



# Accessibility Testing Strategies

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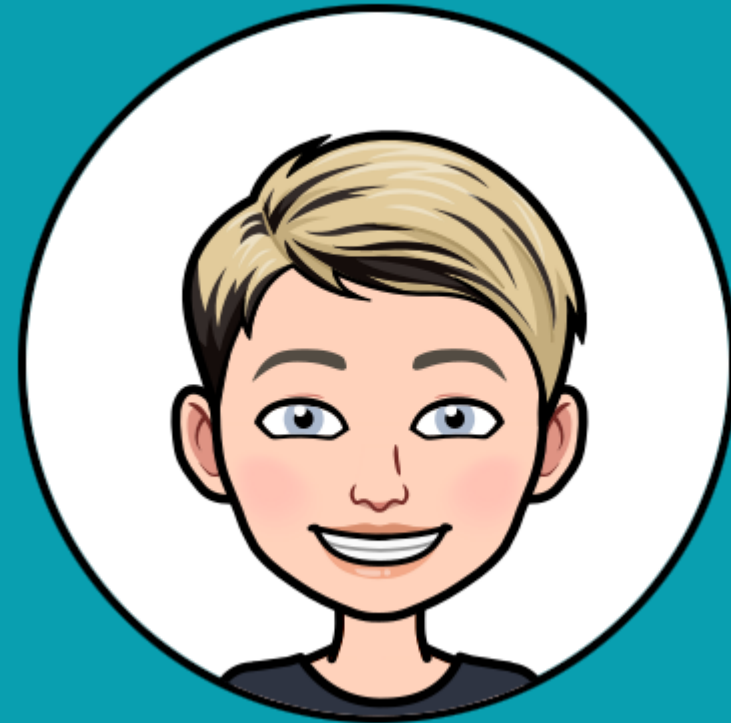
creating an inclusive digital world

[www.intopia.digital](http://www.intopia.digital)





Chris



Julie

# Planning

Goals



# WCAG 2.1 AA

# **WCAG 2.1 AA**

(plus maybe some AAA criteria)



