

# Hands-on accessibility testing



Nicolas Steenhout

@vavroom

<https://incl.ca>

[nic@incl.ca](mailto:nic@incl.ca)

<https://a11yrules.com>

Knowbility

<http://knowbility.org>

# Handout

<http://bit.ly/a11y-testing-handout>

# Disclaimer

No time for everything

Getting you started

Workflow to find a majority of issues

# Accessibility Overview

**"The inclusive practice  
of making websites  
usable by everyone,  
regardless of ability or disability."**

1 in 5





## Vision

Blind, low vision, colour blind



## Hearing

Deaf, hard of hearing



## Physical or Motor

Fine control, slow motion, no mouse



## Cognitive or Neurological

Learning impairment, distracted, decision-making

# Temporary impairments

Sighted  
keyboard-only  
users

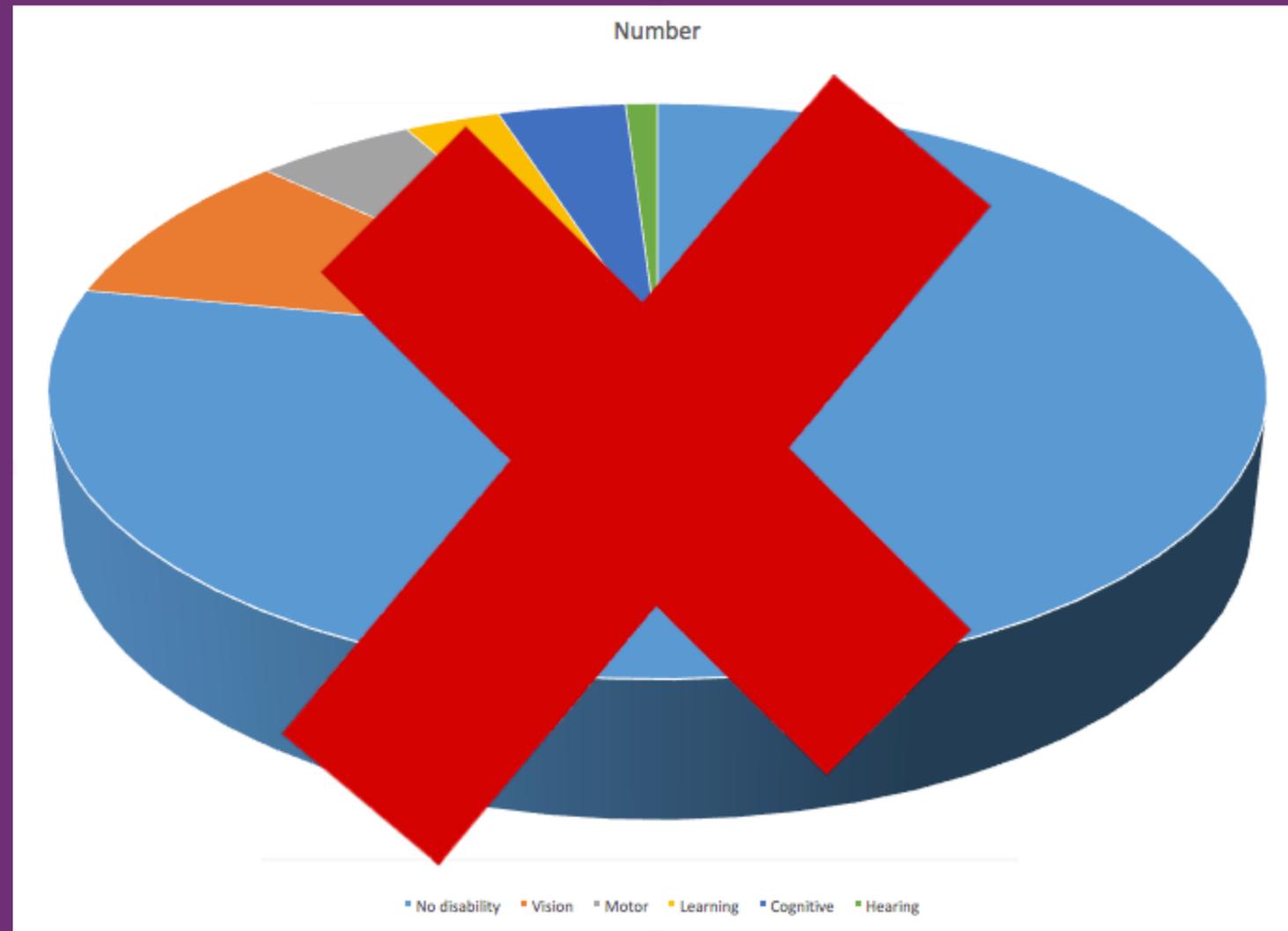


# Functional limitations

New mother with squirming infant in her arms

Cracked mobile phone screen

# No Metrics



Good for everyone

**CP makes fine movements difficult**

**VS**

**Big fingers and small checkbox on phone**

**Cognitive impairment - hard to read text**

**VS**

**Non-native language speakers**

**Low vision - Difficult to perceive text without  
contrast**

**VS**

**Looking at phone in bright sunlight**

# WCAG 2.0

3 Levels

4 Principles

12 Guidelines

61 Success criteria

Lots of techniques

WCAG 2.1

## **Perceivable**

Able to perceive info through their senses either via browser or assistive technology

## **Operable**

Able to interact with controls or dynamic elements with mouse, keyboard, etc

## **Understandable**

Able to understand information and how to use the interface

## **Robust**

Content can be accessed by old and new user agents and assistive technology



