

Testing Web Accessibility in React

Hi I'm Kylie

- **Role:** Developer at Thoughtworks
- **Experience:** Full stack web development specialising in frontend
- Enjoys spreading knowledge with others 😊



Let's talk about...

1. What is web accessibility? 

2. Building in accessibility 





















3. Can I automate testing? 

4. Manual testing 

**What is web accessibility
(a11y)?** 

“Web accessibility means that websites, tools, and technologies are designed and developed so that people with disabilities can use them.”

— W3C Web Accessibility Initiative

| ACCESSIBILITY NEED |  |  |  |  |  |
|-----------------------|---|--|--|--|--|
| | TOUCH | SEE | HEAR | SPEAK | COGNITION |
| PERMANENT | One Arm  | Blind  | Deaf  | Nonspeaking  | Learning Disability  |
| TEMPORARY | Arm Injury  | Cataract  | Ear Infection  | Laryngitis  | Sick  |
| SITUATIONAL | New Parent  | Distracted Driver  | Bartender  | Quiet Space  | Distracted  |



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Accessibility needs can be permanent, temporary or situational

Types of disabilities (table format)

| Accessibility need | touch | see | hear | speak | cognition |
|---------------------------|--------------|-------------------|---------------|--------------|---------------------|
| permanent | one arm | blind | deaf | non speaking | learning disability |
| temporary | arm injury | cataract | ear infection | laryngitis | sick |
| situational | new parent | distracted driver | bartender | quiet space | distracted |

Why should I care?

- I want everyone to be able to use my product
- I might get sued (Disclaimer: I'm not a lawyer)
 - Since 2020: EU Web Accessibility Directive for public sector
 - From 2025: European Accessibility Act (EEA) applies to the private sector. (Germany: Barrierefreiheitsstärkungsgesetz)
- ...and so on

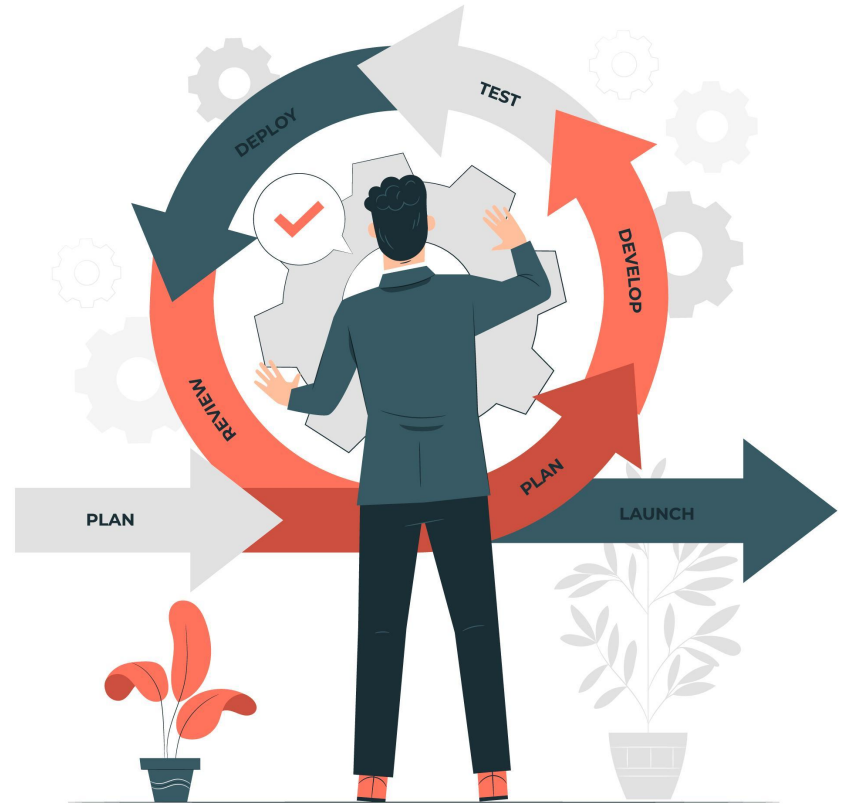
Am I doing it right?

- Web Content Accessibility Guidelines (WCAG) success criteria:
 - A (minimum)
 - AA
 - AAA (highest)
- AA is the recommended standard (see Conformance)
- More on WCAG Quick Reference (e.g. Success Criterion Focus Visible)

