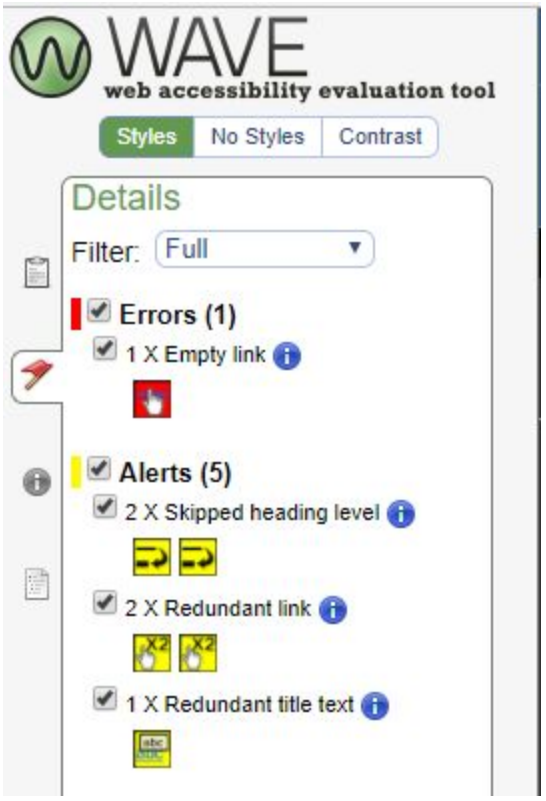
SI 539: Accessibility Review - Tim Decloniemaclennan

Website Tested: https://www.umich.edu/about/

Role taken: Quality Assurance

Run through each page with the WAVE Chrome Extension. [More Info](http://accessibility.voxmedia.com/#preview-output#qa-5#qa-1)

The following errors were found using the WAVE chrome extension:



Overall, the website does a decent job at passing the automated WAVE accessibility checker. There are a few small issues with the website, such as an empty link, and the heading levels are not structured correctly. Additionally, the website includes a lot of HTML5 elements, which are generally much more accessible than outdated code.

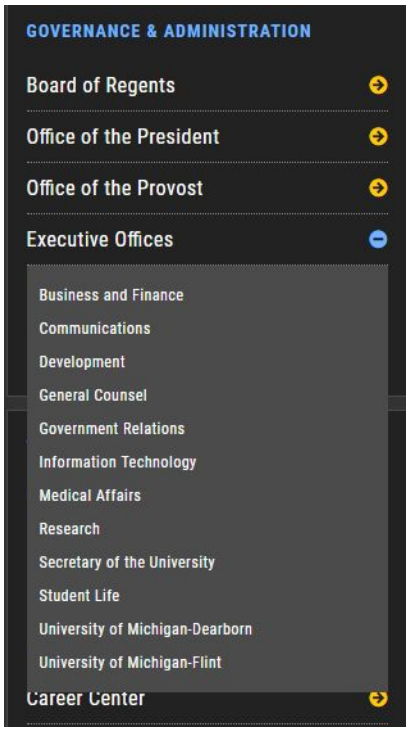
Users should be able to navigate through content using their keyboard. [More Info](http://accessibility.voxmedia.com/#preview-output#qa-5#qa-2)

Users are unable to access all content on the homepage of this website using just their keyboards. The overall website does a good job when it comes to keyboard interactivity; specifically, there is a very clear and logic order that can be seen when using a keyboard to access the website.

However, there are a few links users cannot access when using just a keyboard on the website. For example, keyboard users cannot access the “quick links” section of the website, which contains a lot of links to various Umich websites.