**Compliance != Accessibility**

Meeting  
requirements  
doesn't always  
ensure  
accessibility



# Testing methods overview

**Automated testing**

**Manual testing**

**User testing**

# Automated testing

Quick

Not all errors need human eye

Can review hundreds of pages

Good for getting "pulse", starting point

# Automated testing

Incomplete coverage

Alternate text

Forms

Picks things up that aren't there

Colour

Scripting, dynamic content, etc

# Automated testing

UK Government Digital Service

Worst accessible page ever

Best tool only picked up 38% of barriers

<http://bit.ly/2rEBZlx>

# Manual testing

Human judgement

Slower

Depends on tester's experience

# User testing

Real users

Discovering things testers can miss

<https://access-works.com/>

# Automated testing tools

# tenon.io

## Simplify Your Accessibility

1 ex: `<p>Code</p>` or `http://some-domain.com`

Show Options

Analyze Your Webpage

### We believe...

in a web accessible to everyone. Tenon.io exists because universal design is hard. We create software to help you reach beyond compliance and build superior experiences for everyone.

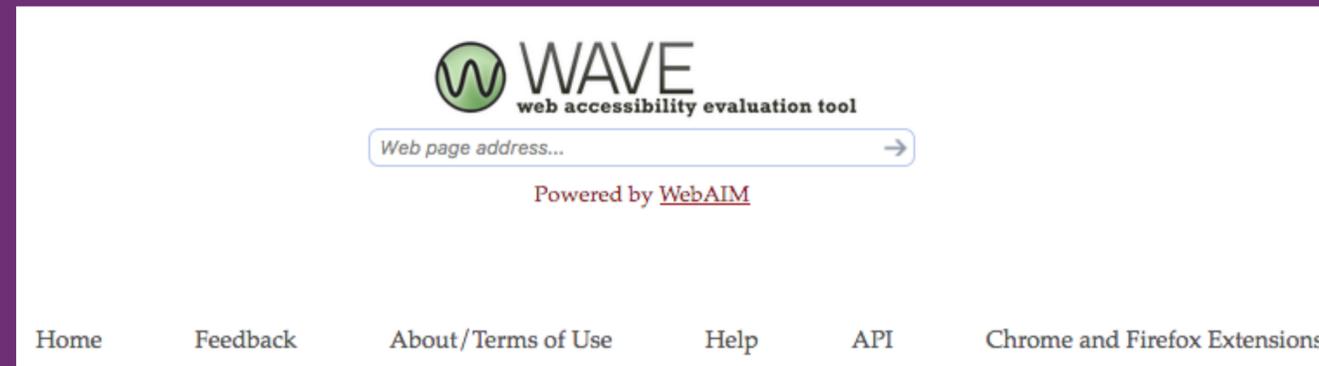
Join us

### Discover

Tenon.io can identify 508 and WCAG 2.0 issues in any environment - even on your developer's laptop. Because



# WAVE toolbar



# axe accessibility engine



# Opquast

Version française

## opquast desktop

### Opquast tests live in your browser

Opquast Desktop is a Firefox extension that allows you to launch more than 450 tests (UX, SEO, accessibility, performance...) on the webpages you're currently browsing or coding.

