Flutter Fundamentals
Routing

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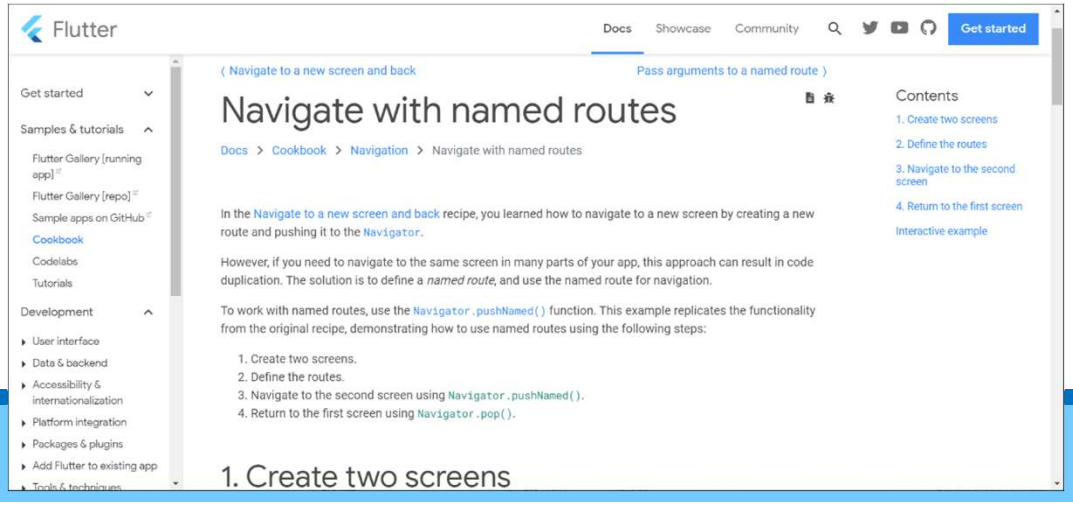
Adding Routing

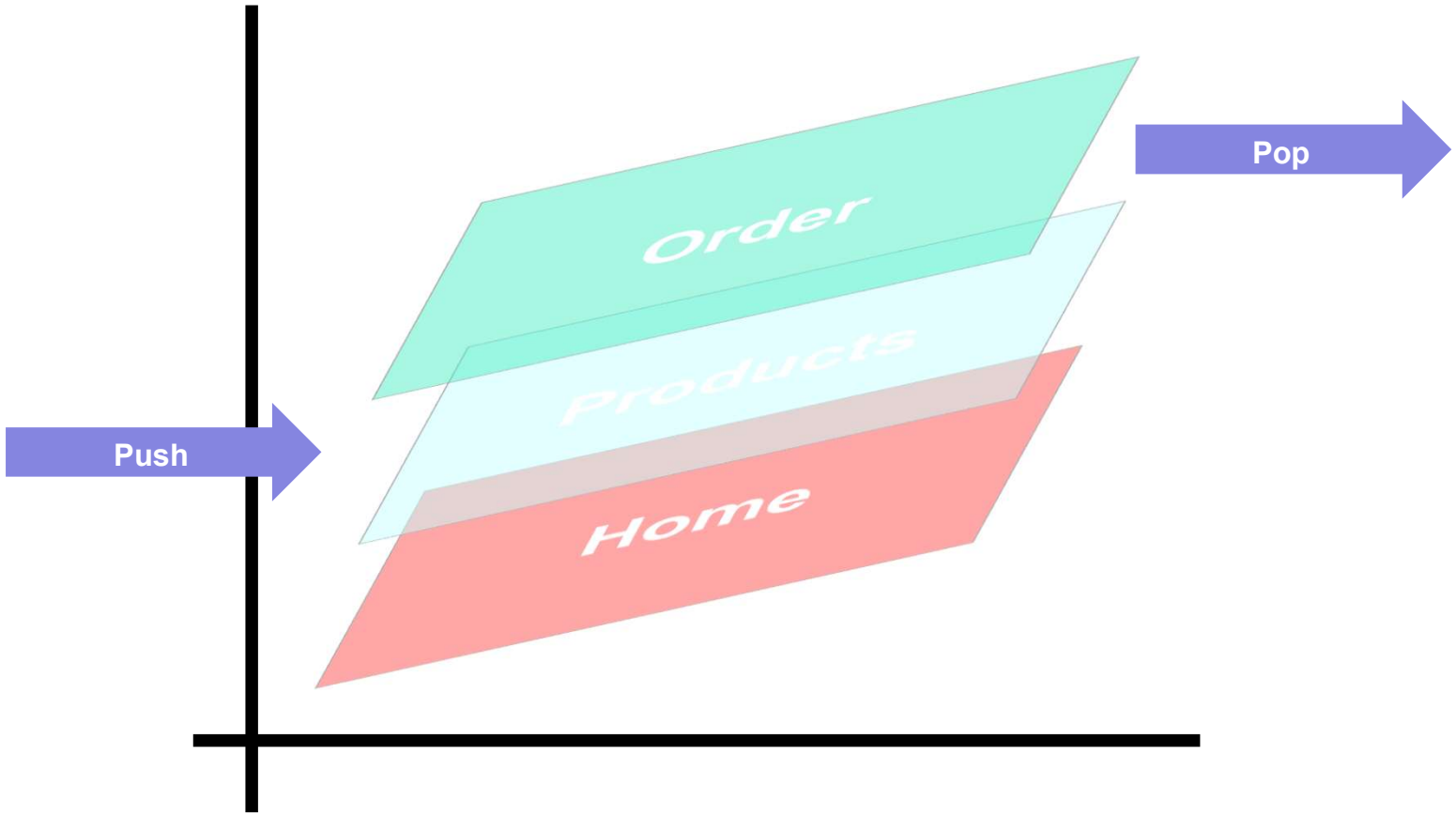
Switchting between screens in your application

