

Automation for Localization

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🍕🍕🍕 Deep Dish Swift, May 2024 🍕🍕🍕

About Me



Nara
奈良



nippon.com





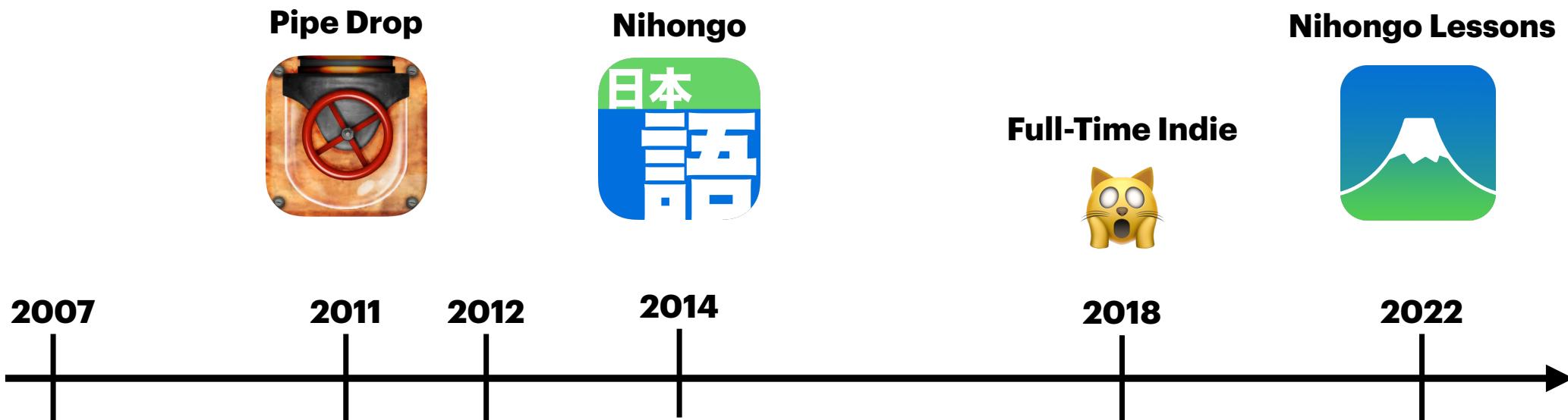
Sento-kun



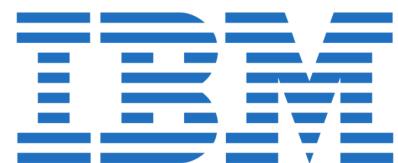
Swifzza-kun

Indie Dev Journey

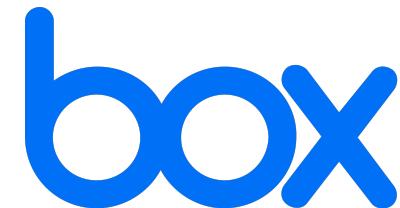
Indie



BIG FIX



Japanese
Language
School

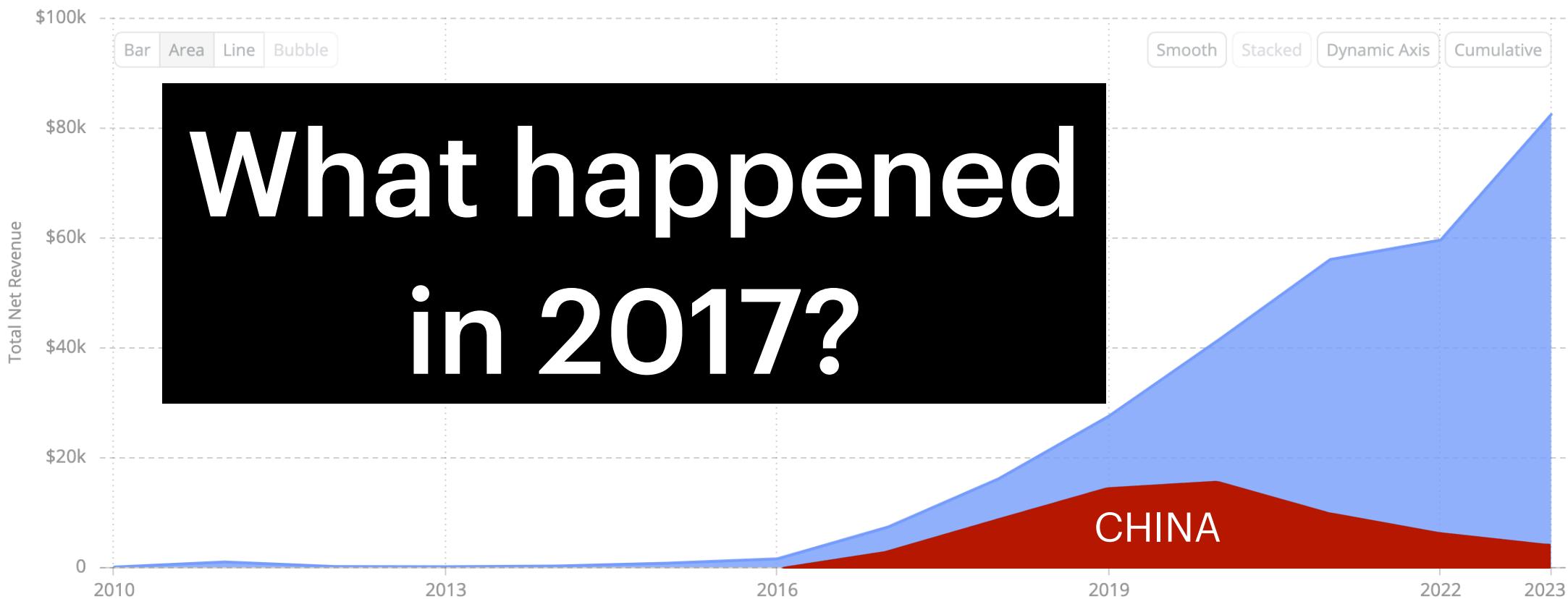


Employment

Indie



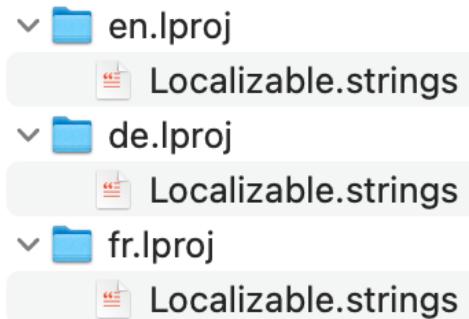
Indie



Localization

- Making your app work as expected in different countries/regions/languages.
- **Translation, layout, and behavior** in different languages/regions.