**Koala11y**

**Siteimprove**



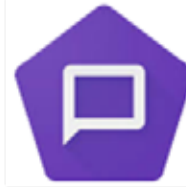
Pa11y



**Tenon.io**



**DRAGON**  
NATURALLY SPEAKING



**monsido.**

**HTML\_CodeSniffer**



**ComplianceSheriff**  
by Cyxtera



**WAVE**



**Accessibility Insights for Web**

**ARC TOOLKIT**

make **sense**  
Better Web



**ZoomText**



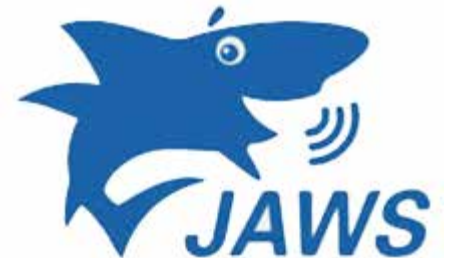
**SortSite**

intopia

# Tools



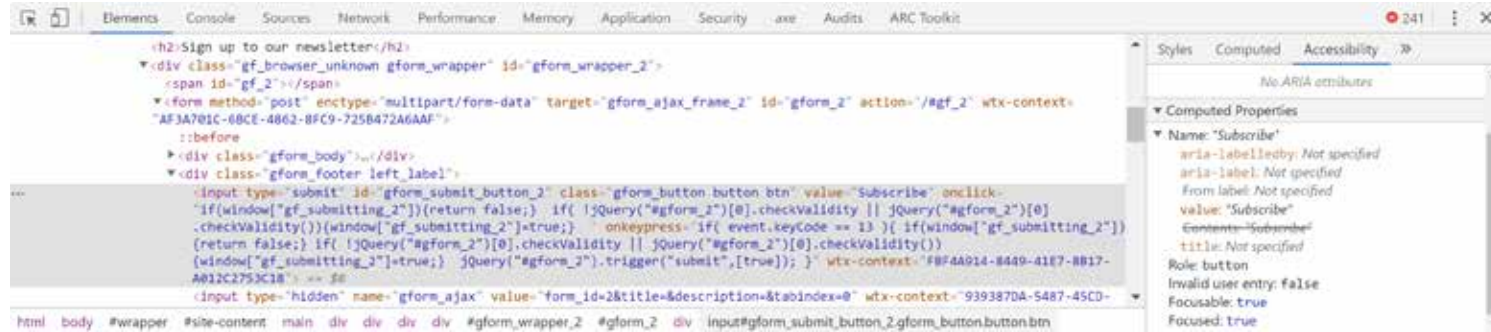
**DRAGON**  
NATURALLY SPEAKING





# Browsers

## Chrome



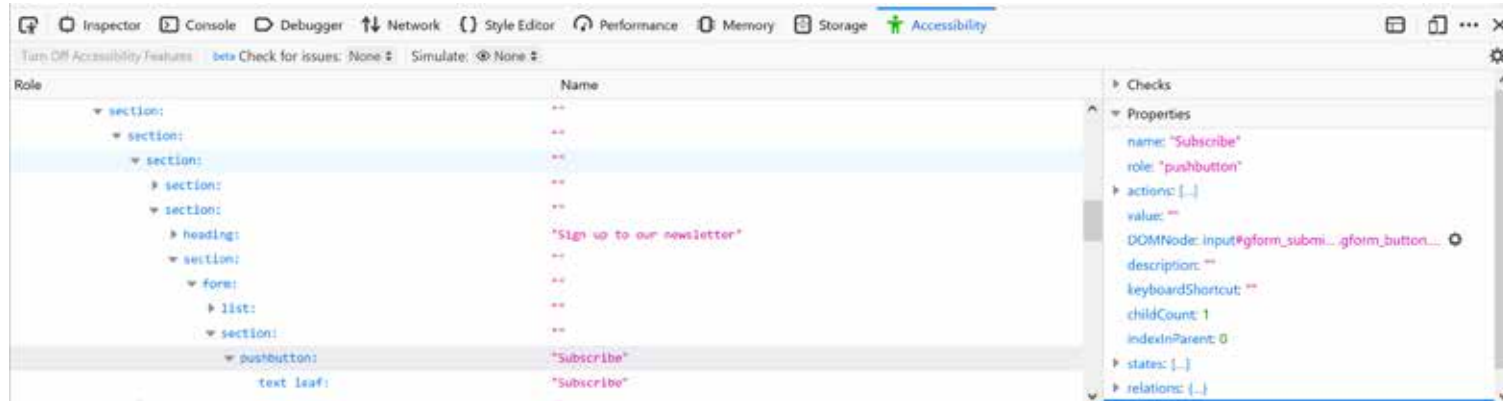
The screenshot shows the Chrome DevTools Accessibility panel. The left pane displays the DOM tree with the following HTML structure:

```
<h2>Sign up to our newsletter</h2>  
<div class="gf_browser_unknown gform_wrapper" id="gform_wrapper_2">  
  <span id="gf_2"></span>  
  <form method="post" enctype="multipart/form-data" target="gform_ajax_frame_2" id="gform_2" action="/#gf_2" wtx-context="AF3A701C-6BCE-4862-8FC9-7258472A6AAF">  
    ::before  
    <div class="gform_body">...</div>  
    <div class="gform_footer left_label">  
      <input type="submit" id="gform_submit_button_2" class="gform_button button btn" value="Subscribe" onclick="if(window['gf_submitted_2']){return false;} if(!jQuery("#gform_2")[0].checkValidity() || jQuery("#gform_2")[0].checkValidity()){window['gf_submitted_2']=true;} onkeypress="if(event.keyCode == 13){if(window['gf_submitted_2']){return false;} if(!jQuery("#gform_2")[0].checkValidity() || jQuery("#gform_2")[0].checkValidity()){window['gf_submitted_2']=true;} jQuery("#gform_2").trigger("submit",[true]);}" wtx-context="FBF4A914-8449-41E7-8B17-A012C2753C18" => $0  
      <input type="hidden" name="gform_ajax" value="form_id=2&title=&description=&tabindex=0" wtx-context="939387DA-5487-45CD-...>
```

The right pane shows the Accessibility panel with the following computed properties for the selected 'Subscribe' button:

- Name: 'Subscribe'
- aria-labelledby: Not specified
- aria-label: Not specified
- From label: Not specified
- value: 'Subscribe'
- Contents: 'Subscribe'
- title: Not specified
- Role: button
- Invalid user entry: false
- Focusable: true
- Focused: true

## Firefox



The screenshot shows the Firefox DevTools Accessibility panel. The left pane displays the DOM tree with the following structure:

```
section:  
  section:  
    section:  
      section:  
        section:  
          heading: "Sign up to our newsletter"  
          section:  
            form:  
              list:  
                section:  
                  pushbutton: "Subscribe"  
                  text leaf: "Subscribe"
```

The right pane shows the Accessibility panel with the following properties for the selected 'Subscribe' button:

- name: "Subscribe"
- role: "pushbutton"
- actions: [...]
- value: ""
- DOMNode: input#gform\_submi...\_gform\_button...
- description: ""
- keyboardShortcut: ""
- childCount: 1
- indexInParent: 0
- states: [...]
- relations: [...]

