

Yet another localization approach in Flutter

ANNA LEUSHCHENKO

Flutter Global Summit'21
Volume 2



Anna 🧑💻📱❤️🇺🇦

Leushchenko

tide

Agenda

- Localization
- Requirements
- Solution
- Live coding

Agenda

- Localization
- Requirements
- Solution
- Live coding



Localization



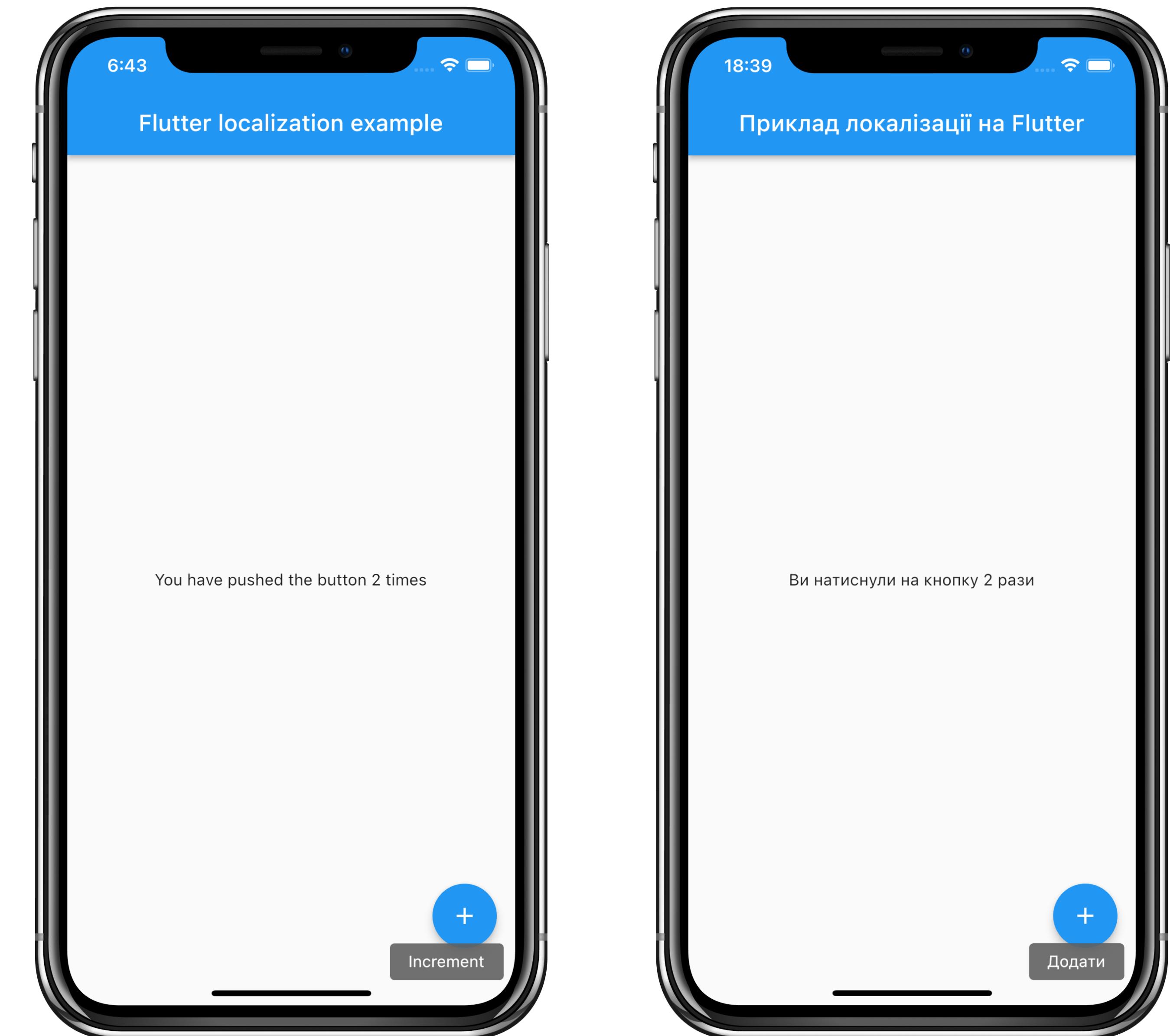
<https://developer.apple.com/localization/>

