Latest tech, great! Accessibility, not so much.



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#FOSDEM202



Why should you care?

"Computer accessibility refers to the accessibility of a computer system to all people, regardless of disability type or severity of impairment."

One billion people, or 15% of the world's population, experience some form of disability.

At least 10% of the adult population has a vision impairment.

Vision • Mobility • Auditory • Neurological • Cognitive • Medical • Psychological





Plus you get...

- A tool or app that is **easier to use by everyone**
- A **bigger user or contributor base**, as more people can use your project
- Advantage over your competitors
- they use, like federal agencies
- Potentially expose areas in UI or user flow that need improvement
- Plus it's 2021... it's about time we not only talk about inclusiveness, but act on it

• Cater for clients whose businesses have a mandatory accessibility requirement for the software that



Where can you start?

Learn about accessibility (ally)

www.a11yproject.com

-> great resources & checklist



Cluse - Sketch

Color blindness simulators

Free tools for designers

Color contrast checkers

- Stark Figma, Sketch, Adobe XD
- <u>A11y Color Contrast Checker</u> Figma

- <u>Able Friction free accessibility</u> Figma
- Stark Figma, Sketch, Adobe XD

Browser tools

Firefox Accessibility Tool - all in one tool

- color blindness simulator
- color contrast checker use as inspect or entire page
- audit for contrast, keyboard navigation and text label issues
- shows tabs order for navigation

<u>Google Lighthouse</u> - runs like an audit

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Other tools

Wave - a11y evaluation tool. Chrome &

Firefox extensions

Color blindness simulator

Colorblindly - extension

Cobis - online tool

Color contrast checker

Colour Contrast Checker - extension & online

tool

Coolors - extension & online tool



Supportive assistive technology

- <u>Orca</u>(Linux/Gnome)
- <u>Emacspeak</u> (Linux)
- <u>VoiceOver</u> (Mac OS X)
- <u>JAWS</u> (Windows)
- <u>NVDA</u> (Windows)
- <u>Dolphin Supernova</u> (Windows)
- <u>ZoomText</u> (Windows)

Why don't you try it yourself?

Close your eyes and try to send an email using a screen reader. Don't cheat!

Automated testing with Pally

Pally runs accessibility tests on your pages via the command line or Node.js, so you can automate your testing process.

With Pa11y you can define routes to be tested, and be able to take screenshots of those routes through actions which help you go through the app.



```
ystart-plugin git:(master) 🗶 yarn test:accessibility
   un v1.22.10

    config .pallyci.json

    Pally on 1 URLs
   tp://localhost:3000/a/grafana-easystart-app/ - 11 errors
rors in http://localhost:3000/a/grafana-easystart-app/
Anchor element found with no link content and no name and/or ID attribute.
(html > body > grafana-app > sidemenu > div:nth-child(3) > div:nth-child(1) > a)
Anchor element found with a valid href attribute, but no link content has been supplied.
(html > body > grafana-app > sidemenu > div:nth-child(3) > div:nth-child(2) > a)
<a class="sidemenu-link" href="/dashboard/new"><span class="icon-circle sideme...</a
Anchor element found with a valid href attribute, but no link content has been supplied.
```

```
"url": "http://pally.org/",
"viewport": { "width": 320, "height": 480 },
"actions": [
 "wait for element .site-brand to be visible",
 "screen capture screenshots-output/mobile-main-view.png",
 "click element .site-nav item button",
 "screen capture screenshots-output/mobile-expand-menu.png"
```





Overwhelming right?

Let's break it into pieces

Audit your project

Use one of the tools presented to see where your project stands today

02

Identify main issues

Write down all important or repetitive issues

04

Create a plan

Be it a roadmap, prioritization matrix or anything that works for you

05

Start small

Go after the low hanging fruit. What's the easiest fix you can do?

03

Estimate time/effort

Give each a rough time or effort estimate

06

+ Involve community

- test your GUI with them
- invite them to open accessibility related tickets



I recently tested the projects I was working

	HTML	Color Blindness	Color Contrast	Tab Navigation
Easystart V2	1 Error*	OK	OK	Unusable Can't select integrations, can't scroll.
Integrations Management	5 Errors* 50 Alerts	OK	OK*	Unusable Can't select integrations.
Synthetic Monitoring (setup)	6 Errors* 1 Alert	OK	Ok	Hardly usable Can create a check. Can't use probes or config.
Alerting UI	16 Errors 4 Alerts	OK	2 Issues	Somewhat usable Can create rules, but can't edit as the button is skipped. Can create silences.
Loki (querying logs in explore)	7 Errors 9 Alerts	OK	5 Issues	Unusable Tab gets stuck in query input. Can't see half of selection items.

Main issues

• Navigation:

- $\circ~$ impossible to use the app with keyboard only
- $\circ~$ impossible to use the app with screen readers

• Structural elements:

- page headings levels are sometimes skipped used to facilitate keyboard navigation by users of assistive technology
- o missing page regions or ARIA landmarks used to identify significant page areas

• Forms (design system related):

- using empty form labels for on/off switches
- $\circ~$ missing fieldset for button-groups
- missing form labels

• Color contrast:

code highlight issues - red on black has too low contrast

y ers

Fixes everywhere

Small issues:

- Define ARIA landmarks ~ 2 days / feature
- Open Github issues for form elements related and you have time
- Make sure we use labels for all dropdowns, budday / feature
- Use proper level headings ~ 1 day / feature



We can fix them in under a week!

• Open Github issues for form elements related to the design system. Assign it to yourself if you can fix it

Make sure we use labels for all dropdowns, button-groups, etc or that we have appropriate aria-labels ~ 1



Fixes everywhere

Make it accessible by keyboard

• Visibility of the focus indicator

Users need to be able to easily distinguish the keyboard focus indicator from other features of the visual design.

Persistence of focus

It is essential that there is always a component within the user interface that is active. Ex: if the user closes a dialog the active element may be hidden or removed from the DOM. In this case the active/focus element should be on the button that triggered that dialog window.

Predictability of movement

Usability of a keyboard interface is heavily influenced by how readily users can guess where focus will land after a navigation key is pressed.

• Avoiding keyboard traps

TAB takes you forward to the next focusable item and that SHIFT+TAB takes you backwards. Ex: client-side form validation that forces users back into the incomplete field, preventing them from moving on the next field.

Bypass Blocks

Provide a 'Skip to Content' link (ex: skip sidebar menu)

~ 1 week - 2 months, depending on the feature/area







Test with pally, our own keyboards and voiceover tools

Final steps





Get feedback from community on the changes

Keep learning, keep fixing and write semantic HTML!

Thank you! Let's take some questions.