Localization .strings Files



en (English)

```
/* Text on the button that when tapped will download new language packs. */
"DOWNLOAD" = "DOWNLOAD";
```

de (German)

```
/* Text on the button that when tapped will download new language packs. */
"DOWNLOAD" = "HERUNTERLADEN";
```

fr (French)

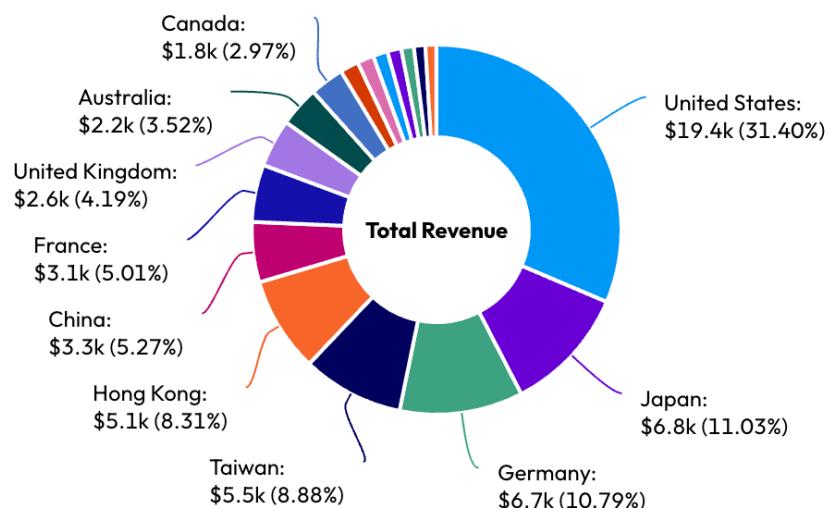
```
/* Text on the button that when tapped will download new language packs. */
"DOWNLOAD" = "TÉLÉCHARGER";
```

Nihongo Supported Languages

- English
- German
- French
- Spanish
- Dutch
- Simplified Chinese
- Traditional Chinese
- Russian

Why Localize?

Nihongo Revenue



Primarily English-Speaking Countries: 39%

Primarily Non-English-Speaking Countries: 61%

Revenue in 1st year after localizing

	Year Before Localization		Year After Localization
Germany	\$157	+355%	\$716
China	\$2.5K	+288%	\$10k
Mexico	\$69	+174%	\$189
Spain	\$0	+++	\$202
France	\$234	+214%	\$737
Taiwan	\$83	+909%	\$844
Hong Kong	\$486	+139%	\$1.2K
Russia	\$103	+423%	\$541
Netherlands	\$221	+3%	\$228

Localization Tasks

Every Release

1. Translate strings
2. SHIP IT!

Localization Tasks

Every Release

1. Generate screenshots to assist translators
2. Translate new strings
3. Verify layout/correctness of translated strings
4. Generate App Store screenshots
5. Translate release notes

Localization Tasks

Every Release

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Translation Tip 1

Take advantage of all types of translation

Types of Translation

- **Professional Translation**
 - Paying translation company to translate
- **Machine Translation**
 - Google Translate, etc.
- **Crowd Translation**
 - Using your social network to provide translations

Translation Types

Professional
Translation

Translation Types

	Quality	Speed	Cost	Volume
Professional Translation	High	Slow	High	High
Machine Translation				

Translation Types

	Quality	Speed	Cost	Volume
Professional Translation	High	Slow	High	High
Machine Translation	Low	Fast	Low	Very High
Crowd Translation				

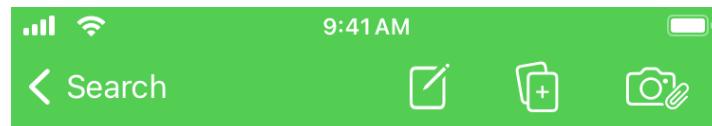
Translation Types

	Quality	Speed	Cost	Volume
Professional Translation	High	Slow	High	High
Machine Translation	Low	Fast	Low	Very High
Crowd Translation	High	Fast	None	Low

Translation Types

When to Use

- **Professional Translation**
 - Interface Strings, App Description, Marketing
- **Machine Translation**
 - In-App Content, Release Notes
- **Crowd Translation**
 - Special Circumstances



あさ
朝



COMMON

Adverb · Noun

MEANING

morning

KANJI

朝 [morning, dynasty, regime, epoch, per...](#) >

NOTES

Add Note

EXAMPLES

あさ
もう朝なの？



Is it morning already?



Search



Clippings



Flashcards



Settings

Professionally Translated

Interface Strings

Database-Sourced

Content Strings





**Machine Translated
Content Strings**

with corresponding English

and tagging as machine-translated

Professional Translation

Babble-on

- \$0.22/word (minimum 100 per request)
- Nihongo has about 5000 words, plus 500 words in app description
- ~\$1200/language

ibabbleon.com



Human-first translation
AI when you need it

The tech leader in localization for 20+ years.
We can help automate your localization process from start to finish,
with or without AI

Machine Translation

Using Microsoft Translator

- \$10/million characters
- Nihongo database content: about 1,000,000 words (10 million characters)
- Professional translation cost: \$220,000/language
- Machine translation cost: \$100/language

Crowd Translation



Chris Vasselli
@chrisvasselli

Would anyone mind helping out with a translation for a last minute New Years promo? 🙏

"Happy New Year! In celebration of the new year, flashcards and clippings will be FREE until January 31."

Looking for Spanish, French, German, Dutch, Chinese (simp + trad), and Russian!



11:43 PM · Dec 31, 2021



OlgaReutelingsperger @OlgaReut · Jan 1, 2022

Gelukkig nieuwjaar! Om het nieuwe jaar te vieren, zijn flash cards en clippings gratis tm 31 januari.

Good luck with the promo!

1

1

1

1

1



Bruce Halperin ✅ @BruceHalperin · Jan 1, 2022

Spanish: "¡Feliz Año Nuevo! En celebración del año nuevo, los flashcard y los recortes serán GRATIS hasta el 31 de enero."

2

1

1

1

1



Marie - Girl Knows Tech @girlknowstech · Jan 1, 2022

Bonne année!

Pour célébrer la nouvelle année, les flashcards et les clippings sont gratuits jusqu'au 31 janvier.

I use flashcard in familiar French, and I don't know how to translate clippings, not sure what it refers to? 😊

1

1

2

1

1

Translation Tip 2

Make sure your professional translation service is integrated with your git repo.



