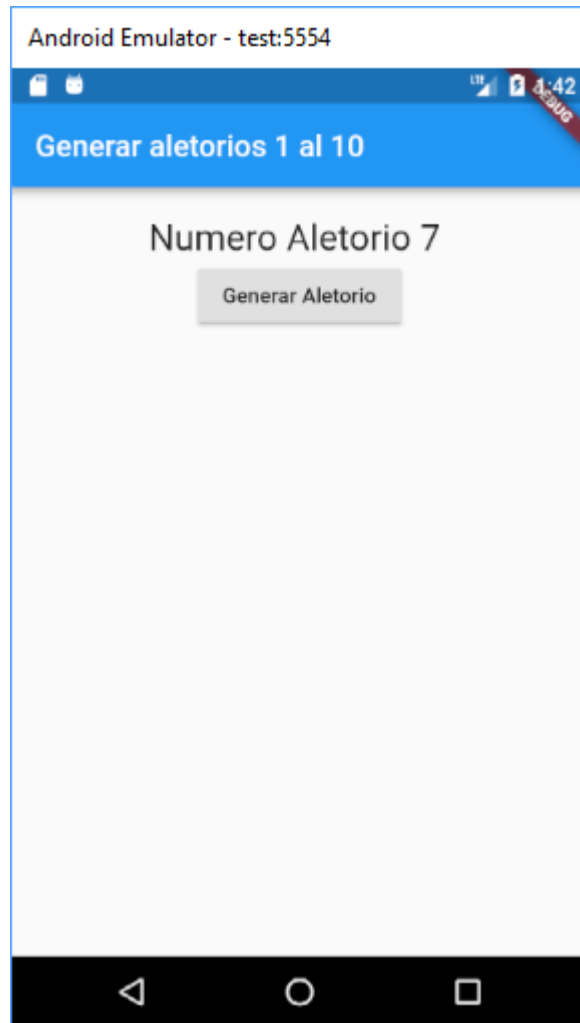
```
class PlayerWidgetState extends State<PlayerWidget> {
  bool isPlaying = false;

  void playerClick() {
    setState(() {
      isPlaying = !isPlaying;
    });
  }

  @override
  Widget build(BuildContext context) {
    return Container(
        color: Colors.lightBlueAccent,
        width: double.infinity,
        child: Column(
          mainAxisAlignment: MainAxisAlignment.center,
          children: <Widget>[
            IconButton(
                icon: isPlaying ? Icon(Icons.pause) : Icon(Icons.play_arrow),
                iconSize: 150.0,
                onPressed: () {
                  playerClick();
                }),
            Text(
              isPlaying ? 'Pause' : 'Play',
              style: new TextStyle(fontSize: 24.0),
            )
          ],
        ));
  }
}
```

```
/lib/main.dart
import 'dart:math';
import 'package:flutter/material.dart';

void main() => runApp(MyApp());

class MyApp extends StatelessWidget {
  @override
  Widget build(BuildContext context) {
    return MaterialApp(
      title: 'Generar aletorios 1 al 10',
      home: Scaffold(
        appBar: AppBar(
          title: Text('Generar aletorios 1 al 10'),
        ),
        body: Center(
          child: AleatorioWidget(),
        ),
      ),
    );
  }
}

class AleatorioWidget extends StatefulWidget {
  @override
  State<AleatorioWidget> createState() {
    return new AleatorioWidgetState();
  }
}
```
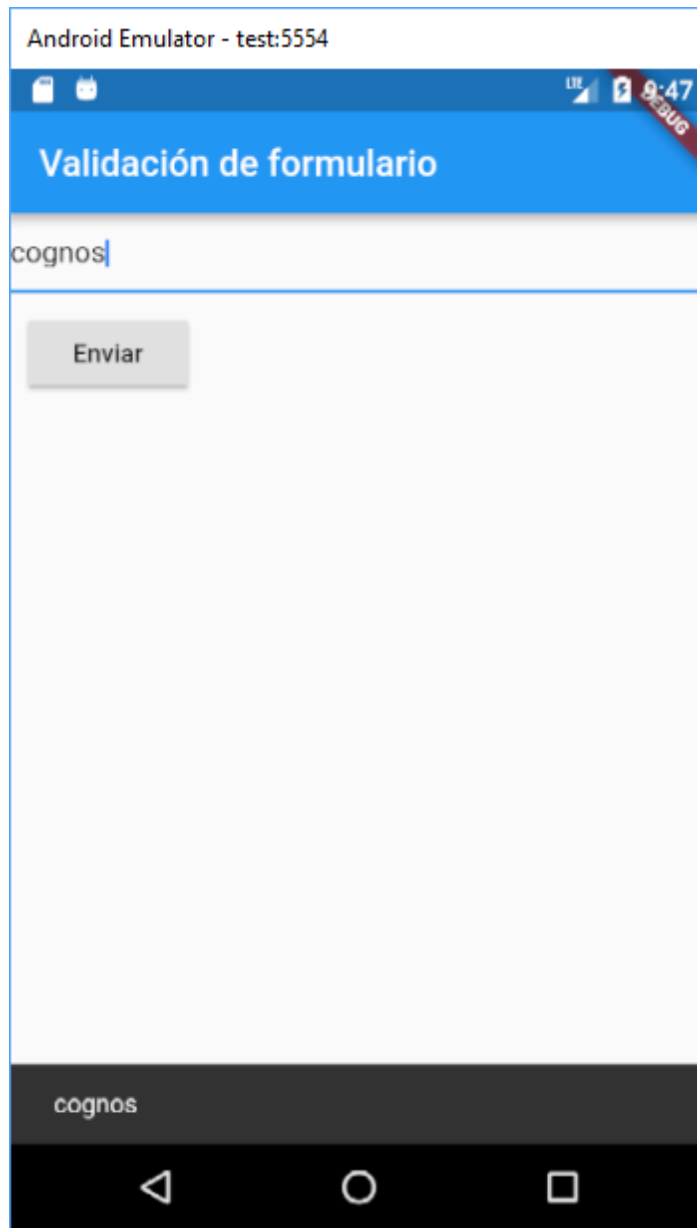
```
class AleatorioWidgetState extends State<AleatorioWidget>{
  int numero = 1;

  void generarAletorioClick(){
    setState(() {
     var rnd = new Random();
     numero = rnd.nextInt(10)+1;
    });
  }

  @override
  Widget build(BuildContext context) {
    return Container(
      child: Column(
        children: <Widget>[
          Padding(padding: EdgeInsets.only(top: 20.0),),
          Text('Numero Aletorio ${numero} ',style: new TextStyle(fontSize: 24.0),),),
          RaisedButton(
            child: Text('Generar Aletorio'),
            onPressed: (){
              generarAletorioClick();
            },
          )
        ],
      ),
    );
  }

}
```

