

Accessibility testing

What? Why? How?



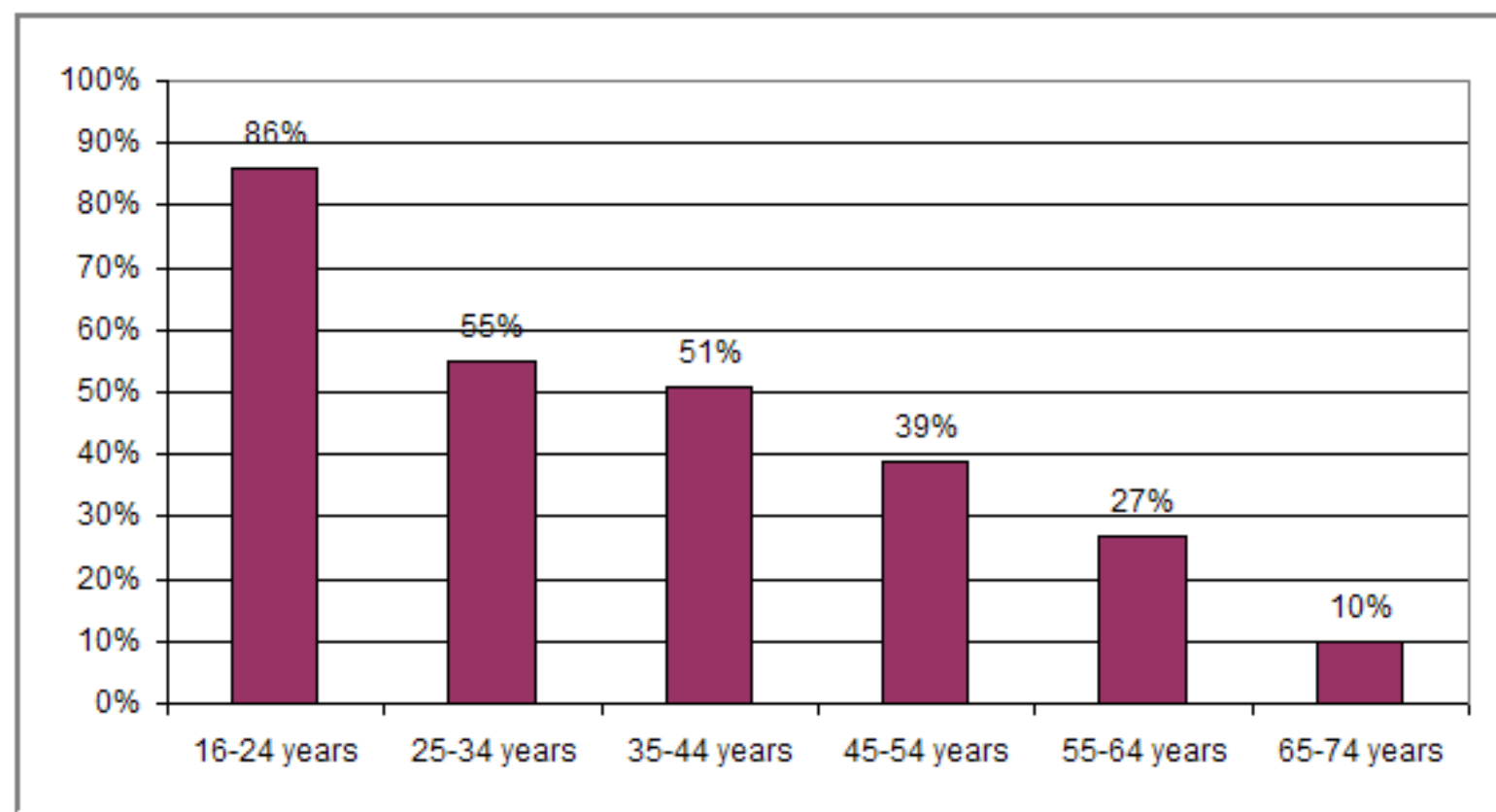
Let's define it

Defining Accessibility

Accessibility testing is a subset of usability testing where in the users under consideration are people with all abilities and disabilities.