Home

To Do

Managers

Translation Memories

Glossaries

Machine Translation

Vendors

Store

Projects

Nihongo

+ Create new project

babbleon / Nihongo

Private

Search projects

Dashboard Sources Translations Screenshots Tasks Members Integrations Reports Activity Discussions Tools Settings

← Integrations

GitHub

GitHub

Millions of developers use GitHub to build personal projects, support their businesses, and work together on open source technologies. Use this integration to sync your repository with Crowdin project.

Detailed Information

Use personal access token (optional)

Search repository

+ Add Repository ▾

chrisvasselli / SerpentiSei CONNECTED

Configuration

Issues



Pause Sync

Edit

Delete Integration

Sync Now



Branch

Last sync

Status

master

Feb 27, 2024 04:58



Translation Tip 3

Generate strings files from your code as part of Continuous Integration.

Generating strings files from code

```
% genstrings WordEntryViewController.swift
```

```
NSLocalizedString("Meanings", comment: "Header above word definitions")
```

WordEntryViewController.swift

```
/* Header above word definitions */
"Meanings" = "Meanings";
```

Localizable.strings

Generating strings files from code

```
% genstrings -SwiftUI KanjiView.swift
```

```
Text("Stroke Count", comment: "Label below a number indicating the number of  
strokes in a kanji.")
```

KanjiView.swift

```
/* Label below a number indicating the number of strokes in a kanji. */  
"Stroke Count" = "Stroke Count";
```

Localizable.strings

Generating strings files from code

```
# Generate Localizable.strings

% find ./ -type f \( -iname \*.m -o -iname \*.swift \| \)
-print0 | xargs -0 genstrings -SwiftUI -a
```

Translation Tip 4

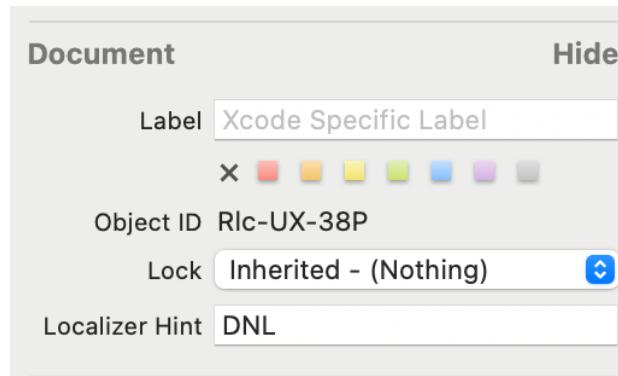
Generate strings files from storyboards as part of your Continuous Integration.

Generating strings files from storyboards

```
ibtool --export-strings-file "nihongo.strings" "nihongo.storyboard"
```

Generating strings files from storyboards

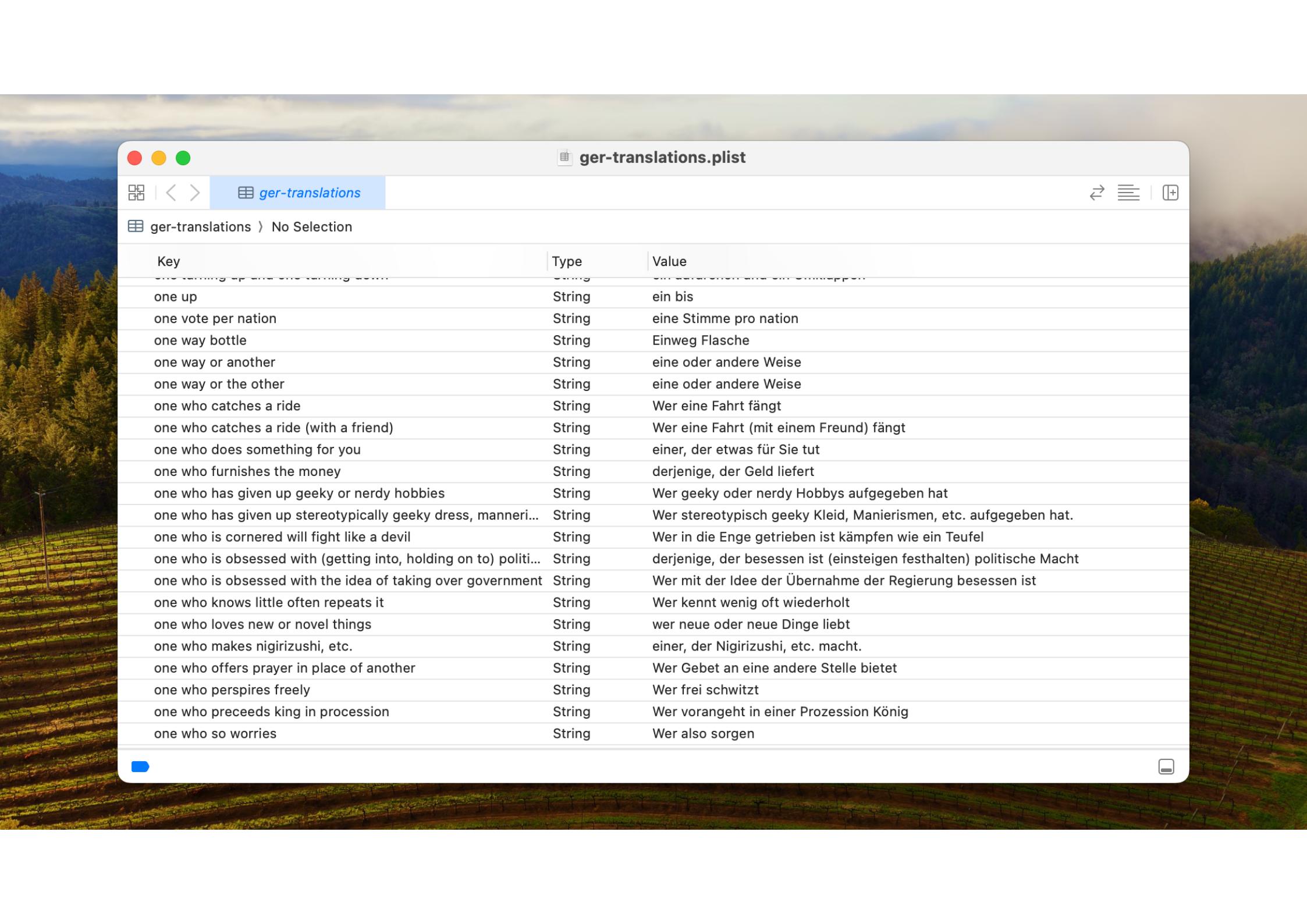
Marking strings that don't need localization



```
perl -0777 -i -pe 's/\/*.+Note = \"DNL\".+\\n.+\\n(?:\\n|$)//ig' \
"nihongo-utf8.strings"
```

Translation Tip 5

**Machine translate new strings as part of
Continuous Integration (and save them!)**



A screenshot of a Mac OS X application window titled "ger-translations.plist". The window displays a table of German idiomatic expressions and their English translations. The columns are "Key" (the expression), "Type" (String), and "Value" (the translation). The table includes entries like "one up" (ein bis), "one vote per nation" (eine Stimme pro nation), and "one who catches a ride" (Wer eine Fahrt fängt).

