

# Building Accessible Applications

## Resources

- Accessibility Fundamentals learning: <https://learn.microsoft.com/training/paths/accessibility-fundamentals/>
- Inclusive Design Toolkit: <https://www.microsoft.com/design/inclusive/>
- Microsoft Accessibility blog: <https://blogs.microsoft.com/accessibility/>
- Accessibility Learning Webinar series: [https://www.youtube.com/playlist?list=PLtSVUgxl06KpRN7i2QKqRYlqkA0Z\\_q3WC](https://www.youtube.com/playlist?list=PLtSVUgxl06KpRN7i2QKqRYlqkA0Z_q3WC)
- Guidance for Creating a more inclusive world: <https://aka.ms/AMoreInclusiveWorld>
- Accessibility Insights: <https://accessibilityinsights.io>
- Accessibility Insights Chrome Extension: <https://aka.ms/accessibilityinsightschrome>
- Accessibility Insights Edge Extension: <https://aka.ms/accessibilityinsightsedge>
- Source code for Accessibility Insights Web: <https://github.com/microsoft/accessibility-insights-web>
- Accessibility conformance reports: <https://www.microsoft.com/accessibility/conformance-reports>

## Accessibility Global Standards

- Web Content Accessibility Guidelines (WCAG): <https://www.w3.org/WAI/standards-guidelines/wcag/>
- US: Section 508 U.S. procurement standard: <https://www.access-board.gov/guidelines-and-standards/communications-and-it/about-the-section-508-standards>
- EU: EN 301 549, the European Union (EU)-developed accessibility standard for information and communications technology (ICT): [https://www.etsi.org/deliver/etsi\\_en/301500\\_301599/301549/02.01.02\\_60/en\\_301549v020102p.pdf](https://www.etsi.org/deliver/etsi_en/301500_301599/301549/02.01.02_60/en_301549v020102p.pdf)
- Introduction to EN 301 549: <https://www.youtube.com/playlist?list=PLfCFZkKjngqrnEalymHKvsym025w0cOF3>
- Famous Accessibility lawsuits: <https://www.accessi.org/blog/famous-web-accessibility-lawsuits/>

## Accessibility Insights for Web workshop step-by-step guide

This step-by-step guide will show you how to install and use the Accessibility Insights on a web app or web site to identify any accessibility issues.

### What's Accessibility Insights for Web?

Accessibility Insights for Web is an **extension** for Chrome and [the new Microsoft Edge](#) that helps developers find and fix accessibility issues in web apps and sites.

The tool supports two primary scenarios:

- *FastPass* is a lightweight, two-step process that helps developers identify common, high-impact accessibility issues in less than five minutes.  
See <https://accessibilityinsights.io/docs/web/getstarted/fastpass/>
  - *Automated checks* - the tool automatically checks for compliance with approximately 50 accessibility requirements.
  - *Tab stops* - the tool provides clear instructions, partial automation, and a visual helper that makes it easy to identify critical accessibility issues related to keyboard access, such as missing tab stops, keyboard traps, and incorrect tab order.

**We recommend developers run a FastPass before every check-in of UI code.**

- *Assessment* allows anyone with HTML skills to verify that a web app or web site is compliant with [Web Content Accessibility Guidelines \(WCAG\) 2.1 Level AA](#).  
See <https://accessibilityinsights.io/docs/web/getstarted/assessment/>
  - *Automated checks* - the tool automatically checks for compliance with approximately 50 accessibility requirements.
  - *Manual tests* - the tool provides step-by-step instructions, examples, and how-to-fix guidance for approximately 20 tests; many tests are "assisted", which means that the tool identifies the test instances or provides a visual helper.
- *Issue filling* makes it easy to file issues to [GitHub Issues](#) or [Azure DevOps Boards](#) directly from automated check failures.  
See <https://accessibilityinsights.io/docs/web/getstarted/issuefiling/>

## Installing the Accessibility Insights extension

### Chrome

1. Open Chrome and navigate to <https://aka.ms/accessibilityinsightschrome>
2. Click **Add to Chrome** button.
3. Select **Add Extension** to confirm the tasks that the extension can perform.

### Edge

1. Open Edge and navigate to <https://aka.ms/accessibilityinsightsedge>
2. Click **Get** button.
3. Select **Add Extension** to confirm the tasks that the extension can perform.

