# Accessibility Is Reach

## The Future of A11y in Ember

Melanie Sumner - October 1, 2021

@melaniersumner

# Survey Says…

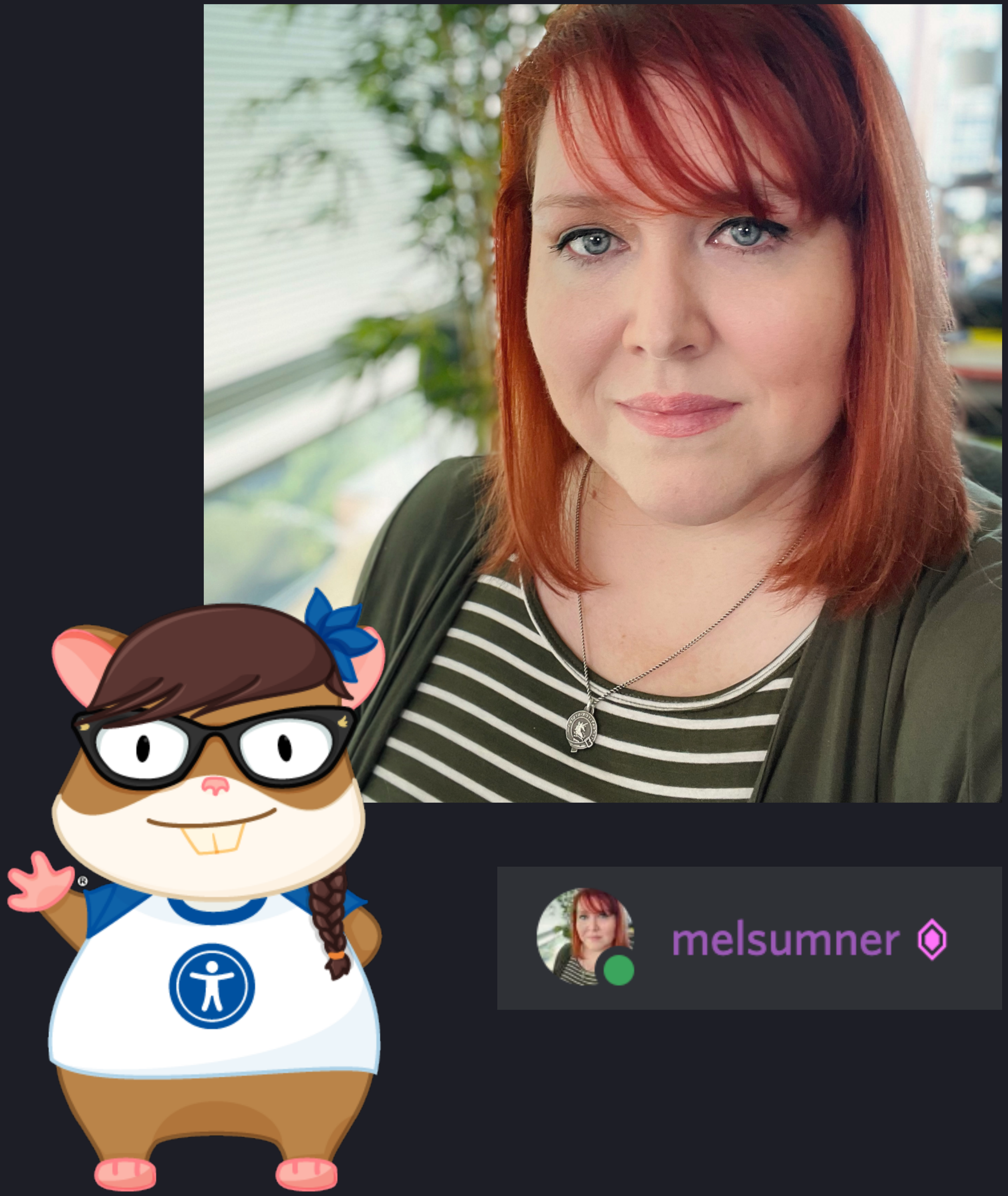
M·AGRIPPA·L·F·COS·TERTIVM·FECIT

Now that’s concrete.

# Hello, friends!

- Senior Design Systems Engineer at HashiCorp
- Ember.js Framework core team member
- WAI-ARIA working group & co-editor of ACCNAME specification
- Disabled, Decorated Military Veteran

https://melanie.codes



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# Our Progress

# The Process

1. Set the goal
2. Identify blockers to that goal
3. Measure impact to users
4. Form a team
5. Incrementally ship solutions

# Step One: Set The Goal

No *new* Ember App should immediately fail accessibility conformance criteria.

# Step Two: Identify Primary Issues

1. Routing - no announcement, no focus reset, no skip links
2. Missing page title
3. Label support for input elements
4. Missing default language declaration
5. Improper support for aria-attributes through ...attributes

# Step Three: Measuring User Impact

Severity Level

1

Severity Level

2

Severity Level

3

# Severity Level One

Not likely to prevent access to content but could affect the ability of some to use a page.

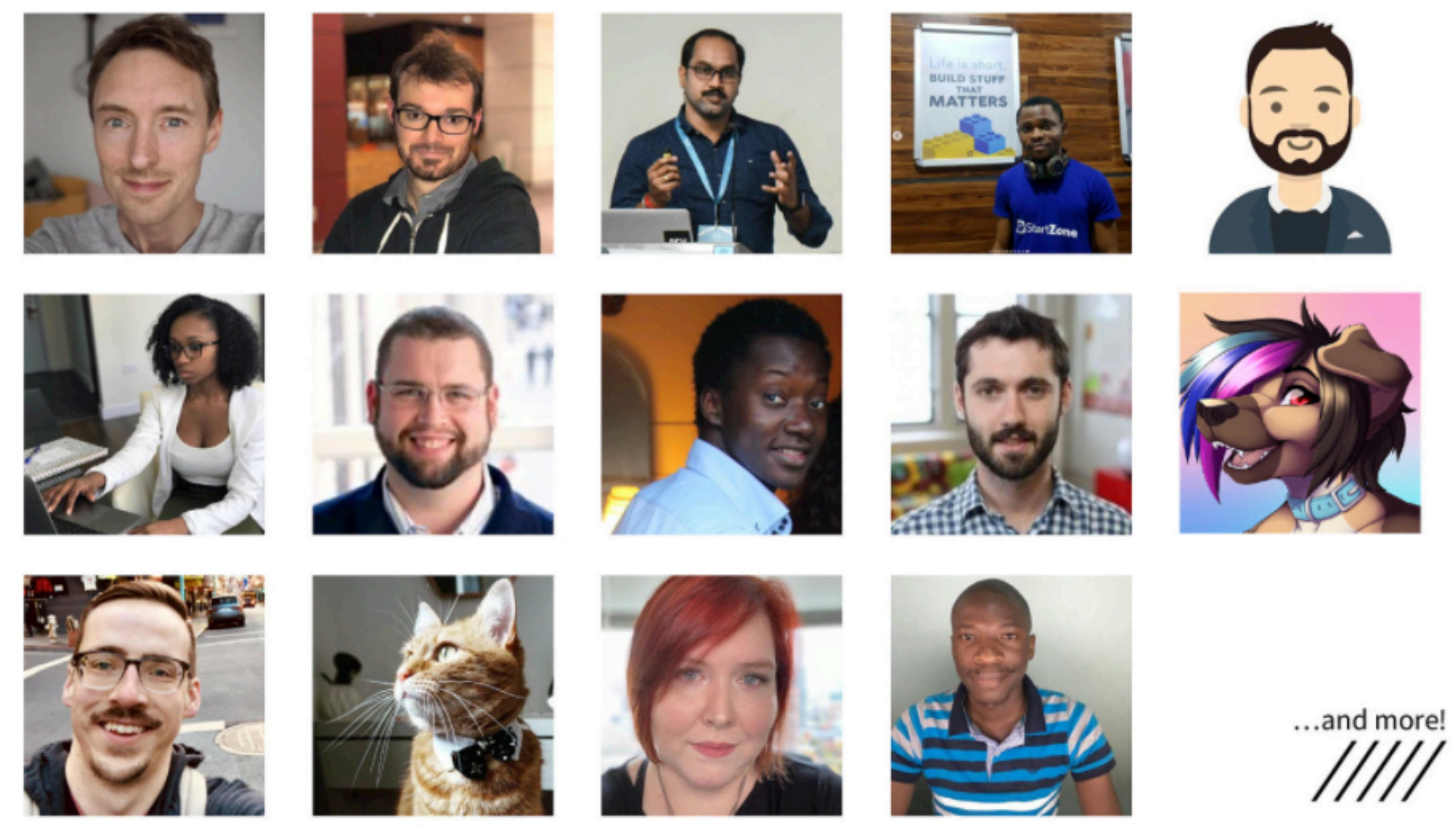
# Severity Level Two

Likely to make it **difficult** for some to access content and use a page, and/or could **prevent** some from accessing or using page content.

# Severity Level Three

Will prevent access to sections of the site or the ability to perform required functions.

