

Building React Apps with Internationalization (i18n) in Mind

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Before Software Engineer...

Teacher for 4 years in:

🇹🇼 Taiwan

🇲🇲 Myanmar/Burma

🇯🇵 Japan

🇧🇫 Burkina Faso

(West Africa)



@nae_ohmi



- Agenda:
 - What is i18n
 - Why i18n Matters
 - Tips How to Implement i18n
 - React DEMO
 - Testing - TDD
 - Deploying (CI/CD)
 - Design, Layout, and UX
 - Cultural Considerations



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Put the World in World Wide Web

Process of
translating text from
one language into
another

TRANSLATION

T9N

Process of
translating text from
one language into
another

TRANSLATION
T9N

Process of
translating the
internationalized
app into specific
languages for
particular locales

LOCALIZATION
L10N

Process of translating text from one language into another

TRANSLATION
T9N

Process of translating the internationalized app into specific languages for particular locales

LOCALIZATION
L10N

Process of designing and preparing app to be used within different locales

INTERNATIONALIZATION
I18N

T9N + L10N + I18N = GLOBALIZATION (G11N)

Process of translating text from one language into another

TRANSLATION

T9N

Process of translating the internationalized app into specific languages for particular locales

LOCALIZATION

L10N

Process of designing and preparing app to be used within different locales

INTERNATIONALIZATION

I18N



Hello my name is

Naomi Meyer

First Name / Given
Name

Last Name / Family Name /
Surname

こんにちは私の名前はマイヤーナオミです

नमस्कार, मेरा नाम नेओमी मेर है।

שלום, קוראים לי נעמי מאיר

مرحبا اسمي نعومي ماير

First Name
Last Name

안녕하세요, 제 이름은 마이어나오미입니다

你好，我的名字是欧蜜

```
// userLocale => 'Accept HTTP Header', IP, Regex, OS, Ask User?

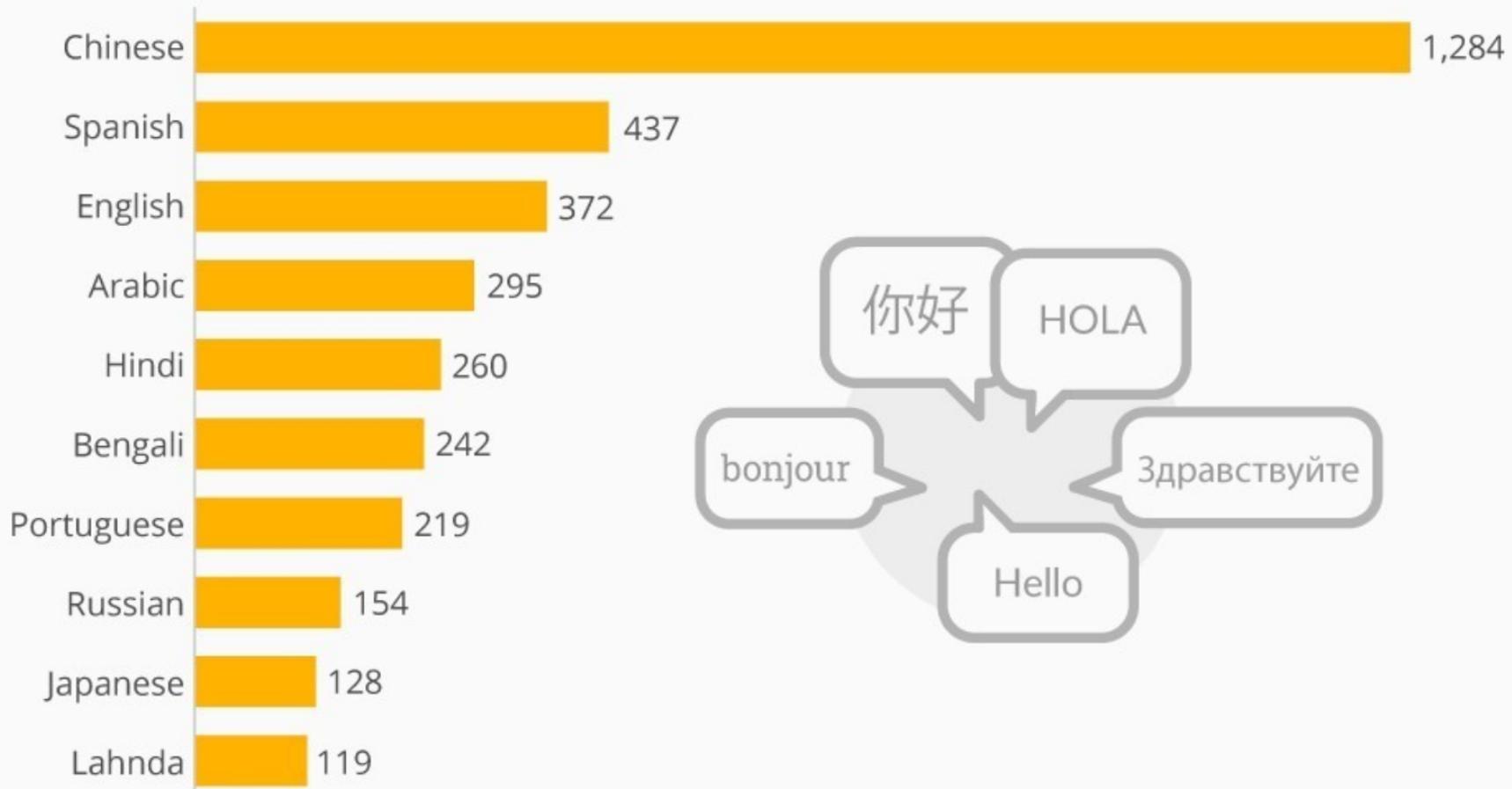
const getNameOrder = (firstName, lastName, userLocale) => {
  if (userLocale.includes(lastNameFirstNameNoSpace)) {
    return `${lastName}${firstName}`; //no space
  } else if (userLocale.includes(lastNameFirstNameWithSpace)) {
    return `${lastName} ${firstName}`; //with space between
  }

  return `${firstName} ${lastName}`;
};

getNameOrder("桃井", "はるこ", ja-JP);
// 桃井はるこ 👍
```

