

i18n & i10n



what's in 18n?

I+nternationalization +n

I10n -> localization

a11y -> accessibility

**What's the
difference?**

Language and Region Settings

●●○○○ TFW ⌘

12:43 PM

58% 🔋

< General Language & Region

iPhone Language

English >

Other Languages...

REGION FORMATS

Region

United States >

Calendar

Gregorian >

Temperature Unit

°F >

Region Format Example

12:34 AM

Tuesday, January 5, 2016

\$1,234.56 4,567.89

●●●○○ TFW LTE 1:39 PM 55 %

General Idioma y región

Idioma del iPhone **Español >**

ORDEN DE IDIOMAS PREFERIDO

Español

English
Inglés

Agregar idioma...

Las apps y las páginas webs usarán el primer idioma en esta lista que sea compatible.

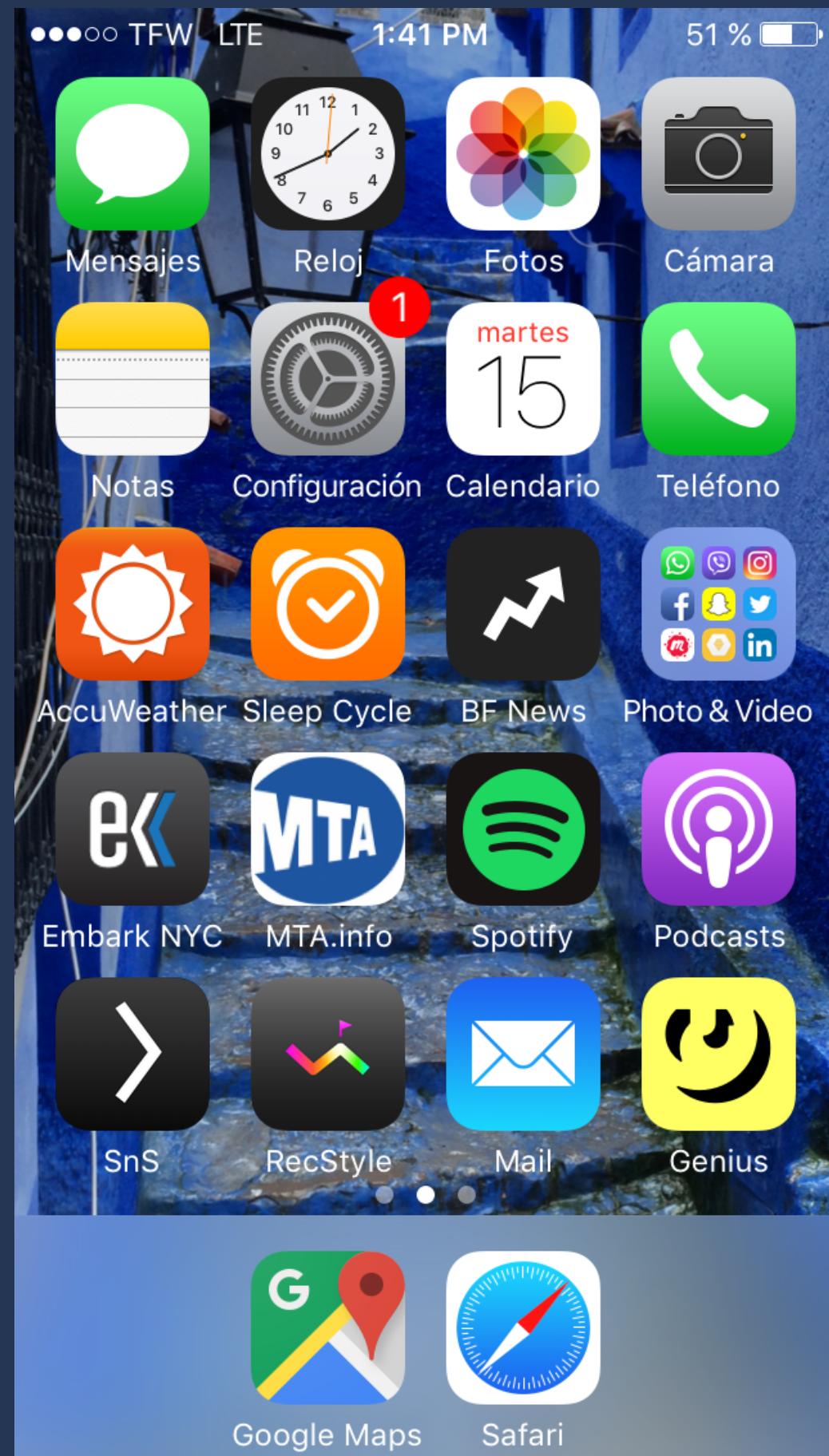
FORMATOS REGIONALES

Región **Estados Unidos >**

Calendario **Gregoriano >**

Unidad de temperatura **° C >**

Ejemplo de formato regional



●●●○○ TFW LTE 1:41 PM 51 %

Configuración

Modo de vuelo

Wi-Fi No conectado >

Bluetooth No >

Datos celulares >

Notificaciones >

Centro de control >

No molestar >

General 1 >

Pantalla y brillo >

Fondo de pantalla >

i18n

To internationalize your app means to adapt it for users in other countries who want to use your app in a language they understand, and see **dates, times, and numbers in familiar, regional formats.**

l10n

To localize your app means to **translate it into other languages.**

English (Germany)

< August ≡ ⚐ +

M T W T F S S

25 26 **27** 28 29 30 31

Wednesday 27 Aug 2014

09:00
10:00
11:00
11:18 - **Dentist**
12:00
13:00
14:00
15:00
16:00

Today Calendars Inbox

German (Germany)

< August ≡ ⚐ +

M D M D F S S

25 26 **27** 28 29 30 31

Mittwoch 27. August 2014

09:00
10:00
11:00
11:20 - **Dentist**
12:00
13:00
14:00
15:00

Heute Kalender Eingang

Steps

1. Internationalize your app
2. Localize your App
3. Test your app
4. Specify territories in iTunes Connect

1. Internationalize Your App

- Separate user facing text from your code.
- Use base internationalization to separate user facing text from your .storyboard and .xib files.
- Use Auto Layout so views adjust to the localized text.
- Use standard APIs to handle the complexity of different writing systems and locale formats.
- If the app supports right-to-left languages, mirror the user interface and change the text direction as needed.

