Evaluating Web Accessibility: How hard can it be?

Jonathan Whiting
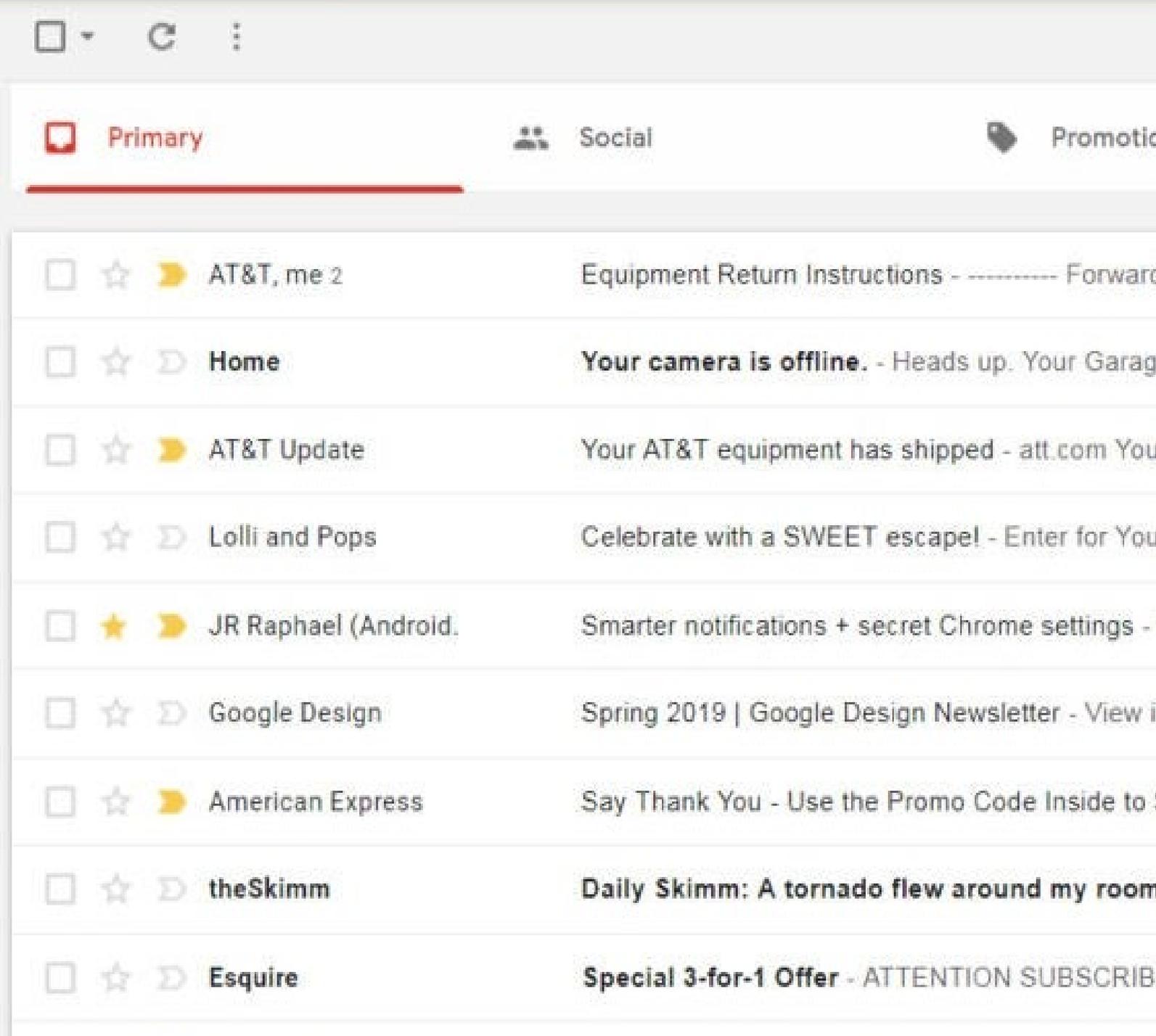
WebAIM.org

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web accessibility in mind
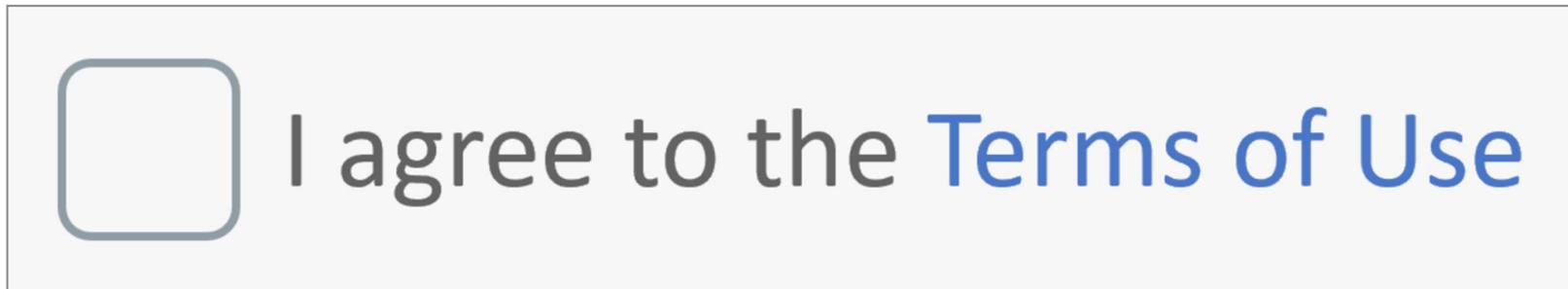
What the hell was I thinking?

"Could you test color & contrast before our morning meeting?"

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Evaluating Color and Contrast – How hard can it be?

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Testing contrast and use of color is one of the most deceptively