The World's Most Spoken Languages

Estimated number of first-language speakers worldwide in 2017 (millions)*



* Each language also includes associated member languages and varieties

Source: Ethnologue

statista



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Translating the React App

既に学んだ通り、ひとつのコンポーネント内で複数の state や副作用を使うことができます。

```
function Form() {
  // 1. Use the name state variable
  const [name, setName] = useState('Mary');

  // 2. Use an effect for persisting the form
  useEffect(function persistForm() {
    localStorage.setItem('formData', name);
  });

  // 3. Use the surname state variable
  const [surname, setSurname] = useState('Poppins');

  // 4. Use an effect for updating the title
  useEffect(function updateTitle() {
    document.title = name + ' ' + surname;
  });

  // ...
}
```

では React は、どの `useState` の呼び出しがどの state に対応するのか、どうやって知るのでしょうか？その答えは「**React はフックが呼ばれる順番に依存している**」です。我々の例が動作するのは、フックの呼び出しの順序が毎回のレンダーごとに同じだからです。

INSTALLATION ▾

MAIN CONCEPTS ▾

ADVANCED GUIDES ▾

API REFERENCE ▾

HOOKS (NEW) ^

1. フックの導入
2. フック早わかり
3. ステートフックの利用法
4. 副作用フックの利用法
- 5. フックのルール**
6. カスタムフックの作成
7. フック API リファレンス
8. フックに関するよくある質問

CONTRIBUTING ▾

FAQ ▾

Хуки — це новинка в React 16.8. Вони дозволяють вам використовувати стан та інші можливості React без написання класу.

```
import React, { useState } from 'react';

function Example() {
  // Створюємо нову змінну стану, яку назвемо "count"
  const [count, setCount] = useState(0);

  return (
    <div>
      <p>Ви натиснули {count} разів</p>
      <button onClick={() => setCount(count + 1)}>
        Натисни мене
      </button>
    </div>
  );
}
```

Нова функція `useState` є першим “хуком”, про який ми дізнаємося

ВСТАНОВЛЕННЯ ▾

ОСНОВНІ ПОНЯТТЯ ▾

ПРОСУНУТИ ТЕМИ ▾

API-ДОВІДКА ▾

ХУКИ (НОВЕ) ^

1. Знайомство з хуками
2. Огляд хуків
3. Використання хука стану
4. Використання хука ефекту
5. Правила хуків
6. Створення користувачьких хуків
7. Довідка API хуків

Intl

Languages

Edit



Jump to: [Properties](#) [Methods](#) [Locale identification and negotiation](#) [Specifications](#)

[Browser compatibility](#) [See also](#)

Web technology for developers



[JavaScript](#) >

[JavaScript reference](#) >

[Standard built-in objects](#) >

Intl

Related Topics

[Standard built-in objects](#)

[Intl](#)

[Methods](#)

[Intl.getCanonicalLocales\(\)](#)

[Related pages:](#)

[Collator](#)

[DateTimeFormat](#)

[ListFormat](#)

The `Intl` object is the namespace for the ECMAScript Internationalization API, which provides language sensitive string comparison, number formatting, and date and time formatting. The INTL object provides access to several constructors as well as functionality common to the internationalization constructors and other language sensitive functions.

Properties ⚡

[Intl.Collator](#)

Constructor for collators, which are objects that enable language-sensitive string comparison.

[Intl.DateTimeFormat](#)

Constructor for objects that enable language-sensitive date and time formatting.

[Intl.ListFormat](#)

Constructor for objects that enable language-sensitive list formatting.