Users should be able to navigate content using a screen reader. [More Info](http://accessibility.voxmedia.com/#preview-output#qa-5#qa-3)

No, users are unable to navigate all content using a screen reader. Once again, the “quick links” section of the website is inaccessible to users that require a screen reader to use. Additionally, there is a link called “executive offices” which contains a drop down with several other links in it, however the screen reader does not recognize this as a drop down list and instead treats it like every other link on the page. This means screen reader users will be unaware of the additional content provided. Example Below:

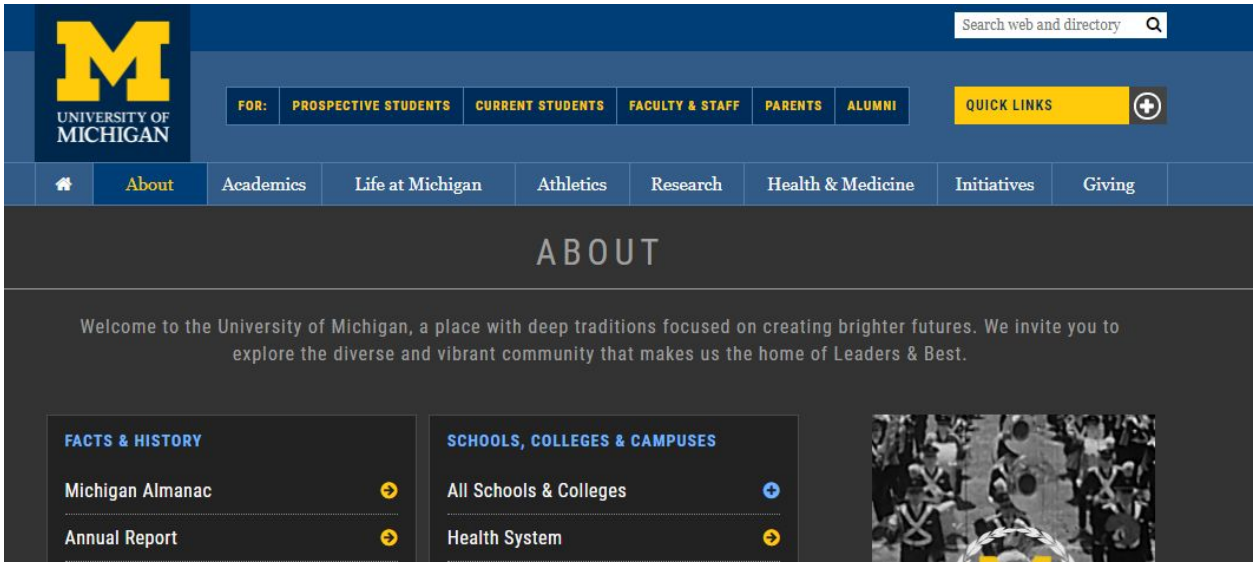


Additionally there are several social media icons in the footer of the page that only read out the word “link” when accessed via a screen reader. These should all be changed to include what social media site they are linking to.