# Ember Accessibility Working Group



# Step Five: Incrementally Ship Solutions

- Routing - no announcement, no focus reset, no skip links
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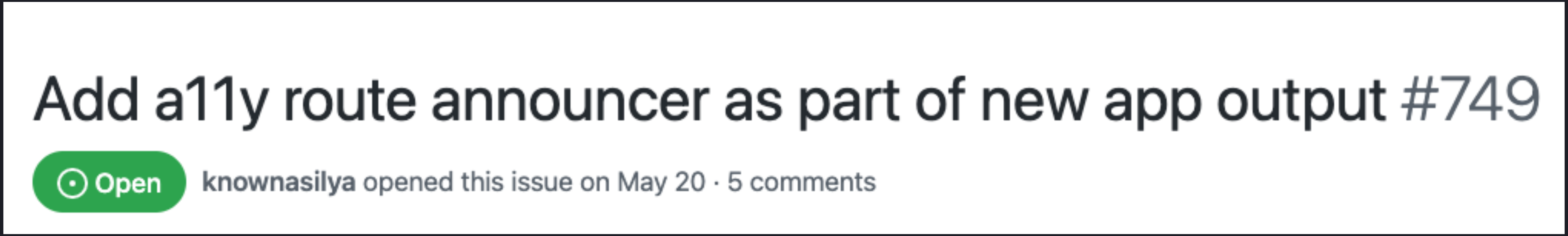
# ember-a11y-refocus



Add a11y route announcer as part of new app output #749

Open

**knownasilya** opened this issue on May 20 · 5 comments

# Incrementally Ship Solutions

- Routing - no announcement, no focus reset, no skip links
- **Missing page title**
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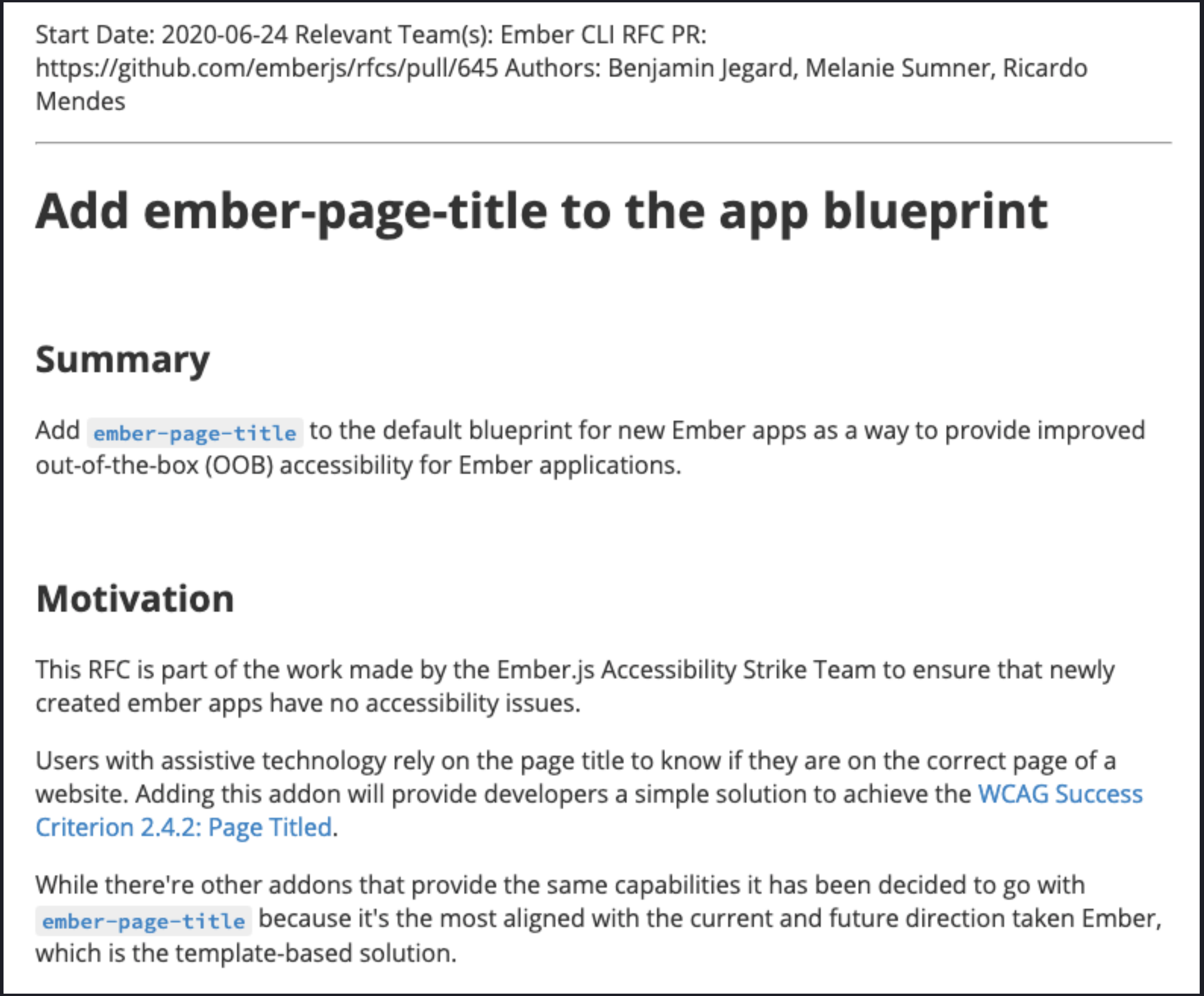
# RFC #645



Start Date: 2020-06-24 Relevant Team(s): Ember CLI RFC PR: https://github.com/emberjs/rfcs/pull/645 Authors: Benjamin Jegard, Melanie Sumner, Ricardo Mendes

## Add ember-page-title to the app blueprint

### Summary

Add `ember-page-title` to the default blueprint for new Ember apps as a way to provide improved out-of-the-box (OOB) accessibility for Ember applications.

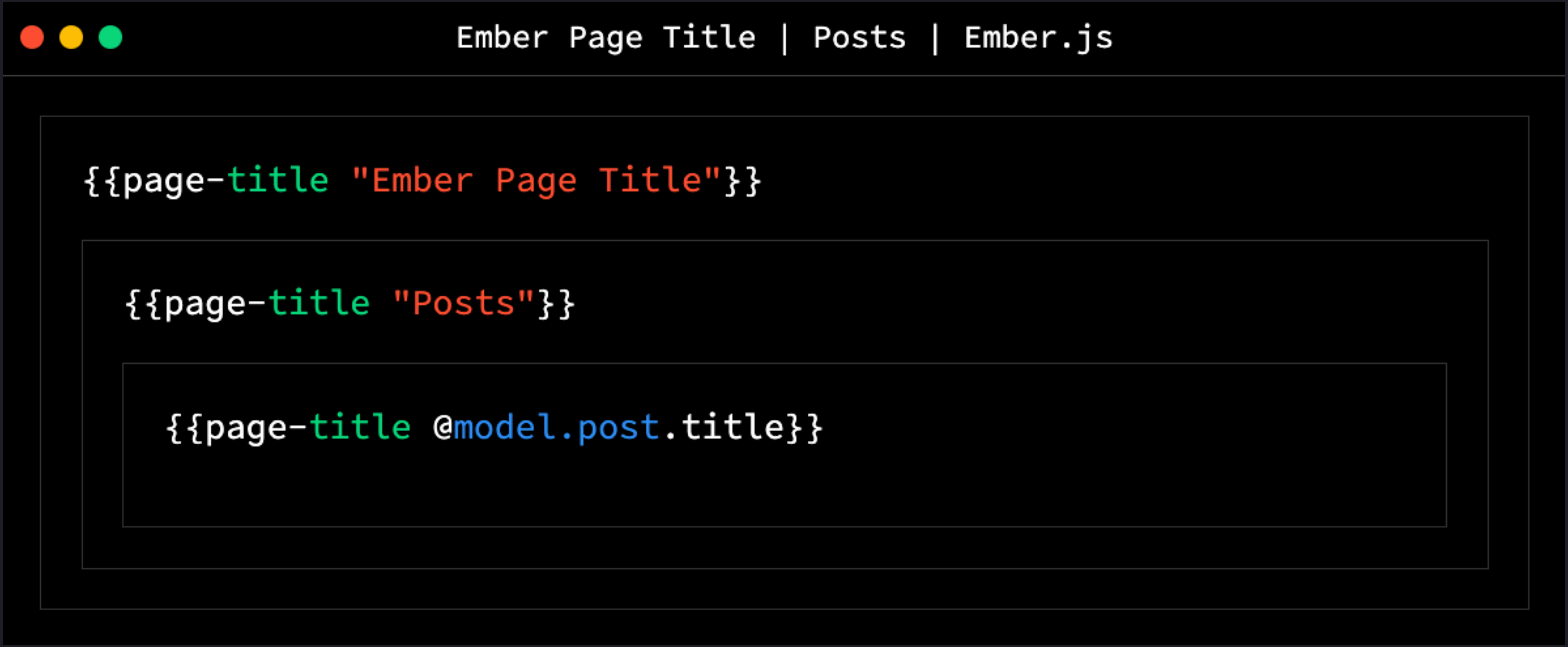
### Motivation

This RFC is part of the work made by the Ember.js Accessibility Strike Team to ensure that newly created ember apps have no accessibility issues.