Localization

Translate User-Visible Content

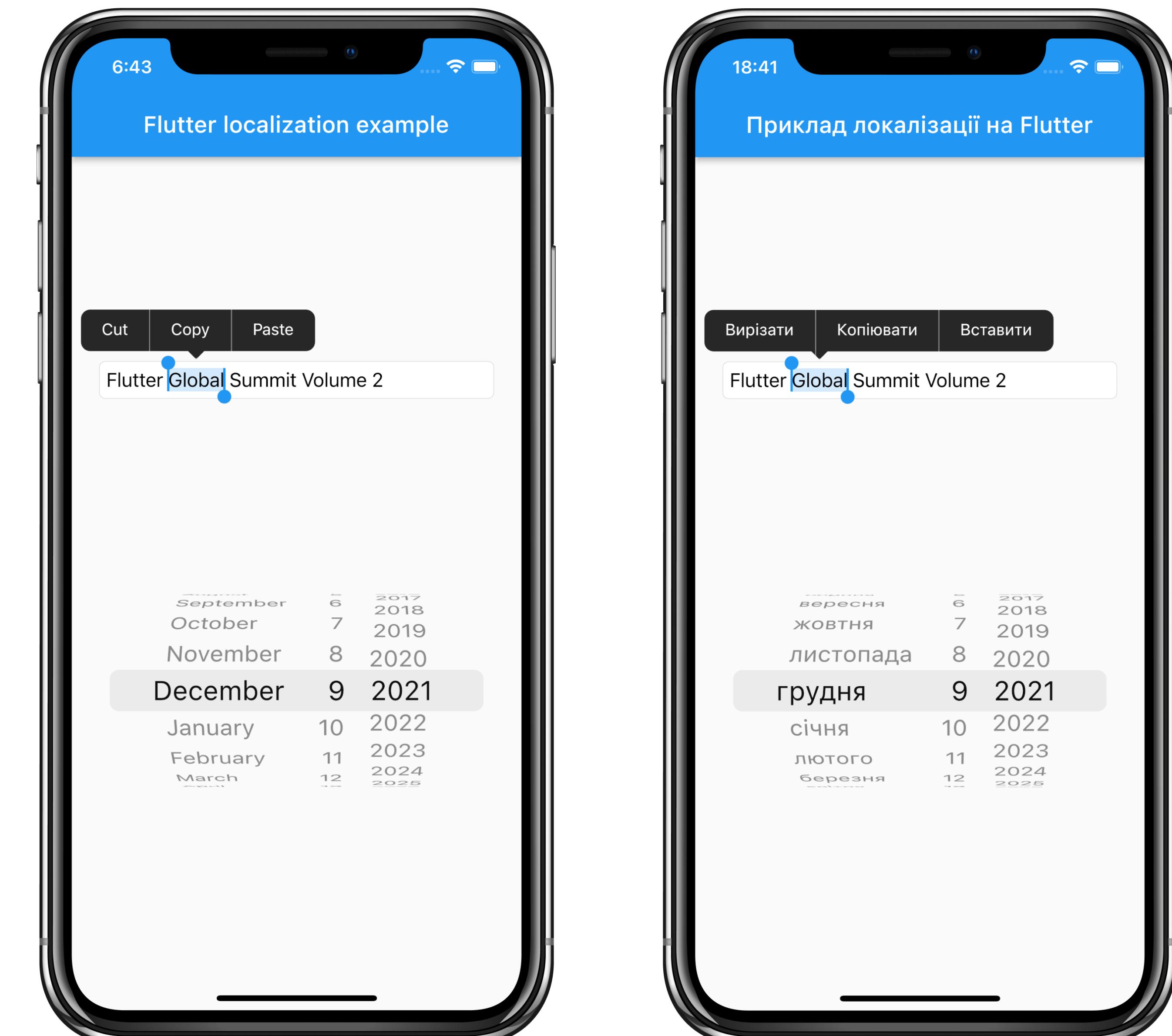
Localization

- Localize UI



Localization

- Localize UI
- Localize Flutter widgets



Localization

- Localize UI
- Localize Flutter widgets
- Localize content



Localization

- Localize UI
- Localize Flutter widgets
- Localize content

Localization

the earlier
the easier

Localization Vocabulary

`Text("Hello, World!");`

=>