difficult tasks in a web accessibility evaluation. Consider this screenshot of a checkbox as an example:

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This simple checkbox and label text require at least 15 checks to test conformance with WCAG requirements for contrast and color use.

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webaim.org/blog/contrast-how-hard-can-it-be

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WAVE

+Keyboard testing

+Browser zoom
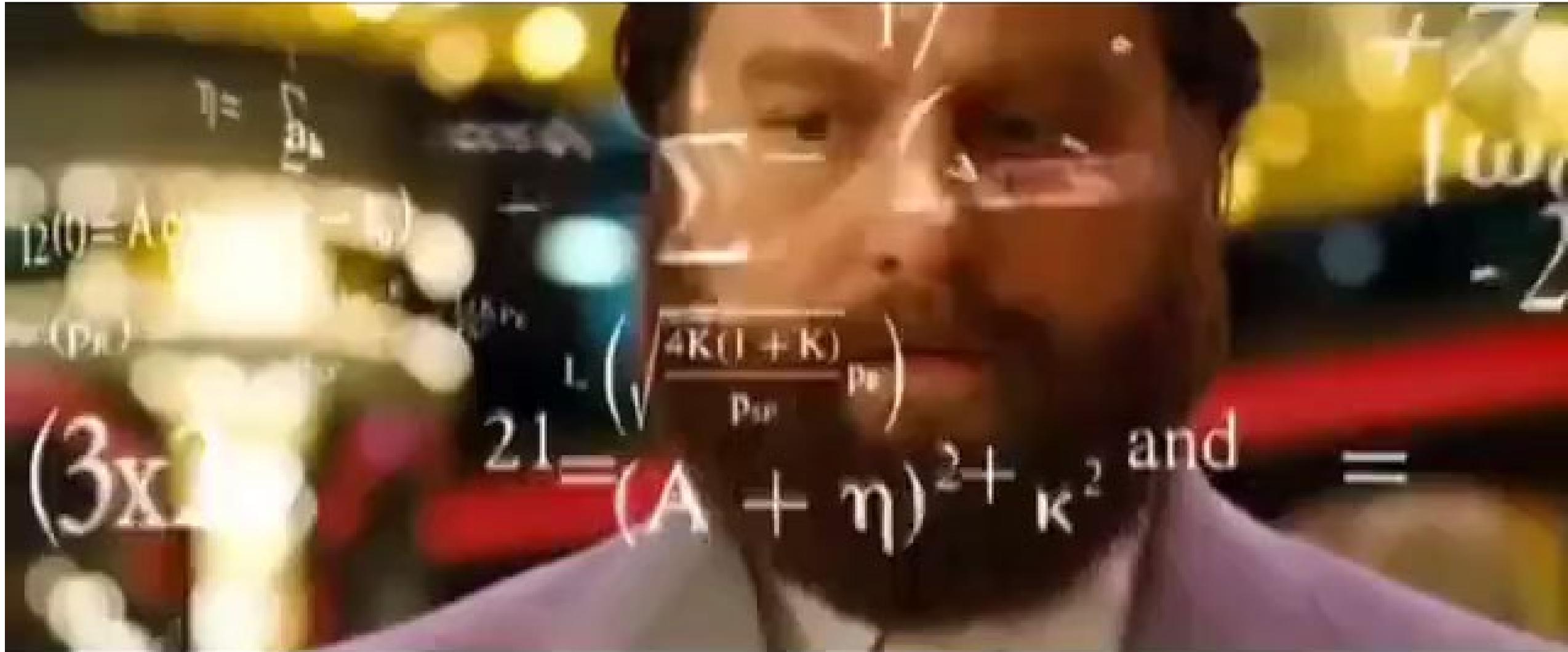
+Contrast tools

+DevTools

Etc.