[+ Add to Firefox](#)  
version 2.0.4  
for Firefox 45.0 and 50.0  
[Old versions](#)

### Issues detection and highlight



Opquast Desktop tests automatically your web page and displays your results. For some issues, thanks to Firefox web developer tools, you can directly locate the errors on the page.

You can test the following checklists:

# tota11y



tota11y

an accessibility visualization toolkit

from your friends at



# Manual Testing Tools



Keyboard

# Colour Contrast Analyser

Many tools out there

WebAIM contrast analyser

<http://bit.ly/Webaim-contrast>

# Zoom Page WE

### Zoom Page WE Options

**General** | Zoom Levels & Font Size

Zoom Levels

Levels (%): [separated by spaces]  
30 50 67 80 90 100 110 120 133 150 170 200 240 300

Default Levels (%): Full: 100 Text: 100

AutoFit Levels (%): Min: 67 Max: 150

Zoom In/Out

To next level  By fixed step (%): 100

Minimum Font Size

Default Minimum Size (px): 0

Save Clear All Per-Site Data

# Code inspection

Web developer toolbar

Browser developer tools, etc

# Screen readers

# Using screen readers

Complex software

Experience mission critical

Good indication but can lead to false positives

# Screen readers

**JAWS (Windows)**

**NVDA (Windows)**

**VoiceOver (OS X)**

**Orca (Linux)**

# Screen readers / browser combo

JAWS (Windows) - IE / Edge

NVDA (Windows) / Firefox/Chrome

VoiceOver (OS X) / Safari

# NVDA Key combinations

Modifier key:  
**INSERT (or CAPS LOCK)**

<http://bit.ly/Webaim-NVDA>

# VO Key combinations

Modifier keys:

**CTRL+OPTIONS = VO**

<http://bit.ly/Webaim-VO>

# Screen reader demo

# Screen reader exercise

Load up your preferred screen reader

Navigate a site you are familiar with

# Manual testing

# Keyboard

Navigate forward - TAB

Navigate backward - SHIFT+TAB

Activate with SPACEBAR or ENTER

# Keyboard Challenge

**Spend a day without using your mouse or trackpad**

# Keyboard Challenge

Spend ~~a day~~ an hour without using your mouse or trackpad

Challenge your friends and colleagues:

<http://nomouse.org>

# Keyboard

Skip link?

Focus visible?

Keyboard traps?

Interactive elements - buttons, links, forms?

# Images

alt attribute

`alt=""` vs `alt="Some description"`

# Images

Decorative vs Informative

<http://bit.ly/alt-decision-tree>

# Forms

labels

associated using the 'for' attribute

# Forms

Error messages

Inline validation

Focus management

aria-describedby

# Forms

Time out

Notify users session about to expire!

# Document structure

Heading hierarchy

Skipped headings?

Missing headings?

Empty headings?

# Language

Document language declared?

Changes in languages defined?

# Text resize to 200%

Text readable?

Horizontal scroll?

Overlap?

# Windows High contrast

How does it look?

Can you see all elements?

# Colour Contrast

Regular text minimum 4.5:1

Large text: 3:1

# Tables - tabular data

Are there `<th>`?

Are cells associated with headers?

# Tables - layout

Don't use tables for layout

If you must, add `role="presentation"`

# Audio & Video

Captions? Transcripts?

Controls keyboard accessible?

**Questions?**

**Thank you!**

**Nicolas Steenhout**  
**nic@knowbility.org**  
**@vavroom**

**<http://bit.ly/Nic-Slides/>**