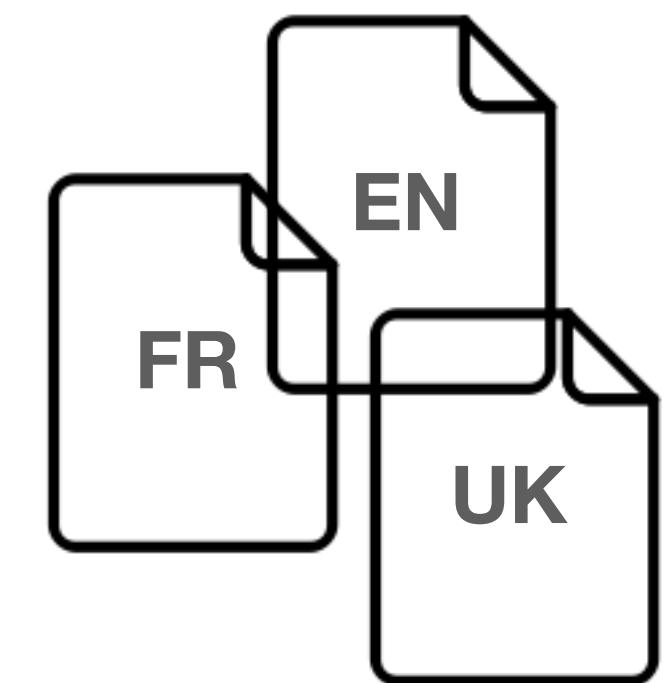
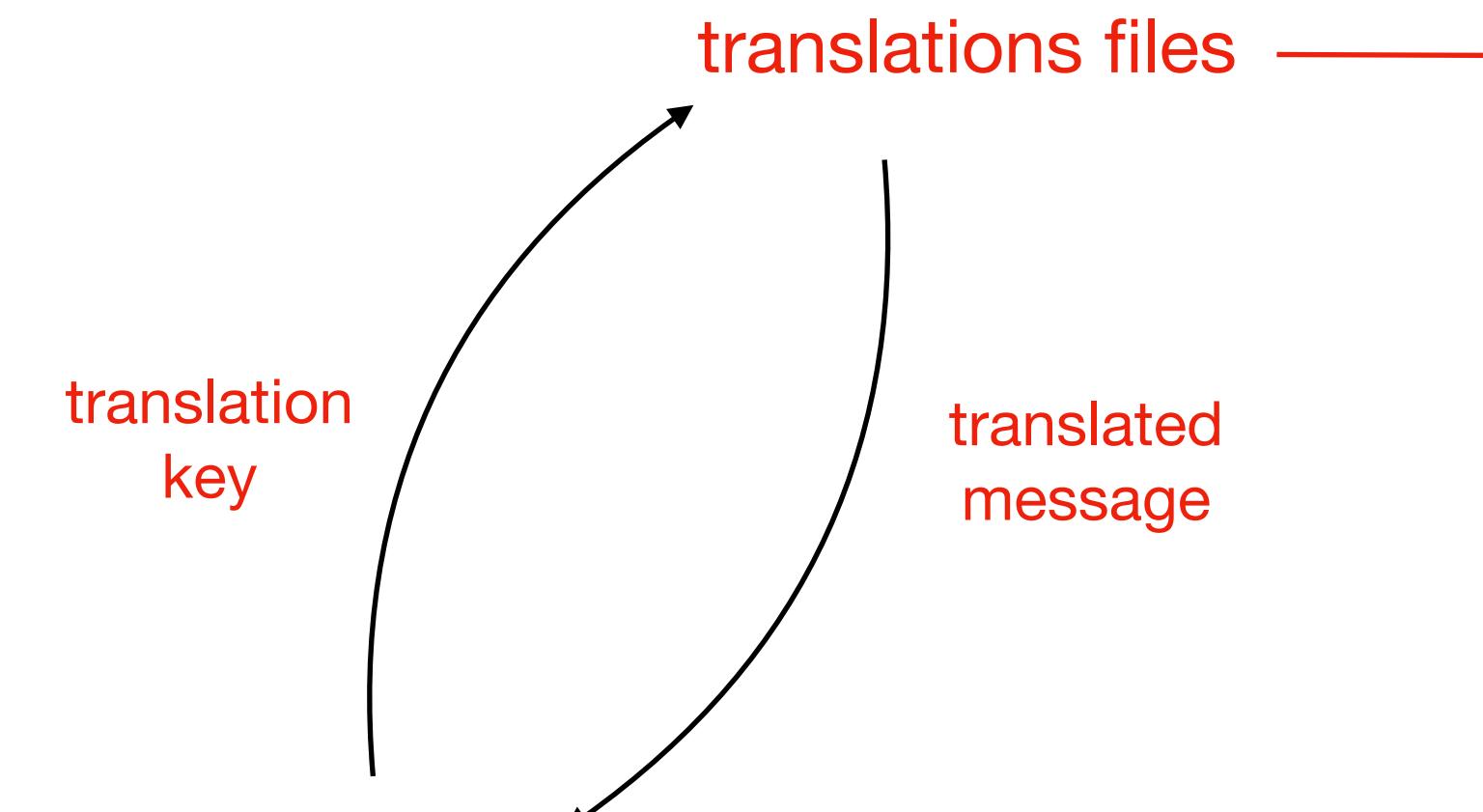
`Text(TranslationsProvider.greetings);`

message
/
translation

translation
key

translated
message

message key
/
translation key



Agenda

- Localization
- Requirements
- Solution
- Live coding

Requirements

- Translation files organization
- Translation keys generation
- File system watching
- Package by feature support
- The less effort the better