Validación de formulario

/lib/main.dart

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

void main() => runApp(MyApp());

class MyApp extends StatelessWidget {
  @override
  Widget build(BuildContext context) {
    final appTitle = 'Validación de formulario';

    return MaterialApp(
      title: appTitle,
      home: Scaffold(
        appBar: AppBar(
          title: Text(appTitle),
        ),
        body: MyCustomForm(),
      ),
    );
  }
}

class MyCustomForm extends StatefulWidget {
  @override
  MyCustomFormState createState() {
    return MyCustomFormState();
  }
}
```
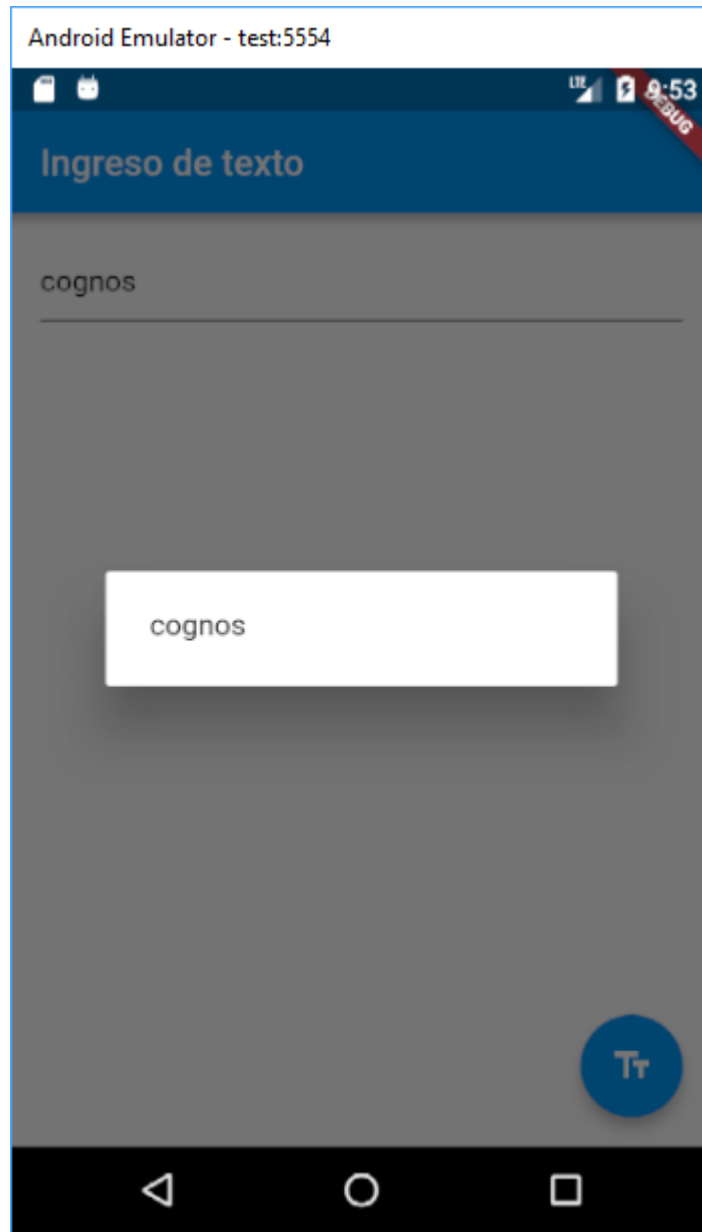
```dart
class MyCustomFormState extends State<MyCustomForm> {
  final _formKey = GlobalKey<FormState>();
  final myController = TextEditingController();
  @override
  void dispose() {
    // Clean up the controller when the Widget is disposed
    myController.dispose();
    super.dispose();
  }
  @override
  Widget build(BuildContext context) {
    return Form(
      key: _formKey,
      child: Column(
        crossAxisAlignment: CrossAxisAlignment.start,