## How to complete a FastPass

### Get ready to test

4. In Chrome or the new Microsoft Edge, navigate to the page you want to test (aka the target page).
5. Open Accessibility Insights for Web:
  - Select the extension icon.  
*or*
  - Press Alt+Shift+K (⌘+Shift+K for macOS) ([Customize this keyboard shortcut](#)).  
*or*
  - Use these keyboard commands:
    - Windows or Linux:
      1. Press Shift+Alt+T or F10 to set focus on the browser's tool bar.
      2. Press the Left Arrow key to set focus on the Accessibility Insights for Web extension.
      3. Press the Space key to open the extension.
    - Windows or Linux:
      1. Press ⌘+L to set focus on the browser's tool bar.
      2. Press the Tab key to set focus on the Accessibility Insights for Web extension.
      3. Press the Space key to open the extension.

The Accessibility Insights for Web extension will open to the **Launch Pad**.

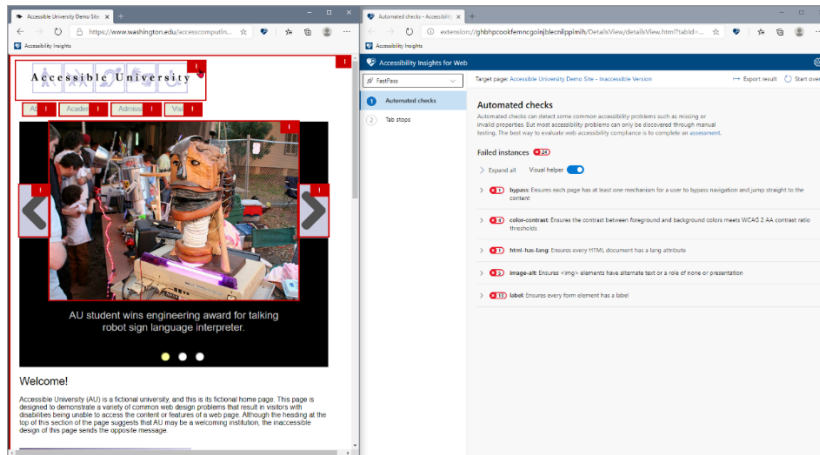
### Run automated checks

1. In the **Launch pad**, select **FastPass**.

Automated checks will run on your target page. Individual failure instances will be highlighted directly in the target page, and the Accessibility Insights for Web page will open in a new browser window.

## 2. Review the automated check results.

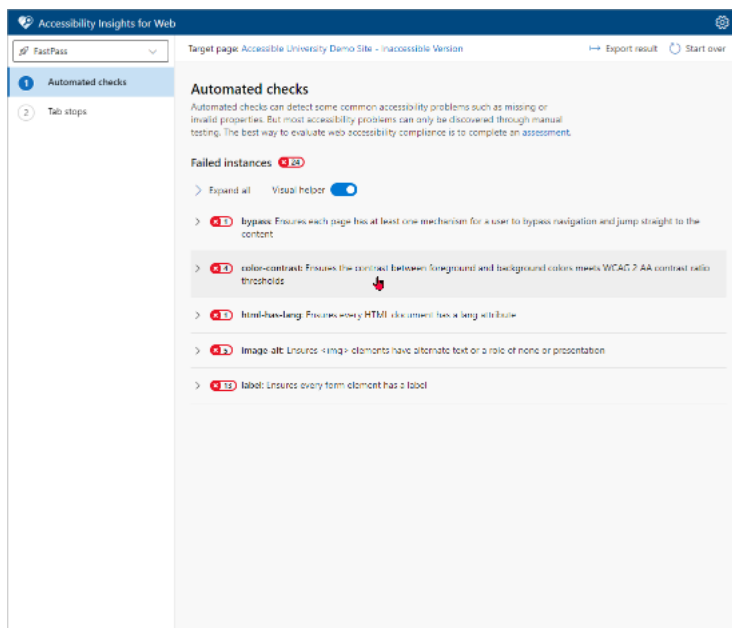
You can review the automated check results directly on the target page or in the Accessibility Insights for Web page.