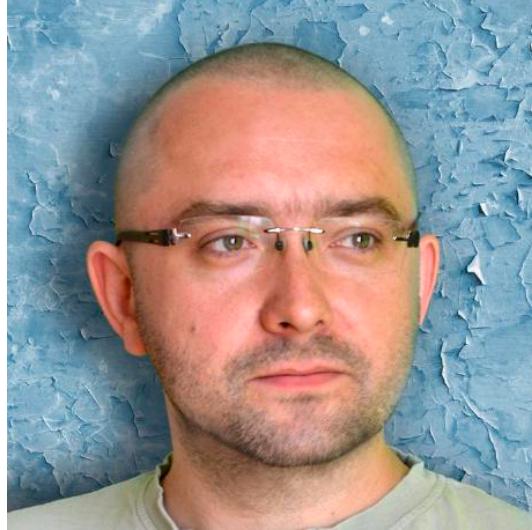
Agenda

- Localization
- Requirements
- Solution
- Live coding

Solution

i69n

<https://pub.dev/packages/i69n>



Tomáš Zvěřina

pub.dev

i69n 2.0.1

Published May 2, 2021 • [fnx.io](#)

DART | NATIVE JS | FLUTTER | ANDROID IOS LINUX MACOS WEB WINDOWS

[Readme](#) [Changelog](#) [Example](#) [Installing](#) [Versions](#) [Scores](#)

Simple internationalization (i18n) package for Dart and Flutter.

build passing pub.dev i69n Github i69n

Supports:

- AngularDart
- Flutter hot reload
- deferred loading of translations
- social distancing
- null safety

i69n

Translation files organization

- Works with translations in **.yaml** files
- One file per supported language:
 - `translations.i69n.yaml` (default)
 - `translations_uk.i69n.yaml`
 - `translations_fr.i69n.yaml`
- Files can be put anywhere under the **lib** folder

i69n

Translation keys generation

- Code is generated with **build_runner**

```
flutter pub run build_runner build
```

- **translations.i69n.yaml**

```
greetings: Hello, world!
```

- **translations.i69n.dart**

```
class Translations implements i69n.I69nMessageBundle {  
  const Translations();  
  
  String get greetings => "Hello, world!";  
}
```

i69n

File system watching

- Supported by **build_runner**

```
flutter pub run build_runner watch
```

i69n

Package by feature support

- feature_package_1

```
lib  
  localization  
  presentation  
  ...
```

```
MaterialApp(  
  localizationsDelegates: [  
    FeaturePackage1Localizations.delegate,  
    FeaturePackage2Localizations.delegate,  
    ...  
  ],  
  supportedLocales: AppLevelLocalizations.supportedLocales,  
  home: ...,  
);
```

- feature_package_2

```
lib  
  localization  
  presentation  
  ...
```

i69n

The less effort the better

- Typical project dependencies:

```
dependencies:  
  ...  
  freezed_annotation:  
  get_it:  
  injectable:  
  json_annotation:  
  retrofit:  
  auto_route:  
  i69n:  
  
dev_dependencies:  
  auto_route_generator:  
  build_runner:  
  freezed:  
  injectable_generator:  
  json_serializable:  
  retrofit_generator:
```

i69n

- Translation files organization ✓
- Translation keys generation ✓
- File system watching ✓
- Package by feature support ✓
- The less effort the better ✓

i69n

Bonus features

- String formatting
- Pluralization support
- Dynamic access
- Translation classes nesting
- Prevents keys duplicates
- Translation classes inheritance
- Flutter hot reload

i69n

String formatting

- **translations.i69n.yaml**

```
passwordLengthValidationError(int length):  
    "The password should be at least $length characters long"
```

- **translations.i69n.dart**

```
class Translations implements i69n.I69nMessageBundle {  
  const Translations();  
  
  String passwordLengthValidationError(int length) =>  
    "The password should be at least $length characters long";  
}
```

i69n

Pluralization support

- **translations.i69n.yaml**

```
homePageCenterText(int times):  
    "You have pushed the button $times ${_plural(times, one:'time', many:'times')}"
```

