

Introduction to Accessibility

Christina Papadimitriou



Christina Papadimitriou

Accessibility Specialist

- 15+ years in telecommunications
- Started as application developer
- Worked 6+ years as front-end developer
- Worked 7 months as Product Owner
- Expert on HTML/CSS, UX, Accessibility and Automation
- Board member of the GreeceJS meetup
- Active member of various tech communities

You can find me at

<https://www.linkedin.com/in/christinapapadimitriou/>

<https://twitter.com/christinapap>

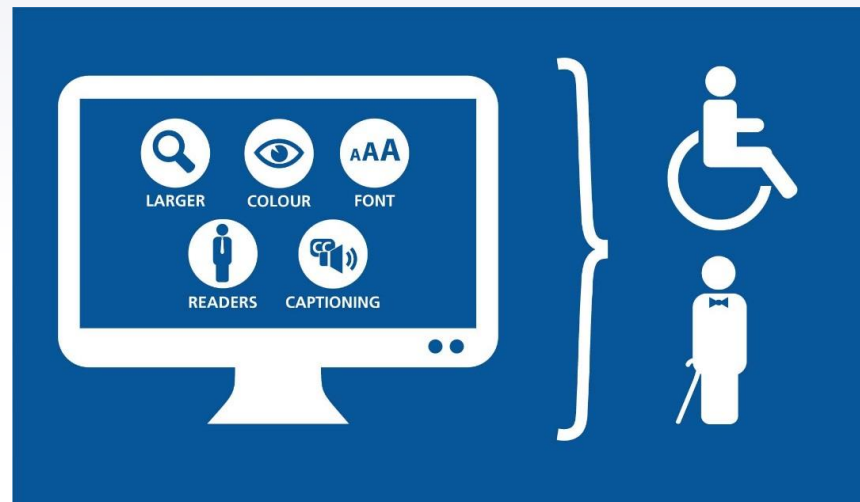


“ **Web accessibility** refers to the inclusive practice of removing barriers that prevent interaction with, or access to, websites by people with disabilities.



Key Issues

- ▶ How users with disabilities access electronic information
- ▶ How **designers** and **developers** enable web pages to function with assistive devices used by individuals with disabilities



Types of disabilities

- ▶ Visual
- ▶ Cognitive, learning, and neurological
- ▶ Auditory
- ▶ Physical
- ▶ Speech
- ▶ Aging-related conditions