Key	Type	Value
one up	String	ein bis
one vote per nation	String	eine Stimme pro nation
one way bottle	String	Einweg Flasche
one way or another	String	eine oder andere Weise
one way or the other	String	eine oder andere Weise
one who catches a ride	String	Wer eine Fahrt fängt
one who catches a ride (with a friend)	String	Wer eine Fahrt (mit einem Freund) fängt
one who does something for you	String	einer, der etwas für Sie tut
one who furnishes the money	String	derjenige, der Geld liefert
one who has given up geeky or nerdy hobbies	String	Wer geeky oder nerdy Hobbys aufgegeben hat
one who has given up stereotypically geeky dress, manneri...	String	Wer stereotypisch geeky Kleid, Manierismen, etc. aufgegeben hat.
one who is cornered will fight like a devil	String	Wer in die Enge getrieben ist kämpfen wie ein Teufel
one who is obsessed with (getting into, holding on to) politi...	String	derjenige, der besessen ist (einsteigen festhalten) politische Macht
one who is obsessed with the idea of taking over government	String	Wer mit der Idee der Übernahme der Regierung besessen ist
one who knows little often repeats it	String	Wer kennt wenig oft wiederholt
one who loves new or novel things	String	wer neue oder neue Dinge liebt
one who makes nigirizushi, etc.	String	einer, der Nigirizushi, etc. macht.
one who offers prayer in place of another	String	Wer Gebet an eine andere Stelle bietet
one who perspires freely	String	Wer frei schwitzt
one who preceeds king in procession	String	Wer vorangeht in einer Prozession König
one who so worries	String	Wer also sorgen

Translation Tip 6

Generate your app descriptions from a shared file.

Generating app descriptions based on language

English

Nihongo is an offline Japanese dictionary, flashcard app, and reading assistant, designed to make the best use of the time you dedicate to studying Japanese.

Over 180,000 words and 6000 kanji entries.

...

Generating app descriptions based on language

German

Nihongo is an offline Japanese dictionary, flashcard app, and reading assistant, designed to make the best use of the time you dedicate to studying Japanese.

Over 115,000 native German definitions and 6000 kanji entries.

...

Generating app descriptions based on language

app_description_source.txt

Nihongo is an offline Japanese dictionary, flashcard app, and reading assistant, designed to make the best use of the time you dedicate to studying Japanese.

<en>* Over 180,000 words and 6000 kanji entries.</en>

<de>* Over 115,000 native German definitions and 6000 kanji entries.</de>

<https://gist.github.com/chrisvasselli/51460cfee92ec3413de5ffe4b4b91460>

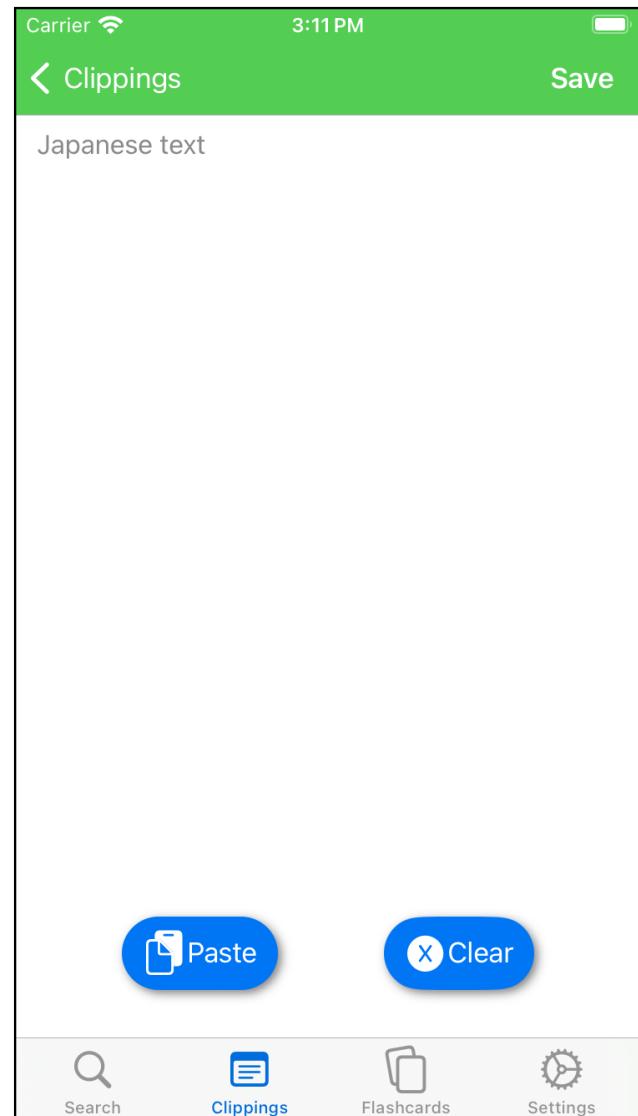


Translation Tip 7

Use Apple's translations for standard OS terminology.

Using Apple's Translations

- Use Apple's strings for common system vocabulary.
- Supply these strings directly, don't ask for professional translation.