Why?

People are getting old



Hardware and software

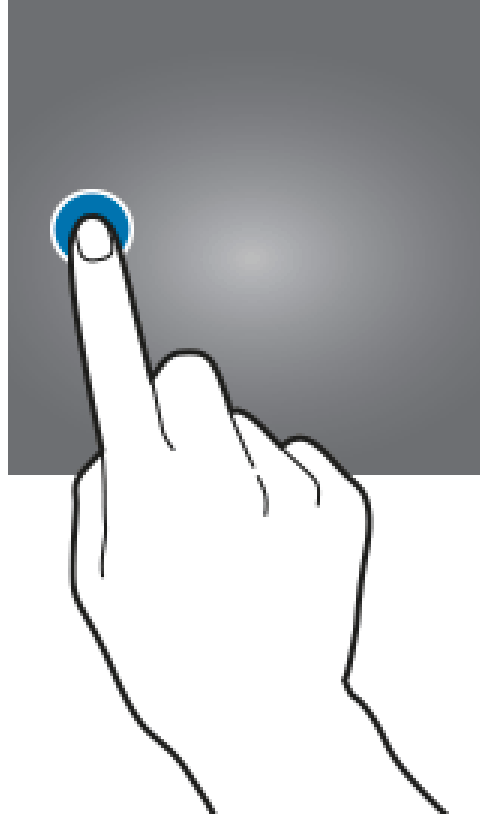


- Screen readers
- Screen magnifiers
- Voice recognition
- Dyslexic users software