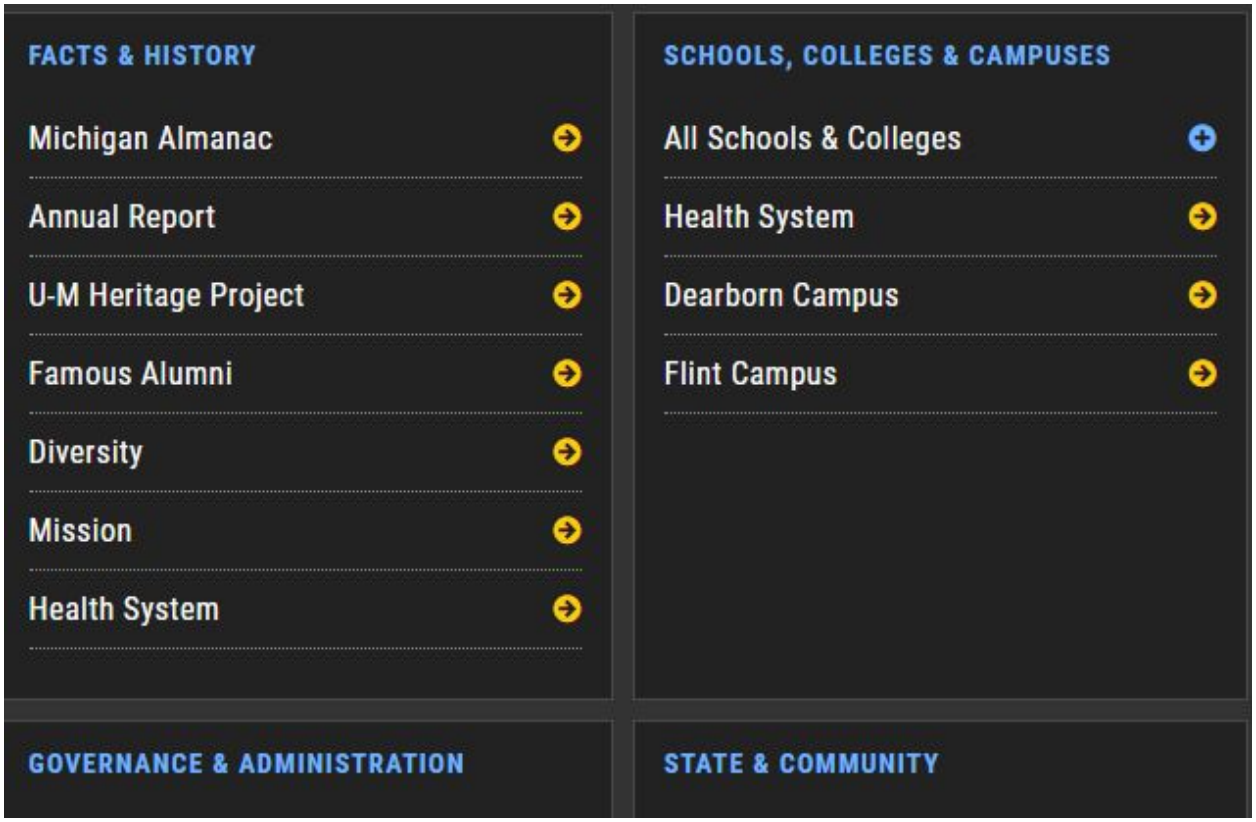
The general architecture and hierarchy of the content should make sense. [More Info](http://accessibility.voxmedia.com/#preview-output#qa-5#qa-4)

No, the website has several issues with their heading structure which makes it difficult to understand the important of certain content, they are as follows.

- The homepage currently contains multiple H1 elements, the first of which is the main logo for the website and the second is the logo placed in the footer of the website. Neither of these should be H1’s because they do not inform users about the content on the page. The actual H1 on the page should be the “about” text underneath the navigation because it is the hierarchical main heading that groups all of the other content.



- Additionally the headings for each of the sets of links in the main content are currently H4’s, these should be changed to H2 headings so they fall underneath “about” which should be the H1. Examples include “Facts & History” and “Schools, Colleges & Campuses”



- The secondary navigation on the page is currently an H4, this should be changed to an H2 since it does not fall underneath an H1.
- There is also an additional H3 present on the page that I could not locate myself, but based on where it appears in the sites hierarchy it should be considered an H2 since it has no previous content to structure it.

Charts and images should all have alt-text so that users with screen readers or users on a slow connection will still be able to understand the images. [More Info](http://accessibility.voxmedia.com/#preview-output#qa-5#qa-5)

There are very few images on the homepage, and each of them currently contains proper all text that is descriptive for users that rely on assistive Technologies. Additionally the WAVE validator did not detect any issues with alt text on the homepage of the website.

Decorative images should not be visible to screen readers. [More Info](http://accessibility.voxmedia.com/#preview-output#qa-5#qa-6)

All decorative images are currently invisible to screen reader users. The only images that are read out are those that are able to be clicked on to access a link.