Using Apple's Translations



<https://developer.apple.com/download/all/?q=glossaries>



Using Apple's Translations

```
./glossary-lookup Paste
```

German

12 Einsetzen

Italian

12 Incolla

Russian

11 Вставить

1 вставку

[https://gist.github.com/chrisvasselli/
84e0201b667acba9f9cb95837ada76d7](https://gist.github.com/chrisvasselli/84e0201b667acba9f9cb95837ada76d7)



Translate New Strings

build_localizations.sh

[https://gist.github.com/chrisvasselli/
ec080640052f24c53d65429654e50aba](https://gist.github.com/chrisvasselli/ec080640052f24c53d65429654e50aba)



Localization Tasks

Every Release

1. Generate screenshots to assist translators
- 2. Translate new strings**
3. Verify layout/correctness of translated strings
4. Generate App Store screenshots
5. Translate release notes

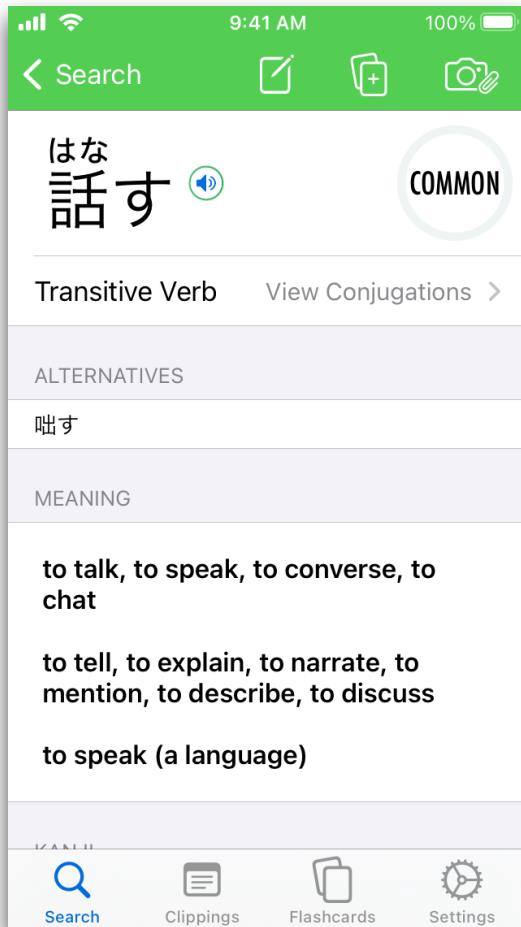
Localization Tasks

Every Release

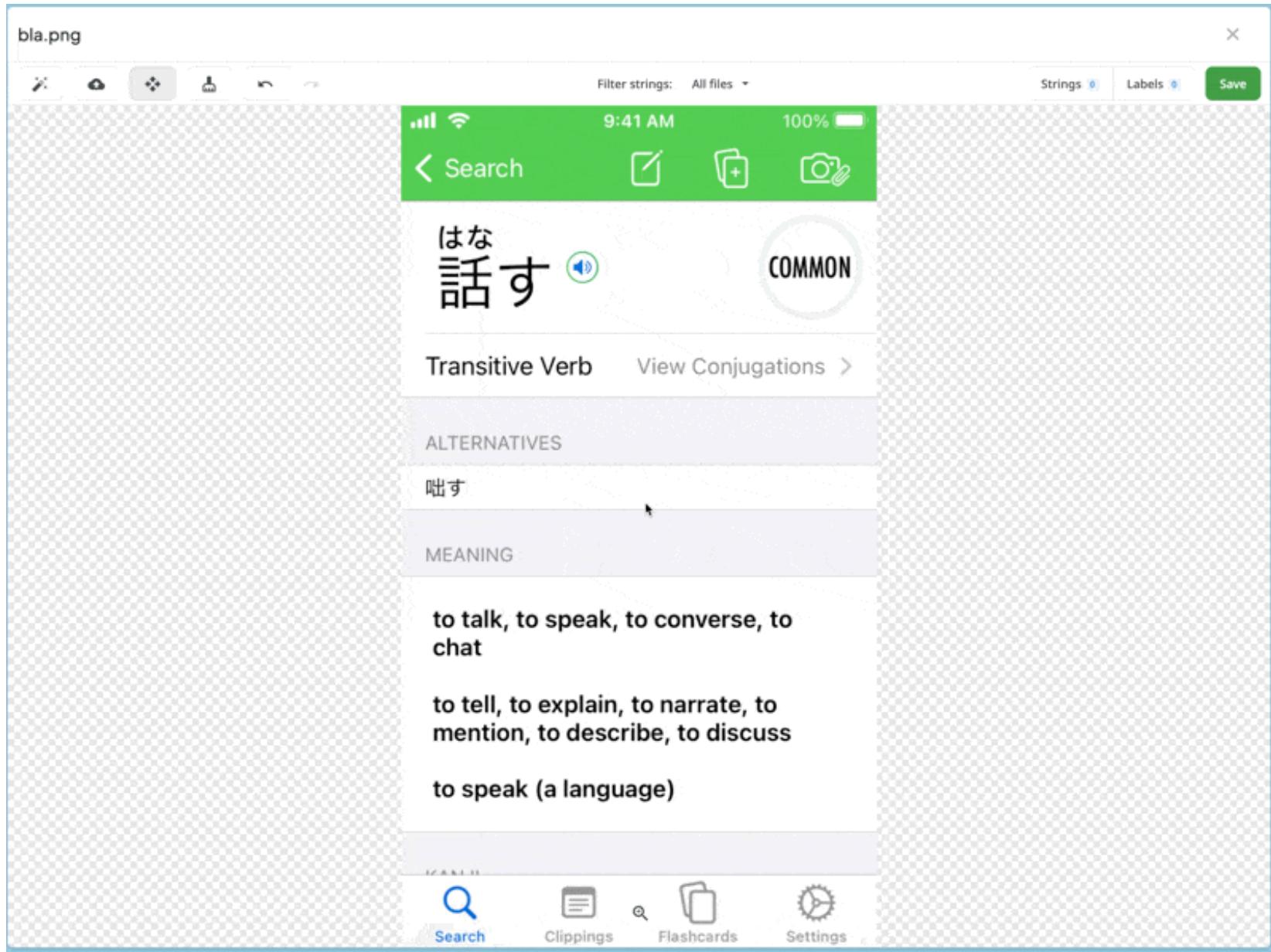
- 1. Generate screenshots to assist translators**
2. Translate new strings
- 3. Verify layout/correctness of translated strings**
4. Generate App Store screenshots
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Create screenshots for translators

```
class WordEntryUITests: XCUITest {
    func testLocalization() {
        navigateToWordEntry(for: "話す")
        XCUIScreen.main.screenshot().image.pngData()!.write(to: outputURL)
    }
}
```