Accessibility lab



Swiping issue

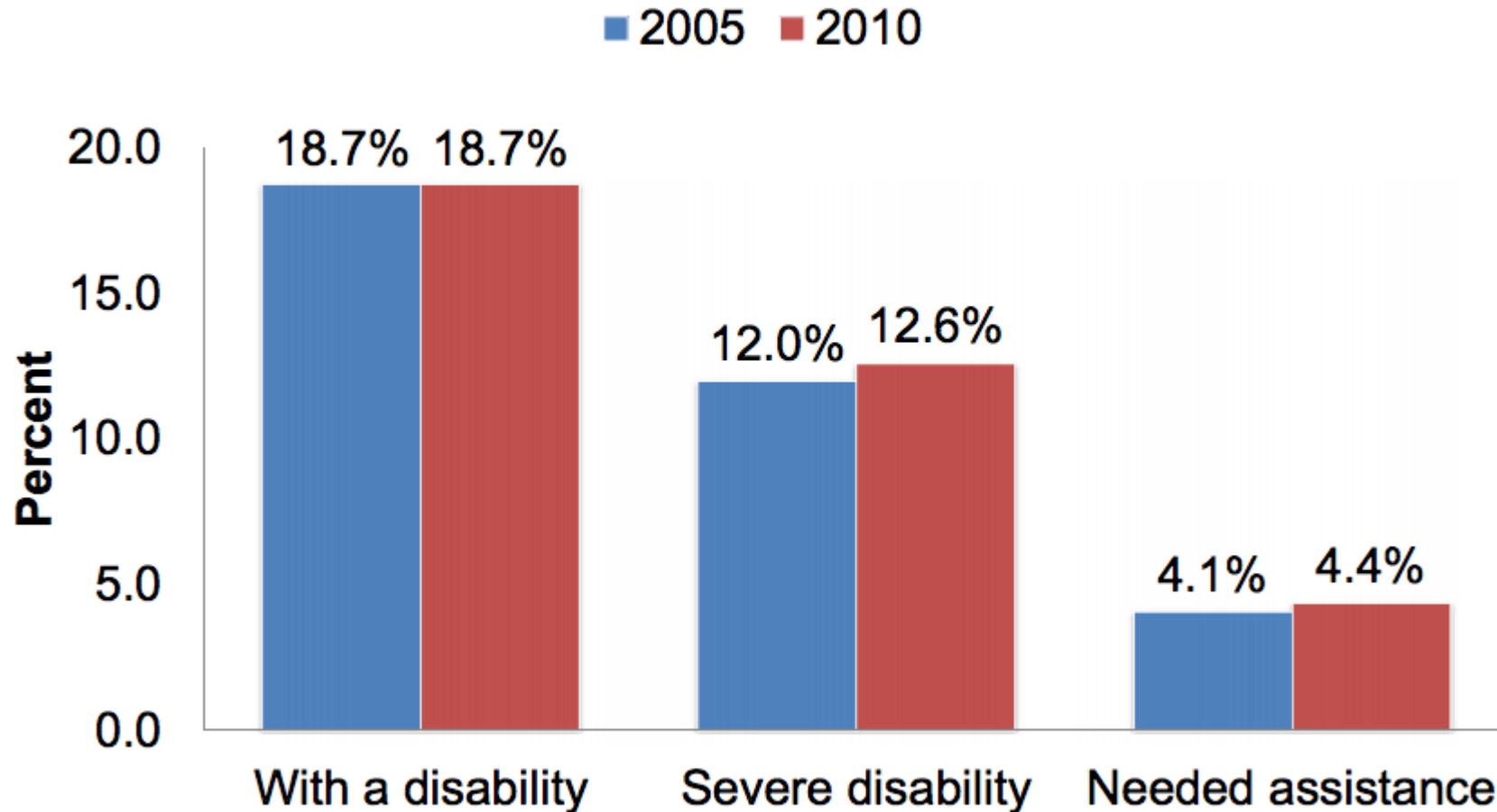


Disabilities

- Vision
- Mobility
- Hearing
- Learning
- Psycho-social issues

How many people needs assistive technologies?

Percentage of People with a Disability



Source: U.S. Census Bureau, Survey of Income and Program Participation, 2004 and 2008 Panels, Adult and Child Functional Limitations Topical Module

Accessibility testing

Requirements!

WCAG 2.0 by W3schools.org

Perceivable

Operable

Understandable

Robust

- A – must
- AA – should
- AAA – may

Requirements!

EU:

AA - New websites must comply from 23 September 2019 on, old websites from 23 September 2020 on and mobile applications from 23 June 2021 on.

Canada:

By January 1, 2020, all internet and intranet websites and web content must conform with WCAG 2.0 Level AA.

US:

Section 508 of the Rehabilitation Act of 1973

Requirements!

- Definition of Ready
- Definition of Done
- Acceptance Criteria
- Separate Jira tasks

Approaches

Pure manual

Manual+

Test automation

Accessibility testing – Manual approach

Notifications test

TAB-navigation test

Colorblind test

Blind user test

Accessibility testing – Manual approach

Notifications test

TAB-navigation test

Colorblind test

Blind user test

Accessibility testing – Manual approach – Notifications and Alerts

My name is 12345 Last Name and

Alpha characters only

Accessibility testing – Manual approach

Notifications test

TAB-navigation test

Colorblind test

Blind user test

Accessibility testing – Manual approach – Focus Management

Apply for this Solution

Apply for this Solution

Accessibility testing – Manual approach

Notifications test

TAB-navigation test


Colorblind test

Blind user test

Accessibility testing – Manual approach - Colorblind


Google

RL


 Colour Contrast Analyser

Options Image Help

Foreground


Colour select:  Hex:


Background

Colour select:  Hex:


Result - luminosity


Text

 Fail (AA)

 Fail (AAA)

Large text

 Pass (AA)

 Fail (AAA)

☒ Show contrast result for colour blindness

Results for color blindness

Normal	The contrast ratio is: 3.9:1
Protanopia	The contrast ratio is: 4.9:1
Deuteranopia	The contrast ratio is: 3.1:1
Tritanopia	The contrast ratio is: 3.9:1