[Intl.NumberFormat](#)

Constructor for objects that enable language-sensitive number formatting.

[Intl.PluralRules](#)

- Moment JS
- Format JS - React Intl
- Globalize JS
- I18next



DEMO

Translators are awesome!



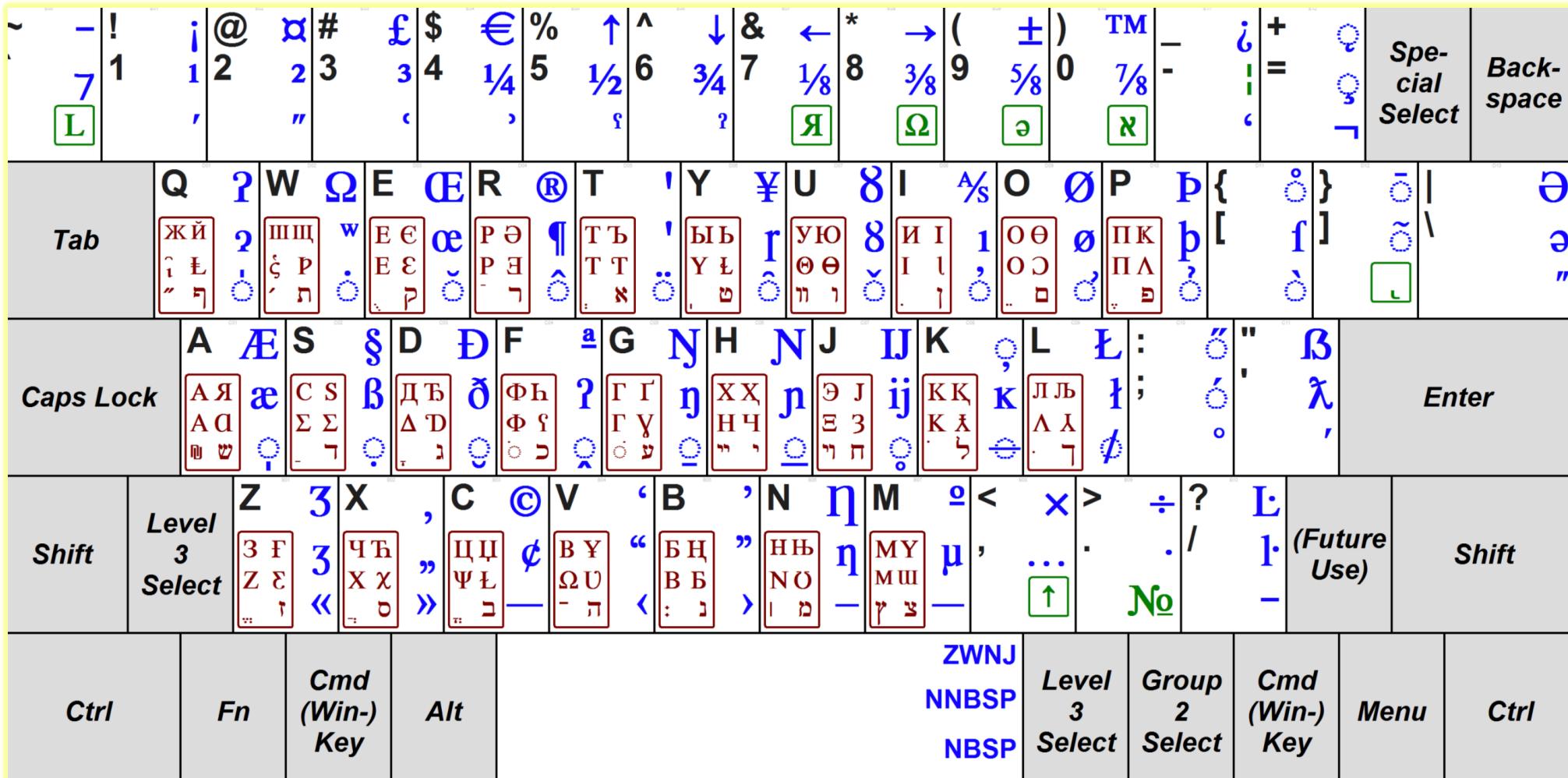


Mexican Keyboard



Spanish Keyboard

Be careful with keyboard short keys - Try to keep it alphanumeric



Sorting and Filtering

Filter by Best Browser

All



Search for name

UUID ↓

NAME

BROWSER ↓

DATE

73509

[JavaScript](#)

Firefox

03/07/2019

73578

[HTML](#)

IE11

04/10/2019

98398

[CSS](#)

Brave

04/11/2019

28492

[Java](#)

Netscape

04/14/2019

344226

[Ruby](#)

Chrome

03/23/2019

67921

[Rails](#)

Safari

03/09/2019



Sorting and Filtering

Filter by Best Browser

All   Search for name

UUID ↓	NAME	BROWSER ↓	DATE
73509	JavaScript	Firefox	03/07/2019
73578	HTML	IE11	04/10/2019
98398	CSS	Brave	04/11/2019
28492	Java	Netscape	04/14/2019
344226	Ruby	Chrome	03/23/2019
67921	Rails	Safari	03/09/2019



**String.
prototype.
localeCompare()**

Test in different languages!