Building in accessibility



Shift accessibility to the left



Example process

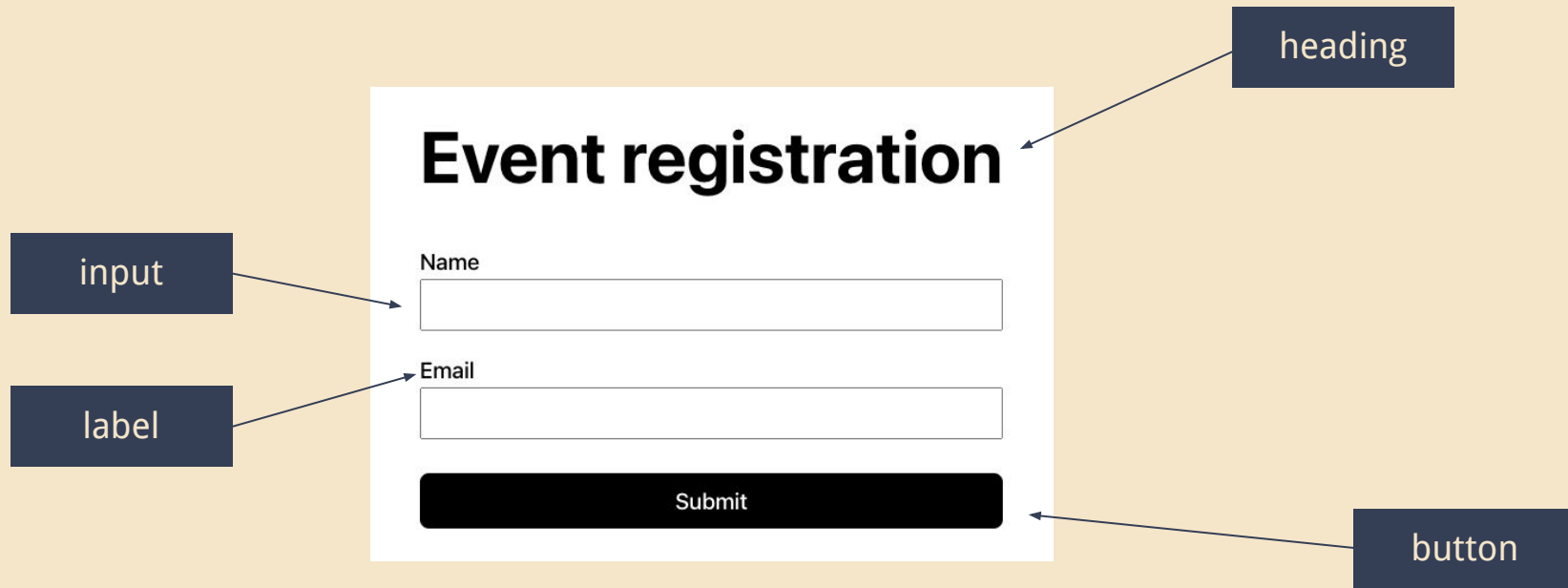
➡ Acceptance criteria

➡ Coding standards

➡ Automated tests

➡ Manual testing guidelines

Example component



Acceptance criteria

- Screen reader desktop

| Component | Action | Result |
|----------------|--------|--|
| <u>Input</u> | Tab | Announces role as input with label (email, name) |
| <u>Button</u> | Tab | Announces role as button with label (submit) |
| <u>Heading</u> | Arrow | Announces role as heading level 1 |

Acceptance criteria

- Keyboard

| Component | Action | Result |
|-----------|--------|-----------------------|
| Input | Tab | Focus ring is visible |
| Button | Tab | Focus ring is visible |
| Button | Enter | Submits the form |
| Button | Space | Submits the form |
| Heading | Tab | Does not have focus |

Coding standards

- Semantic HTML in mind (e.g. <button> instead of <div>)
- Avoiding common accessibility failures
- Designing tests that promote accessibility



Let's see it in action!

Can I automate testing? 🤖

What can I automate?

- Checking contrast
- Heading order
- Checking if HTML elements are used correctly
- Bonus: writing specific tests for interactions
- ...and so on

Tools

- Text Axe
 - Similar to a code linter
 - Cannot check contrast
- Testing library
 - Testing how a user would interact with the UI
 - Interactions
- Lighthouse accessibility audit
 - Page level tests
 - Can check contrast



Let's see it in action!

Manual testing

What cannot be automated?

- If an image's alternative text is descriptive enough for screen reader users
- Deciding whether an image should be read by the screen reader or not
- If link text is descriptive enough
- Good user experience for users of assistive technology
- Compatibility of complex components with assistive technology
- ...and so on

Create a manual testing guide

- Preliminary checks can be used if you are just starting out with checking your application's accessibility.
- Checklist
- Accessibility audits or **testing with users with disabilities**



Let's see it in action!

Questions or feedback? 🤔

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Further information

- [A practitioner's accessibility handbook \(beginner's guide\)](#), Thoughtworks
- [Introduction to Accessibility](#) , W3C Web Accessibility Initiative
- [How To Bake Layers Of Accessibility Testing Into Your Process](#), Kate Kalcevich and Mike Gifford
- [Automated Accessibility Testing in JavaScript Frameworks - axe-con 2021](#), Mark Steadman
- [Navigating the Web as a Blind Person: Accessible vs. Inaccessible Website Examples](#)
- [Will your code work with assistive technologies?](#)

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for your feedback