Recommendations for Improvements:

1. **Restructure the homepage to contain correct heading structure.**

   The website currently contains a number of structural issues related to headings, they should be changed as follows (also in the hierarchy section)

   a. “About” should be changed to an H1 since it structures the main content of the page
   b. Headings such as “Facts & History” and “Schools, Colleges & Campuses” should be changed to H2 headings because they fall underneath “about” which should be the H1.
   c. The current H1’s on the page (Umich logos in the header and footer) should be changed to h2’s since they do not relate to the main content of the page, but also don’t fall underneath an H1
   d. Lastly, each navigation menu currently has an H3 or H4 in front of them. These should either be removed or changed to an H2 because that content doesn’t fall underneath a specific H1. Preferably, they should be removed since HTML5 Supports semantic tags, meaning they no longer need to have headers in order to be accessed easily by keyboards or screen readers.

2. **Add sufficient focus to elements when using a keyboard.**
   a. Even though users can access the majority of the content on the web page via their keyboards, the website could still do more to improve the experience. Currently the website relies on the default Focus applied by the user's browser, this is oftentimes not sufficient enough for users to see where they are using a keyboard. Instead the website should specifically Define a focus element in their CSS file which will allow keyboard users to more easily see where they are on the web page.
      i. For example, they could include code such as…
      ii. a:focus {
         1. border: solid;
         2. border-width: 5px;
         3. border-width: white;
         4. }
         5. These changes would make it much easier for keyboard users to locate where they are on the web page.

3. Give links unique styling throughout the website and be consistent

   a. At its core, this is more of a heuristic issue than an accessibility issue. However with the current structure of the web page I believe it's somewhat difficult for

visual users to tell what is clickable and what is not clickable on the website. For example, the footer of the website contains several links but users would never know they are clickable unless they hovered over each link and saw the cursor change and the hover effect apply. When visually looking at the page they have no distinct style that indicates a user can click on this to go to another page of the website. An example of this can be seen below…

B. Each one of these lines of text can be clicked, even the address and “The regents of the University of Michigan,” but because of their current styling, it is not made apparent to users on a first glance.

4. Include proper links for icons for screen reader users.

A. In the footer of the website there are several social media icons that when accessed via a screen reader they are not read out correctly. These should be changed so when they are accessed via a keyboard, the name of the social media website is red out. This can be accomplished by implementing the correct HTML code. For example…

B.
```
<a href="#rss" class="icon-alone">
  <span aria-hidden="true"
data-icon="&#x25a8;"></span>
  <span class="screen-reader-text">      </span>
</a>
```

C. This will ensure each icon is read out correctly when accessed via a screen reader.

Tools
 - Use these tools to help make your work accessible [More Info](http://accessibility.voxmedia.com/#preview-output#qa-5#tools-1)
 - [WCAG 2.0 guidelines to review best practices](http://code.viget.com/interactive-wcag/#responsibility=design&level=aa),
 - [WAVE (Web Accessibility Evaluation Tool) Chrome Extension to check accessibility across your products](https://chrome.google.com/webstore/detail/wave-evaluation-tool/jbbplnpkjmmeebjpijfedlgcdilocofh?hl=en-US),
 - [Web Accessibility Checker to check accessibility across your products](http://achecker.ca/checker/index.php),
 - [Color Contrast Analyzer App to analyze color contrast](https://www.paciellogroup.com/resources/contrastanalyser/),
 - [Color Palette Accessibility Checker to automatically check color combinations for passing contrast](https://accessibility.oit.ncsu.edu/tools/color-contrast/),
 - [Color Extractor bookmarklet to find all colors in CSS and load them in the Color Palette Accessibility Checker](https://accessibility.oit.ncsu.edu/tools/color-extractor/),
 - [Web Accessibility Checker to check accessibility across your products](http://achecker.ca/checker/index.php),
 - [Color Safe to make accessible color palettes](http://colorsafe.co/),
 - [Color Oracle to simulate color blindness](http://colororacle.org/index.html),
 - [Sim Daltonism to simulate color blindness](https://michelf.ca/projects/sim-daltonism/),
 - [Text over images accessibility tool](http://www.brandwood.com/a11y/)