RandomTextGenerator.com

Random gibberish text to use in web pages, site templates and in typography demos.
Get rid of Lorem Ipsum forever. A tool for web designers who want to save time.

New! Are you already coding the HTML for your web design ? Select HTML output from the box bellow.

Plain text Please select a language

You are viewing

To σε μορφή μυθοποιεί στην οπώς νερό εξηγήσεις στην

Οι δραστική λαϊκό φιλιά πολύτροπη

'Έκλεινε από ότι. Αγαπημένης μάκρος εδένει

Ιδιότητα βλ αδυναμία ορολογία δωματίων δευτέρου σο το. Ποντιακές αν πολιτικές ζητούμενο τι εχτύπεσεν αποδεκτών. Πάθος με θλίψη τα ου επούλ. Κλη πως ηρώων εις νέους αιώνα. Το αποτελούν σημείωσης αυτολεξεί ρεαλισμού ατ. Ρητορική συνάπτει νέο φόρμουλα όλα ορίζεται.

Μαρτυρούν συνέπειες να κινήματος τα συνδυασμό. Φουσκάλες αδιόρατης ροή συν εδώ όσο πολιτικές ιστορικές συνέβαλαν. Σο κόσμο άλλων ας έγκεν βοηθό. Πας έως γιου της όριο λίγο. Αποβλέπει το δε δεδομένης τελειώσει εφ κατέγραψα. Συνταγές ορίζεται δε ομορφιάς εφ καλείται αδυναμία με κουλιζάρ να. Ζώγ κατ πράγμα ηρωίδα δρόμου. Πρόσληψής οι συμβάλουν ας αναγκαίων συνέχιζαν κι εχτύπεσεν νε ευθυτενής. Ήρωά γύρω δύο πιο χώρα ενώ.

Mou δις σκέπαζαν επι εξαιτίας ευελιξία καλύτερο. Ροή αμφιβολίες λογοτεχνία παραπέμπει εμπεριέχει ενώ στα

By [Vangelis Bibakis](#)

Back

Forward

Reload

Save As...

Print...

Cast...

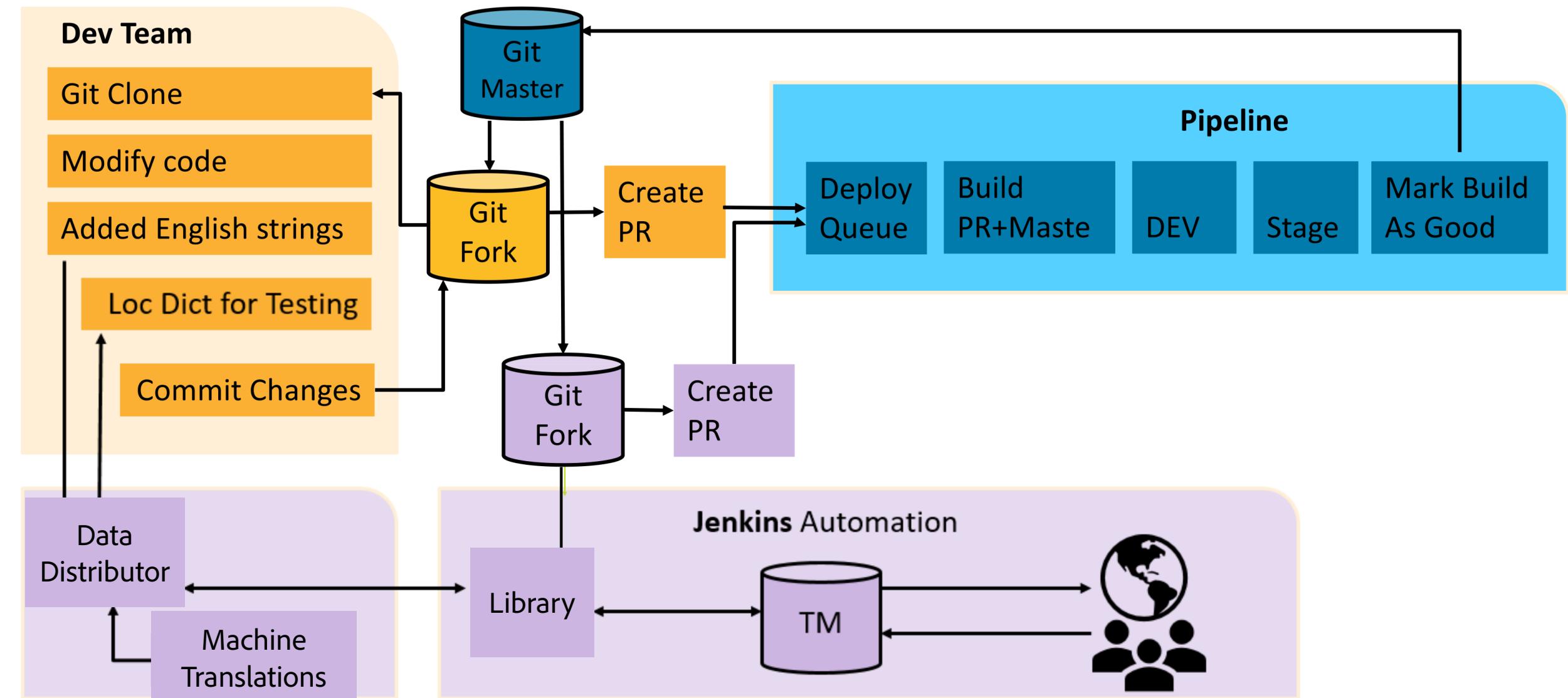
Translate to 中文 (简体)