Directions

Search or enter an address

Map Satellite

English (United States)

Start: Cupertino, CA

End: San Francisco, CA

Drive Walk

1 of 2 Suggested Routes
59 min — 45.9 miles — I-280 N

Cupertino, CA

0.9 miles
Turn right to merge onto CA-85 N

0.4 miles
Keep left to merge onto I-280 N toward San Francisco, Mountain View

479 ft
Keep left to merge onto I-280 N toward San Francisco

31.4 miles

Arabic (United States)

قمر صناعي خريطة

قم بالبحث أو قم بإدخال عنوان

الاتجاهات

البداية: كوبيرتينو, CA الولايات المتحدة

النهاية: San Francisco, CA

قيادة سير

1 من 2 من الطرق المقترنة — 45.9 من الأميال — I-280 N

كوبيرلينو, CA الولايات المتحدة

0.9 من الأميال
اتجه يميناً للدمج نحو N CA-85 N

0.4 من الأميال
البقاء على اليسار للدمج نحو N I-280 N باتجاه San Francisco, Mountain View

479 قدم
البقاء على اليسار للدمج نحو N I-280 N باتجاه San Francisco

2. Localize Your App

- Export and import the localizations using standard file formats.
- Lock views in the user interface.
- Export the localizations.
- Submit the exported files to translators.
- Import the localization files and confirm the changes.
Perform additional localization steps yourself.

3. Test Your App

- Detect Auto Layout problems and non-localized strings. Run your app using pseudo-languages. Pseudo-localization lets you test whether your app's UI adapts well for running in other languages.
- As a rule, non-English languages are 30% longer, so small buttons and titles may not fit when you localize. Simulate right-to-left languages if internationalizing/localizing app for right-to-left languages.
- Test specific languages and regions.
- After importing localizations, test your app in all the languages you support.

4. Specify territories in iTunes Connect

- Before you submit your localized app to the App Store, add territories and localize your metadata using iTunes Connect.
- You should localize your app description. Also, make sure you have a list of search keywords for localization. They will help users find your app while searching its localized version in the App Store.

Apple's suggested implementation workflow

1. Internationalize
2. Localize
3. Test
4. Ship

Ayuna's suggested workflow

1. Separate user facing text, export strings
2. Send to translators
3. Test with pseudo-localization, find Auto Layout bugs
4. Internationalize
5. Import translations
6. Test
7. Ship

User facing text & String formatting

- Code strings
- Storyboard & .xib strings
- InfoPlist.Strings

Code Strings

- NSLocalizedString wrapper

```
let termsOfServiceText = NSLocalizedString("Terms of Service",  
comment: "")
```

Code Strings

- NSLocalizedString wrapper

```
let termsOfServiceText = NSLocalizedString("Terms of Service",  
comment: "")
```

```
let privacyPolicyText = NSLocalizedString("Privacy Policy",  
comment: "Privacy Policy label text")
```

Code Strings

- NSLocalizedString wrapper

```
let termsOfServiceText = NSLocalizedString("Terms of Service",  
comment: "")
```

```
let privacyPolicyText = NSLocalizedString("Privacy Policy", comment:  
"Privacy Policy label text")
```

```
let text = String(format: NSLocalizedString("By joining, you agree to  
our %@ and %@", comment: "The placeholders are for 'Terms of  
Service' and 'Privacy Policy'"), termsOfServiceText, privacyPolicyText)
```

Code Strings

- Don't break strings into separate strings (lost context, not helpful for translators, declination & conjugation, word order)

By joining, you agree to our %@ and %@.

By joining, you agree to our %@ and %@.

Comment: The placeholders are for 'Terms of Service' and
'Privacy Policy'

```
/* The placeholders are for 'Terms of Service' and 'Privacy Policy' */  
"By joining, you agree to our %@ and %@." = "En rejoignant Vimeo, vous acceptez nos %1$@ et %2$@.;"
```

/* The placeholders are for 'Terms of Service' and 'Privacy Policy' */

"By joining, you agree to our %@ and %@." = "En rejoignant,
vous acceptez nos %1\$@ et %2\$@.;"