Copy results

Accessibility testing – Manual approach

Notifications test

TAB-navigation test

Colorblind test

Blind user test

Accessibility testing – Manual approach – Screen reader

- Speech Viewer
- Ability to change tool's voice
- Ability to change tool's voice language
- Settings of features that should be read, e.g., color, font name, font size, etc.
- Mouse settings
- Keyboard settings
- Others

Accessibility testing – Manual approach – Speech Viewer



Contact Information

HOME ADDRESS



HOME ADDRESS 2 (OPTIONAL)

CITY

PROVINCE



PRIMARY PHONE

NVDA Speech Viewer

button

POSTAL CODE edit invalid entry required

blank

PRIMARY PHONE edit invalid entry required

blank



Show Speech Viewer on Startup

Accessibility testing – Manual+

- Site Improve Accessibility checker
- Wave evaluation tool
- Chrome Dev Tools Audit
- Accessibility Evaluator for Firefox
- aXe Chrome plugin

Accessibility testing – Manual+ - aXe Chrome plugin

Analyze

73 violations found.

RESULTS

Elements must have sufficient color contrast1

id attribute value must be unique8

Frames must have title attribute15

<html> element must have a lang attribute14

Images must have alternate text14

Form elements must have labels1

Links must have discernible text13

Zooming and scaling must not be disabled3

<video> elements must have captions2

< Violation 1 of 14

Critical

Ensures elements have alternate text or a role of none or presentation
(More Info)

wcag2a wcag111 section508 section508.22.a

Inspect

Target: #aswift_0,#google_ads_frame1,body > iframe:nth-of-type(1),body > img

HTML:

```

```

Summary:

Fix any of the following:

- Element does not have an alt attribute
- aria-label attribute does not exist or is empty
- aria-labelledby attribute does not exist, references elements that do not exist or references elements that are empty or not visible
- Element has no title attribute or the title attribute is empty
- Element's default semantics were not overridden with role="presentation"

Accessibility testing – Automate! – Gulp Accessibility

```
AccessSniff — bash — 101x26
Stevens-MacBook-Pro:AccessSniff stevenjohnmiller$ sniff test/**/*.html -r json -l reports
Testing test/examples/test.html

NOTICE WCAG2A.Principle2.Guideline2_4.2_4_2.H25.2
Line 3 col 4
Check that the title element describes the document.
-----
<title>Test One</title>

ERROR WCAG2A.Principle3.Guideline3_1.3_1_1.H57.2
Line undefined col undefined
The html element should have a lang or xml:lang attribute which describes the language of the document.
-----
<html><head>
  <title>Test One</title>
</head>
<body>
  <h1>Derp</h1>
  <a id="herpDerp" class="test Element" href="test">Test</a>
  <a href="test">Test</a>
  <a href="test" class="herp">Test</a>

</body></html>
```

Lessons learned

Lessons learned

- About 35% of raised bugs are closed due to accessibility tools problems
- Different key combinations
- Stay focused on the page
- Challenging your patience

Tips and tricks

Tips and tricks – Talk with your team



Tips and tricks – Colorblind test



\neq



Tips and tricks – Close your eyes

- What page is currently
- Where can I get from here
- How can I get from here
- Any forms to fill?
- Where am I transferred to



Tips and tricks – Give it to someone else!



Tips and tricks – Front-end Developers are your best friends



Tips and tricks – HTML + CSS

HTML



CSS



Tips and tricks – HTML Examples

- `<p>Lorem ipsum dolor sit amet, consectetur adipiscing elit...</p>`

- `<html lang="en">`

Company has _____ employee(s)

- `<label for="businessEmployeeNum" class="hidden-element ng-scope" translate="">employee(s)</label>`

Tips and tricks – Tooltip case

Email

Password



Confirm Password

Tips and tricks – Skip Navigation Link

Skip to Navigation

Learn!



IT'S A LONG ROAD
but it's worth it



ENGINEERING VALUE

Thank You