        children: <Widget>[
          TextFormField(
            validator: (value) {
              if (value.isEmpty) {
                return 'Campo requerido';
              }
            },
            controller: myController,
          ),
          Padding(
            padding: const EdgeInsets.all(10.0),
            child: RaisedButton(
              onPressed: () {
                if (_formKey.currentState.validate()) {
                  Scaffold.of(context).showSnackBar(
                      SnackBar(content: Text(myController.text)));
                }
              },
              child: Text('Enviar'),
            ),
          ),
        ],
      ),
    );
  }
}
```

Diálogos

/lib/main.dart

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

void main() => runApp(MyApp());

class MyApp extends StatelessWidget {
  @override
  Widget build(BuildContext context) {
    return MaterialApp(
      title: 'Ingreso de texto',
      home: MyCustomForm(),
    );
  }
}

class MyCustomForm extends StatefulWidget {
  @override
  _MyCustomFormState createState() => _MyCustomFormState();
}

class _MyCustomFormState extends State<MyCustomForm> {

  final myController = TextEditingController();

  @override
  void dispose() {
    myController.dispose();
    super.dispose();
  }
```
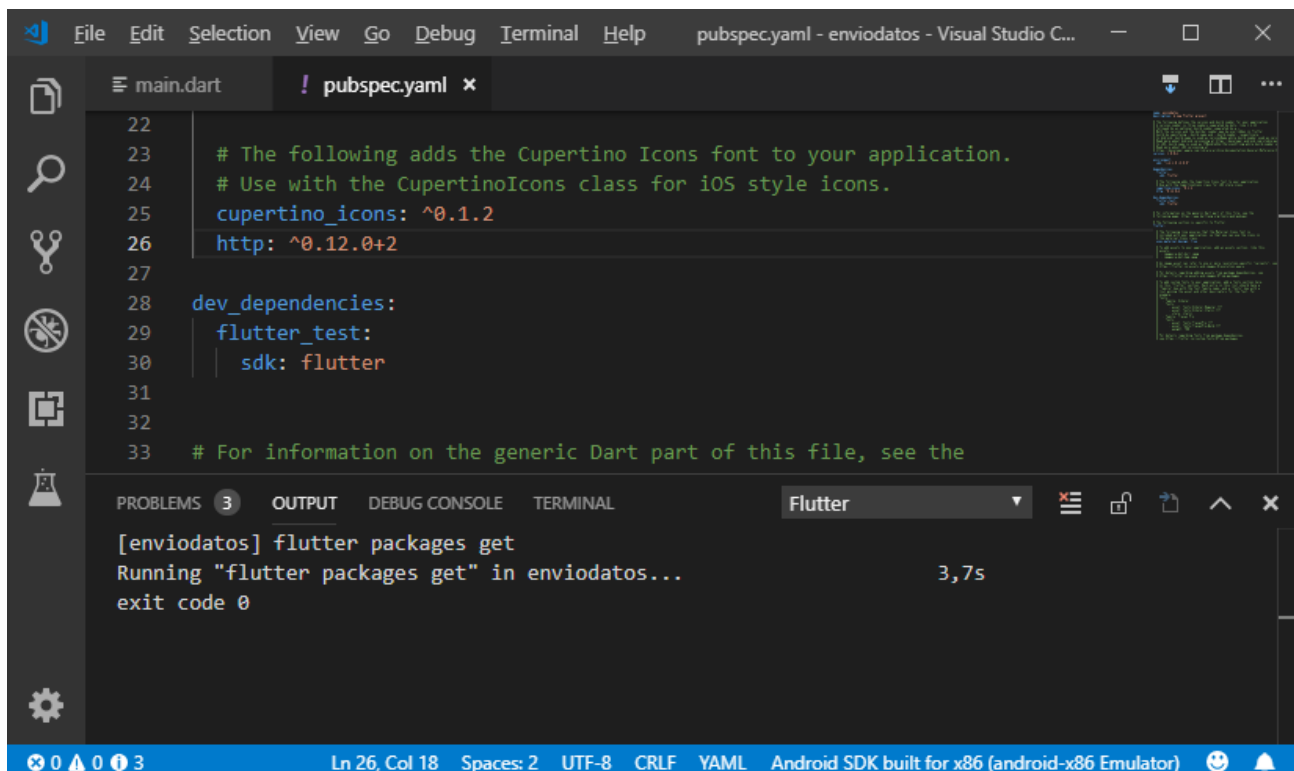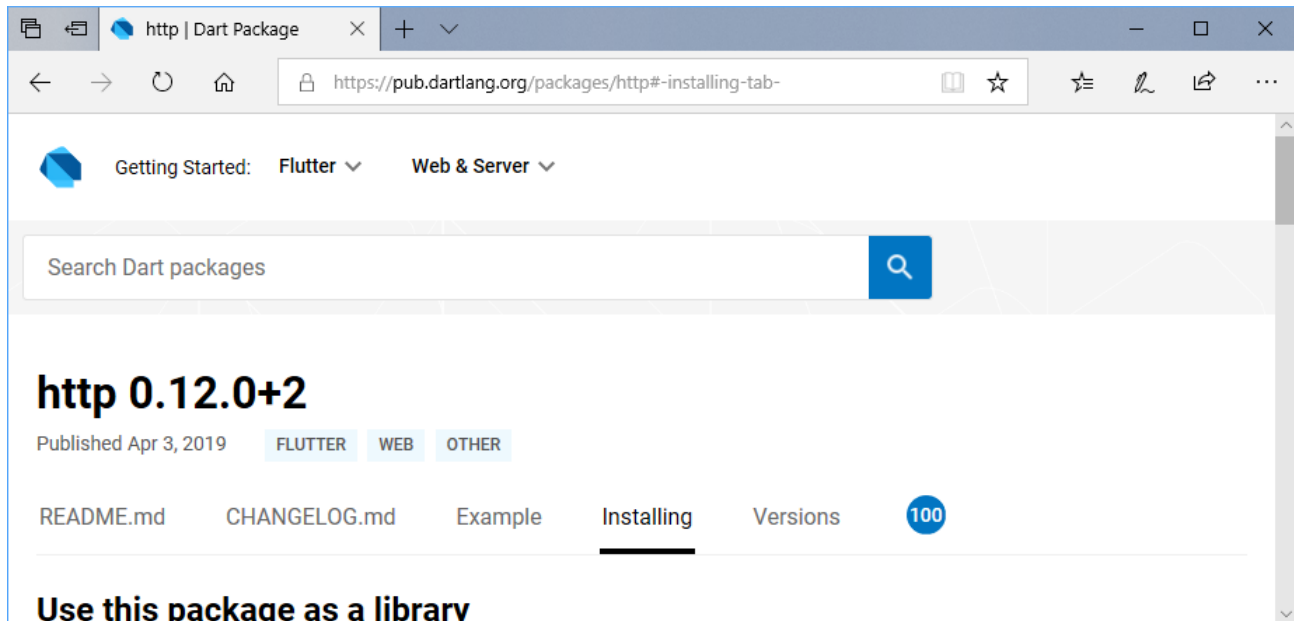
```dart
  @override
  Widget build(BuildContext context) {
    return Scaffold(
      appBar: AppBar(
        title: Text('Ingreso de texto'),
      ),
      body: Padding(
        padding: const EdgeInsets.all(16.0),
        child: TextField(
          controller: myController,
        ),
      ),
      floatingActionButton: FloatingActionButton(
        onPressed: () {
          return showDialog(
            context: context,
            builder: (context) {
              return AlertDialog(
                content: Text(myController.text),
              );
            },
          );
        },
        tooltip: 'Mostrar el valor',
        child: Icon(Icons.text_fields),
      ),
    );
  }
}
```
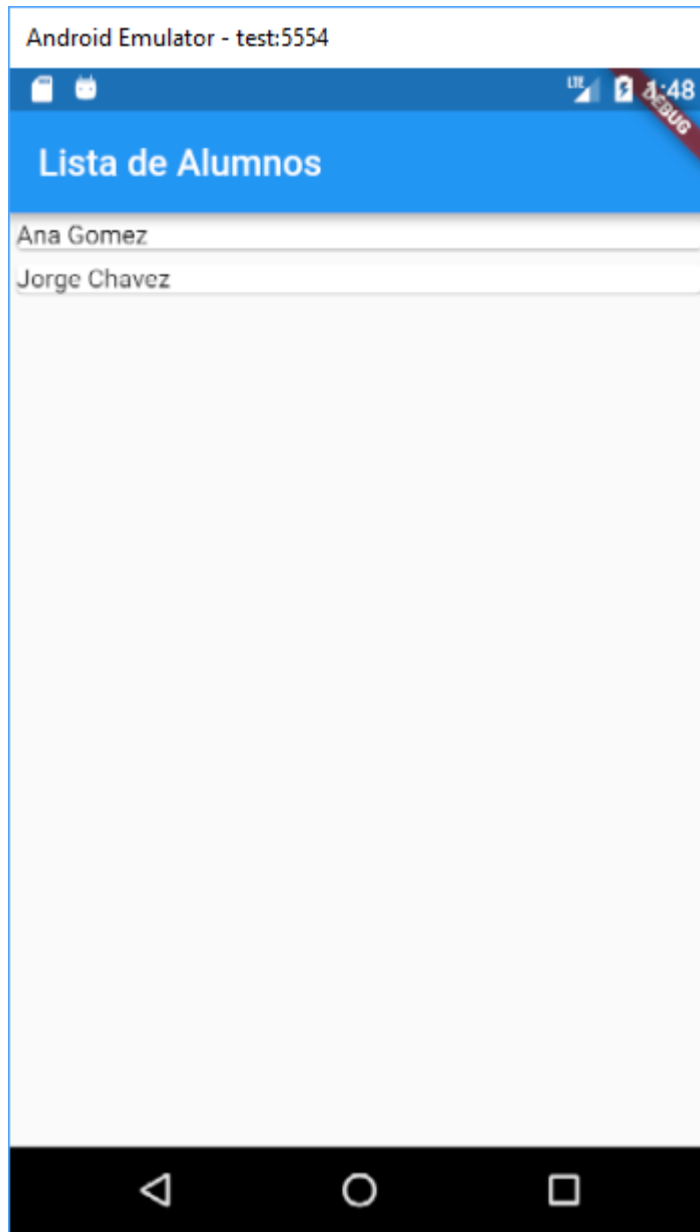
Obtener datos remotos