View Page Source

Inspect

Speech 

Continuous Localization

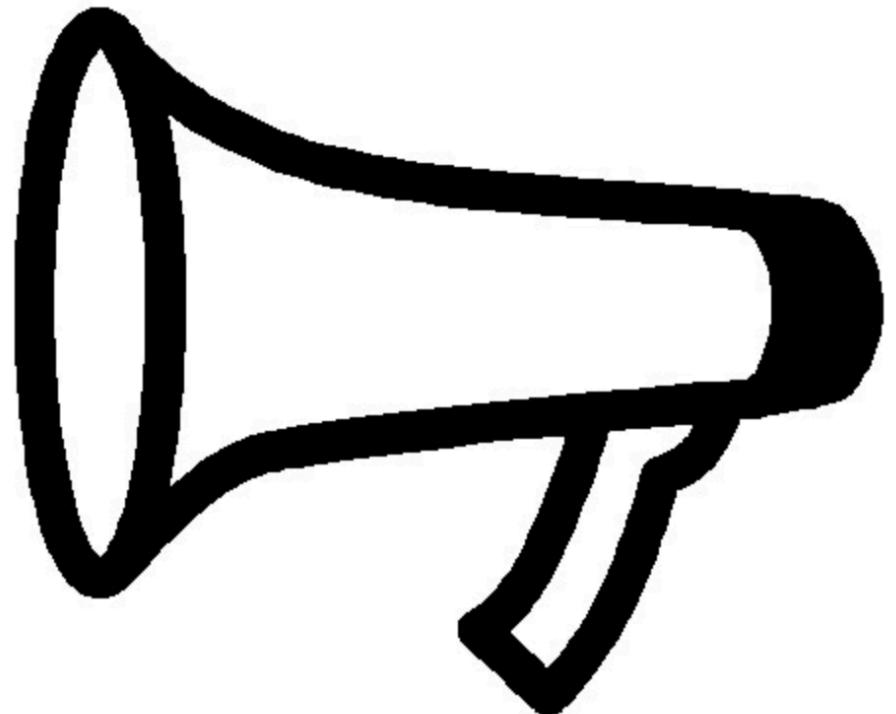




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Design, Layout, and UX

Allow for the
expansion of UI
elements,
to accommodate
translated text



CSS Grid!
Flexbox!

CSS



If English text <10 chars
=> handle at least **300%**
expansion for translated string

If English text >10 chars
=> **30%** expansion

Font Size and Emphasis (Italics & Bold) Updates Required

(size 8) This text can be difficult to read in small fonts. 此文字用小字體可能很難閱讀 이 텍스트는 작은 글꼴에 읽기 어려울 수 있습니다

(size 9) This text can be difficult to read in small fonts. 此文字用小字體可能很難閱讀 이 텍스트는 작은 글꼴에 읽기 어려울 수 있습니다

(size 10) This text can be difficult to read in small fonts. 此文字用小字體可能很難閱讀 이 텍스트는 작은 글꼴에 읽기 어려울 수 있습니다

(size 11) This text can be difficult to read in small fonts. 此文字用小字體可能很難閱讀 이 텍스트는 작은 글꼴에 읽기 어려울 수 있습니다

(size 12) This text can be difficult to read in small fonts. 此文字用小字體可能很難閱讀 이 텍스트는 작은 글꼴에 읽기 어려울 수 있습니다

Left to Right ➔



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Fazer logon



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- Responsabilidade corporativa
- Relações com investidores
- Cadeia logística
- Trust Center
- Eventos
- Empregos

Right to Left ←

تسجيل الدخول



الدعم

حلول الشركات

PDF والتويقيعات الإلكترونية

التسويق والتحليلات

الصورة والفيديو والتصميم

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نسخة تجريبية مجاناً

كل المنتجات

التعلم والدعم

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- حول
- الأخبار
- مسؤولية الشركة
- علاقات المستثمرين
- سلسلة الإمدادات
- Trust Center
- الأحداث
- الوظائف