# Browser plugins



ARC TOOLKIT



 Accessibility Insights for Web

# Colour contrast analyser

The screenshot displays the axe accessibility tool interface. The top navigation bar includes tabs for Elements, Console, Sources, Network, Performance, Memory, Application, Security, axe, Audits, and ARC Toolkit. The main header shows the axe logo and version v4.1.0 (axe-core 3.3.2). Below the header, there is a section for URL/Scope and a summary of violations: 119 found. A table lists the violations, with 'Elements must have sufficient color contrast' having 105 instances. The detailed view for this violation shows the issue description, element location (span[data-count="\31 594"]), and element source (HTML code for a span with class 'ProfileNav-value' and data-count '1594').

| Violation   | Count |
|---|-------|
| Elements must have sufficient color contrast      | 105   |
| IDs used in ARIA and labels must be unique        | 1     |
| Frames must have title attribute                  | 1     |
| <li> elements must be contained in a <ul> or <ol> | 2     |

**Elements must have sufficient color contrast**  
</> Inspect Node Highlight

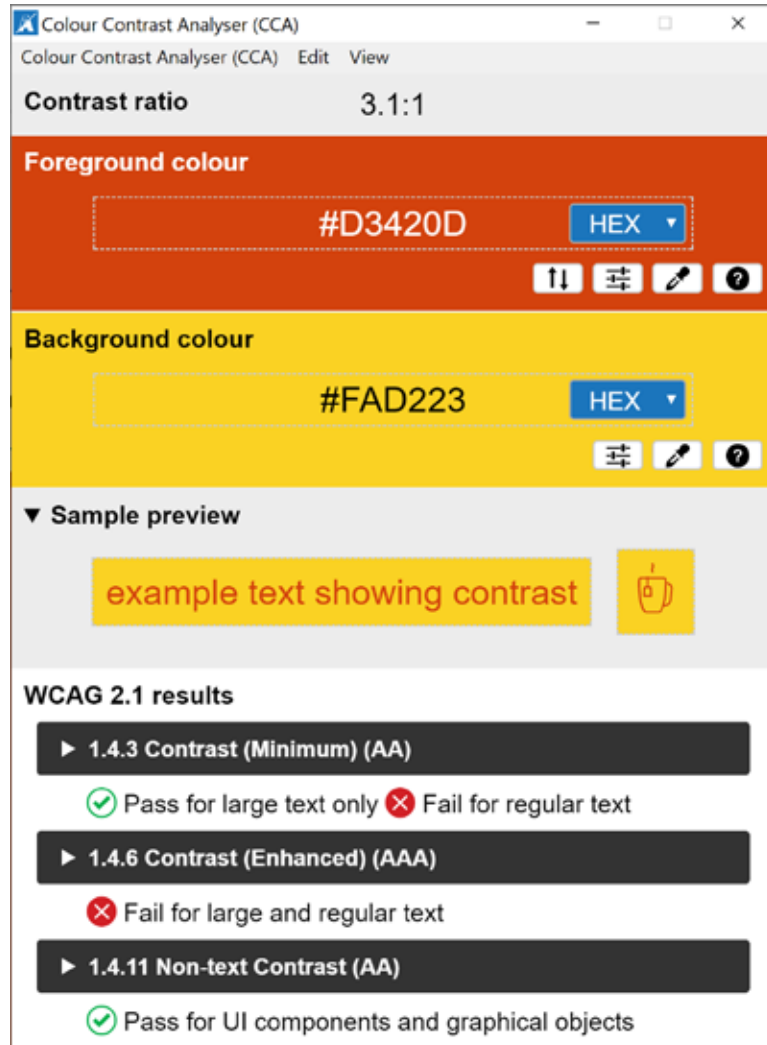
**Issue description**  
Ensures the contrast between foreground and background colors meets WCAG 2 AA contrast ratio thresholds  
Impact: **serious**  
[Learn more](#)

**Element location**  
span[data-count="\31 594"]

**Element source**  
<span class="ProfileNav-value" data-count="1594" data-is-compact="false">1,594 </span>

**Issue tags:** category: color wcag2aa wcag143

# Colour contrast analyser (app)



# Colour contrast analyser (web)

The screenshot shows the WebAIM website's Contrast Checker tool. The page header includes the WebAIM logo and navigation links for services, articles, resources, and community. A search bar and a list of featured articles are visible. The main content area is titled 'Contrast Checker' and shows a contrast ratio of 3.14:1 for the selected colors #D3420D and #FAD223. Below this, three sections of text are analyzed: 'Normal Text' (fails WCAG AA and AAA), 'Large Text' (passes WCAG AA but fails AAA), and 'Graphical Objects and User Interface Components' (passes WCAG AA). A 'permalink' link is provided for the tool.