Users with assistive technology rely on the page title to know if they are on the correct page of a website. Adding this addon will provide developers a simple solution to achieve the WCAG Success Criterion 2.4.2: Page Titled.

While there're other addons that provide the same capabilities it has been decided to go with `ember-page-title` because it's the most aligned with the current and future direction taken Ember, which is the template-based solution.

# ember-page-title



Ember Page Title | Posts | Ember.js

```
{{page-title "Ember Page Title"}}

  {{page-title "Posts"}}

    {{page-title @model.post.title}}
```

Ember Page Title > Posts | Ember.js

```
{{page-title "Ember Page Title" separator=" > "}}

  {{page-title "Posts"}}

    {{page-title @model.post.title}}
```

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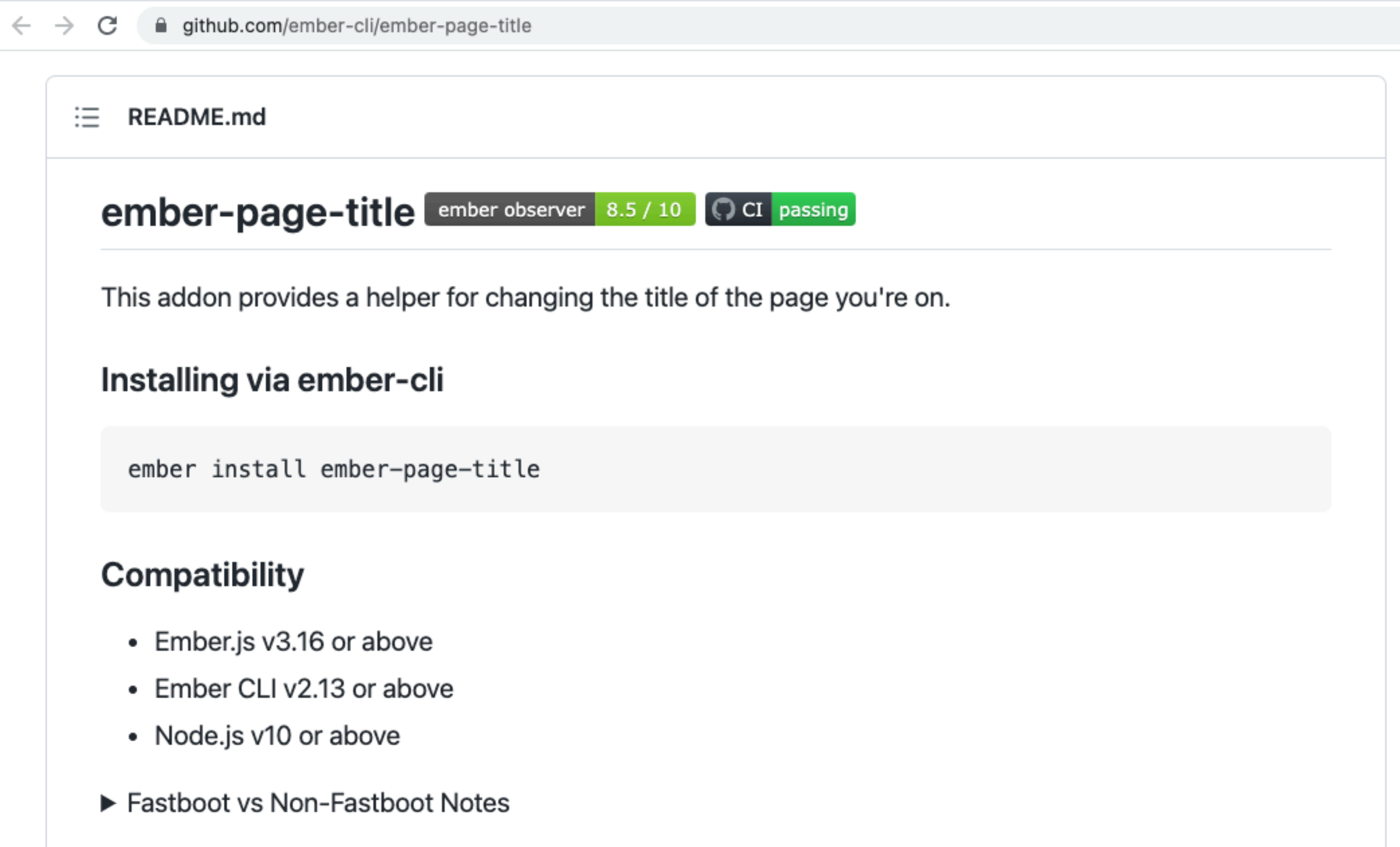
Ember Page Title | Posts | Ember.js

```
{{page-title "Ember Page Title" prepend=true}}

  {{page-title "Posts"}}

    {{page-title @model.post.title}}
```



# ember-page-title

This addon provides a helper for changing the title of the page you're on.

## Installing via ember-cli

```
ember install ember-page-title
```

## Compatibility

- Ember.js v3.16 or above
- Ember CLI v2.13 or above
- Node.js v10 or above

▶ Fastboot vs Non-Fastboot Notes

# Incrementally Ship Solutions

- Routing - no announcement, no focus reset, no skip links
- Missing page title
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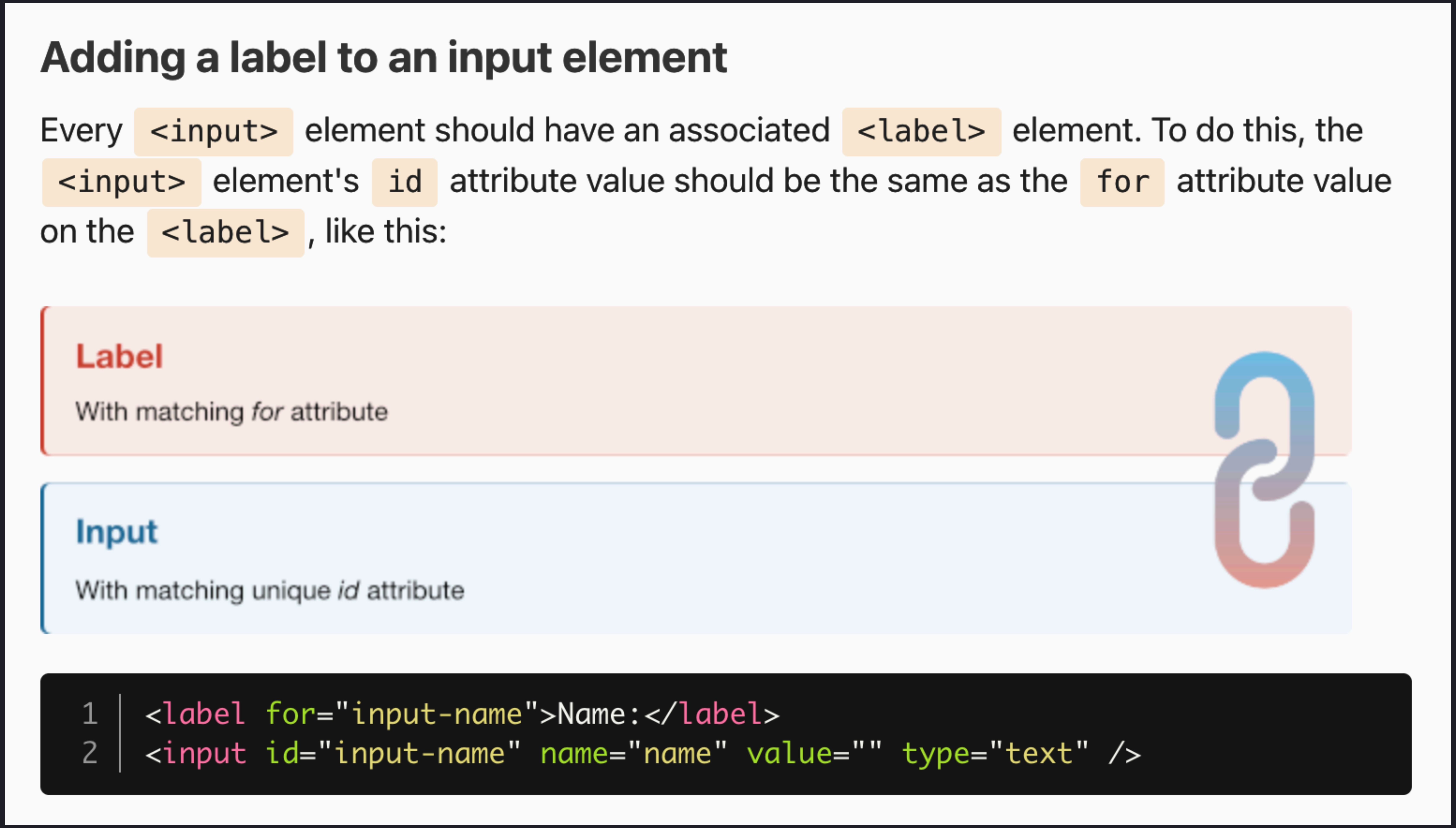
```
import Component from '@glimmer/component';
import { guidFor } from '@ember/object/internals';

export default class InputTextComponent extends Component {
  inputId = 'textInput-' + guidFor(this);
}
```