## Review results in the Accessibility Insights for Web page

By default, the Accessibility Insights for Web page shows:

- The total number of failed instances
- A list of any accessibility rules that were violated
- The number of failed instances for each rule
- A visual helper toggle that allows you to quickly show or hide failure highlighting in the target page



A rule can be expanded to show information about its failed instances. Rules can be expanded or collapsed:

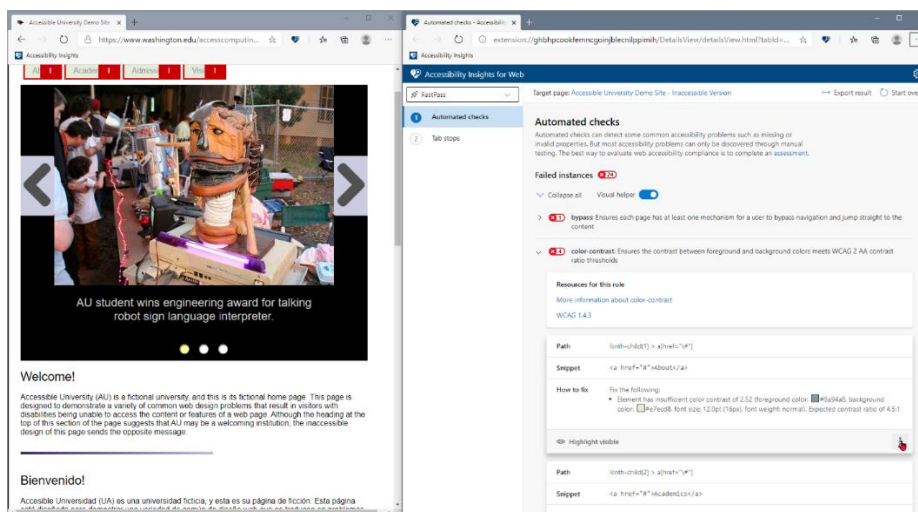
- All at once by using **Expand all / Collapse all**
- Individually by clicking a rule, or by tabbing to it and pressing **Enter**

Expanding a rule:

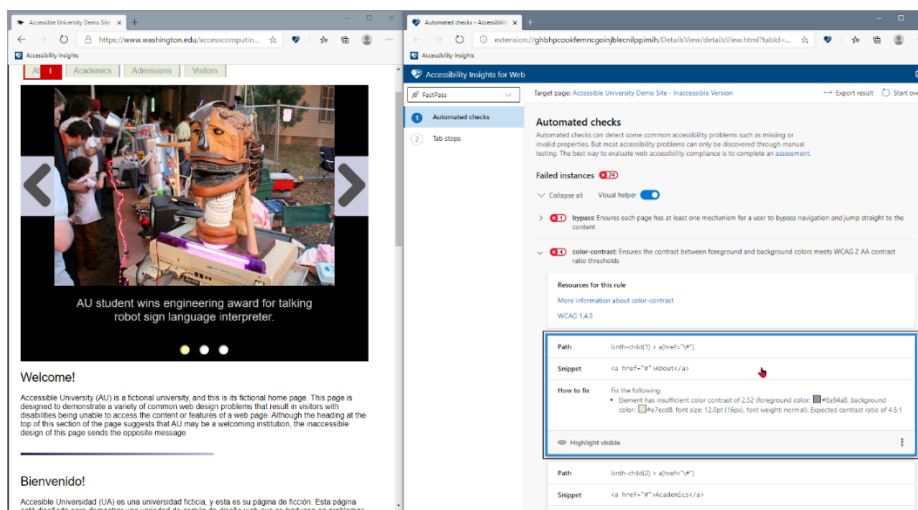
- Shows links to additional information about the rule, including why it matters, examples, and detailed instructions for fixing
- Highlights its failed instances in the target page
- Shows the failed instances in a list

Each failed instance includes:

- The class name of the element that failed
- How to fix the detected issue
- Additional information to help identify the element (some rules only)
- A disclosure button that reveals more actions to take on the failed instance. You can:
  - **File an issue** in your GitHub or Azure Boards repository.
  - **Copy failure details** to your clipboard and paste them into the tool or document of your choice.