WebAIM  
web accessibility in mind

services articles resources community

Search:

Introduction to Web Accessibility

WebAIM Training

## Contrast Checker

Home > Resources > Contrast Checker

Foreground Color: #D3420D

Background Color: #FAD223

Contrast Ratio: 3.14:1

[permalink](#)

Related Resources

- [Contrast and Color Accessibility](#)
- [Quick Reference: Testing Web Content for Accessibility](#)
- [Web Accessibility for Designers](#)
- [Link Contrast Checker](#)

### Normal Text

WCAG AA: **Fail**

WCAG AAA: **Fail**

The five boxing wizards jump quickly.

### Large Text

WCAG AA: **Pass**

WCAG AAA: **Fail**

The five boxing wizards jump quickly.

### Graphical Objects and User Interface Components

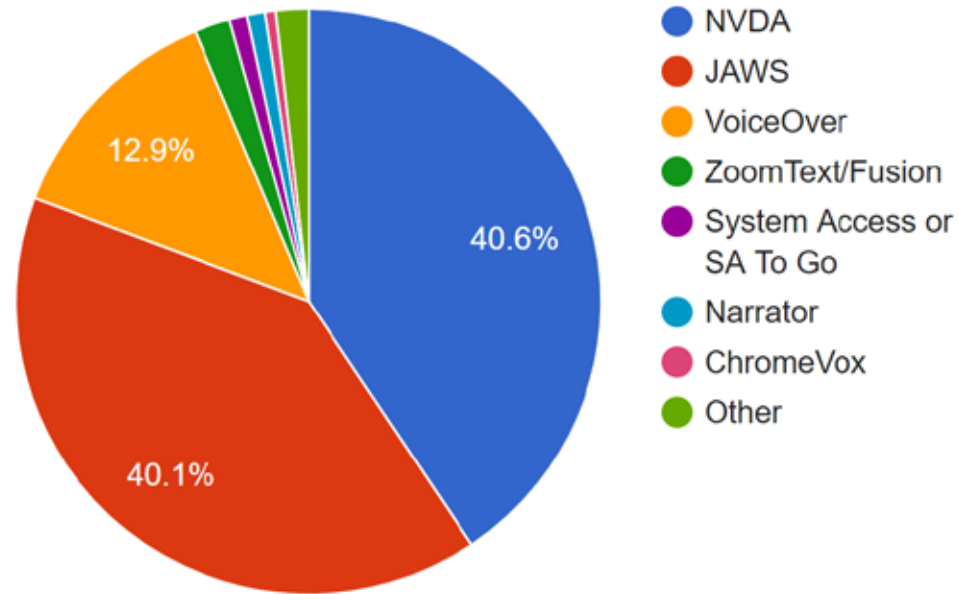
WCAG AA: **Pass**

Text Input ✓

# Screen readers (desktop)

## Primary Screen Reader

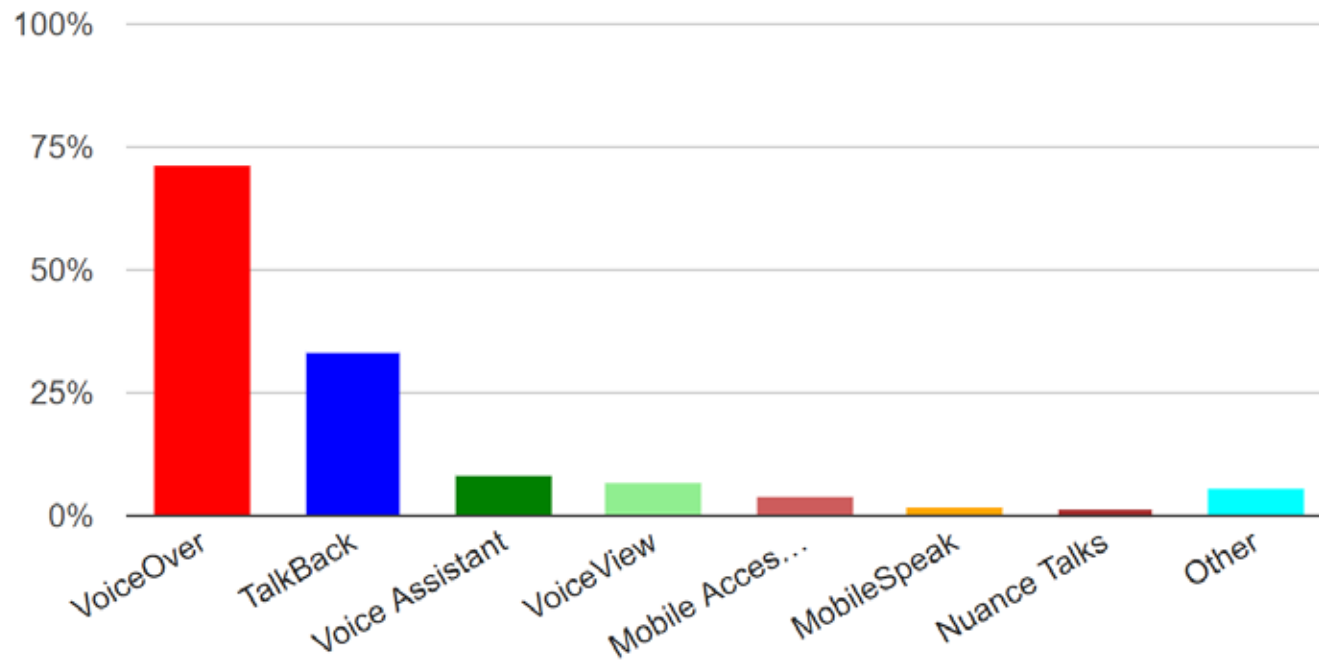
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# Screen readers (mobile)