Code Strings

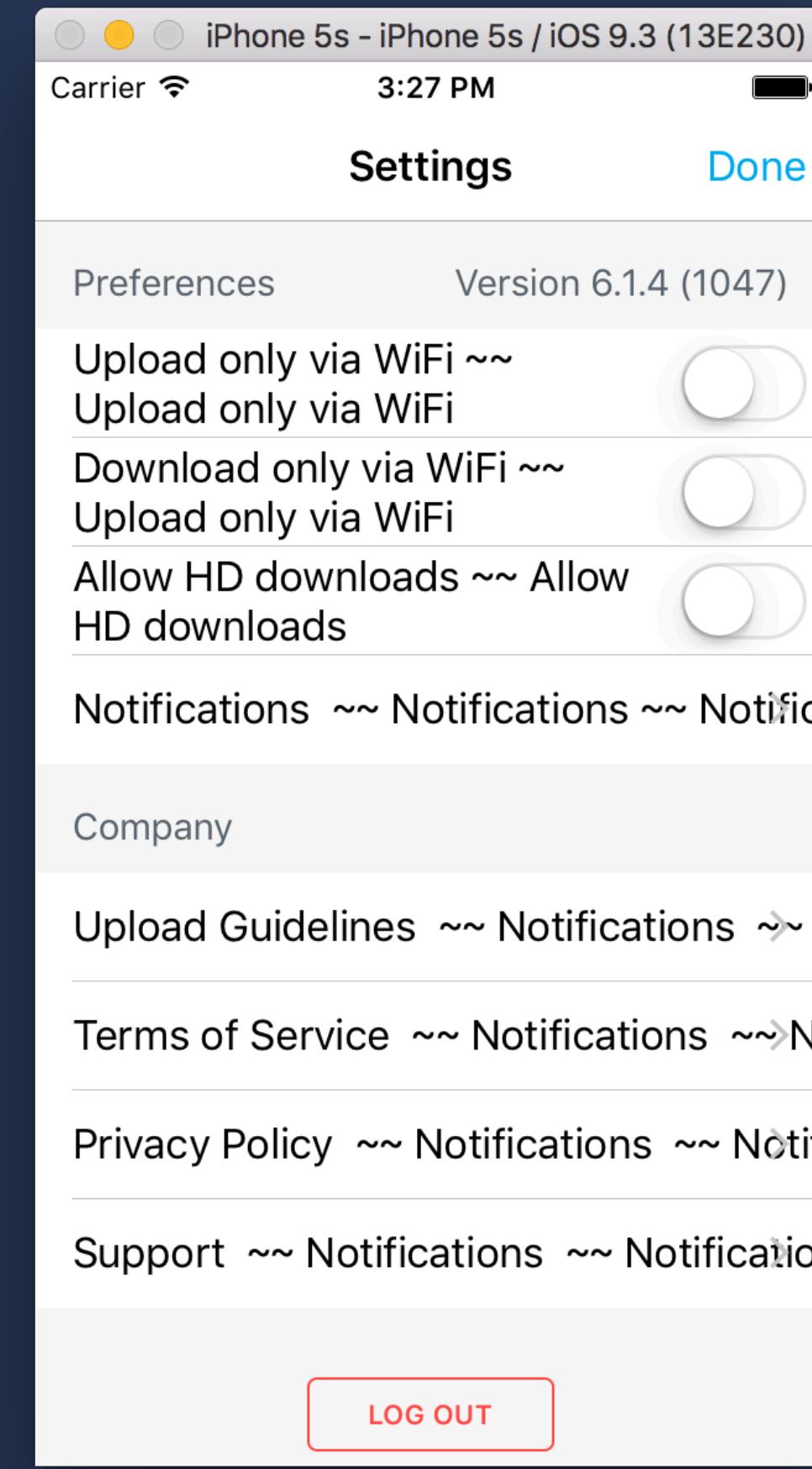
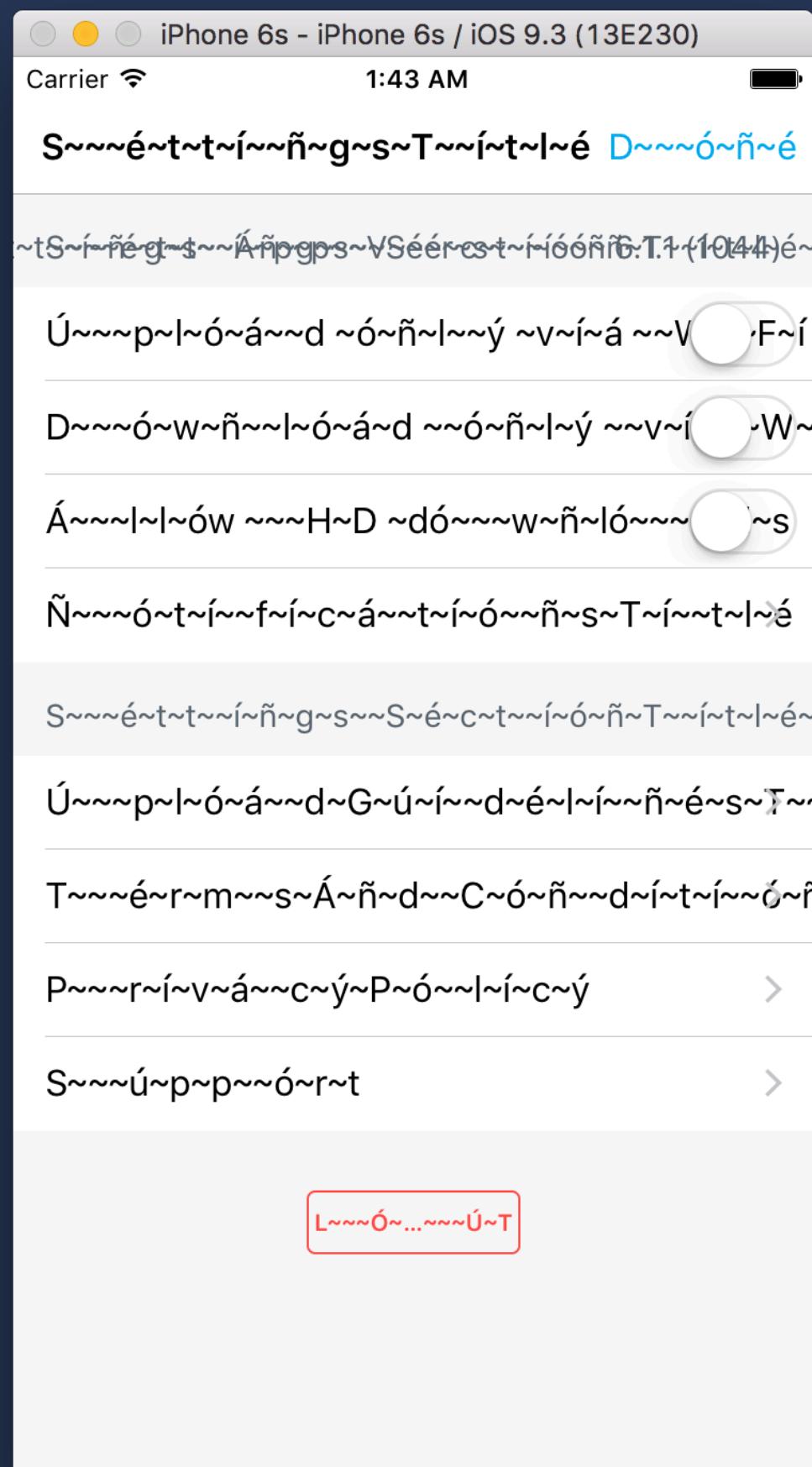
- Keys vs strings

```
let termsOfServiceText = NSLocalizedString("Terms of Service", comment: "")
```

```
let termsOfServiceText = NSLocalizedString("termsOfServiceLabel", comment: "")
```


Caveat

```
/* Terms of Service */  
"termsOfServiceLabel" = "termsOfServiceLabel";
```



Storyboard Strings

Project -> Info -> Localizations

▼ Localizations

Language	Resources
English — Development Language	2 Files Localized

+ -

Use Base Internationalization

▼ Localizations

Language

English — Development Language



- French (fr)
- German (de)
- Chinese (Simplified) (zh-Hans)
- Chinese (Traditional) (zh-Hant)
- Japanese (ja)
- Spanish (es)
- Spanish (Mexico) (es-MX)
- Italian (it)
- Dutch (nl)
- Korean (ko)
- Portuguese (Brazil) (pt-BR)
- Portuguese (Portugal) (pt-PT)
- Danish (da)
- Finnish (fi)