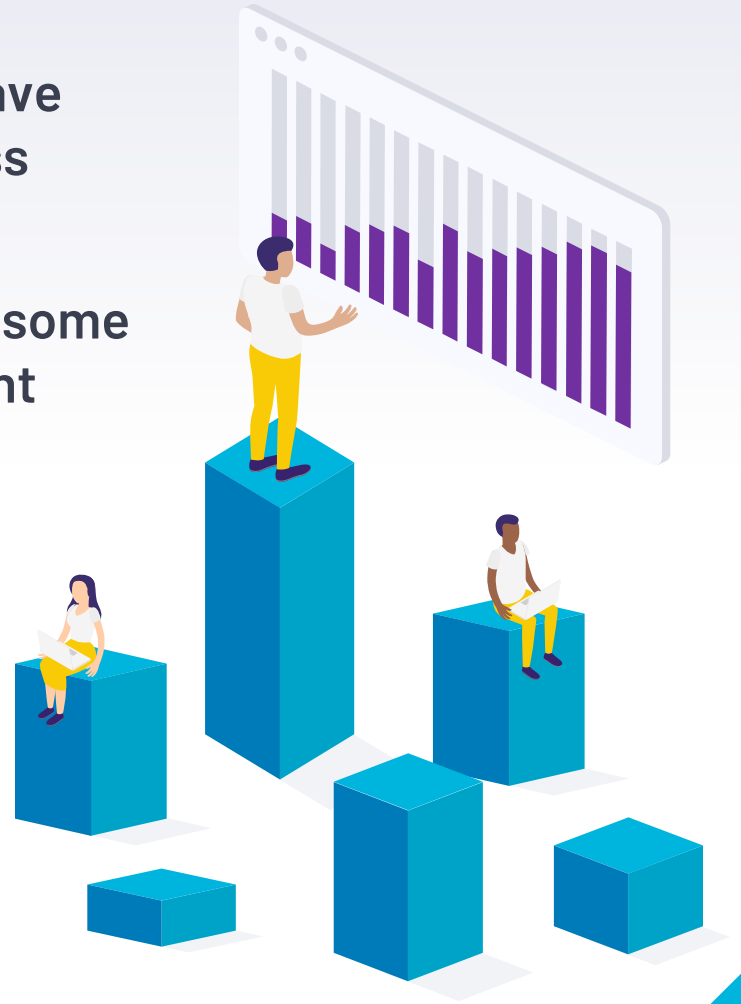


466 million people worldwide have disabling hearing loss

1.3 billion people globally live with some form of vision impairment

15% of the world's population, live with some form of disability

rates **are increasing** due to population ageing and increase in chronic health conditions, among other causes



Assistive Technologies (AT)

AT is any device, software or equipment that helps people work around their challenges, so that they can learn, communicate and function better.

- ▶ Screen readers (JAWS, VoiceOver, NVDA, etc.)
- ▶ Screen magnifiers (ZoomText, MAGic, etc.)
- ▶ Speech to Text
- ▶ Text to Speech
- ▶ Braille



► Standards and Laws

- ▶ **WCAG** is the most universally accepted
- ▶ **Section 504** requires all US federal government-funded programs and activities to be accessible
- ▶ **Section 508** requires all electronic and information and communication technology (ICT) in these programs to be accessible
- ▶ Country-specific Standards and Legislation

Web Accessibility



▶ WCAG: Web Content Accessibility Guidelines

- ▶ Define how to make web content accessible to people with disabilities
- ▶ Developed through W3C process
- ▶ WCAG 2.0 are organized by 4 layers:
 - principles
 - guidelines
 - success criteria
 - techniques

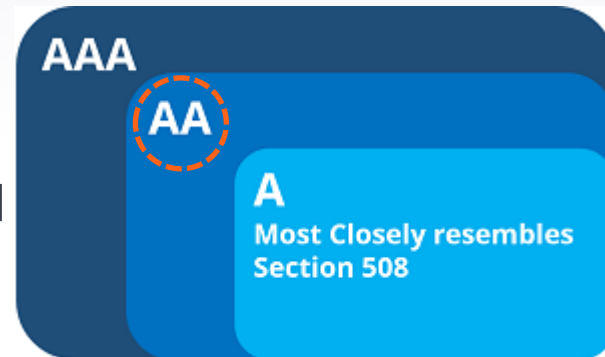


▶ WCAG 2.0

WCAG 2.0 Principles – POUR

- ▶ **P**erceivable – content can be detected
- ▶ **O**perable – content can be manipulated
- ▶ **U**nderstandable – content can be understood
- ▶ **R**obust – content adheres to standards

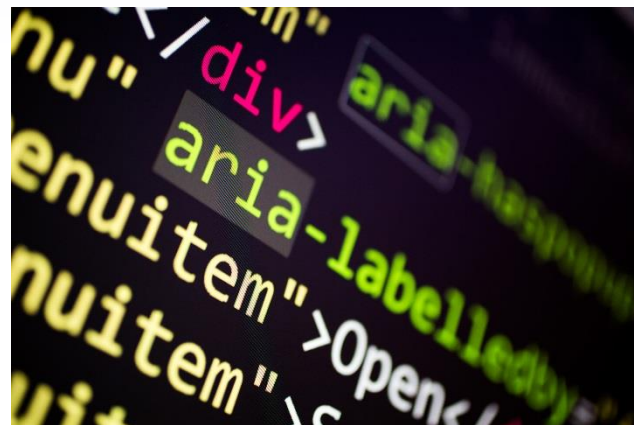
Conformance Levels



▶ WAI-ARIA

- ▶ **WAI:** Web Accessibility Initiative
- ▶ **ARIA:** Accessible Rich Internet Applications suite

It defines a way to make Web content and web applications more accessible to people with disabilities. It especially helps the dynamic content and advanced user interface controls developer with Ajax, HTML, JavaScript, and related technologies.