## Mobile Screen Readers Used

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# Creating



Research

# Web Content Accessibility Guidelines (WCAG) 2.1



# High level checklist

## **1.1.1 – Non-text Content**

- Check that informative images have alternate text
- Check that alternate text is descriptive
- Check that decorative images are hidden from screen readers

## **1.2.1 – Audio-only and Video-only (Pre-recorded)**

- Check that there is a text alternative provided for the audio / video only content
- Check that the transcript accurately convey the information presented in the audio /video only content

## **1.2.2 – Captions (Pre-recorded)**

- Check that captions are provided for pre-recorded audio content
- Check that captions are accurate

# Test cases

### R4 Page title

**3 Passed**  
75% set to Passed

**0 Blocked**  
0% set to Blocked

**0 Retest**  
0% set to Retest

**1 Failed**  
25% set to Failed

75% Passed  
0 / 4 untested (0%)

Sort: Section | Filter: None

#### Page title

As a user, I want a short and descriptive page title, so that I can easily identify what page I am on

| ID  | Title  | Status |
|-----|--|--------|
| T85 | Check that the <head> has a <title> (SC 2.4.2 - A)               | Passed |
| T84 | Check that the title describes topic or purpose (SC 2.4.2 - A)   | Passed |
| T86 | Check that the most unique content is placed first ( Best pra... | Failed |
| T87 | Check that the page title is unique (Best practice)              | Passed |

### T84 Check that the title describes topic or purpose (SC 2.4...

| Type          | Priority | Automation Type |
|---------------|----------|-----------------|
| Accessibility | Medium   | None            |

**Success Criteria**

Page titled (2.4.2 Page titled)

**Preconditions**

The page <head> has a <title>

**Steps**

**Testing methodology:** Manual testing

- Check that the page title briefly describes the page content. It should make sense when read out of context.

**Expected Result**

The page title summarises the page content.

**RESULTS & COMMENTS** | **HISTORY & CONTEXT** | **DEFECTS**

Add a comment ...

**Passed** This test was marked as 'Passed'.  
11/8/2019 3:20 AM  
Christopher P. [Edit](#)

# Grouping tests

## Page tests

- Page level
  - Page title
  - Page language
  - Content
  - Resize text
  - Reflow
  - Text Spacing
  - Orientation
  - Skip links
  - Landmarks
  - Headings
  - Lists
  - Links
  - Keyboard
  - Focus visible
  - Focus order
- Focus order
  - Meaningful sequence
  - Multiple ways
  - Consistent navigation
  - Consistent identification
  - On focus
  - On input
  - On hover and focus
  - Colour contrast
  - Use of colour
  - Sensory characteristics
  - Images
  - Media
  - Tables
  - Forms
  - Name, role and value
  - Parsing

## Component tests

- Component level
  - Alerts
  - Accordion
  - Breadcrumb
  - Button
  - Cards
  - Carousel
  - Chatbot
  - Checkbox
  - Combobox
  - Data grid
  - Drag and drop
  - Loading screen
  - Menu button
  - Menu
  - Modal Dialog
  - Radio button
- Other
  - Tabs
  - Tooltips
  - Slider