Choose files and reference language to create Russian localization

Cancel

Finish

▼ Localizations

Language	Resources
English — Development Language	2 Files Localized
Russian	2 Files Localized
+	-
<input checked="" type="checkbox"/> Use Base Internationalization	

```
/* Class = "UITextField"; placeholder = "Number of days"; ObjectID = "Dw4-rU-n26"; */
"\"Dw4-rU-n26.placeholder\" = \"Number of days\";

/* Class = "UINavigationItem"; title = "Tingo"; ObjectID = "Jiv-Iz-0W5"; */
"\"Jiv-Iz-0W5.title\" = \"Tingo\";

/* Class = "UITextField"; placeholder = "Neighbor's name"; ObjectID = "QPo-SA-DC5"; */
"\"QPo-SA-DC5.placeholder\" = \"Neighbor's name\";

/* Class = "UIButton"; normalTitle = "Promised to return!"; ObjectID = "X1W-IC-AM8"; */
"\"X1W-IC-AM8.normalTitle\" = \"Promised to return!\";

/* Class = "UITextField"; placeholder = "Number of items"; ObjectID = "jxX-iX-dDm"; */
"\"jxX-iX-dDm.placeholder\" = \"Number of items\";

/* Class = "UITextField"; placeholder = "Item"; ObjectID = "npm-hn-cxa"; */
"\"npm-hn-cxa.placeholder\" = \"Item\";

/* Class = "UILabel"; text = "Title"; ObjectID = "oXL-mC-3oK"; */
"\"oXL-mC-3oK.text\" = \"Title\";
```

iPhone 6s - iPhone 6s / iOS 9.3 (13E230)

Carrier 3:19 PM

[Cancel](#) **Add a note**

Neighbor's name

Item

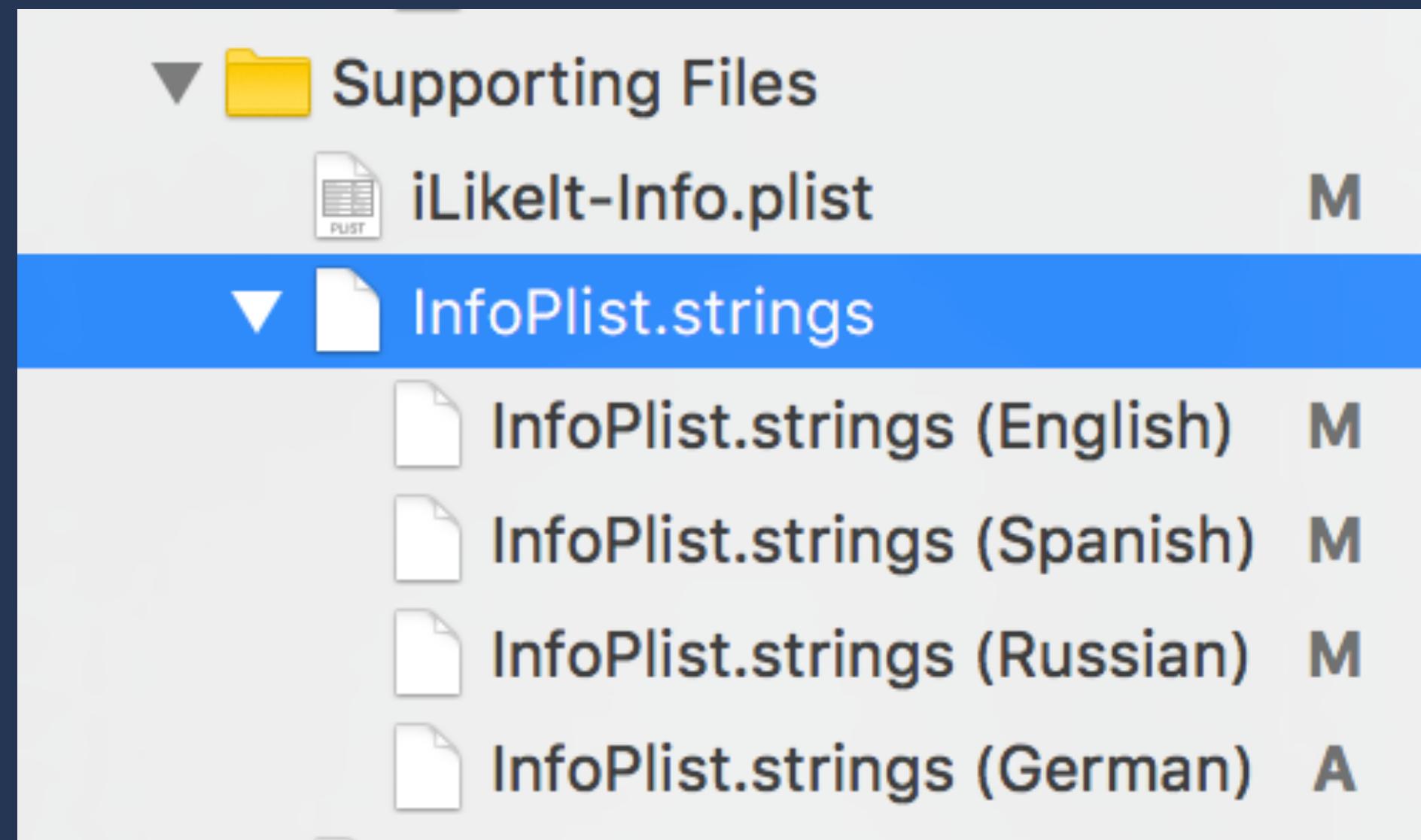
Number of items

Number of days

Promised to return!

InfoPlist.Strings

You can specify localized names for your app



/* Localized versions of Info.plist keys */

"CFBundleDisplayName" = "Me Gusta";

/* Localized versions of Info.plist keys */

"CFBundleDisplayName" = "Mhe Hpa";



Dev Comments

Dev Comments

- Button vs. label
- Approx. or max. length
- Use single quotation marks or params for placeholders

```
/* Navigation bar title for Notifications settings screen.*/
"Notifications" = "알림";
```

```
/* The user can choose to sort search results for channels, users, or videos by Popularity.*/
"Popularity" = "인기도";
```

```
/* Param 1: current page; Param 2: total count */
“currentPage.results.label” = “Showing %1d out of %2d results”; // “Showing 6 out of 12 results”
```

NSNumberFormatter

- Strings with numbers (number of users, followers, search results, etc.)
- Decimal, thousands separator, currency, and percentage symbols.
- Currency

For example, the number 1,234.56 is formatted as 1.234,56 in Italy.