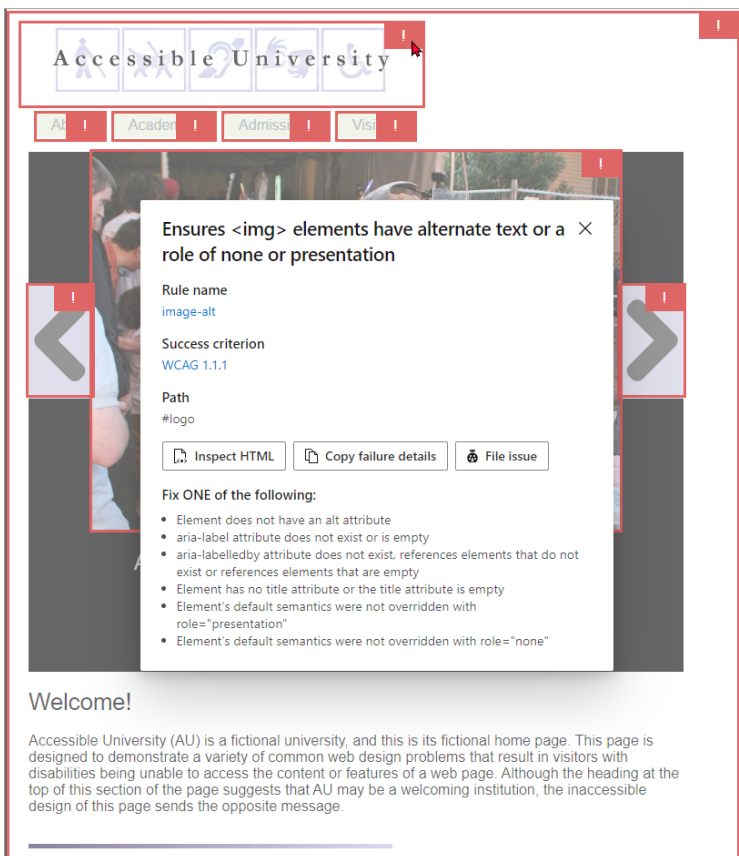
- Selecting a failed instance highlights it in the target page. You can select multiple instances. An instance can be selected or deselected by clicking it, or by tabbing to it and pressing **Enter**.



## Review results in the target page

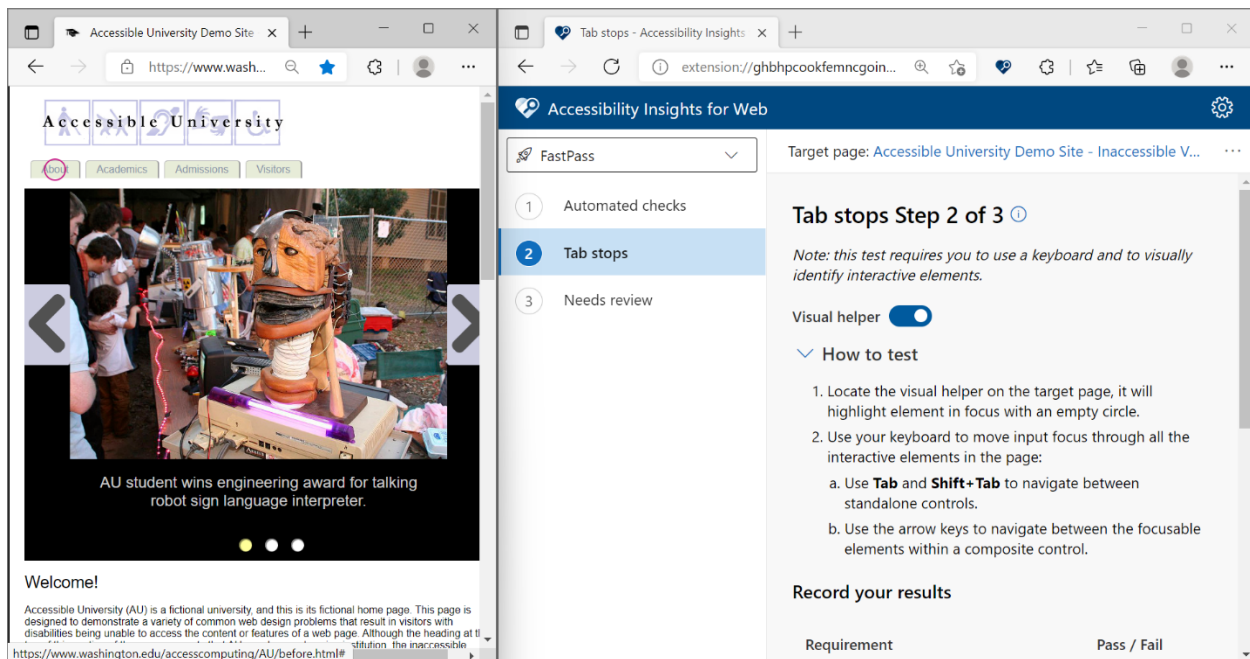
Selecting a failure icon opens a dialog with the following information:

- A description of the rule that failed
- The rule name, which links to detailed information about the rule
- The number of the relevant WCAG success criteria, which links to detailed information about the criterion
- The path to the element that generated the failure
- Three buttons:
  - **Inspect HTML** takes you directly to the element's code. (You must open the Dev Tools panel to enable this button.)
  - **Copy failure details** copies all the details to your computer's clipboard.
  - **File issue** allows you to easily [file an issue](#) on GitHub or Azure Boards.
- Instructions for fixing the problem



## Complete the assisted test for Tab stops

1. In the navigation pane, select **Tab stops**.
2. Refresh the target page to put it into its default state.
3. In **Tab stops**, turn on the **Show tab stops** toggle.
4. An empty circle will highlight the element that has input focus. It might be necessary to tab once to move focus into the page.



5. Use standard keyboard commands to move input focus through all the interactive elements in the page:
  - Use the Tab key and Shift+Tab key to navigate between controls.
  - Use the arrow keys to navigate between the focusable elements within a composite control, such as the items in a menu.

As you navigate away from each element, its place in the tab order will be displayed as a number.

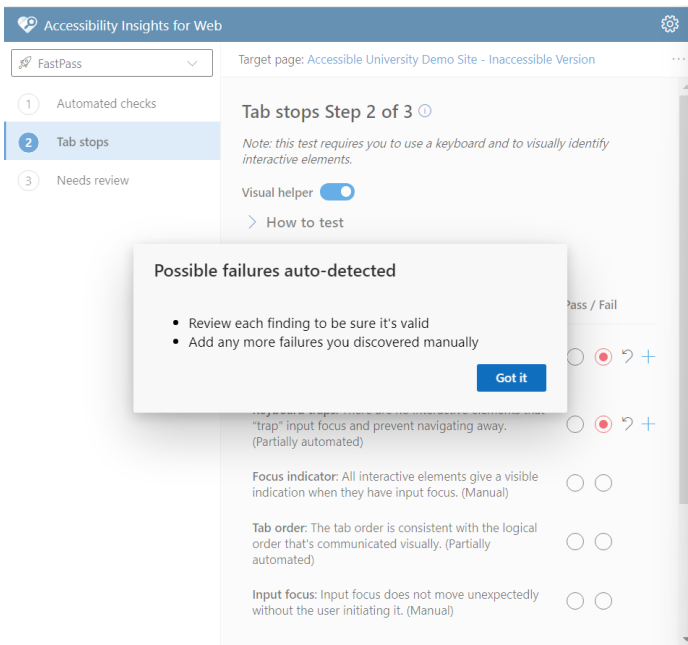
6. As you navigate through the elements, look for these accessibility problems:
  - An interactive element can't be reached using the Tab or arrow keys.
  - An interactive element "traps" input focus and prevents navigating away.
  - An interactive element doesn't give a visible indication when it has input focus.
  - The focus order is inconsistent with the logical order that's communicated visually.
  - Input focus moves unexpectedly without the user initiating it.

Review the [partial automation results in the Accessibility Insights for Web page](#)

In some cases, the Tab stops test can automatically detect possible Tab stops issues.

A dialog will appear in the Tab stops page indicating that *Possible failures were auto-detected* after you have completed the navigation through the elements and returned to the Accessibility Insights for Web page.