► How screen readers are used

- All textual content is auto-played
- Navigation using keys
- Utilizing each screen reader's reserved keystrokes
- Rich configuration possibilities (i.e.: language, speech speed, etc)



Keyboard navigation

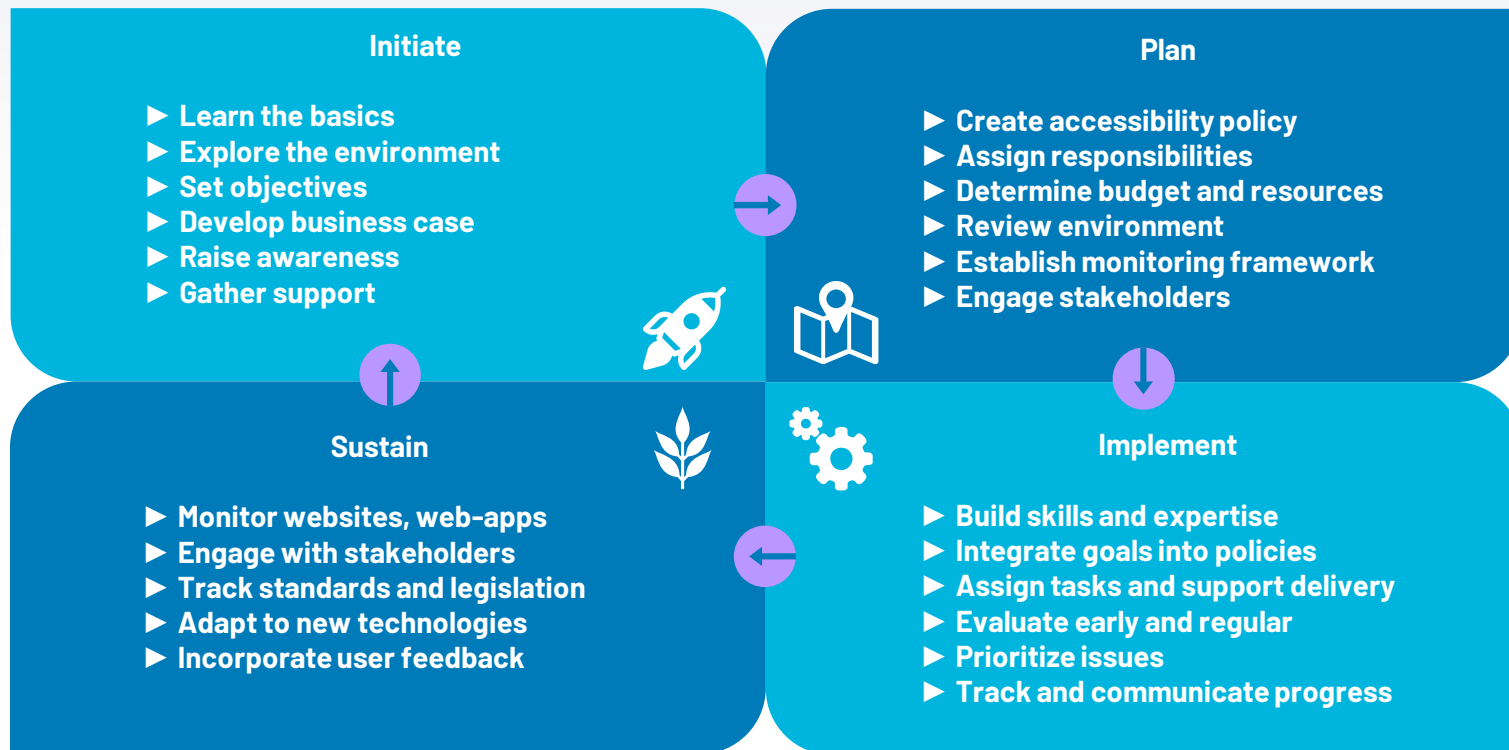
“Users that cannot or do not use a mouse to navigate need the same level of access as those who use a mouse.”