Use the NSNumberFormatter class to create localized string representations of NSNumber objects.

NSNumberFormatter

```
let numberFormatter = NSNumberFormatter()  
numberFormatter.numberStyle = .CurrencyStyle  
numberFormatter.currencyCode = "EUR"  
let cashString = numberFormatter.stringFromNumber(3.50) // 3.50€ or €3.50, depending on locale
```

```
let numberFormatter = NSNumberFormatter()  
numberFormatter.numberStyle = .CurrencyStyle  
numberFormatter.currencyCode = "EUR"  
let cashString = numberFormatter.stringFromNumber(3.50)  
// 3.50€ or €3.50, depending on locale
```

Plurals

Wrong approach

```
if n == 1 {  
    secondString = “\n) second”  
}  
else {  
    secondString = “\n) seconds”  
}
```

.stringsdict

Handling Noun Plurals and Units of Measurement

- // NSLocalizedString

```
localizedString = [NSString stringWithFormat:NSLocalizedString(@"%@", file(s) remaining", @"Message shown for remaining files"), count];
```

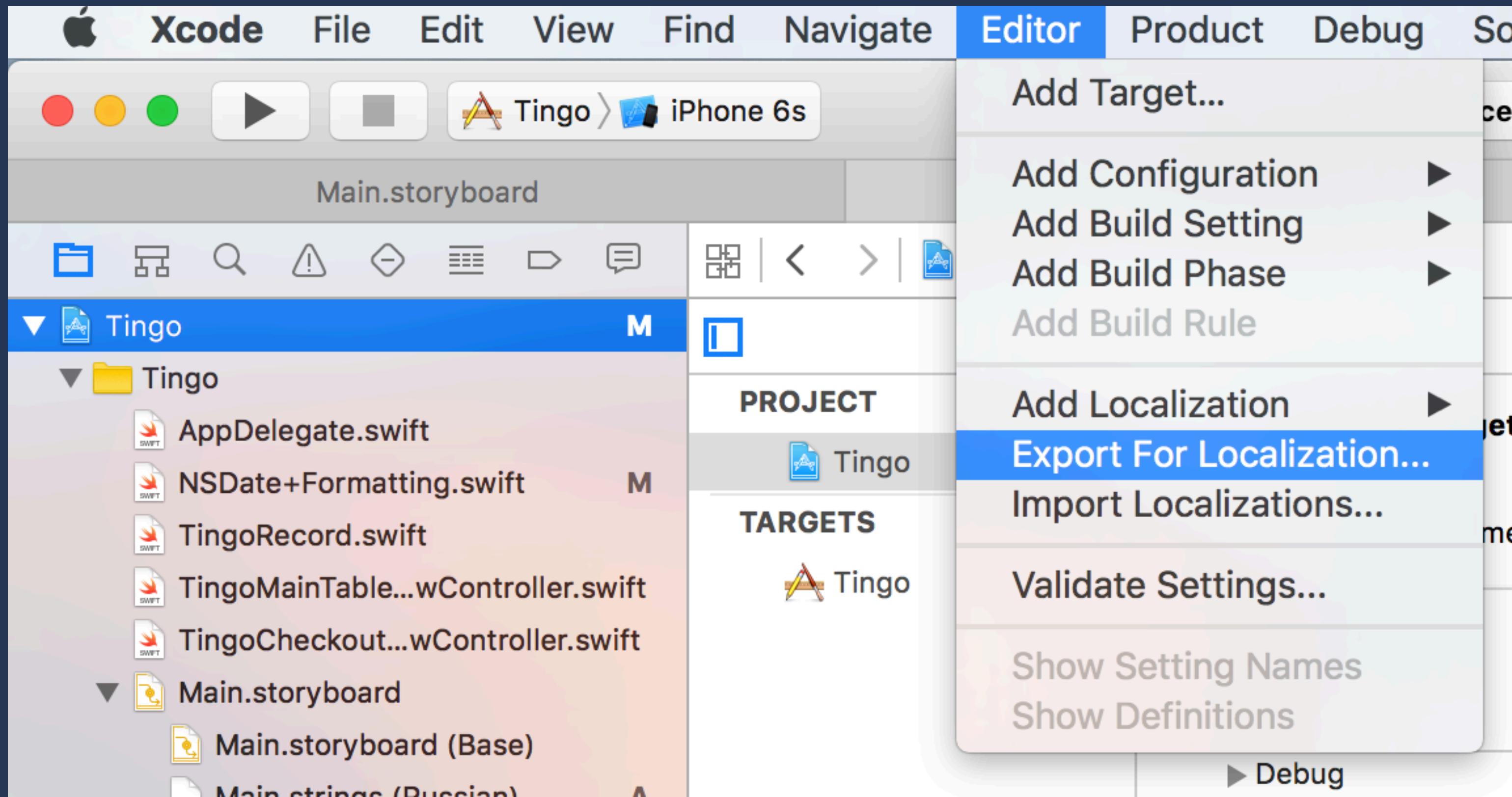
- // in Localizable.strings file

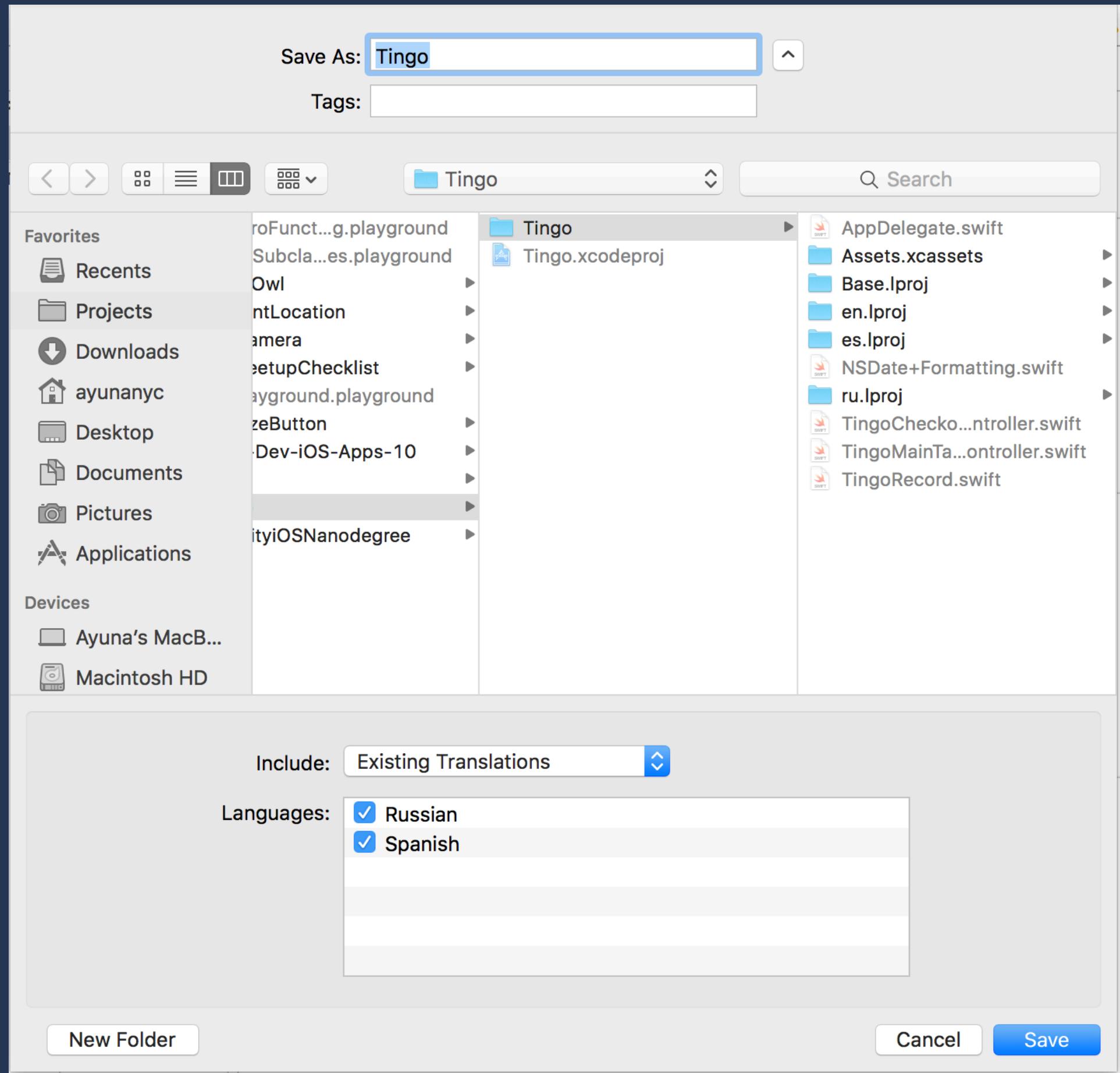
```
/* Message shown for remaining files */  
"%d file(s) remaining" = "%d file(s) remaining";
```

- Create a .stringsdict property list file and localize it for each language that has different plural rules.
- Add the language-specific plural rules to each .stringsdict file.