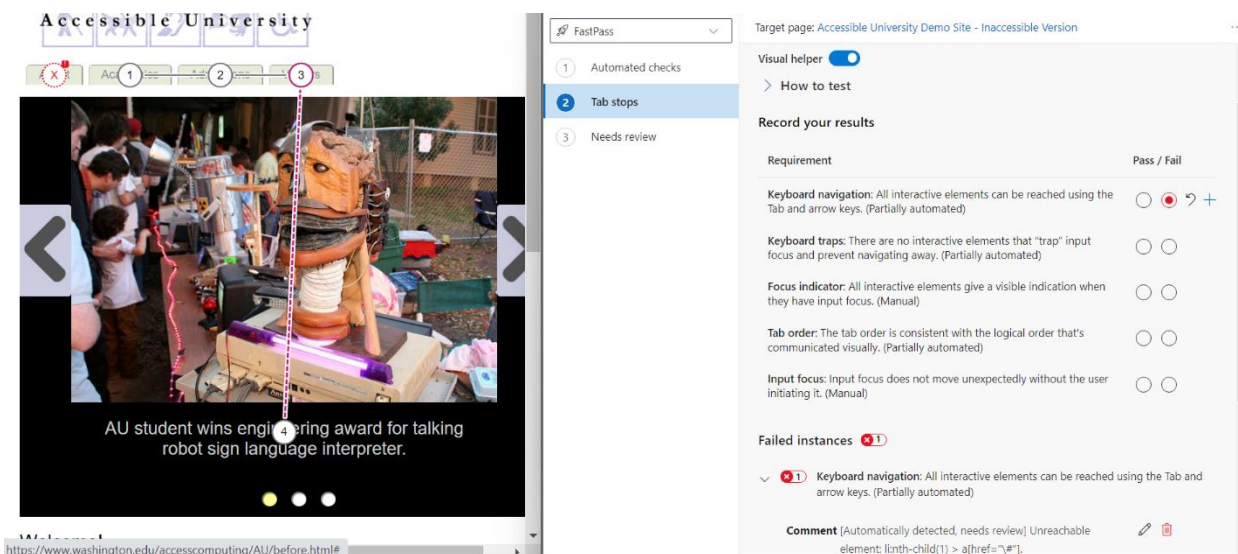
These possible issues are highlighted directly in the target page and described in the Accessibility Insights for Web page.

A possible Tab stops failure auto-detected will:

- Mark the requirement as *Fail*
- Add a failure instance for that rule

Each automatic failure instance includes:

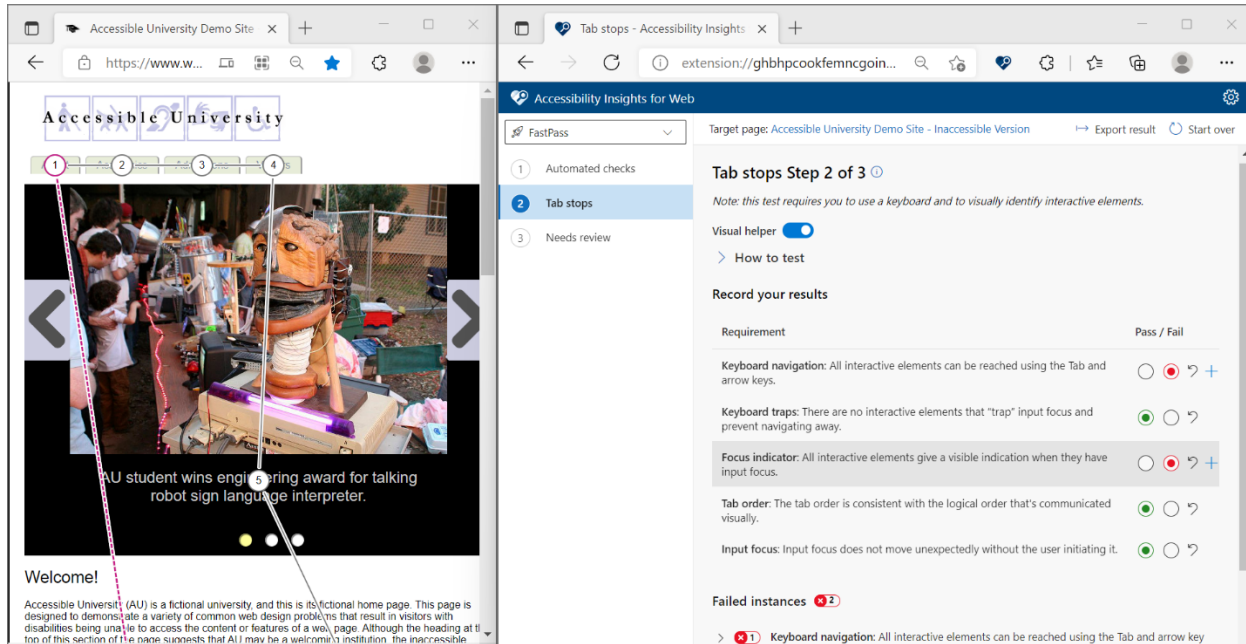
- A note that the issue was automatically detected and needs a human to review
- A short description on why this element was added (e.g., *Unreachable element*)
- The path to the element that generated the failure
- An **Edit** button that allows you to edit the information on the failure instance
- A **Delete** button that allows you to delete that instance