English





German



German

Localization Tasks

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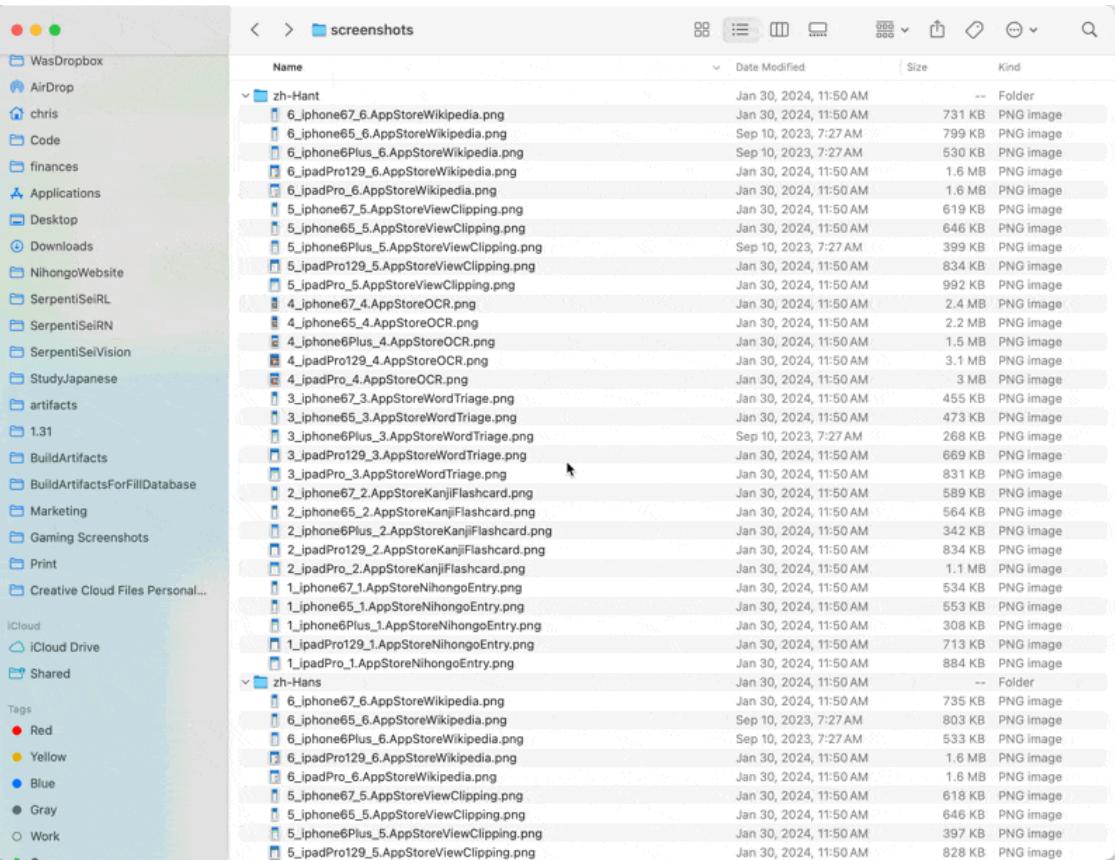
Localization Tasks

Every Release

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The Problem

- 10 screenshots
- (minimum) 4 device types
- 8 languages
- $10 * 4 * 8 = 320$ screenshots



Basic Setup

Fastlane Snapshot + Frameit + Deliver

- Create UI tests that navigate to the screens you want
- Use Fastlane Snapshot to automate taking screenshots in all languages
- Use Fastlane Frameit to put screenshots in device frames and add titles
- Use Fastlane Deliver to upload screenshots to App Store Connect

<https://docs.fastlane.tools/getting-started/ios/screenshots/>



Offline Japanese Dictionary



Read Japanese from your Camera



Generate Flashcards Automatically



Standardizing Status Bar

- `xcrun simctl status_bar`
- If you want to get a localized status bar on iPad, need
SimulatorStatusMagic

[https://github.com/shinydevelopment/
SimulatorStatusMagic](https://github.com/shinydevelopment/SimulatorStatusMagic)



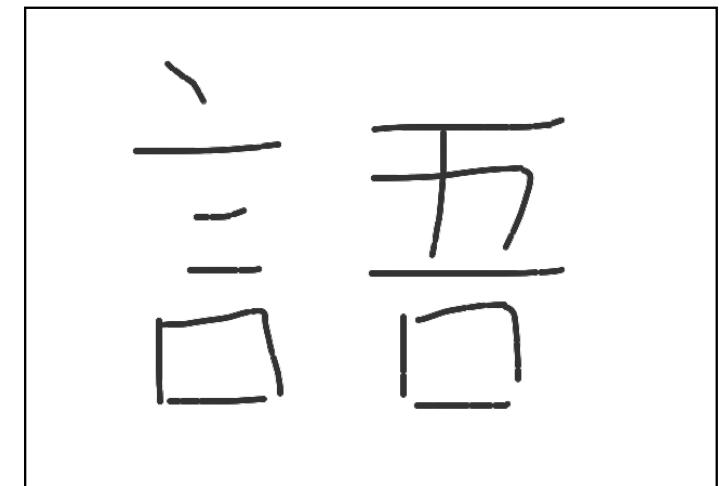
Advanced Setup

when Fastlane doesn't do what you need

and Flashcards



Advanced Setup



and Flashcards



Advanced Setup

Replace FrameIt with ImageMagick

```
mogrify -crop 750x1234+0+0 +repage -crop 750x1123+0+0 +repage -resize 920x1378 +repage
"$file"
composite -gravity south "$file" "../../../../Resources/AppStoreScreenshotBackground.png"
"$file"

automatic_point_size=$(convert -size 1050x300 -background transparent -fill white -font
"../../../../Resources/Fonts/HelveticaNeue-Light.ttf" -gravity center caption:"Add Furigana
or Romaji to Imported Text" -format "%[caption:pointsize]" info:)
if [ "$automatic_point_size" -gt "120" ]; then
    convert -size 1050x300 -pointsize 120 -background transparent -fill white -font
"../../../../Resources/Fonts/HelveticaNeue-Light.ttf" -gravity center caption:"Add Furigana
or Romaji to Imported Text" label.png
else
    convert -size 1050x300 -background transparent -fill white -font
"../../../../Resources/Fonts/HelveticaNeue-Light.ttf" -gravity center caption:"Add Furigana
or Romaji to Imported Text" label.png
fi
composite -gravity north -geometry -0+155 label.png "$file" "$file"
rm label.png
```

<https://imagemagick.org>



Create Postprocessing Script

```
snapshot("AppStoreViewClipping", forSize: .appStoreScreenshot, withStatusBar: true,  
withTabBar: false, embedInAppStoreBackgroundWithText: localized("Add Furigana or Romaji to  
Imported Text"), appStoreScreenshotOrder: 5)
```