# Traceability

| Level | Success Criteria  | Issue  |
|-------|---|--|
| A     | 1.1.1 – Non-text Content                                      | <b>Images</b> <ul style="list-style-type: none"><li>Image does not have alt text</li><li>Image alt text is not descriptive</li><li>Decorative image has alt text</li><li>Decorative image is not hidden from screen readers</li><li>Font icon does not have a text alternative</li><li>SVG should be hidden from screen readers</li><li>CSS background images are not visible in Windows High Contrast mode</li><li>Info-graphic does not have a complete text alternative</li><li>SVG graph content not conveyed</li></ul> <b>Links</b> <ul style="list-style-type: none"><li>Linked image is missing alt text or a label</li><li>Linked image has redundant alt text</li></ul> |
| A     | 1.2.1 – Audio-only and Video-only (Pre-recorded)              | <ul style="list-style-type: none"><li>There is no text alternative provided for audio/video only content</li><li>The transcript does not accurately convey the information presented</li></ul>   |
| A     | 1.2.2 – Captions (Pre-recorded)                               | <ul style="list-style-type: none"><li>No captions provided for prerecorded audio content</li><li>Auto-generated inaccurate captions</li></ul>  |
| A     | 1.2.3 – Audio Description or Media Alternative (Pre-recorded) | <ul style="list-style-type: none"><li>No audio description provided for video content</li><li>The audio description does not provide a full description of the video content</li></ul>   |
| A     | 1.3.1 – Info and Relationships                                | <b>Headings</b> <ul style="list-style-type: none"><li>Text should be a heading</li><li>Text should not be a heading</li><li>Headings do not reflect the content structure</li></ul>  |

# Accessibility Insights

The screenshot displays the 'Accessibility Insights for Web' application interface. At the top, there is a blue header with the text 'Accessibility Insights for Web' and a dropdown menu for 'Assessment'. Below the header, the target page is identified as 'IA board - Agile Board - Jira'. On the right side of the header, there are buttons for 'Export result' and 'Start over'. A left-hand navigation pane lists various accessibility categories, with 'Keyboard' selected and highlighted in blue. The main content area is titled 'Keyboard' and includes a 'Getting Started' section with a paragraph explaining the importance of keyboard accessibility and a link to a video. Below this is a 'Requirements' section with a list of six items, each with a radio button. The first item, 'Keyboard navigation', is selected and expanded to show a detailed 'Keyboard navigation' panel. This panel includes a 'Visual helper' toggle set to 'Off', a 'How to test' section with a list of steps, and an 'Info & examples' link.

Accessibility Insights for Web Assessment

Target page: IA board - Agile Board - Jira Export result Start over

Overview 0% Completed

- 1 Automated checks
- 2 Keyboard
- 3 Focus
- 4 Landmarks
- 5 Headings
- 6 Repetitive content
- 7 Links
- 8 Native widgets
- 9 Custom widgets
- 10 Timed events
- 11 Errors / status
- 12 Page navigation
- 13 Parsing
- 14 Images
- 15 Language
- 16 Sensory

## Keyboard ⓘ

Getting Started

Users must be able to access and interact with interface components using only the keyboard because using a mouse is not possible when the user has no vision or low vision or doesn't have the physical capability or dexterity to effectively control a pointing device.

See [this fun video](#) to learn how landmarks, headings, and tab stops work together to provide efficient navigation.

### Requirements

- 1 **Keyboard navigation.** Users must be able to *navigate* to all interactive interface components using a keyboard.
- 2 **No keyboard traps.** Users must be able to *navigate away* from all components using a keyboard.
- 3 **On focus.** Navigating to a component must not trigger any unexpected change of context.
- 4 **On input.** Changing a component's settings must not trigger any unexpected change of context.
- 5 **No keystroke timing.** Components must not require specific timings for individual keystrokes.
- 6 **Character key shortcuts.** Users must be able to turn off or remap character key shortcuts.

### Keyboard navigation ⓘ Info & examples

Visual helper  Off

How to test

The visual helper for this requirement records elements in the target page that receive the input focus.

- Use the keyboard to navigate through all the interactive interface components in the target page.
  - Use **Tab** and **Shift+Tab** to navigate between widgets both forwards and backwards.
  - Use the arrow keys to navigate between the focusable elements within a composite widget.
- If a "keyboard trap" prevents the focus from leaving a widget:
  - Use your mouse to move the focus to the next widget.
  - Resume testing.
- If you encounter any trigger component that reveals hidden content:
  - Activate the trigger.
  - Navigate through the revealed content.
  - Close the revealed content.

# Establish expectations

- How much extra work will be involved?
- When will it start?
- What support will be available?