- **translations.i69n.dart**

```
String get _languageCode => 'en';  
  
String _plural(int count, {String? zero, String? one, String? two,  
    String? few, String? many, String? other}) =>  
    i69n.plural(count, _languageCode,  
        zero: zero, one: one, two: two, few: few, many: many, other: other);  
  
class Translations implements i69n.I69nMessageBundle {  
    const Translations();  
  
    String HomePageCenterText(int times) =>  
        "You have pushed the button $times ${_plural(times, one: 'time', many: 'times')}";  
}
```

i69n

Dynamic access

- **translations.i69n.yaml**

```
greetings: Hello, world!
```

- **translations.i69n.dart**

```
class Translations implements i69n.I69nMessageBundle {  
  const Translations();  
  
  String get greetings => "Hello, world!";  
  
  Object operator [](String key) {  
    switch (key) {  
      case 'greetings':  
        return greetings;  
      default:  
        throw Exception('Message $key doesn\'t exist in $this');  
    }  
  }  
}
```

i69n

Translation classes nesting

- **translations.i69n.yaml**

```
general:  
  greetings: Hello, world!  
  
validationErrors:  
  passwordLengthValidationError(int length):  
    "The password should be at least $length characters long"
```

- **translations.i69n.dart**

[next slide =>](#)

```
class Translations implements i69n.I69nMessageBundle {
  const Translations();

  GeneralTranslations get general =>
    GeneralTranslations(this);

  ValidationErrorsTranslations get validationErrors =>
    ValidationErrorsTranslations(this);
}

class GeneralTranslations implements i69n.I69nMessageBundle {
  final Translations _parent;

  const GeneralTranslations(this._parent);

  String get greetings => "Hello, world!";
}

class ValidationErrorsTranslations implements i69n.I69nMessageBundle {
  final Translations _parent;

  const ValidationErrorsTranslations(this._parent);

  String passwordLengthValidationError(int length) =>
    "The password should be at least $length characters long";
}
```

i69n

Prevents keys duplicates

- `translations.i69n.yaml`

```
greetings: Hello, world!
```

```
greetings: Hello, world!
```

i69n

Translation classes inheritance

- **translations.i69n.yaml**

greetings: Hello, world!

- **translations_fr.i69n.yaml**

greetings: Bonjour, le monde!

- **translations_uk.i69n.yaml**

greetings: Привіт, світе!

i69n

Translation classes inheritance

- **translations.i69n.dart**

```
class Translations implements i69n.I69nMessageBundle {  
    const Translations();  
  
    String get greetings => "Hello, world!";  
}
```

- **translations_fr.i69n.dart**

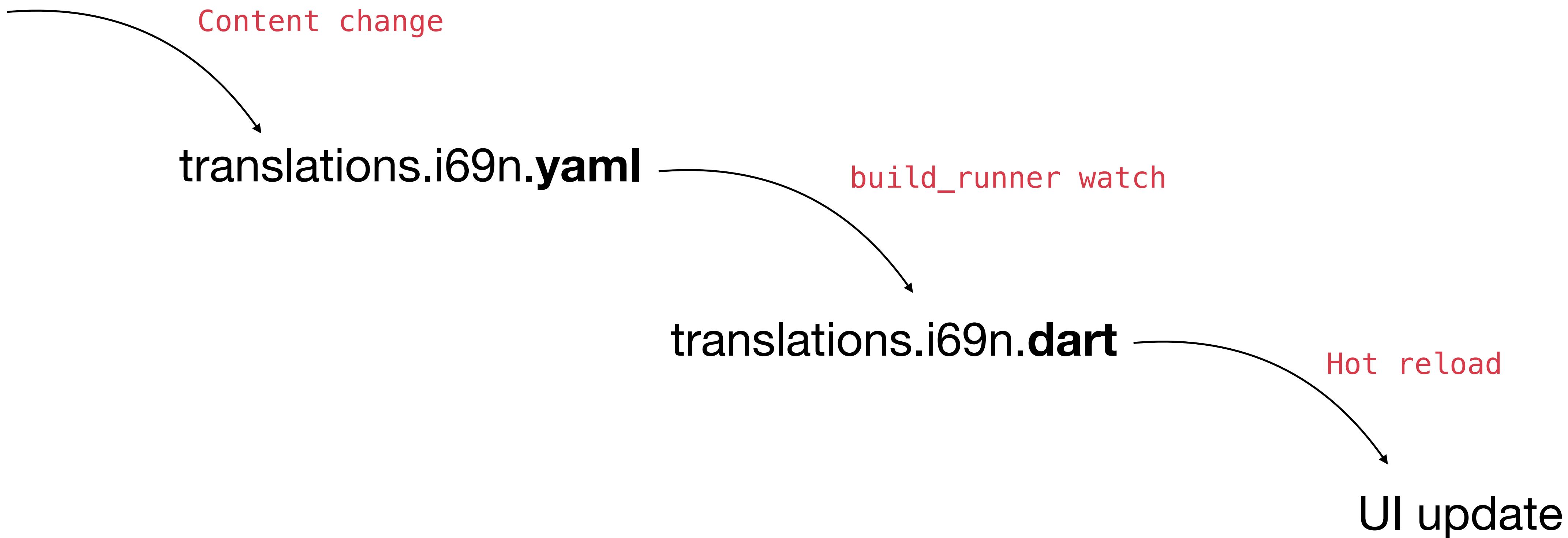
```
class Translations_fr extends Translations {  
    const Translations_fr();  
  
    String get greetings => "Bonjour le monde!";  
}
```