https://pub.dartlang.org/packages/http#-installing-tab-

import 'package:http/http.dart' as http;

/lib/main.dart

```dart
import 'dart:async';
import 'dart:convert';

import 'package:flutter/material.dart';
import 'package:http/http.dart' as http;

void main() {
  runApp(new MaterialApp(
    home: new HomePage(),
  ));
}

class HomePage extends StatefulWidget {
  @override
  HomePageState createState() => new HomePageState();
}
```

```dart
class HomePageState extends State<HomePage> {
  List data;

  Future<String> getData() async {
    var response = await http.get(
      Uri.encodeFull("http://192.168.4.34:3000/api-cognos/alumnos"),
      headers: {
        "Accept": "application/json"
      }
    );
    this.setState(() {
      data = json.decode(response.body);
    });
    return "Success!";
  }
  @override
  void initState() {
    super.initState();
    this.getData();
  }
  @override
  Widget build(BuildContext context) {
    return new Scaffold(
      appBar: new AppBar(
        title: new Text("Lista de Alumnos"),
      ),
      body: new ListView.builder(
        itemCount: data == null ? 0 : data.length,
        itemBuilder: (BuildContext context, int index) {
          return new Card(
            child: new Text(data[index]["nombres"]+" " + data[index]["apellidos"]),
          );
        },
      ),
    );
  }
}
```