Run Shell Scripts After UI Tests

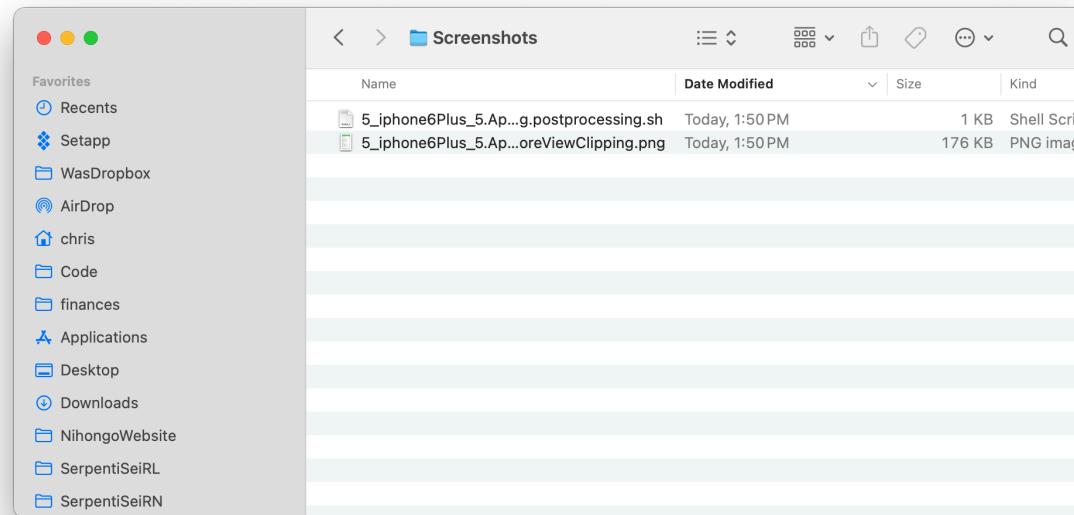


```
./flashcards-postprocessing.sh  
flashcards.png
```



The Simulator is Not Sandboxed!

```
let macUserHomeFolder =  
ProcessInfo().environment["SIMULATOR_HOST_HOME"]
```



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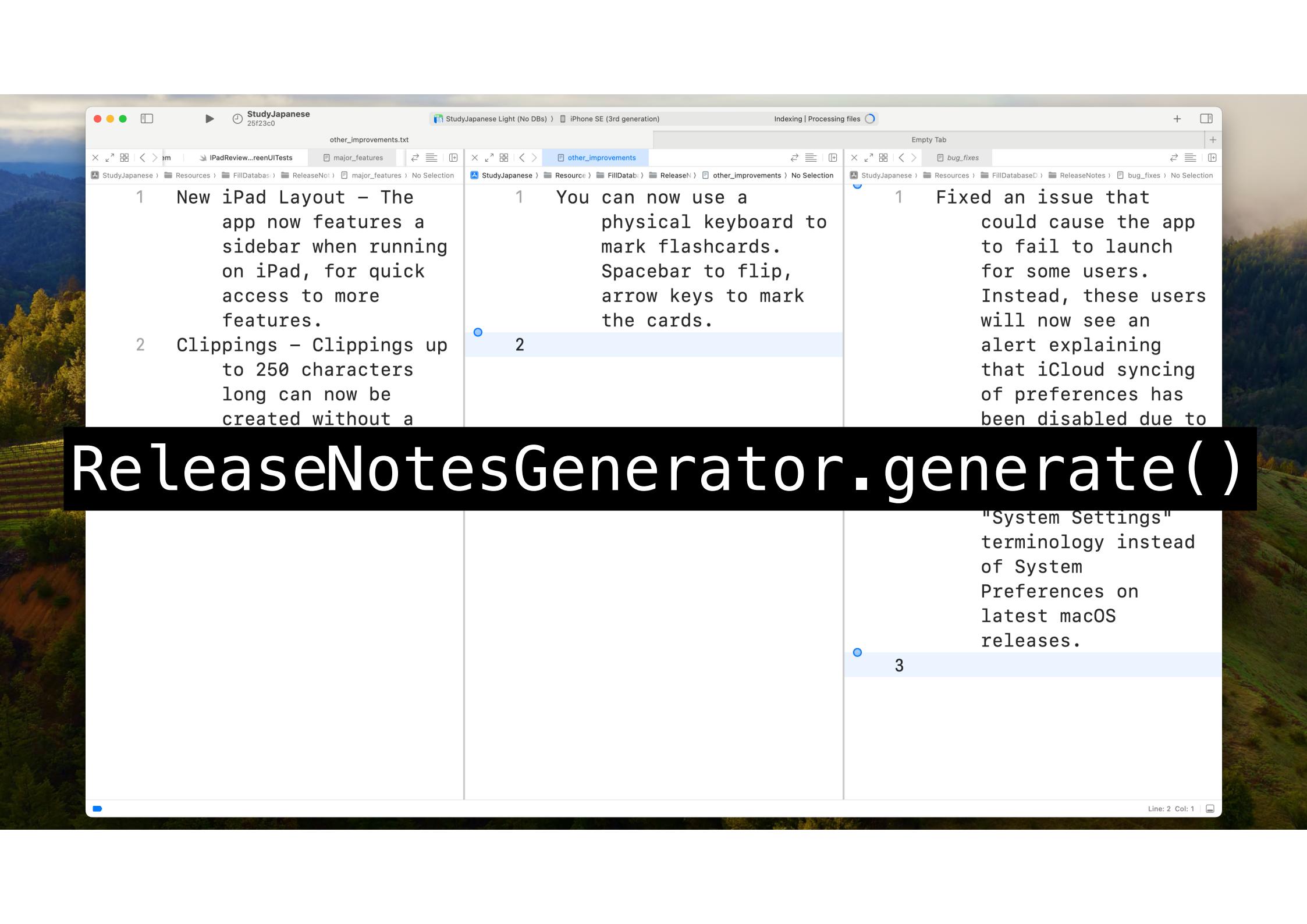
```
release_notes.txt
release_notes ) No Selection

1 Major Features
2 * New iPad Layout – The app now features a sidebar when running on iPad,
   for quick access to more features.
3 * Clippings – Clippings up to 250 characters long can now be created
   without a subscription to Nihongo Pro.

4
5 Other Improvements
6 * You can now use a physical keyboard to mark flashcards. Spacebar to
   flip, arrow keys to mark the cards.

7
8 Bug Fixes
9 * Fixed an issue that could cause the app to fail to launch for some
   users. Instead, these users will now see an alert explaining that
   iCloud syncing of preferences has been disabled due to a bug in iOS.
10 * Updated Apple Silicon Mac version to use "System Settings" terminology
    instead of System Preferences on latest macOS releases.

11 |
```



```
other_improvements.txt
```

1 New iPad Layout – The app now features a sidebar when running on iPad, for quick access to more features.

2 Clippings – Clippings up to 250 characters long can now be created without a

```
other_improvements
```

1 You can now use a physical keyboard to mark flashcards. Spacebar to flip, arrow keys to mark the cards.

2

```
bug_fixes
```

1 Fixed an issue that could cause the app to fail to launch for some users. Instead, these users will now see an alert explaining that iCloud syncing of preferences has been disabled due to

ReleaseNotesGenerator.generate()

"System Settings" terminology instead of System Preferences on latest macOS releases.