Adding routing

- Routing in Flutter is different from routing in web apps
- You stack screens on top of each other while routing
- Use the `Navigator` object to push new (named) routes to the stack
- https://flutter.dev/docs/cookbook/navigation/named-routes



Routing stack



Adding Routing

- The `MaterialApp()` widget has *built-in routing*
- Use `initialRoute` to set the start screen
  - then don't use the `home:` property!
- Use `routes:` to define a `Map` with routes
- A Dart `Map` is like a JavaScript object
  - key/value-pairs
- Use `Navigator.pushNamed()` to push a new screen to the stack

AppBar()

- When using an `AppBar()` widget, it shows a Back-button automatically
- Use `Navigator.pop()` to navigate from code to the previous screen
- Always provide `context` as an argument, to let Flutter know 'where you are in the app'.

  Yeah. It's magic.

Steps. 1: Create additional screens

- Create a screen showing details of the country
  - Name: `screens/country_detail.dart`
  - For now it's a simple `Stateful` widget
  - We'll pass arguments with the specific country next

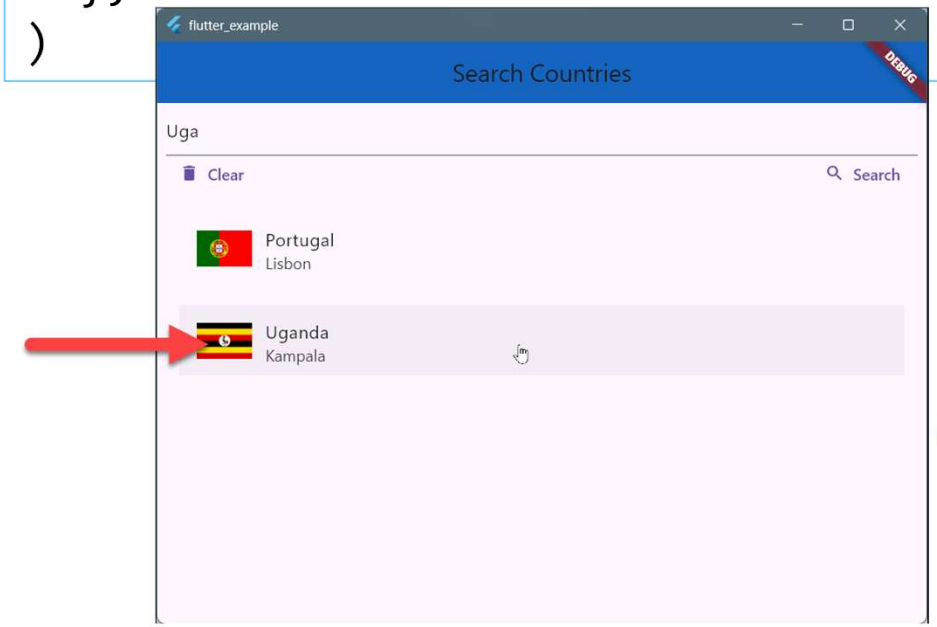
```dart
import 'package:flutter/material.dart';

class CountryDetail extends StatefulWidget {
  @override
  _CountryDetailState createState() => _CountryDetailState();
}

class _CountryDetailState extends State<CountryDetail> {
  // getting the country details later...
  @override
  Widget build(BuildContext context) {
    return Scaffold(
      appBar: AppBar(
        title: Text('Country details'),
      …,
      ),
      body: Column(…),
    );
  }
}
```