Forms

- ☐ , ☐ - Ensure form controls have descriptive, correctly-associated labels and that `<label>` is used when possible.
  - ○ If a form control gains focus or is activated when its label text is **clicked** with a mouse, then it is likely that the text is a correctly-associated `<label>`.
- ☐ , ☐ - If a label is not visible, check for a hidden label, `aria-label`, or `title` attribute.
- ☐ – If a `<select>` menu does not have a `<label>`, confirm that the default option presents the purpose of the menu.
- ☐ , ☐ , ☐ , ☐ - Use the **Code panel** to explore broken labels.
- ☐ , ☐ , ☐ - Look for `<fieldset>`/`<legend>` where a higher-level description for a group of form fields is needed.
- Required fields are visually apparent and are presented to a screen reader through at least one of the following: label/accessible name, `aria-required`, or the `required` attribute.
- Trigger form errors and then test error feedback using the **WAVE browser extension**.
- ☐ – Descriptions and inline error messages are associated to the correct form control using `aria-describedby`.

Tables

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First step: Look it over

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What do you see?

How many contrast and color checks?

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5

15

How many checks for a standard checkbox and underlined link with default focus outline?

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At least 4.5:1 contrast:

1. Label text
2. Link text
3. Link text – mouse hover
4. Link text – keyboard focus
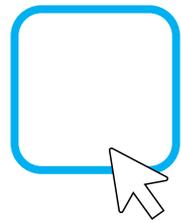5. Link text – active
6. Link text – visited

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1. A 3:1 contrast ratio between link text and non-link text
   - Use [WebAIM link contrast checker](#)

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2. Link must present a non-color cue (typically underline) on mouse hover

3. AND keyboard focus

3:1 Contrast of UI "Boundaries"

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3:1 contrast of UI "States"

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3:1 between default and :focus required

✓ ☐ **default**

✓ ☐ :hover

✗ ☐ :focus
(Probably)

Address with keyboard focus outline

✓ ☐ default

✓ ☐ :hover

✓ ☐ :focus

Don't forget the checkbox

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At least 4.5:1 contrast

1. Label text
2. Link text
3. Link text – mouse hover
4. Link text – keyboard focus
5. Link text – active
6. Link text – visited

At least 3:1 contrast

7. Between label text and link text
8. Visual cue when the link has keyboard focus
9. Visual cue that the checkbox has keyboard focus
10. Checkbox border – default
11. Checkbox border – mouse hover
12. Checkbox border – keyboard focus
13. Checkbox border – active
14. Checkbox border – checked
15. The checkmark indicating the checkbox is checked.

And that's combining

- 2.4.7 Focus Visible (Level AA) requires a visible indication that an element has keyboard focus.

- 1.4.1 Use of Color (Level A) states that this indication cannot be just a subtle change in color.

- 1.4.11 Non-text Contrast (Level AA) requires 3:1 contrast for graphical objects and user interface components.

Into a single requirement of a keyboard focus cue with 3:1 contrast.

What else?

WAVE

A lot of info at-a-glance

- Form label – Good
- Missing form label – Bad
- Orphaned form label – Almost
- Aria-label – Why?
- Broken ARIA label – WHY???!!!
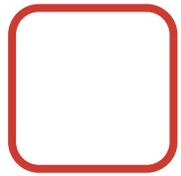- Very low-contrast text

Keyboard testing?

Always

- Focus order
- Focus outline
- Potential contrast issues with focus states (that you can test later if you have concerns)
- Submit the form with the checkbox unchecked

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⚠️ *You must agree to the terms of use to continue*

- Contrast?

- Error feedback?

- ARIA?

- Anything else?

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⚠️ *You must agree to the terms of use to continue*

- Run WAVE again using Browser Extension
- Contrast
  - Checkbox error state
  - Error message text
  - NOT contrast of the error icon
- NOT alternative text of the error icon
- ARIA
  - Should you have included aria-required from the start?

- aria-invalid
- aria-describedby
- "Input assistance"
  - Error identification
  - Error Suggestion
  - Error feedback is not color-only
  - All of this information is presented to a screen reader user.

Browser Developer Tools?

It depends

- Did your visual scan, mouse, or keyboard testing reveal contrast concerns?

- Did your WAVE test reveal any problems?
  - Missing or orphaned label
  - ARIA

Screen reader?

I probably wouldn't

- If you test with a WAVE and DevTools, you won't learn anything new with a screen reader.

- If you're not comfortable using DevTools, a screen reader might be an easier way for you to find problems, but not what is causing the problem.

- Maybe test if WAVE and DevTools reveal issues.
    - <div onclick="checkboxStuff()" tabindex="0" role=…>

Dragon?

Nope

- Nothing in this interaction poses unique challenges for voice control users

- What would you do if there is a problem?

Thank you!

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