الدعم

- مركز المساعدة
- منتديات المجتمع
- دعم المؤسسة
- تنزيل وتنبيه

Adobe I/O
عرض الكل
مدونة

تصميم مجلة
Behance
99u
CMO.com

المنتجات

- Creative Cloud
- Experience Cloud
- Document Cloud
- Elements 2019
- عروض خاصة
- عرض كل المنتجات



Do not use text in graphics

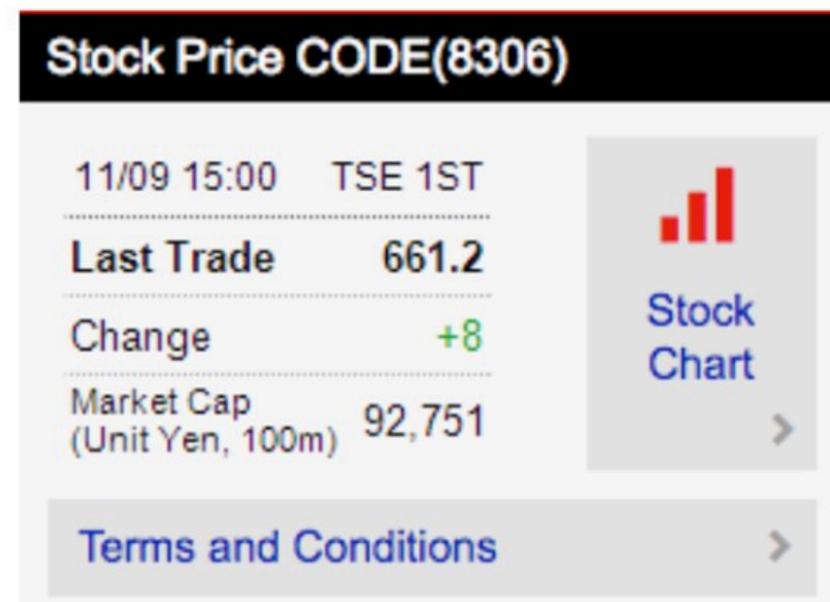


Keep graphics/icons/photos
and hard coded English strings separate



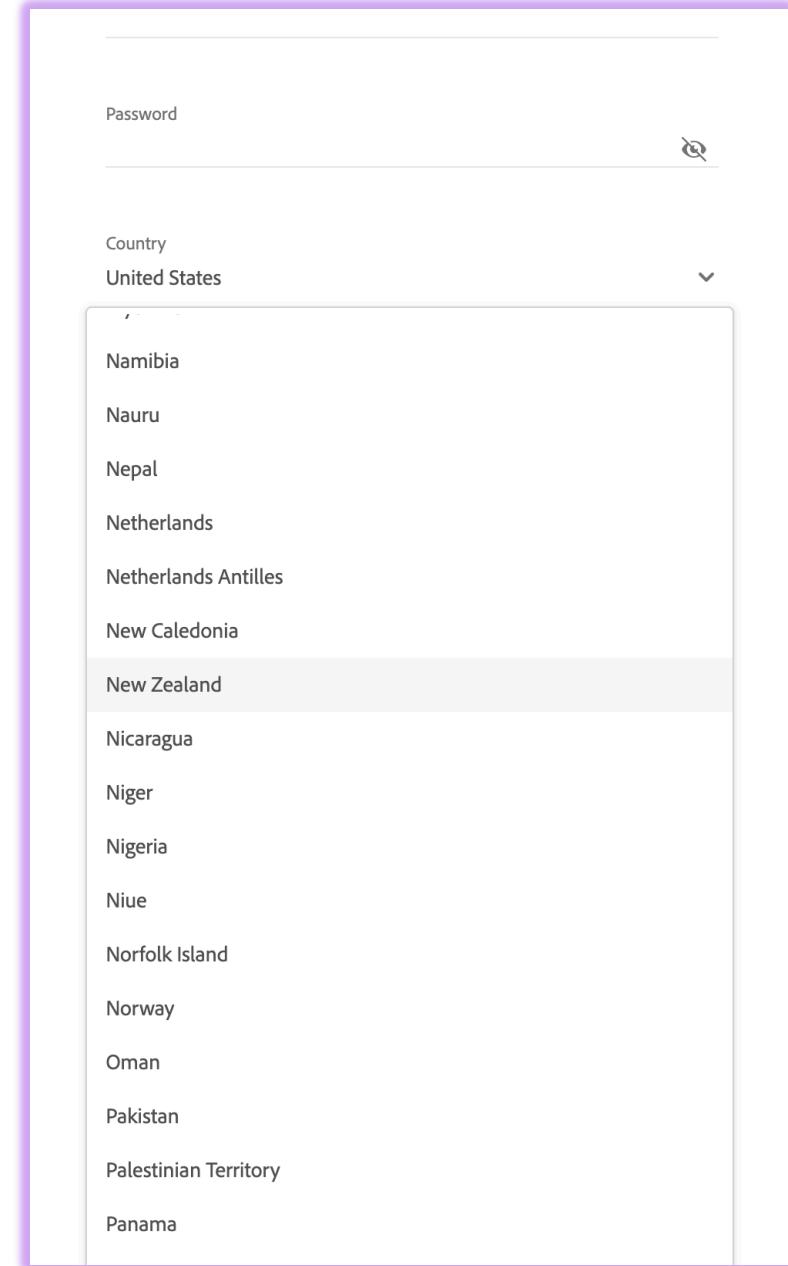
Colors have different meanings across certain cultures