- **translations_uk.i69n.dart**

```
class Translations_uk extends Translations {  
    const Translations_uk();  
  
    String get greetings => "Привіт, світе!";  
}
```

i69n

Flutter hot reload



i69n

Particularities

- No automatic language detection
- English has to be the default language

Agenda

- Localization
- Requirements
- Solution
- Live coding

Live coding Flutter Global Summit Vol.2 schedule mobile application



Localization

- Localize UI



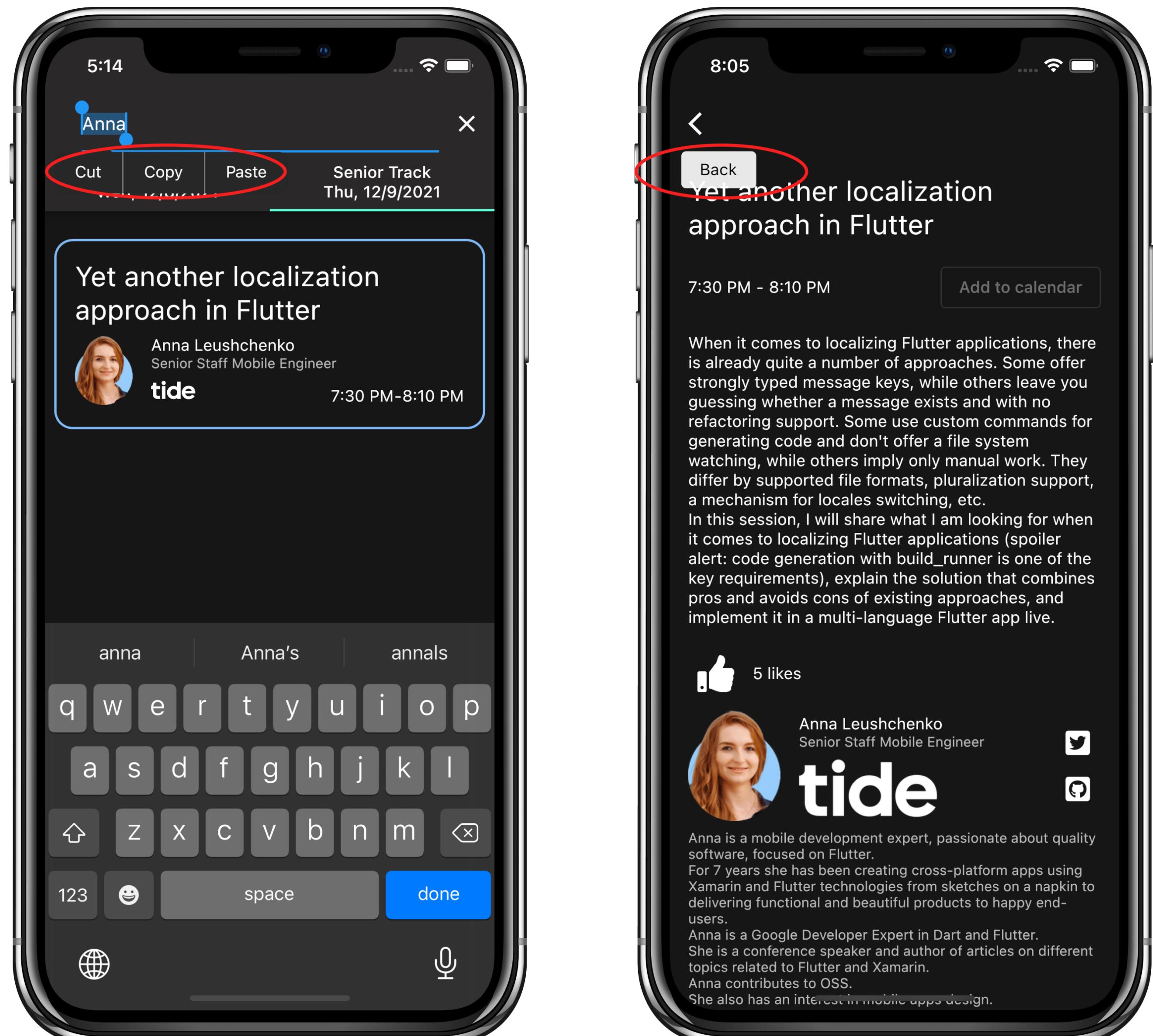
Localization

- Localize UI



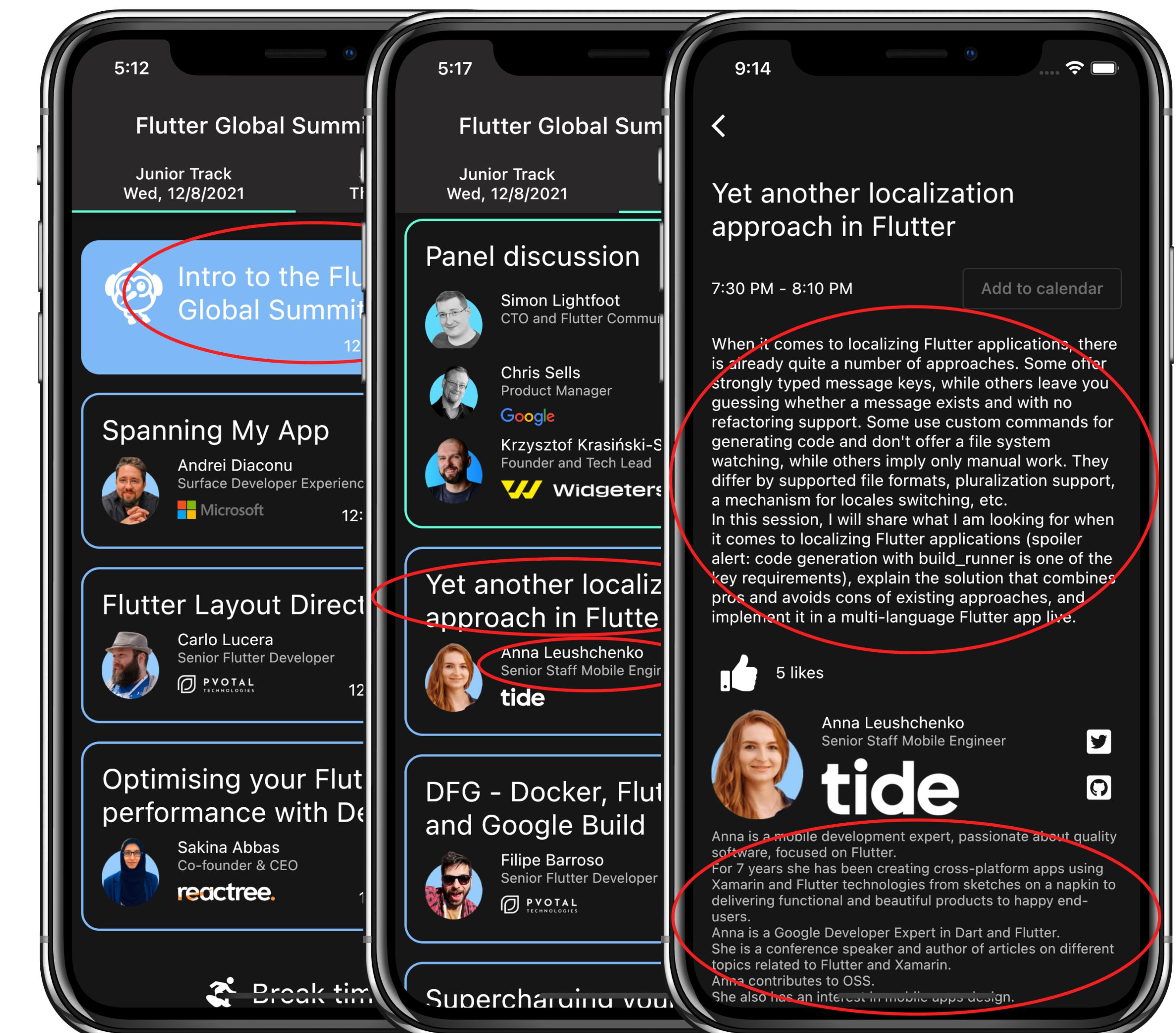
Localization

- Localize UI
- Localize Flutter widgets

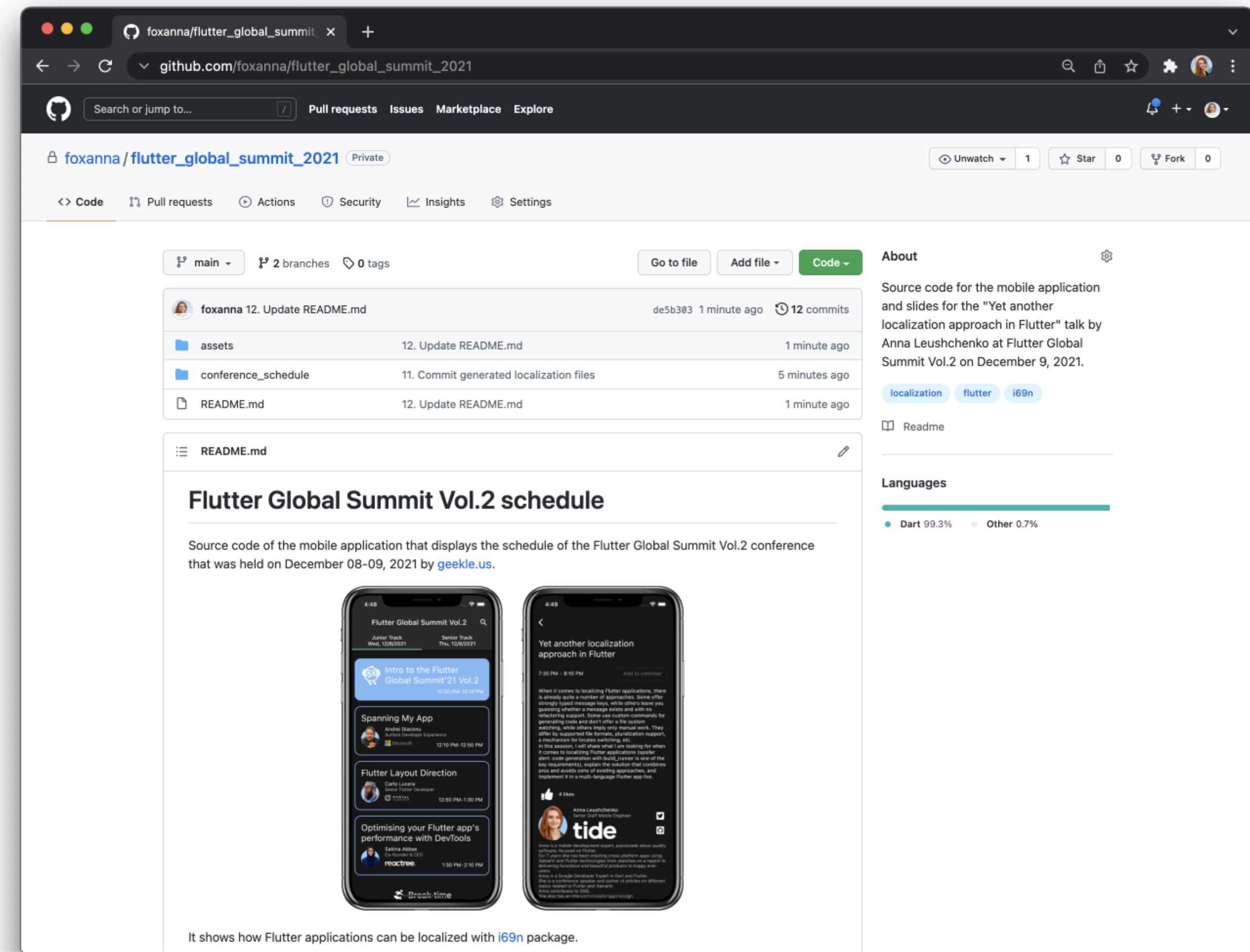


Localization

- Localize UI
- Localize Flutter widgets
- Localize content



Live coding



https://github.com/foxanna/flutter_global_summit_2021

Agenda

- Localization
- Requirements
- Solution
- Live coding



Yet another localization approa +

medium.com/flutter-community/yet-another-localization-approach-in-flutter-477cf058ba41

welcome to the Flutter Community FEATURED ABOUT FLUTTER COMMUNITY IS NOT ACCEPTING NE

Yet another localization approach in Flutter

Anna Domashych 🧑‍💻 ❤️ 📱 🇺🇦

May 12, 2020 · 4 min read

Twitter Facebook LinkedIn Reddit Print ...

<https://medium.com/flutter-community/yet-another-localization-approach-in-flutter-477cf058ba41>



Q&A