*Note: Turning the visual helper on / off will show / hide the visualizations and previously found automatic instances. You can use the **Start Over** button to restart the Tab stops test*

## Record your results

After reviewing any partial automation results, record your results by marking each requirement as **Pass** or **Fail**. Optionally, if you find any failures, you can add a failure instance by selecting the **+ Add a failure instance** button.



When you have completed the assisted test for Tab stops, your FastPass is complete.

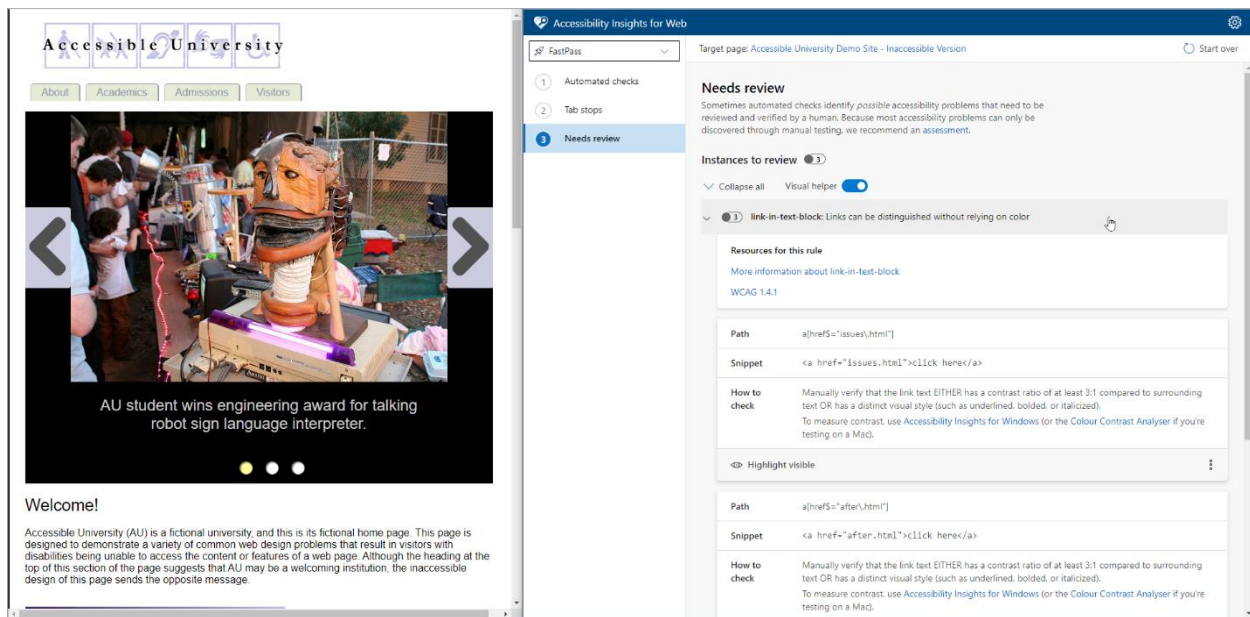
## Optional: Evaluate instances that need review

Sometimes an automated check encounters an element coded in a way that it can't be evaluated automatically. For example, the color-contrast rule can't determine the contrast ratio of text that's superimposed on an image or gradient. Such instances need to be reviewed by a human to determine whether they pass or fail.

## Show instances that need review

1. In the navigation pane, select **Needs review**.
2. In the command bar, select **Start over**. After a moment, any instances that need review will be displayed in the main panel.
3. Expand a rule to see its instances.
4. To determine whether an instance passes or fails, follow the **How to check** instructions.





## Share a detailed report

1. In the command bar, select **Export result**.
  - Optional: Provide a description to include in the report.
2. Use the browser's download bar to open the report or view the file location.