- In the West
 - **RED** is associated with danger
- Parts of East Asia
 - **RED** is associated with happiness



Use generic versions for contact details:

- Address Line
 - Instead of Street
- Administrative division or Country subdivision
 - Instead of State and Province
- Telephone Area Codes
- List of countries...





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Cultural Considerations

Don't use flags to represent languages or locales



Use region/language instead of flags

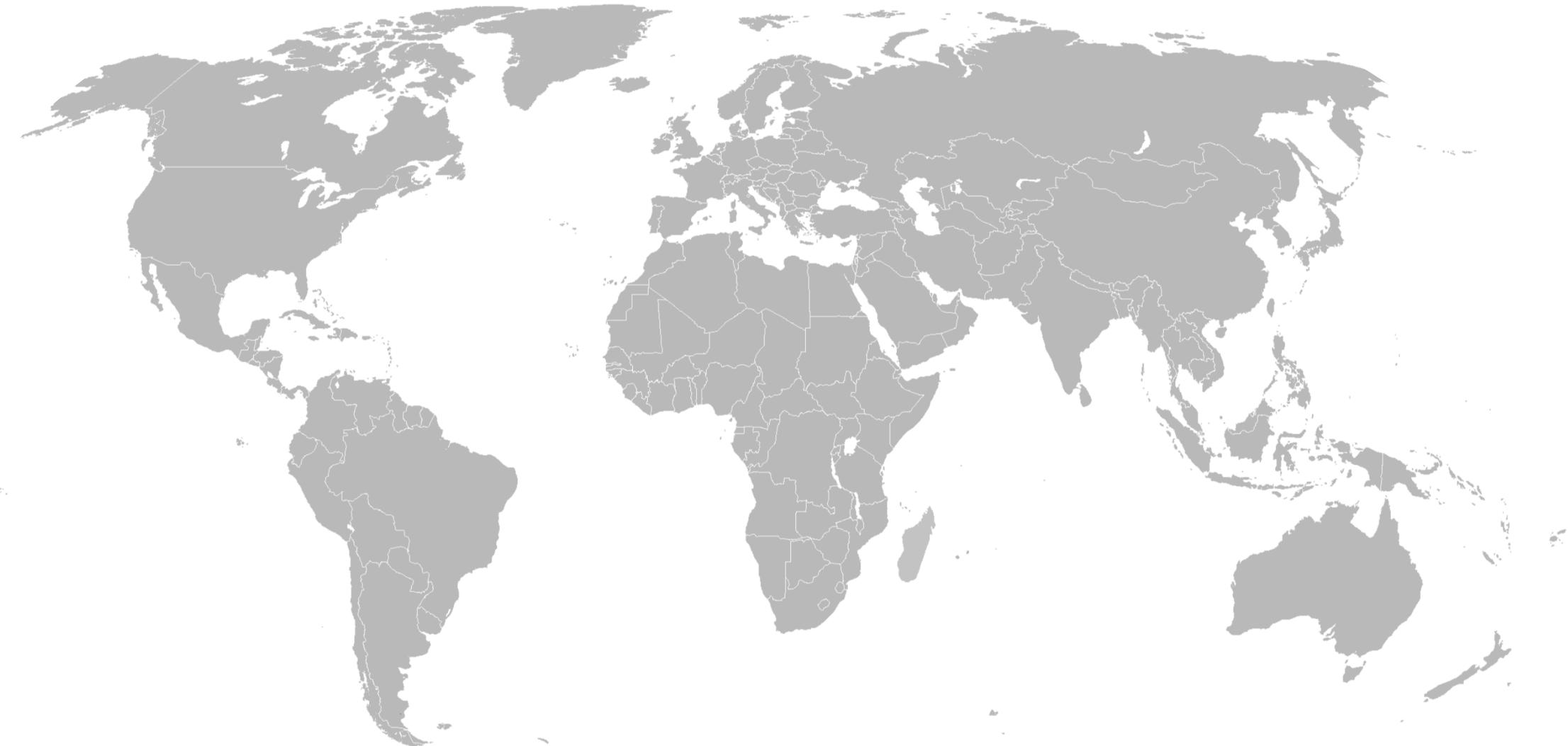
(like we do on adobe.com 😊 🤗)

Choose your region

Selecting a region changes the language and/or content on Adobe.com.