# Improved Guides



## Adding a label to an input element

Every `<input>` element should have an associated `<label>` element. To do this, the `<input>` element's `id` attribute value should be the same as the `for` attribute value on the `<label>`, like this:

**Label**

With matching *for* attribute

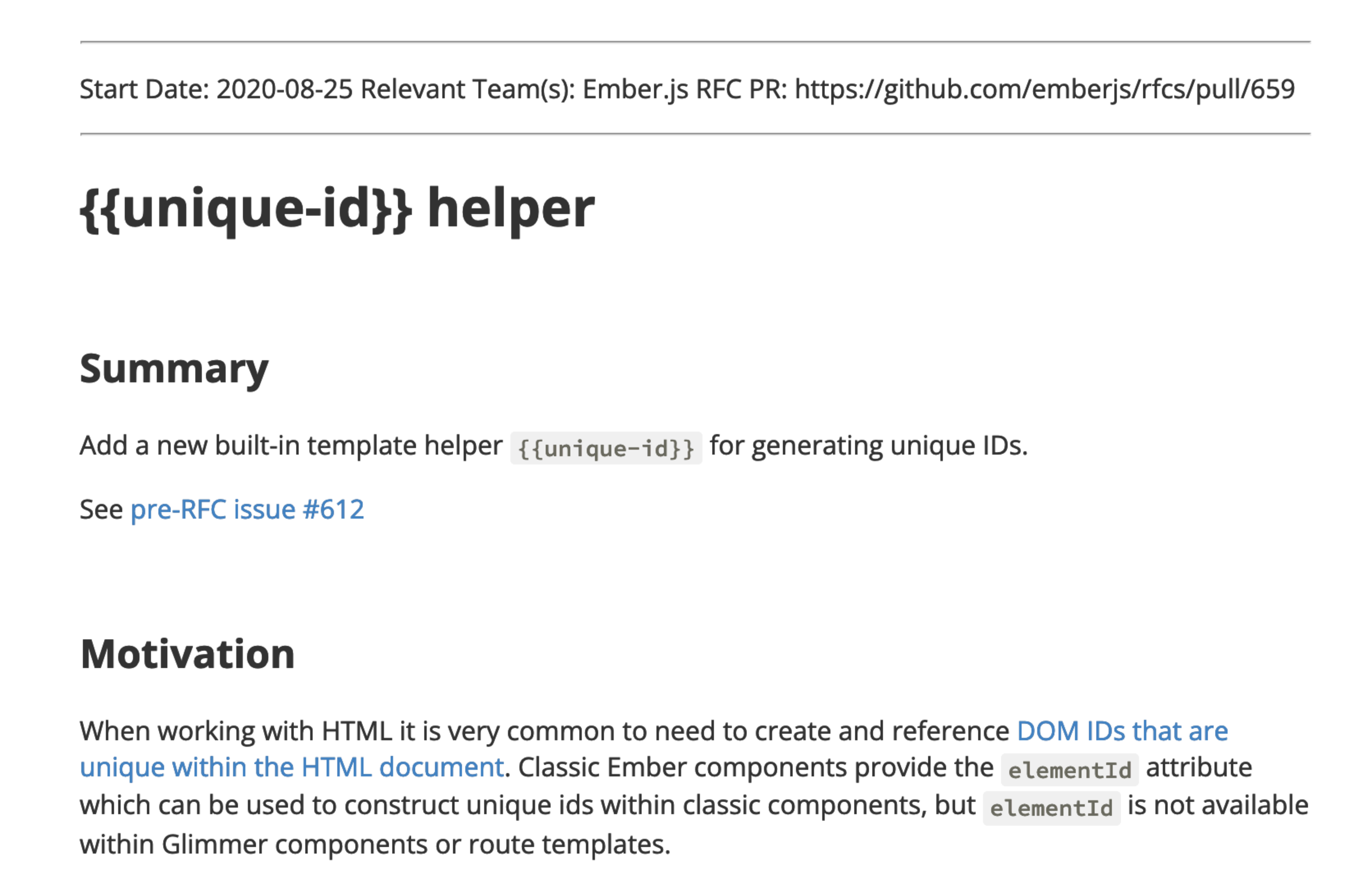
**Input**

With matching unique *id* attribute

```html
<label for="input-name">Name:</label>
<input id="input-name" name="name" value="" type="text" />
```

# ember-context-id-helper

# RFC #659



Start Date: 2020-08-25 Relevant Team(s): Ember.js RFC PR: https://github.com/emberjs/rfcs/pull/659

# {{unique-id}} helper

## Summary

Add a new built-in template helper `{{unique-id}}` for generating unique IDs.

See pre-RFC issue #612

## Motivation

When working with HTML it is very common to need to create and reference DOM IDs that are unique within the HTML document. Classic Ember components provide the `elementId` attribute which can be used to construct unique ids within classic components, but `elementId` is not available within Glimmer components or route templates.

# Incrementally Ship Solutions

- Routing - no announcement, no focus reset, no skip links
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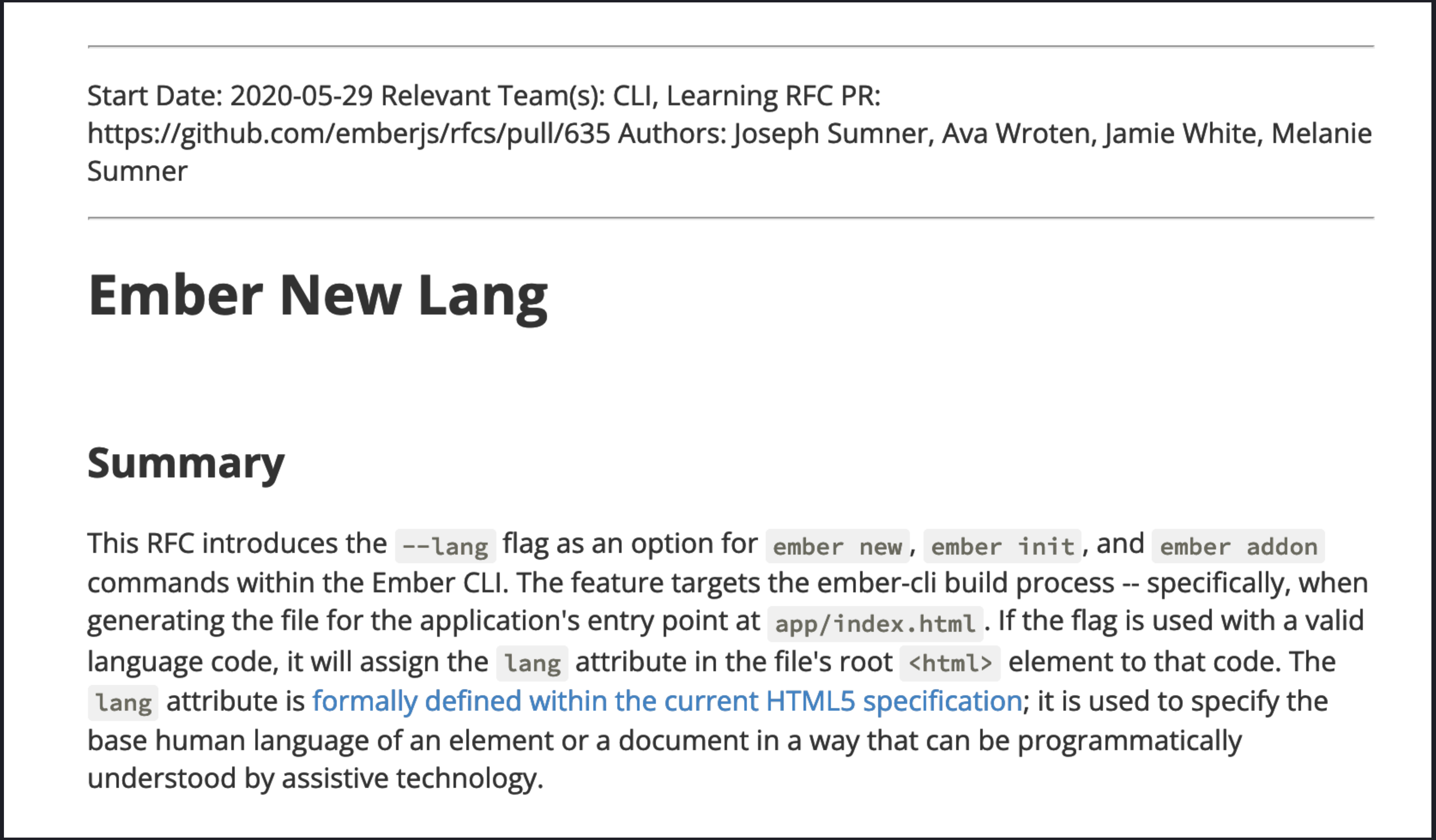
# RFC #635