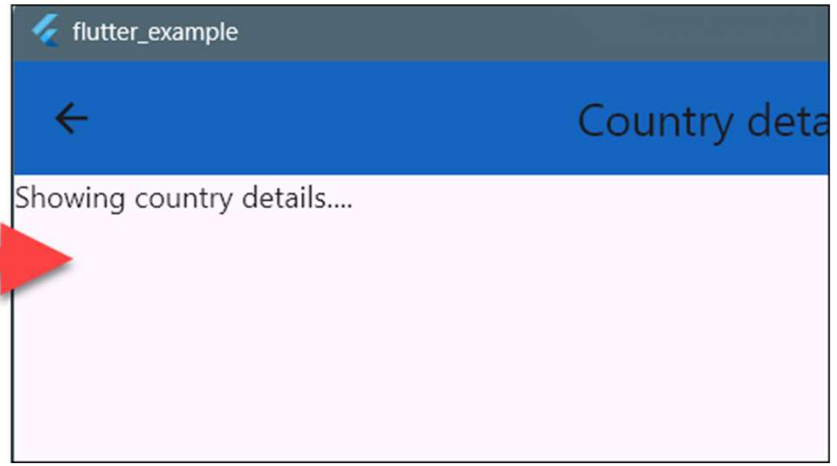
2. Build the routing table

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

// Import the screens
import 'package:first_flutter_app/screens/homeCountries.dart';
import 'package:first_flutter_app/screens/countryDetail.dart';

void main() => runApp(MaterialApp(
      initialRoute: '/',
      routes: {
        '/': (context) => CountriesHome(),
        '/detail': (context) => CountryDetail(),
      },
    )
);
```

3. Navigating to detail route

```
ListTile(
  …
  onTap: () {
    Navigator.pushNamed(context, '/detail');
  },
)
```





4. Sending arguments/parameters

- Use the `arguments:` property
- Send (in this case) the name of the country
- In the detail route: do an additional http-request to lookup the country, based on the name

```
onTap: () {
  // navigate to detail page
  Navigator.pushNamed(context, '/detail',
      arguments: {'name': countries[index]['name']['common']});
},
```

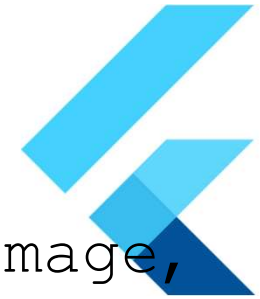
5. Retrieving parameters

- In the detail component
  - Import `http, convert` package
  - Create variables to hold the routing data & found country
  - Get the countryData in the build function
  - Create additional UI to show the found country

Getting the country

```
// 0. Variables in this widget
String url = 'https://restcountries.com/v3.1/name/';
Map routingData = {};
String countryName = '';
List countries = [];

// 1. Get the requested country
void getCountry(name) async { …}

//************************ UI
@override
Widget build(BuildContext context) {

  // Get the parameters from the router
  routingData = ModalRoute.of(context)?.settings.arguments as …;