# Create checklists

- Short
- Actionable tasks, not explanations
- By role, media type or other category

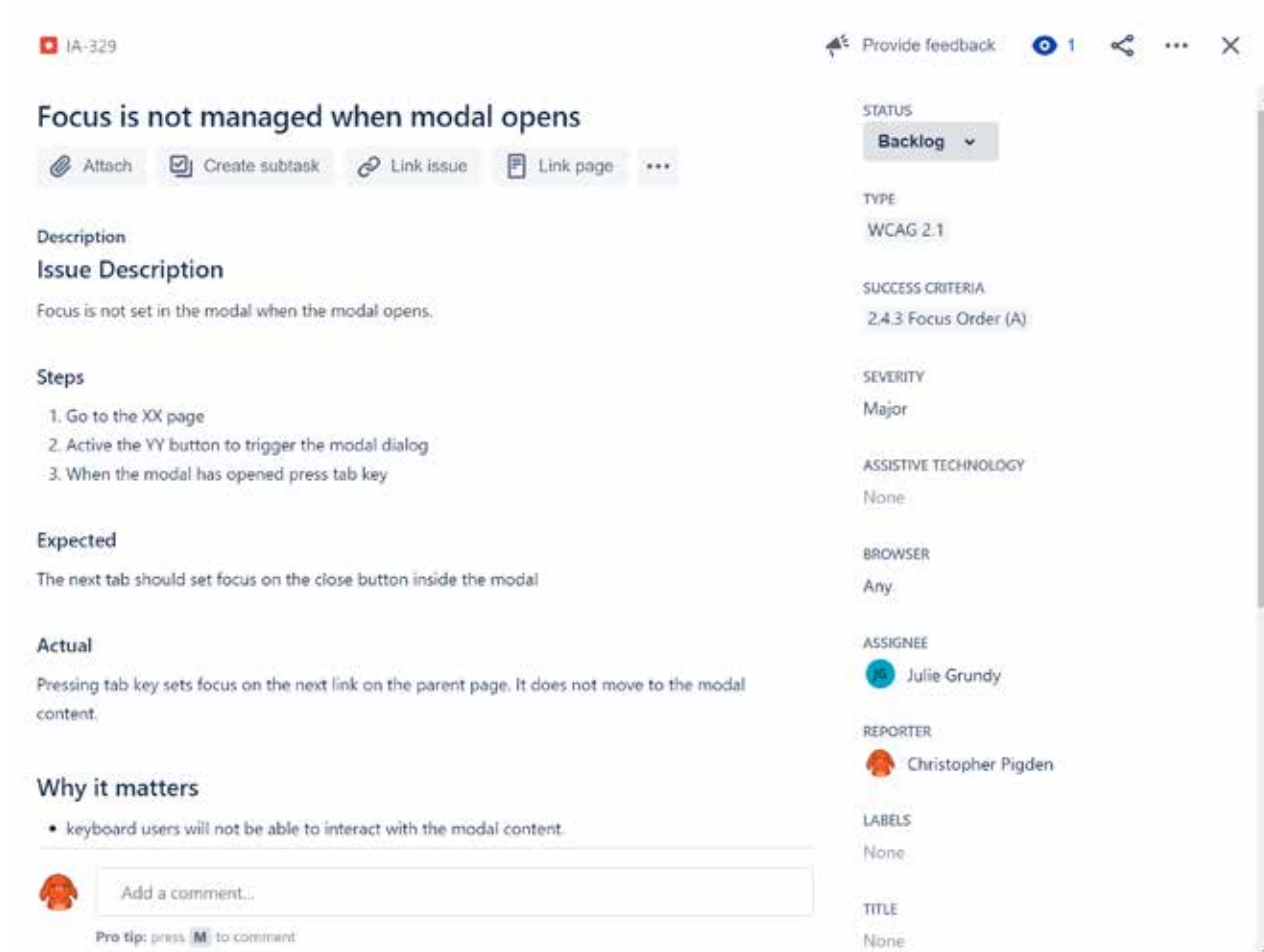


# Create a resource library

- Start with the tools and references you're using
- Add articles and videos by people with disabilities
- Link to tutorials and ideas for the future

# Testing

# Writing bug reports



IA-329

Focus is not managed when modal opens

Attach Create subtask Link issue Link page

**Description**  
**Issue Description**  
Focus is not set in the modal when the modal opens.

**Steps**

1. Go to the XX page
2. Active the YY button to trigger the modal dialog
3. When the modal has opened press tab key

**Expected**  
The next tab should set focus on the close button inside the modal

**Actual**  
Pressing tab key sets focus on the next link on the parent page. It does not move to the modal content.

**Why it matters**

- keyboard users will not be able to interact with the modal content.