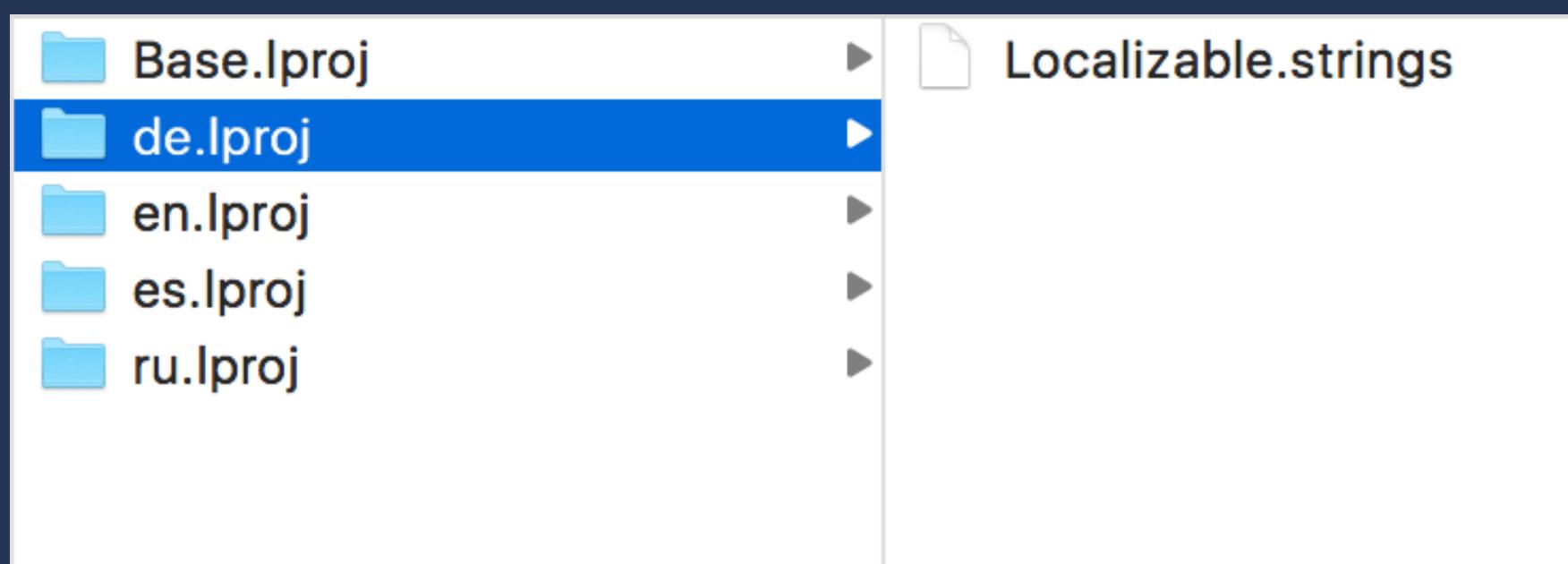
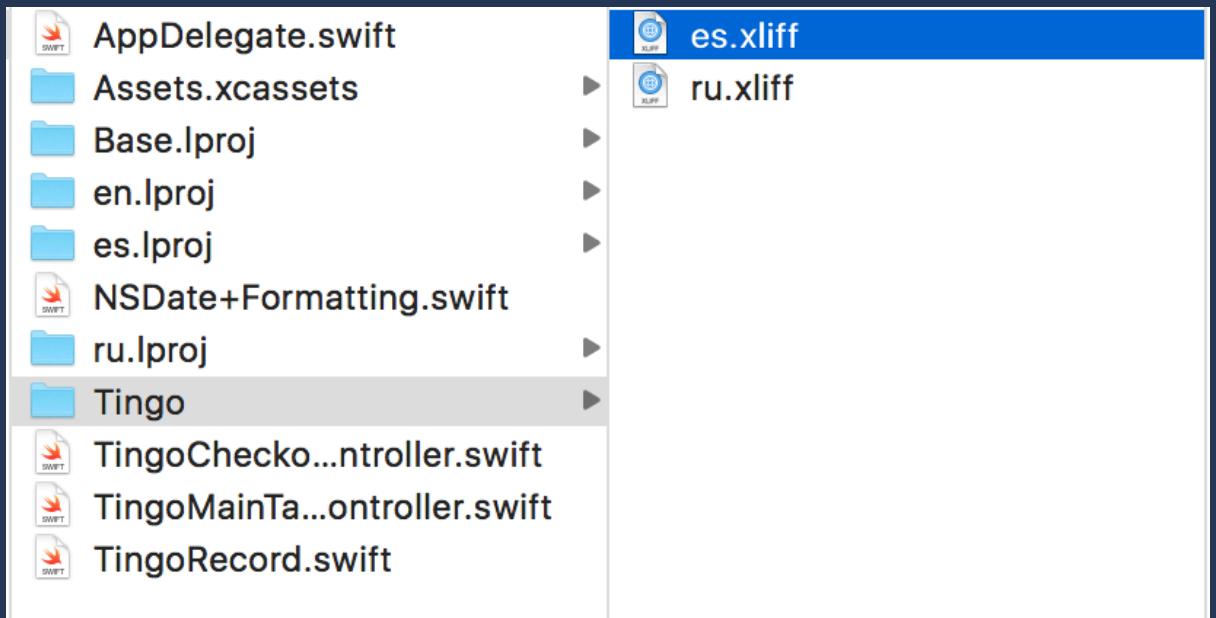
```
<plist version="1.0">
  <dict>
    <key>%d file(s) remaining</key>
    <dict>
      <key>NSStringLocalizedFormatKey</key>
      <string>%#@files@</string>
      <key>files</key>
      <dict>
        <key>NSStringFormatSpecTypeKey</key>
        <string>NSStringPluralRuleType</string>
        <key>NSStringFormatValueTypeKey</key>
        <string>d</string>
        <key>one</key>
        <string>Остался %d файл</string>
        <key>many</key>
        <string>Осталось %d файлов</string>
        <key>other</key>
        <string>Осталось %d файла</string>
      </dict>
    </dict>
  </dict>
</plist>
```

**Export strings
&
Send to translators**





.xliff or Localizable.strings



Translations

Translations

- Internal
- External
- Apple
- Style Guide
- Yourself

Resources: [iOS Glossary](#) - common translations for iOS terms
(Settings, Tap, etc.)

Nota Bene!

- Tell translators to follow the original capitalization & punctuation.
- If working with Smartling, be careful with translation memory smart matching. Some string won't show up.

Original:

Download only via WiFi

Translation:

Nur mit WLAN herunterladen.

[ISSUES](#) [INSTRUCTIONS](#) [HISTORY](#)

There are no open issues for this string [Open New Issue](#)

 TRANSLATION
Review Translation

Ayuna Vogel Is the period at the end of this string intentional? It's not consistent with other settings titles in the Settin... CLOSED

Test: Pseudo-Localization

**Xcode**

File

Edit

View

Find

Navigate

Editor

P



-  Vimeo
-  Vimeo Enterprise

Run

**Vimeo**

External Libraries

Frameworks

Products

Submodules

Vimeo

Application

Categories

Controllers

- Edit Scheme...**
- New Scheme...
- Manage Schemes...



neo ◆

Deployment Target

iOS Deployment

Configurations

Name

► **Build**
2 targets

► **Run Debug**

► **Test**
Debug

► **Profile**
Debug

► **Analyze**
Debug

► **Archive**
Release

	Info	Arguments	Options	Diagnostics
Core Location	<input checked="" type="checkbox"/> Allow Location Simulation			
Default Location	<input type="text"/> None			
Application Data	<input type="text"/> None			
Routing App Coverage File	<input type="text"/> None			
Background Fetch	<input type="checkbox"/> Launch due to a background fetch event			
Localization Debugging	<input type="checkbox"/> Show non-localized strings			
Application Language	<input type="text"/> Double Length Pseudolanguage			
Application Region	<input type="text"/> System Region			
XPC Services	<input type="checkbox"/> Debug XPC services used by this application			
Queue Debugging	<input checked="" type="checkbox"/> Enable backtrace recording			

[Duplicate Scheme](#)[Manage Schemes...](#) Shared[Close](#)