  // Check if there already is a country. If not, fetch it.
  countries.length == 0 ? getCountry(routingData['name']) : null;
  …
}
```

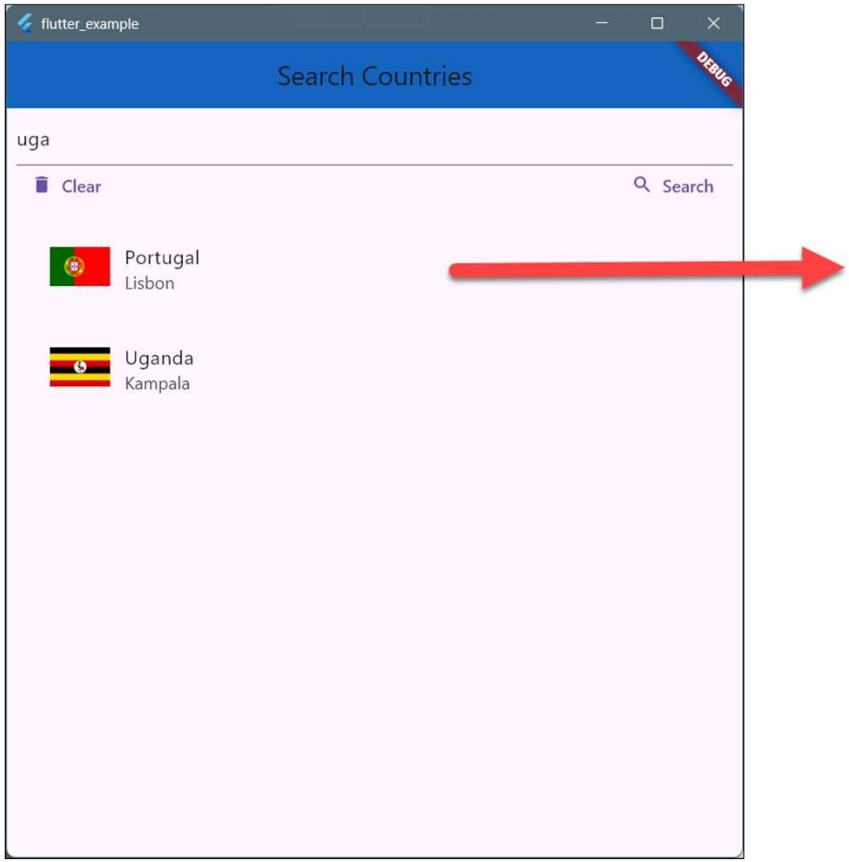
Create UI

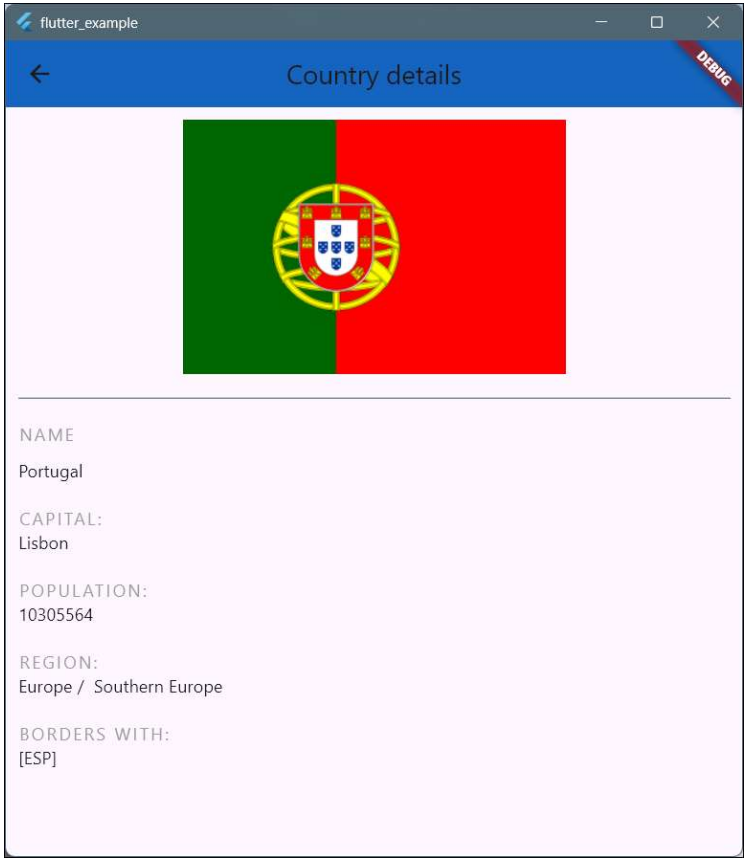


Use widgets of your choice (`ListView`, `Column`, `Image`, `Text`, `Sizedbox`, etc) to build the UI.

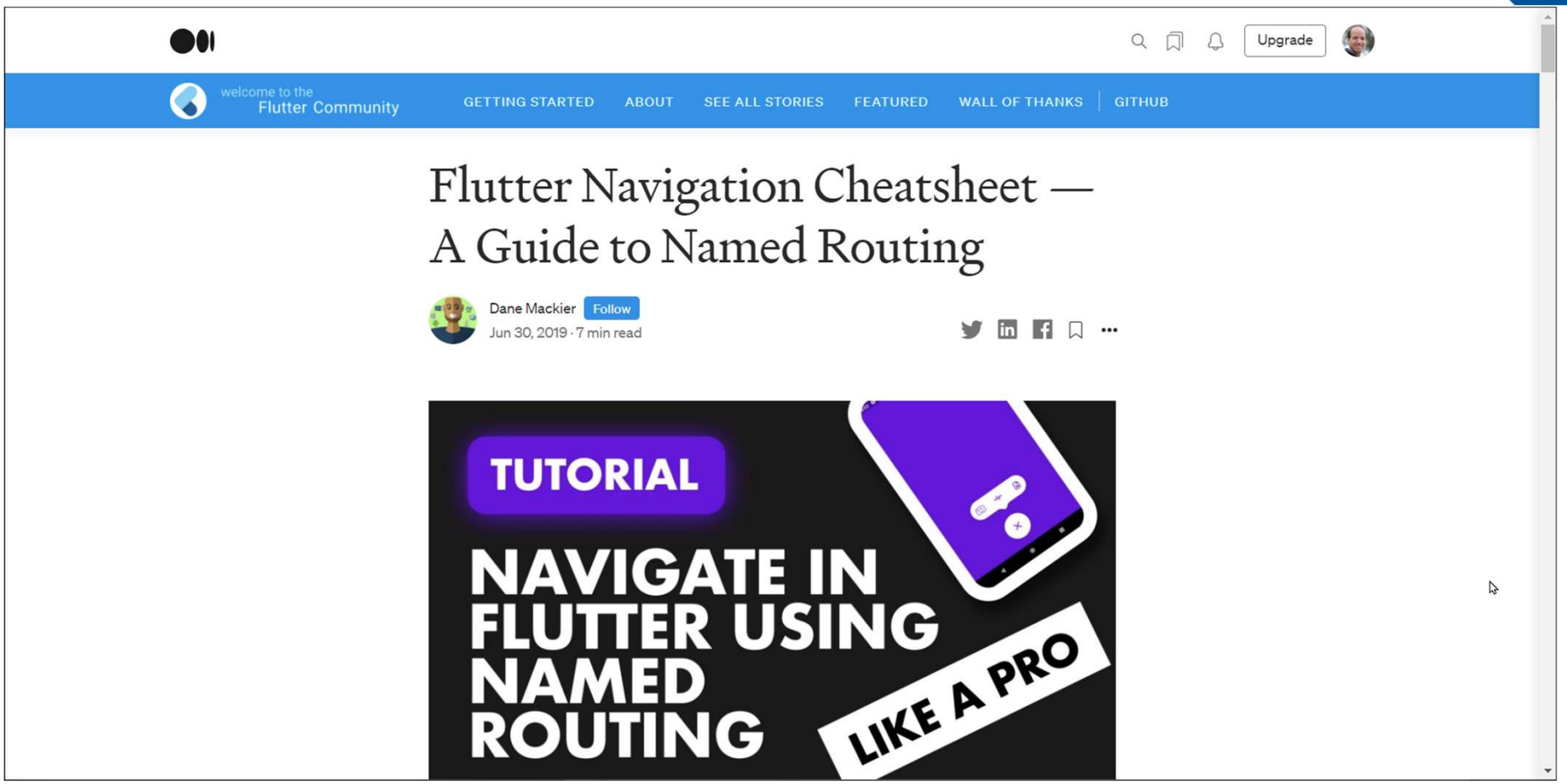
```
body: ListView.builder(
  itemCount: countries.length,
  itemBuilder: (BuildContext context, int index) {
    return Column(
      crossAxisAlignment: CrossAxisAlignment.start,
      children: <Widget>[
        Center(