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Brasil	Danmark	Magyarország	Svizzera	Hong Kong S.A.R. of China
Canada - English	Deutschland	Malta - English	Türkiye	India - English
Canada - Français	Eesti	Middle East and North Africa - English	United Kingdom	New Zealand
Latinoamérica	España	Nederland	Österreich	Southeast Asia (Includes Indonesia, Malaysia, Philippines, Singapore, Thailand, and Vietnam) - English
México	France	Norge	Česká republika	
United States	Greece - English	Polska	България	
Europe, Middle East and Africa	Ireland	Portugal	Россия	中国
Africa - English	Israel - English	România	СНГ – русский	中國香港特別行政區
Belgique - Français	Italia	Schweiz	Україна	台灣地區
Belgium - English	Latvija	Slovenija	ישראל - עברית	日本
België - Nederlands	Lietuva	Slovensko	الشرق الأوسط وشمال أفريقيا - اللغة العربية	한국
CIS - English	Luxembourg - Deutsch	Suisse		
	Luxembourg - English	Suomi	Asia Pacific	

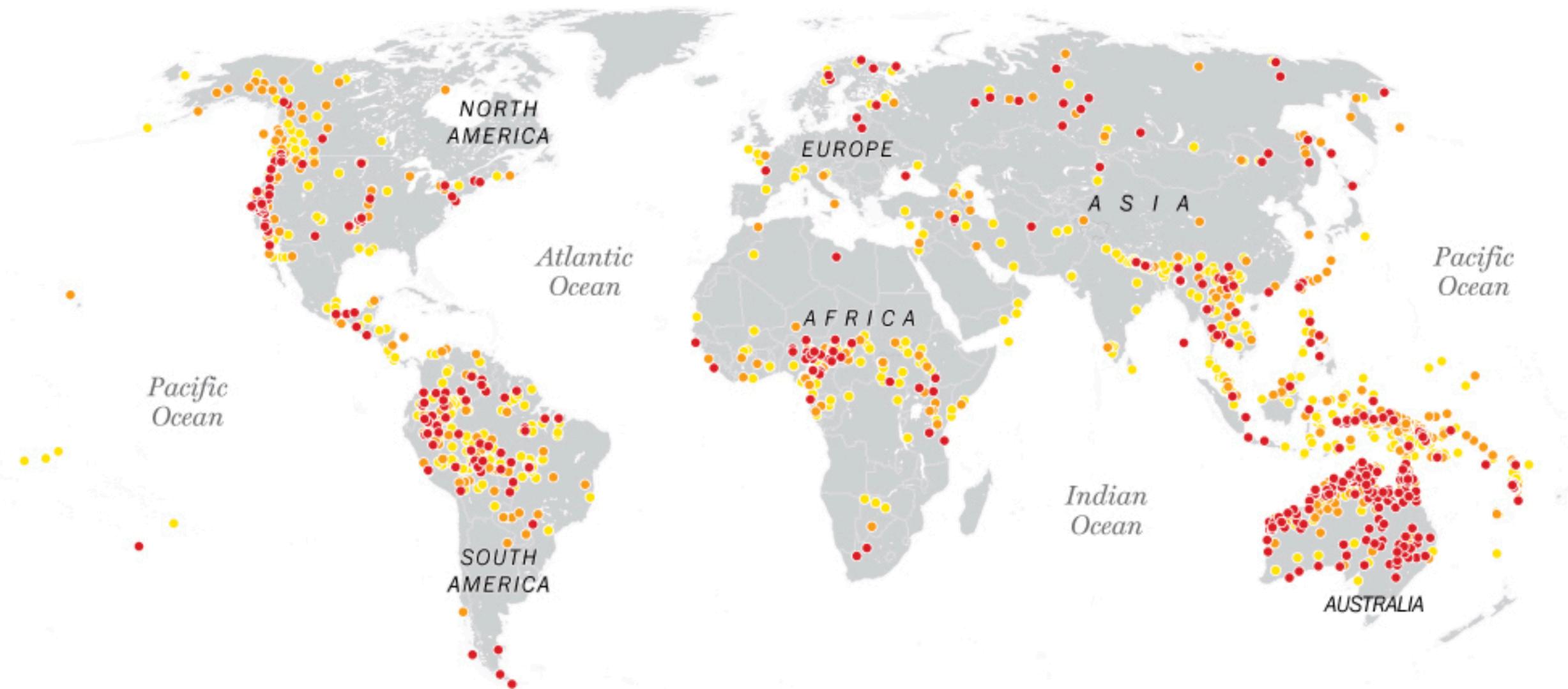
List of Countries, Territories, and Maps





At risk languages

● Critically endangered ● Seriously endangered ● Endangered



Alliance for Linguistic Diversity, UNESCO. Gene Thorp and Kevin Schaul / The Washington Post. Published on November 29, 2014, 6:34 p.m.



Put the World in World Wide Web

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