Start Date: 2020-05-29 Relevant Team(s): CLI, Learning RFC PR: https://github.com/emberjs/rfcs/pull/635 Authors: Joseph Sumner, Ava Wroten, Jamie White, Melanie Sumner

## Ember New Lang

### Summary

This RFC introduces the `--lang` flag as an option for `ember new`, `ember init`, and `ember addon` commands within the Ember CLI. The feature targets the ember-cli build process -- specifically, when generating the file for the application's entry point at `app/index.html`. If the flag is used with a valid language code, it will assign the `lang` attribute in the file's root `<html>` element to that code. The `lang` attribute is formally defined within the current HTML5 specification; it is used to specify the base human language of an element or a document in a way that can be programmatically understood by assistive technology.

```
$ ember new ember-a11y-for --lang en
$ ember new ember-a11y-for --lang it
```

# Pub Quiz Time!

- TS is…
    - the Tsonga language and is spoken by three countries in Africa
- XML is…
    - Malaysian sign language
- CSS is…
    - It was a dead language called Coastanoan but was recently revived by historians in California

# Incrementally Ship Solutions

- Routing - no announcement, no focus reset, no skip links
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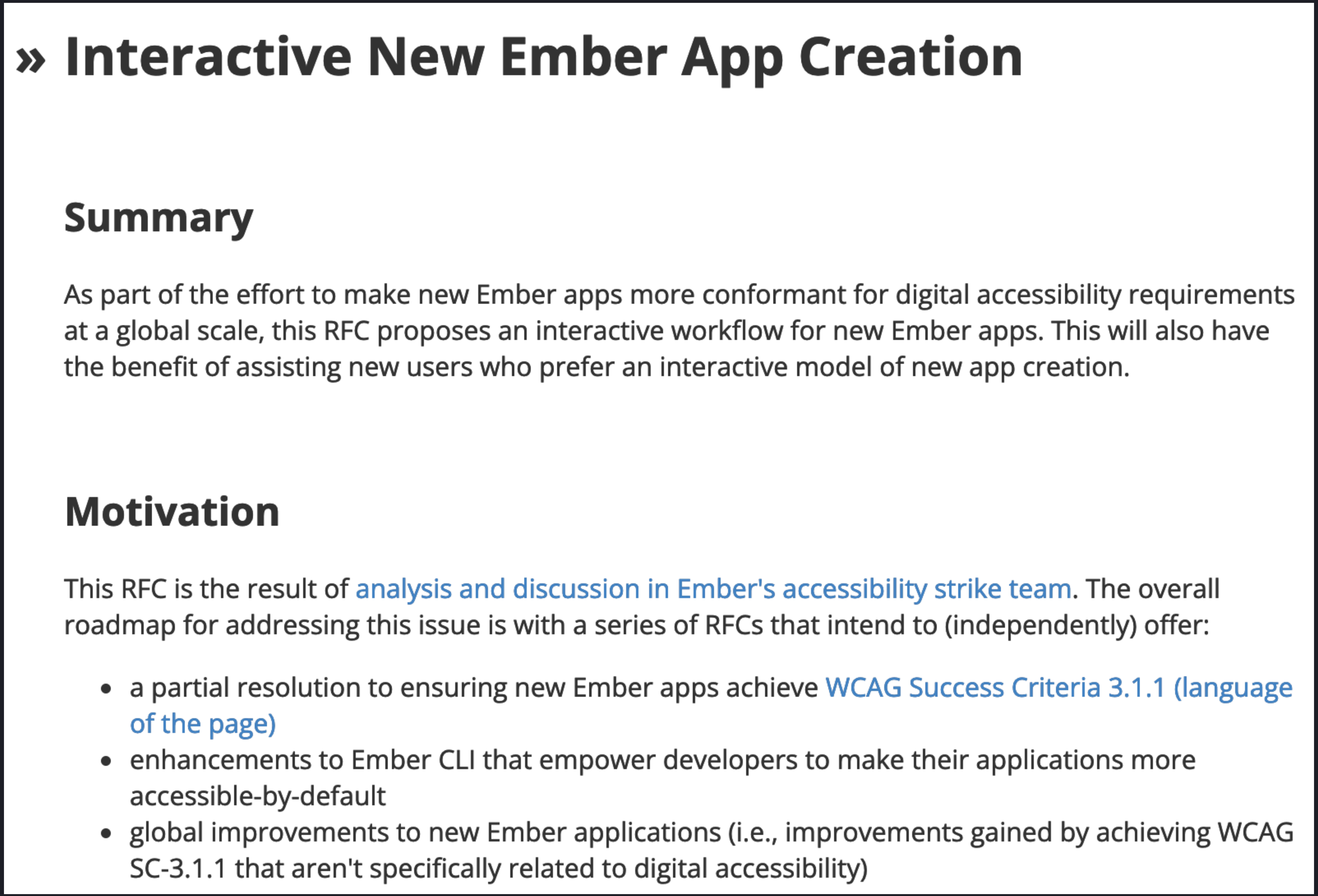
# Ideas beget more ideas

# RFC #638



## » Interactive New Ember App Creation

### Summary

As part of the effort to make new Ember apps more conformant for digital accessibility requirements at a global scale, this RFC proposes an interactive workflow for new Ember apps. This will also have the benefit of assisting new users who prefer an interactive model of new app creation.

### Motivation

This RFC is the result of analysis and discussion in Ember's accessibility strike team. The overall roadmap for addressing this issue is with a series of RFCs that intend to (independently) offer:

- a partial resolution to ensuring new Ember apps achieve WCAG Success Criteria 3.1.1 (language of the page)
- enhancements to Ember CLI that empower developers to make their applications more accessible-by-default
- global improvements to new Ember applications (i.e., improvements gained by achieving WCAG SC-3.1.1 that aren't specifically related to digital accessibility)

# ember-select-light

# ember-template-lint

# Improved Accessibility Support

1. link-href-attributes
2. no-abstract-roles
3. no-accesskey-attribute
4. no-aria-hidden-body
5. no-down-event-binding
6. no-duplicate-attributes
7. no-duplicate-id
8. no-duplicate-landmark-elements
9. no-heading-inside-button
10. no-invalid-interactive
11. no-invalid-link-text
12. no-invalid-link-title
13. no-invalid-meta
14. no-invalid-role
15. no-nested-interactive
16. no-nested-landmark
17. no-obsolete-elements
18. no-positive-tabindex
19. no-redundant-landmark-role
20. no-whitespace-for-layout
21. no-whitespace-within-word
22. require-iframe-title
23. require-input-label
24. require-lang-attribute
25. require-valid-alt-text
26. table-groups

# Improved Team Support

- Implementation of the TODO feature
- Try it out!

```
$ ember-template-lint . --update-todo

$ ember-template-lint . --include-todo

$ ember-template-lint . --fix
```

# Our Present

# Global Accessibility Awareness Day Continues!

Thursday, May 20, 2021, marked the tenth Global Accessibility Awareness Day (GAAD), and it doesn’t need to end there. Please join us to continue to spread awareness. The purpose of GAAD is to get everyone talking, thinking and learning about digital access/inclusion and people with different disabilities.

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# The Ember JS Framework Takes the GAAD Pledge