3

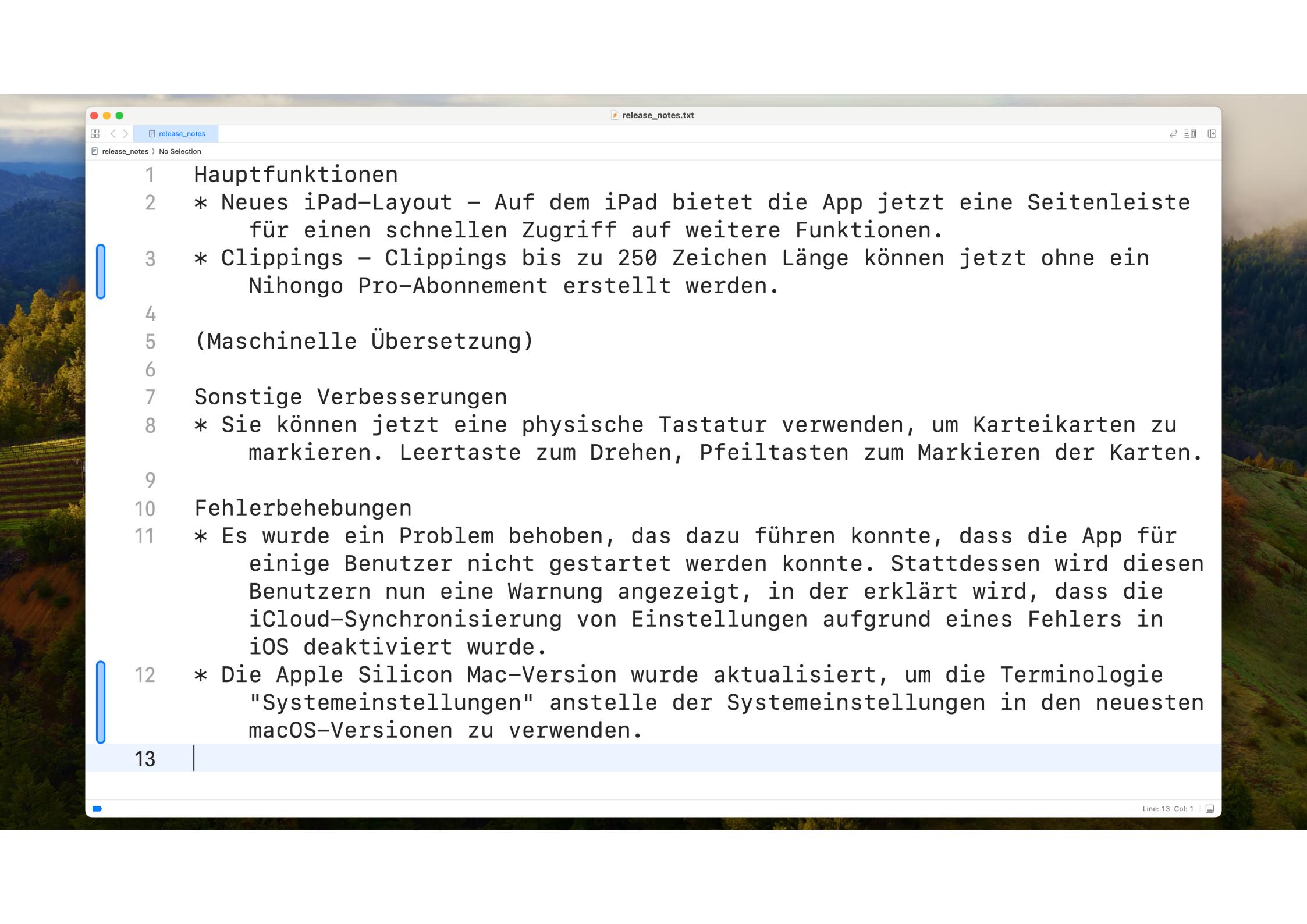
```
release_notes.txt
release_notes ) No Selection

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    instead of System Preferences on latest macOS releases.

11 |
```



release_notes.txt

```
release_notes ) No Selection
```

1 Hauptfunktionen
2 * Neues iPad-Layout – Auf dem iPad bietet die App jetzt eine Seitenleiste
für einen schnellen Zugriff auf weitere Funktionen.
3 * Clippings – Clippings bis zu 250 Zeichen Länge können jetzt ohne ein
Nihongo Pro-Abonnement erstellt werden.

4
5 (Maschinelle Übersetzung)

6
7 Sonstige Verbesserungen
8 * Sie können jetzt eine physische Tastatur verwenden, um Karteikarten zu
markieren. Leertaste zum Drehen, Pfeiltasten zum Markieren der Karten.

9
10 Fehlerbehebungen
11 * Es wurde ein Problem behoben, das dazu führen konnte, dass die App für
einige Benutzer nicht gestartet werden konnte. Stattdessen wird diesen
Benutzern nun eine Warnung angezeigt, in der erklärt wird, dass die
iCloud-Synchronisierung von Einstellungen aufgrund eines Fehlers in
iOS deaktiviert wurde.
12 * Die Apple Silicon Mac-Version wurde aktualisiert, um die Terminologie
"Systemeinstellungen" anstelle der Systemeinstellungen in den neuesten
macOS-Versionen zu verwenden.

13 |

ReleaseNotesGenerator.swift

[https://gist.github.com/chrisvasselli/
7d2baefb72076539f023e7c8834fa384](https://gist.github.com/chrisvasselli/7d2baefb72076539f023e7c8834fa384)



Summary

- Good localization is more than just translating strings!
- It's possible to support lots of high-quality localizations even as an indie developer.
- Most localization tasks can be automated!
- Feel free to use/adapt any of the code shared in this deck.

Thank You!