Adapt your Processes

Managing & Planning



Tips for getting started

Designing

- Provide sufficient contrast between foreground and background
- Don't use color alone to convey information
- Ensure that interactive elements are easy to identify
- Provide clear and consistent navigation options
- Ensure that form elements include clearly associated labels
- Provide easily identifiable feedback
- Use headings and spacing to group related content
- Create designs for different viewport sizes
- Include image and media alternatives in your design
- Provide controls for content that starts automatically

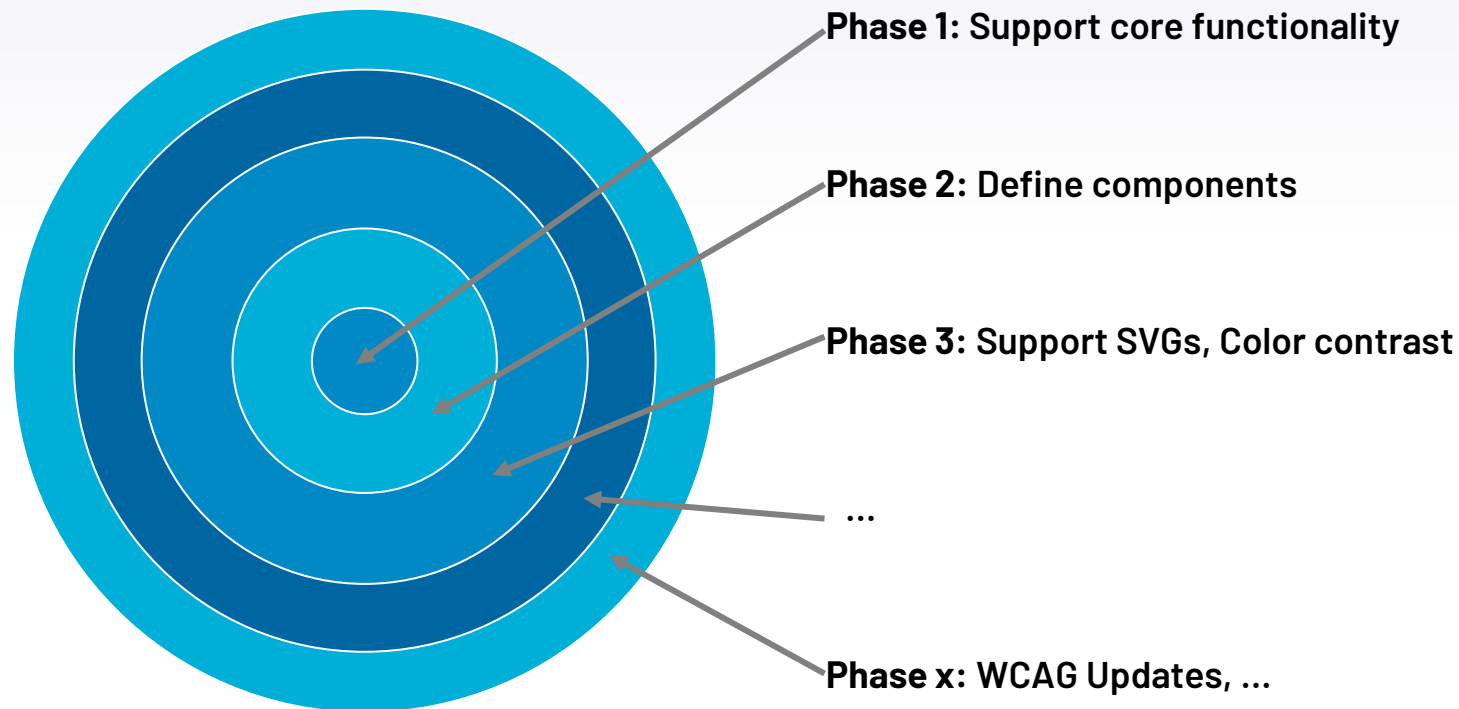
Writing

- Provide informative, unique page titles
- Use headings to convey meaning and structure
- Make link text meaningful
- Create transcripts and captions for multimedia
- Provide clear instructions
- Keep content clear and concise