by Melanie Sumner

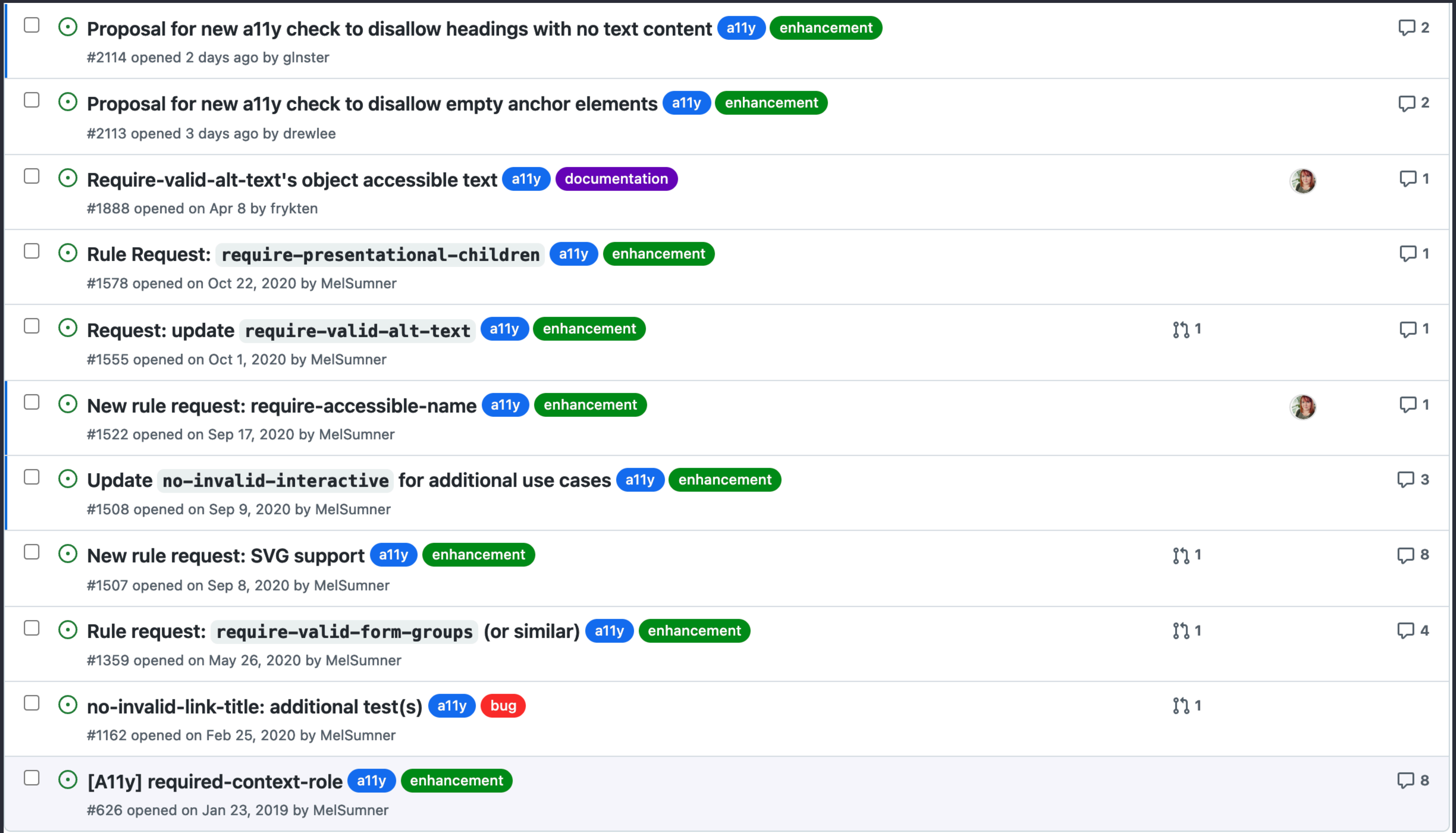
As we join Global Accessibility Awareness Day (GAAD) in celebrating its tenth anniversary, we are delighted to announce that the Ember JavaScript Framework has taken the GAAD pledge **to make accessibility a core value of our framework**.

> “As we join Global Accessibility Awareness Day (GAAD) in celebrating its tenth anniversary, we are delighted to announce that the Ember JavaScript Framework has taken the GAAD pledge to make accessibility a core value of our framework.”

# What this means for our TODO list

1. implement unique-id helper (RFC #659)
2. implement interactive mode for new Ember apps (RFC #638)
3. write RFC to include ember-a11y-refocus into default blueprint
4. finish making the Ember website accessible (including guides and API docs)
5. increase available accessibility automation

# Increasing Available Automation



□ ○ Proposal for new a11y check to disallow headings with no text content a11y enhancement 2
#2114 opened 2 days ago by glnster

□ ○ Proposal for new a11y check to disallow empty anchor elements a11y enhancement 2
#2113 opened 3 days ago by drewlee

□ ○ Require-valid-alt-text's object accessible text a11y documentation 1
#1888 opened on Apr 8 by frykten

□ ○ Rule Request: `require-presentational-children` a11y enhancement 1
#1578 opened on Oct 22, 2020 by MelSumner

□ ○ Request: update `require-valid-alt-text` a11y enhancement 1 1
#1555 opened on Oct 1, 2020 by MelSumner

□ ○ New rule request: require-accessible-name a11y enhancement 1
#1522 opened on Sep 17, 2020 by MelSumner

□ ○ Update `no-invalid-interactive` for additional use cases a11y enhancement 3
#1508 opened on Sep 9, 2020 by MelSumner

□ ○ New rule request: SVG support a11y enhancement 1 8
#1507 opened on Sep 8, 2020 by MelSumner

□ ○ Rule request: `require-valid-form-groups` (or similar) a11y enhancement 1 4
#1359 opened on May 26, 2020 by MelSumner

□ ○ no-invalid-link-title: additional test(s) a11y bug 1
#1162 opened on Feb 25, 2020 by MelSumner

□ ○ [A11y] required-context-role a11y enhancement 8
#626 opened on Jan 23, 2019 by MelSumner

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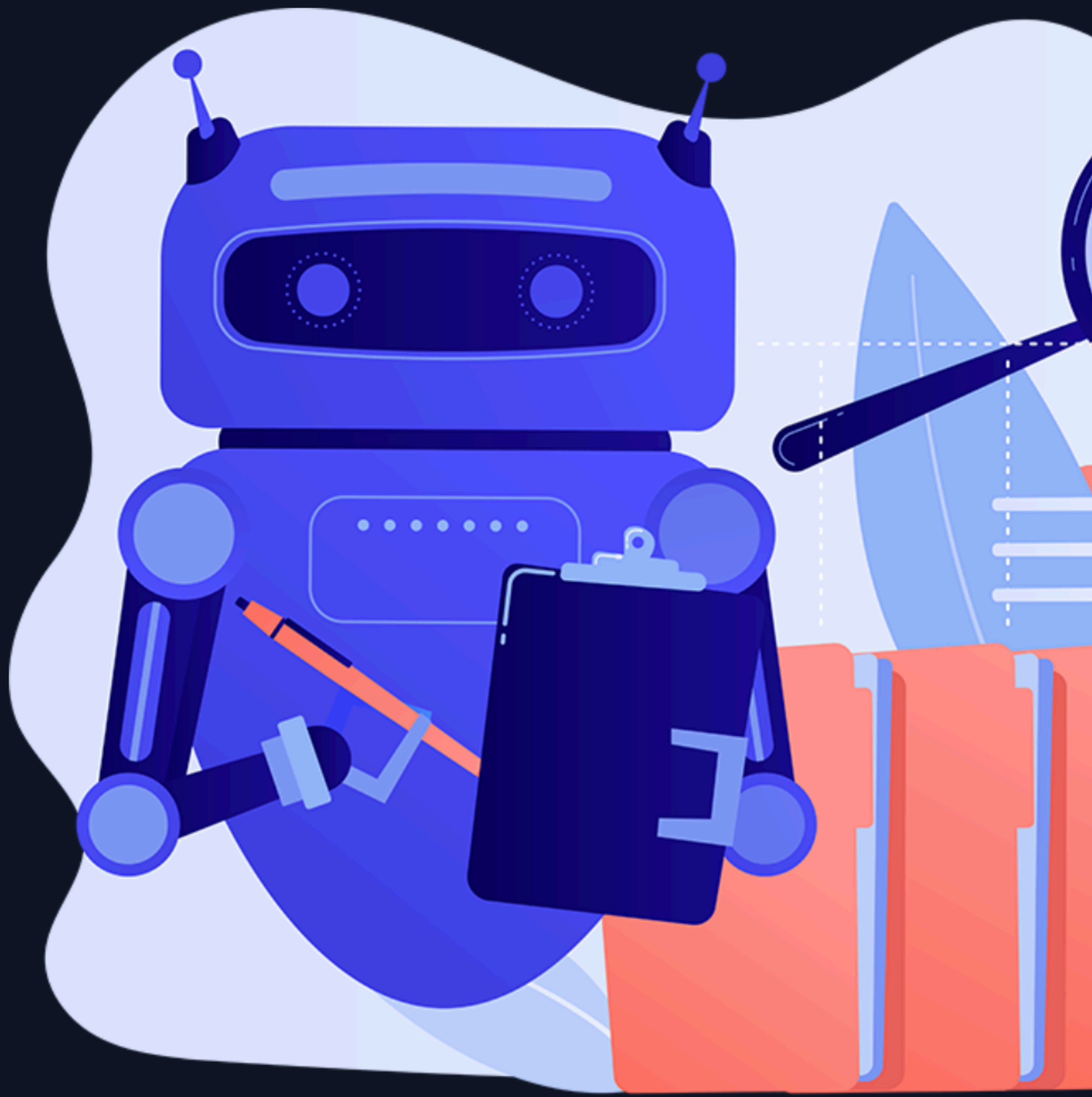
Home Potential Violations Automated Tools GitHub Repo

# A11y Automation Tracker

A more thorough way to track the potential accessibility violations and the automated linters and tests currently available.