          child: SvgPicture.network(
            countries[index]['flags']['png'],
          ),
        ),
        …
        Text(
          'NAME:',
          style: TextStyle(color: Colors.grey, letterSpacing: 2),
        ),
       …
      ],
 …
```

Result


flutter_example
Search Countries
DEBUG
uga
Clear
Search
Portugal
Lisbon
Uganda
Kampala

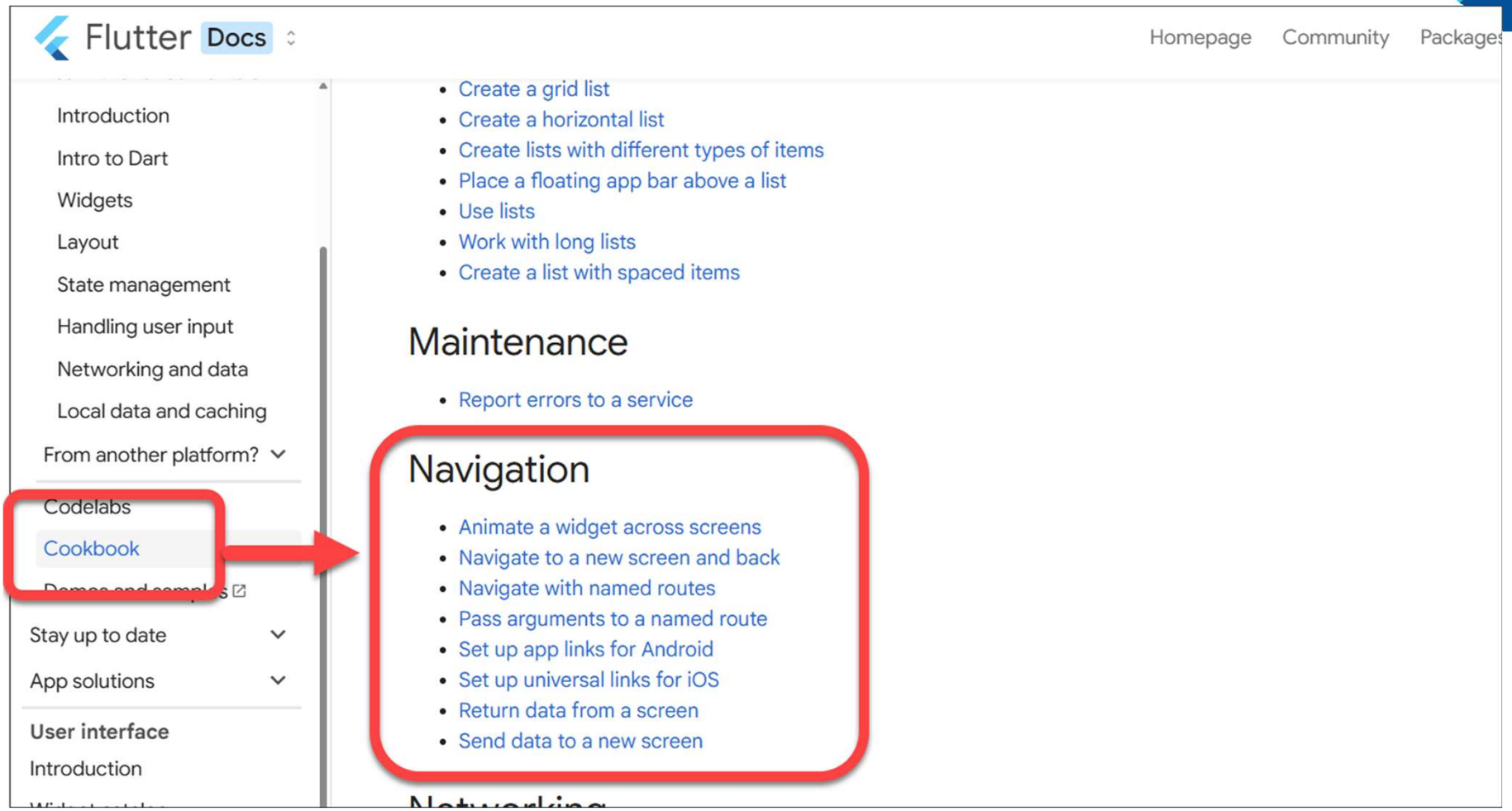

flutter_example
Country details
DEBUG
NAME
Portugal
CAPITAL:
Lisbon
POPULATION:
10305564
REGION:
Europe / Southern Europe
BORDERS WITH:
[ESP]

More information on routing



https://medium.com/flutter-community/flutter-navigation-cheatsheet-a-guide-to-named-routing-dc642702b98c

Navigation cookbook



https://flutter.dev/docs/cookbook/navigation

Workshop

- Continue with the typicode (users) API from the previous workshop
- Implement routing:
  - show a list of users on the homepage
  - When clicked on a user, show its details in the next page
- Optional: create a button to navigate back to the homepage (instead of using the built-in `AppBar()`)
- Optional: implement a `TabBar()` that a user can navigate from
  - https://api.flutter.dev/flutter/material/TabBarView-class.html
- examples: `../_300-routing`, `../_310-routing-detail`