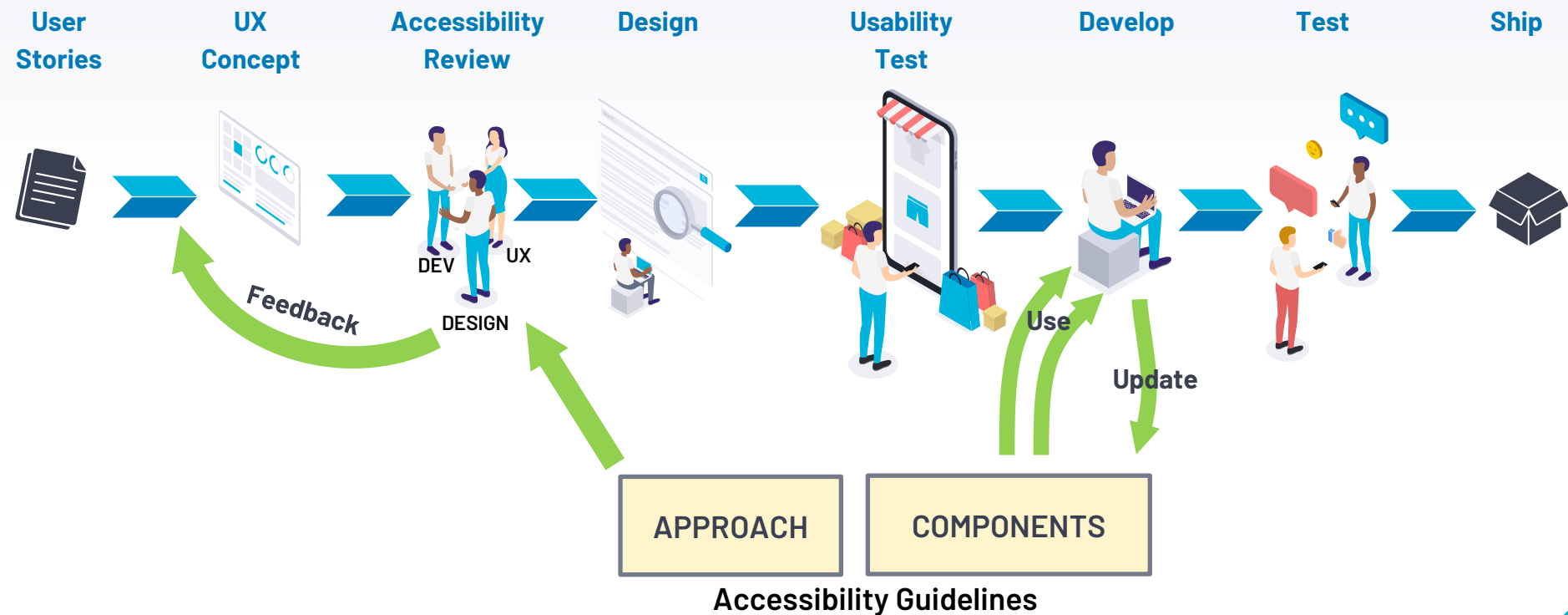
Developing

- Associate a label with every form control
- Include alternative text for images
- Identify page language and language changes
- Use mark-up to convey meaning and structure
- Help users avoid and correct mistakes
- Reflect the reading order in the code order
- Write code that adapts to the user's technology
- Provide meaning for non-standard interactive elements
- Ensure that all interactive elements are keyboard accessible
- Avoid CAPTCHA where possible

► Plan with phases



Process



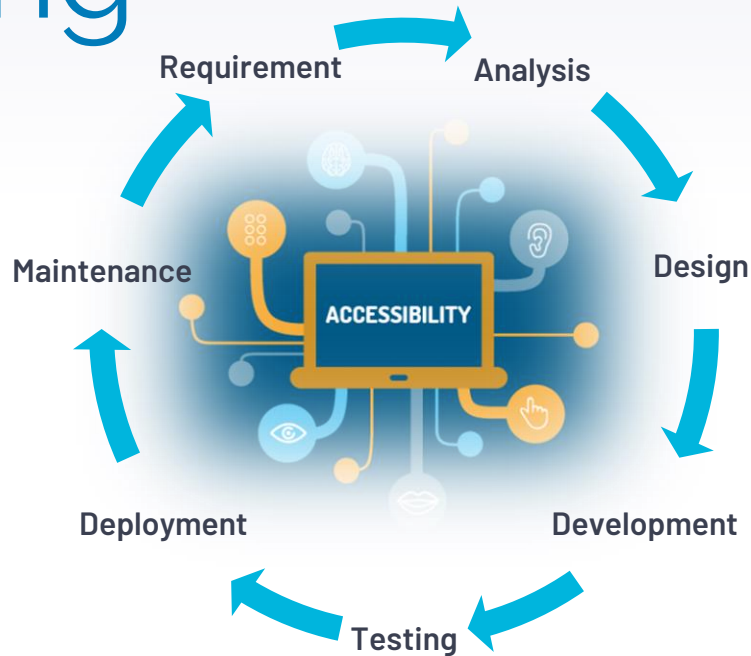
▶ Test & Evaluate

- ▶ Initial Checks
- ▶ Use Evaluation tools
- ▶ Perform conformance evaluation

Tips:

- ✓ We cannot check all accessibility aspects automatically.
Human judgement is required
- ✓ Sometimes evaluation tools can produce false or misleading results
- ✓ Evaluation tools can assist and can **not determine** accessibility

► Accessibility is not a one-time thing



THANKS!

Any questions?

You can find me at:

-  @christinapap
- <https://www.linkedin.com/in/christinapapadimitriou/>



References

- <https://www.w3.org/WAI/>
- <https://www.w3.org/WAI/standards-guidelines/wcag/>
- <https://www.w3.org/WAI/standards-guidelines/aria/>
- <https://www.w3.org/TR/wai-aria-practices/examples/>
- <https://www.w3.org/WAI/ER/tools/>
- <https://www.w3.org/WAI/policies/>
- <http://webaim.org/techniques/keyboard/>
- <https://developer.mozilla.org/en-US/docs/Web/Accessibility>
- <https://accessibility.blog.gov.uk/>
- <https://accessibility.digital.gov/>
- <https://www.who.int/news-room/facts-in-pictures/detail/disabilities>
- <https://www.powermapper.com/blog/government-accessibility-standards/>

Image sources

- Slide 4: <https://www.richmedia.com/richideas/articles/6-ways-to-make-your-projects-accessible>
<https://www.richmedia.com/richideas/img/6-easy-ways-to-make-your-projects-more-accessible-banner.jpg>
- Slide 5: <https://coolbuzz.org/the-exciting-future-of-accessible-technology/>
<https://coolbuzz.org/wp-content/uploads/2018/06/Accessible-Technology.jpg>
- Slide 7: <https://www.tecnoaccessible.net/en/content/accessibility-and-assistive-technologies>
https://www.tecnoaccessible.net/sites/default/files/styles/medium/public/2020-02/Tecnologias_apoyo-02.png?itok=D2DZItIA
- Slide 8: <http://digitalinclusionnewslog.itu.int/2015/10/12/section-508-wcag-and-e-learning/>
<http://digitalinclusionnewslog.itu.int/wp-content/uploads/sites/9/2015/10/Section-508.png>
- Slide 9: <https://www.multidots.com/web-accessibility-overview/>
https://www.multidots.com/wp-content/uploads/2018/02/infographic_white-1.jpg?quality=90
- Slide 10: <https://www.td.org/insights/accessibility-for-e-learning-section-508-and-wcag>
<https://d19d5sz0wk10lu.cloudfront.net/dims4/default/98a02ff/2147483647/resize/800x%3E/quality/90/?url=https%3A%2F%2Fatd-brightspot.s3.amazonaws.com%2Fwcag-3levels.png>
- Slide 11: <https://patrickhlauke.github.io/aria/presentation/>
- Slide 12: <https://blog.testlodge.com/screen-reader-accessibility-testing/>
<https://blog.testlodge.com/wp-content/uploads/2019/06/screen-reader-accessibility-testing.png>
- Slide 13: <https://blogs.sap.com/2015/12/11/keyboard-navigation-enables-the-cool-toys-accessibility-fiori/>
https://blogs.sap.com/wp-content/uploads/2015/12/id_100378541_849263.jpg
- Slide 18: https://i1.wp.com/uxeng.net/wp-content/uploads/2017/08/accessibility_governance_v1-00.png
- Slide 20: <https://medium.com/fbdevclagos/why-web-accessibility-is-important-and-how-you-can-accomplish-it-4f59fda7859c>
https://miro.medium.com/max/600/1*HnSxmR5WbFCD98wXgUe3EA.png

Presentation template: <https://www.slidescarnival.com/gaoler-free-presentation-template/9122>