Add a comment...  
Pro tip: press **M** to comment

Provide feedback 1

**STATUS**  
Backlog

**TYPE**  
WCAG 2.1

**SUCCESS CRITERIA**  
2.4.3 Focus Order (A)

**SEVERITY**  
Major

**ASSISTIVE TECHNOLOGY**  
None

**BROWSER**  
Any

**ASSIGNEE**  
Julie Grundy

**REPORTER**  
Christopher Pigden

**LABELS**  
None

**TITLE**  
None

# Report the problem, not the symptom

Given I'm on the login page, using JAWS with Chrome, when I navigate to the account menu button in read mode, then JAWS says "Unlabelled button"

# Report the problem, not the symptom

~~Given I'm on the login page, using JAWS with Chrome, when I navigate to the account menu button in read mode, then JAWS says "Unlabelled button"~~

The account menu button does not have a programmatically associated label

# Issue templates

## Page title is not descriptive



Created by Christopher Pigden

Last updated Oct 16, 2019 by Zoë Haughton

|                           |   |
|---------------------------|---|
| <b>Issue Summary</b>      | Page title is not descriptive   |
| <b>Issue Description</b>  | The <title> - XX is not descriptive. It does not describe the page subject.   |
| <b>Type</b>               | WCAG 2.0 failure  |
| <b>Success Criteria</b>   | Fails 2.4.2 Page Titled - Level A   |
| <b>Severity</b>           | Medium  |
| <b>Why it matters</b>     | An informative page title benefits all users. It allows them to quickly and easily identify whether the information contained in the Web page is relevant to their needs.   |
| <b>Our recommendation</b> | Update the <title> in the <head> from XX to YY.<br>The page title should describe the page content and make sense when read out of context.<br>It is best practice to put the most unique (i.e. page specific) title information first, most generic (i.e. site name) last. |

## Reference

[G88: Providing descriptive titles for Web pages](#)

# Iterating

# Gather statistics

- Keep track of what's happened
- Give bosses an executive summary of progress



# Review your goals

- Do you need to change the tactics or the goal?

# Complaints are clues



# Going from test cases to Issue templates

The screenshot shows the 'aTally' web application interface. The top navigation bar includes 'Return to Dashboard', a search bar, and user information 'Working On Christopher Pligden'. The main menu has tabs for 'OVERVIEW', 'TODO', 'MILESTONES', 'TEST RUNS & RESULTS', 'TEST CASES', 'REPORTS', and 'ADMINISTRATION'. The 'TEST CASES' tab is active, displaying a list of test cases under the heading 'Test Cases'. The list includes sections for 'Colour contrast', 'Text resize', 'Shape size and relative position', and 'Colour'. Each section has a brief description and a table with columns for 'ID' and 'Title'. For example, under 'Colour contrast', there is a test case with ID 'C1' and title 'Check contrast (SC 1.4.3 - AA)'. A sidebar on the right contains a search bar and a list of categories for adding sections, such as 'Colour contrast', 'Text resize', 'Page title', etc.

## Accessibility checklist

### Page level

#### Page title

- Page title is missing
- Page title is not descriptive
- Page title is not succinct
- Site displayed before the page name
- Page title is not unique

#### Page language

- Page language has not been set
- Incorrect language set

#### Content

- Consider increasing default font size for easier readability

#### Resize text

- Text truncates / overlaps / overruns when zoomed to 200%
- Zooming or scaling has been disabled
- Fonts are set in px instead of relative units

#### Reflow

- Functionality breaks when zoom is increased to 400%
- Content overlaps / truncates / overruns when the page is zoomed 400%
- Horizontal scroll bar displayed when content is resized to 400%
- The sticky header and footer obscures the main content area when the page is resized by 400%

The screenshot shows a search results box with the search term 'Modal'. The results list several accessibility issues related to modals:

- Focus is not managed when modal opens
- Modal has no heading structure
- Modal background content is not dimmed
- Modal does not close on escape
- Focus is not managed while the modal is open

At the bottom of the search box, there is a link that says 'See more results for Modal'.

### Accordion

- Accordion does not communicate state
- No visual cue to indicate that there is hidden content
- Hidden content is announced by the screen reader
- Accordion is marked up using the ARIA tab pattern

### Breadcrumb

- Breadcrumbs are not wrapped in a navigation landmark
- Breadcrumbs navigation landmark does not have an accessible label
- Active page can not be programmatically determined

### Button

- Button does not have the required role
- Button does not have an accessible label
- Button does not communicate disabled state
- Button does not communicate pressed state
- Button does not communicate expanded / collapsed state
- Button does not communicate current state
- Button has a redundant role
- Button is not navigable using a keyboard

### Cards

Thankyou