Home
Potential Violations
Automated Tools
GitHub Repo

# A11y Automation

A more thorough way to track the potential accessibility violations and the automated linters and tests currently available.

https://a11y-automation.dev

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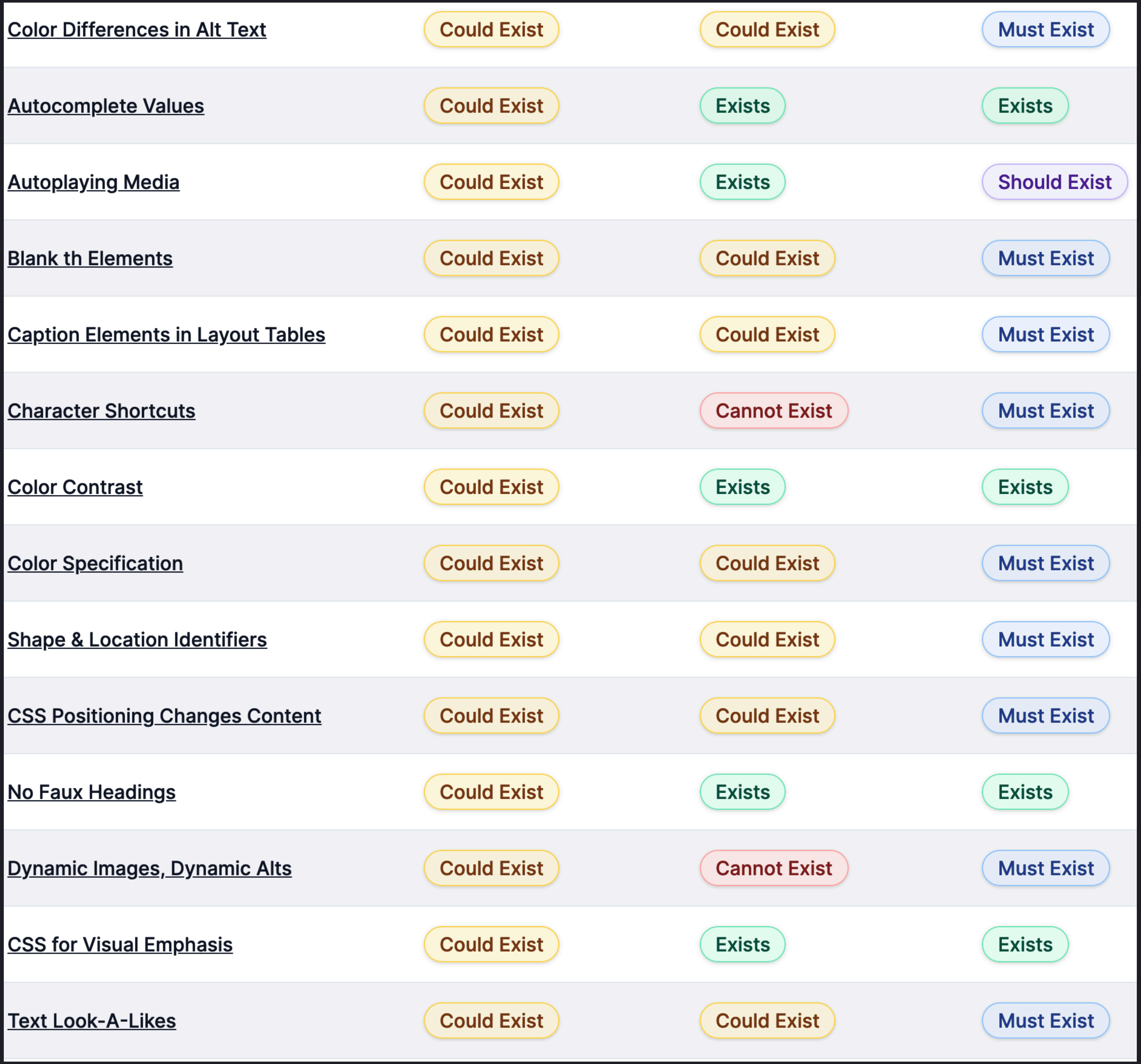

| | | | |
|---|---|---|---|
| Color Differences in Alt Text | Could Exist | Could Exist | Must Exist |
| Autocomplete Values | Could Exist | Exists | Exists |
| Autoplaying Media | Could Exist | Exists | Should Exist |
| Blank th Elements | Could Exist | Could Exist | Must Exist |
| Caption Elements in Layout Tables | Could Exist | Could Exist | Must Exist |
| Character Shortcuts | Could Exist | Cannot Exist | Must Exist |
| Color Contrast | Could Exist | Exists | Exists |
| Color Specification | Could Exist | Could Exist | Must Exist |
| Shape & Location Identifiers | Could Exist | Could Exist | Must Exist |
| CSS Positioning Changes Content | Could Exist | Could Exist | Must Exist |
| No Faux Headings | Could Exist | Exists | Exists |
| Dynamic Images, Dynamic Alts | Could Exist | Cannot Exist | Must Exist |
| CSS for Visual Emphasis | Could Exist | Exists | Exists |
| Text Look-A-Likes | Could Exist | Could Exist | Must Exist |

Could Exist

===

Work To Do

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# Community Participation

1. File issues
2. Validate issues
3. Help write documentation that doesn’t exist yet
4. Edit documentation that does exist
5. Create graphics for documentation that exists
6. Submit a PR for an issue (**https://help-wanted.emberjs.com**)
7. Write an RFC (or co-write!)
8. Help upgrade an Ember add-on to be Embroider v2 ready
9. Ask me for more ideas! I have lots!

# What part will *you* play?

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Start where *you* are.

# Our Future

# Reach

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What platform provides *maximum* reach?

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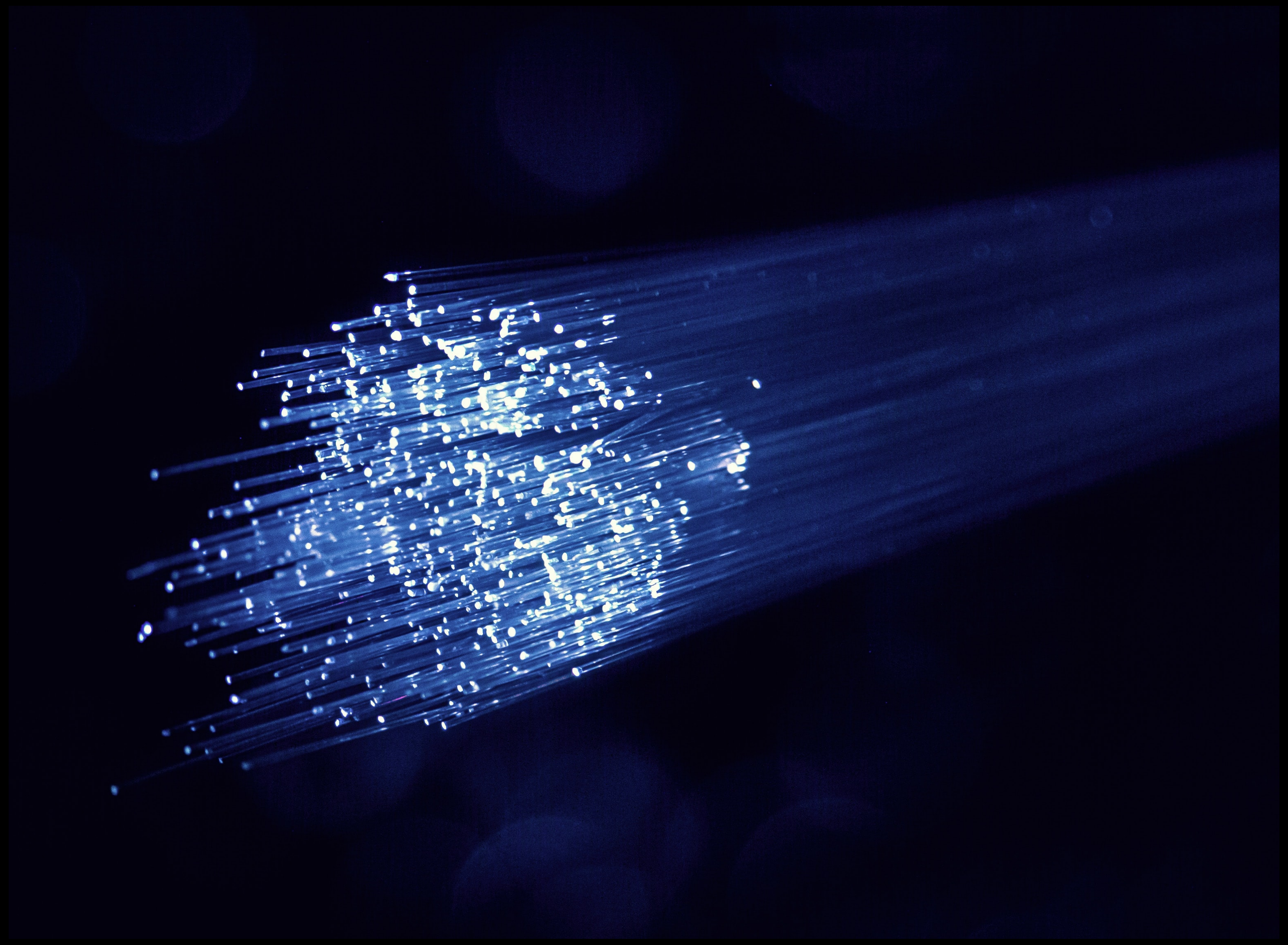

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# Reach Constraints

- Must have a device
- Must have users
- Must have some sort of network connectivity
- (P.S. Physical height is not a constraint)

🤔 🤔 🤔

# www

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Think outside your dev machine.