Trump

C~~~á~ñc~~~é~

V~~~Í~DÉ~~~Ó~S | C~~~H~Á~ÑÑ~~~... | P~~~É~ÓP~~~L~É

9.2k r~~~é~s~ú~~|~t~s

R~~~É~FÍ~~~Ñ~É



TRUMP RALLY

Sean Dunne

214k plays · 6

m~~~ó~ñ~th~~~s ~á~gó

21:26



Mac Miller - Donald Trump

Ian Rex Arrow Wolfson

41.6k plays · 5

ý~~~é~á~r~~s ~á~gó

TRUMP REMIX

Eclectic Method

9.2k plays · 7

m~~~ó~ñ~th~~~s ~á~gó

2:30



Topless Women Talk Trump

Ben W

10.7k p

m~~~ó~

1:26

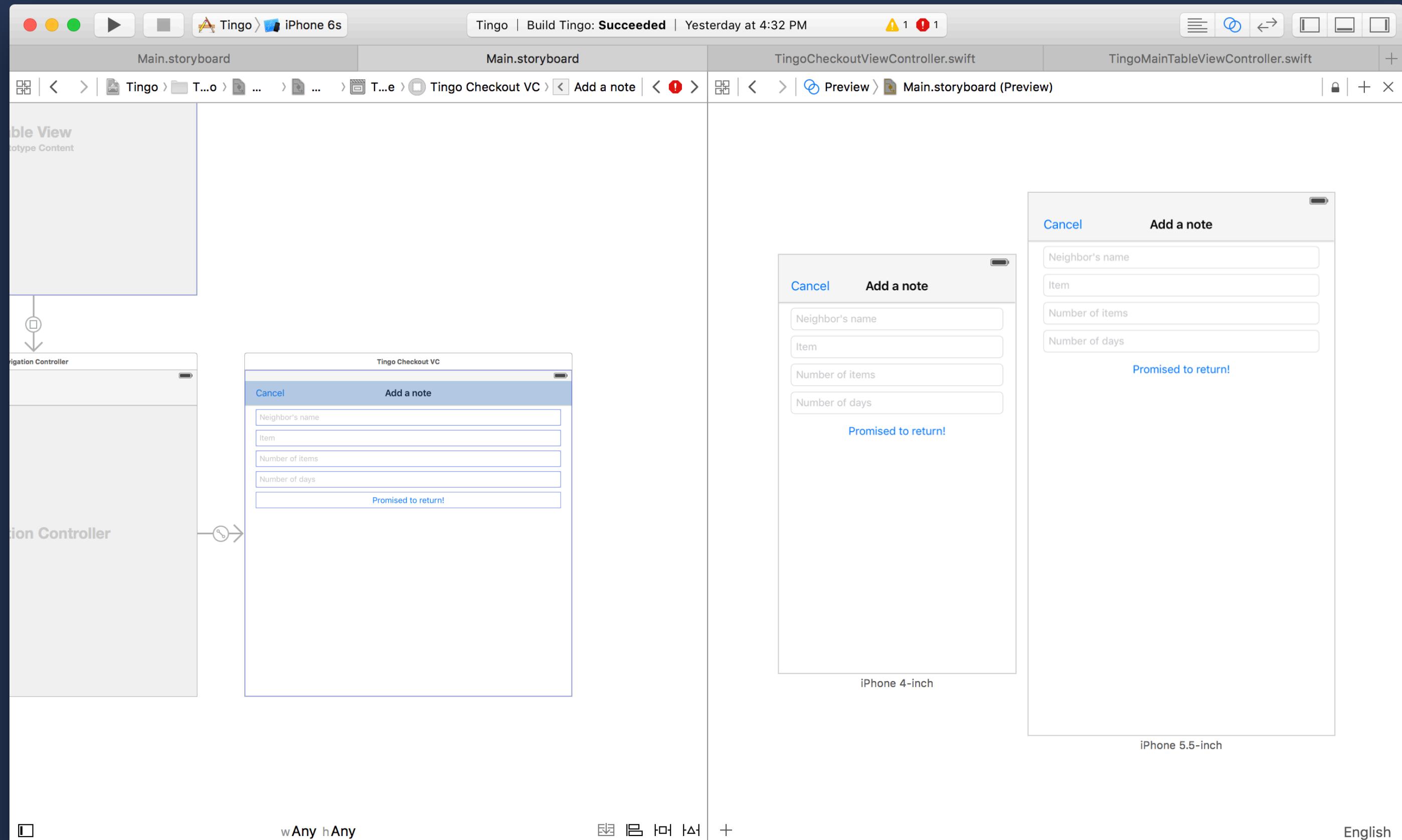


Detect Auto Layout Bugs

- Detect Auto Layout problems and non-localized strings
- As a rule, non-English languages are 30% longer, so small buttons and titles may not fit when you localize
- Test on iPhone 4s
- Simulate right-to-left languages if internationalizing/localizing app for right-to-left languages

Fix Auto Layout Bugs

- Test with Double Length Pseudolanguages
- Adjust based on the length of the strings
- Preview in Assistant Editor



Specify territories in iTunes Connect

- Before you submit your localized app to the App Store, add territories and localize your metadata using iTunes Connect.
- You should localize your app description. Also, make sure you have a list of search keywords for localization. They will help users find your app while searching its localized version in the App Store.

iPhone 6s - iPhone 6s / iOS 9.3 (13E230)

Carrier 4:55 PM

Explorer

CATÉGORIES

Tout voir >

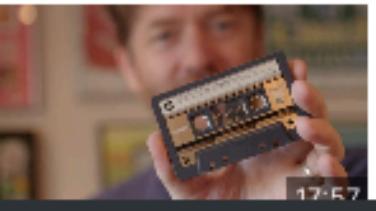
- Fiction
- Arts et design
- Sports
- P

- Animation
- Musique
- Caméras et techniques

STAFF PICKS

Tout voir >

- 

Bosco Rogers - Beach! Beach! Beach! (Officiel...
Bosco Rogers
2.7k lectures · Il y a 1 mois
2:34
- 

CALLS TO OKIES: The Park Grubbs Story
The Bear
2.4k lectures · Il y a 1 an
17:57

v 🌐 📄 😊 ☁

iPhone 6s - iPhone 6s / iOS 9.3 (13E230)



0:55 7:05

FriendSheep

272k lectures · Il y a 4 ans

PrimerFrame **PLUS**
122 vidéos · 122 abonnés [+ Suivre](#)

À VENIR 71 COMM. 2522 J'AIME

D'AUTRES VIDÉOS DE VOTRE RECHERCHE

- 

Making Of de FriendSheep
PrimerFrame
8.7k lectures · Il y a 4 ans
22:44
- 

Teaser Trailer de FriendSheep
PrimerFrame
2.9k lectures · Il y a 5 ans
1:01

Resources

Documentation

iOS Developer Library - [Internationalization and Localization Guide](#)

WWDC Videos

WWDC 2016: [Internationalization Best Practices](#)

WWDC 2014: [Localizing with Xcode](#)

Tutorials

[https://www.raywenderlich.com/64401/internationalizationtutorialforios2014](https://www.raywenderlich.com/64401/internationalization-tutorial-for-ios-2014)

[https://www.oneskyapp.com/academy/learnioslocalization/](https://www.oneskyapp.com/academy/learn-ios-localization/)

<http://blog.localize.io/step-by-step-ios-localization-tutorial/>