“Paint the picture, not the frame”

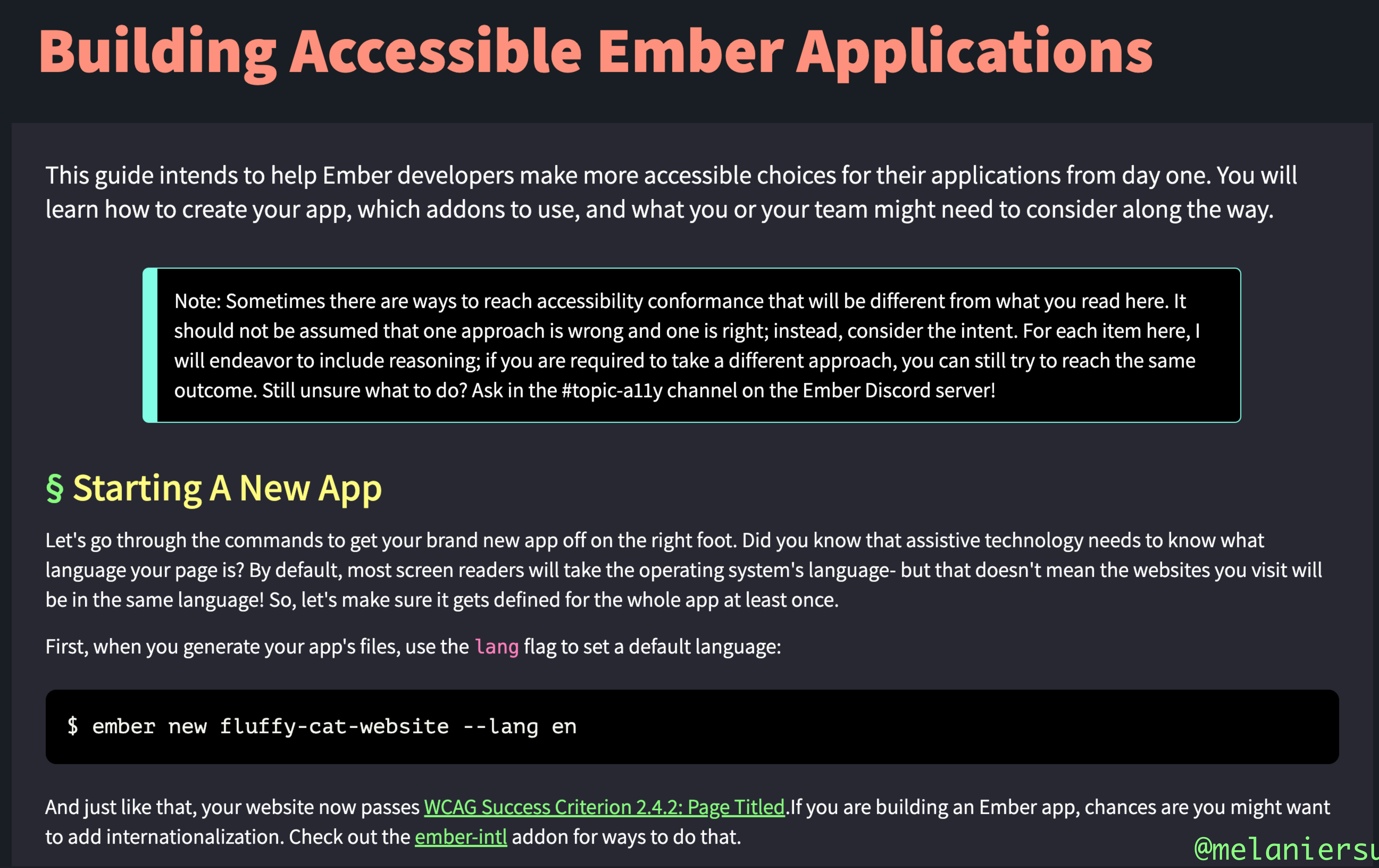
- ERIC BAILEY (@ERICWBAILEY)

The future of a11y in Ember is…

# Design Systems

“Also here’s something new and helpful for you”

- EVERY EMBER SPEAKER, EVER



# Building Accessible Ember Applications

This guide intends to help Ember developers make more accessible choices for their applications from day one. You will learn how to create your app, which addons to use, and what you or your team might need to consider along the way.

> Note: Sometimes there are ways to reach accessibility conformance that will be different from what you read here. It should not be assumed that one approach is wrong and one is right; instead, consider the intent. For each item here, I will endeavor to include reasoning; if you are required to take a different approach, you can still try to reach the same outcome. Still unsure what to do? Ask in the #topic-a11y channel on the Ember Discord server!

## § Starting A New App

Let's go through the commands to get your brand new app off on the right foot. Did you know that assistive technology needs to know what language your page is? By default, most screen readers will take the operating system's language- but that doesn't mean the websites you visit will be in the same language! So, let's make sure it gets defined for the whole app at least once.

First, when you generate your app's files, use the `lang` flag to set a default language:

```
$ ember new fluffy-cat-website --lang en
```

And just like that, your website now passes WCAG Success Criterion 2.4.2: Page Titled.If you are building an Ember app, chances are you might want to add internationalization. Check out the ember-intl addon for ways to do that.

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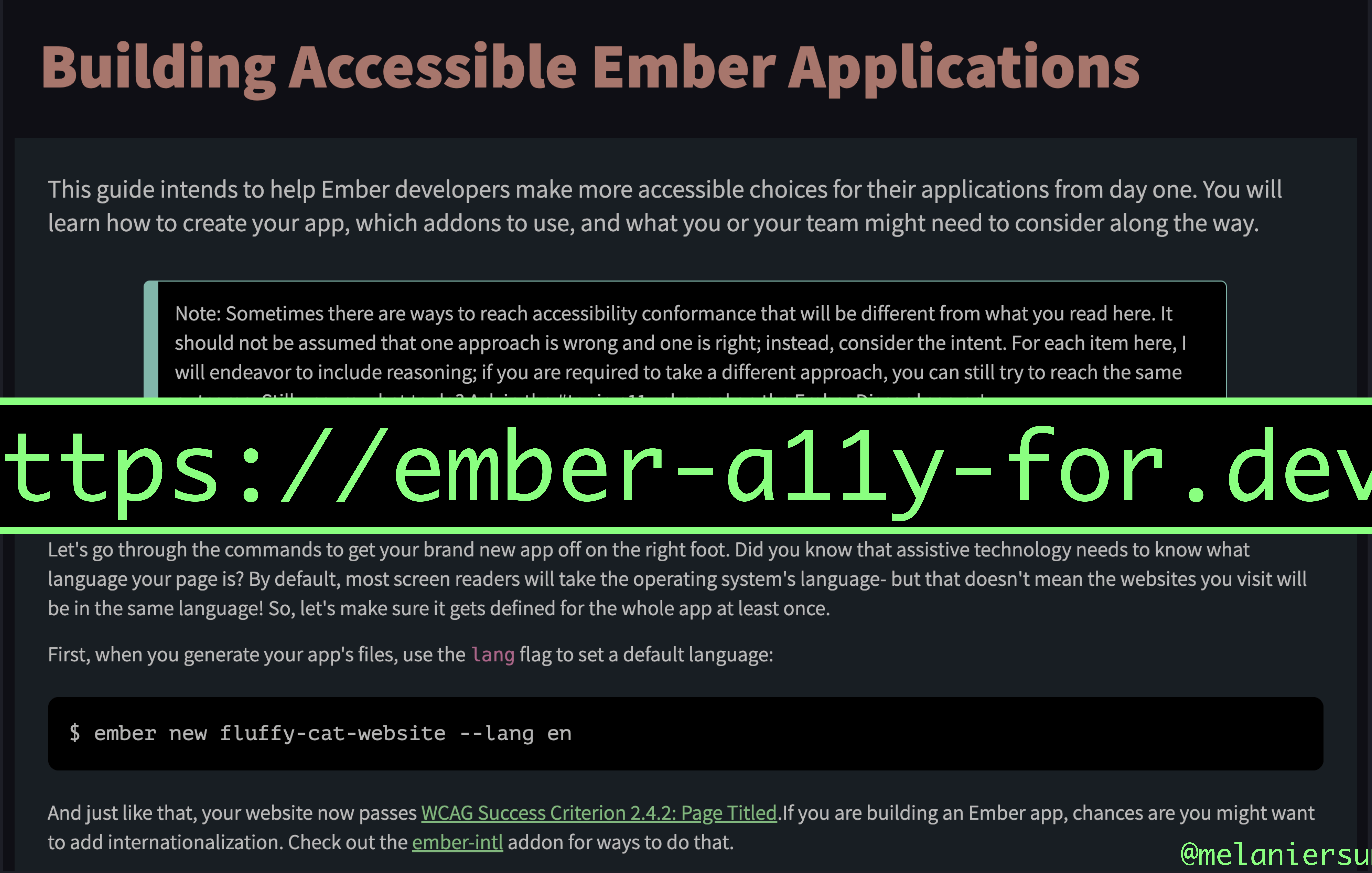

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https://ember-a11y-for.dev

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You do not require permission to create accessible code.

- ME

You do not require permission to create accessible code.

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