Dalton Murray

Human Computer Interaction

INT 3603 - 3452-202320_INT3603_OL

Professor Darren Hood

February 5, 2022

Lab 2

(All images can be found and labeled here: https://drive.google.com/drive/folders/1ponB18SXgtNKdoHuLg_dVQ6mM0it3cy8?usp=sharing)

I initially wanted to do this lab on Google, however, I realized that the website may be too simplistic to be able to properly do this lab on it. So, I decided to do this lab on multiple different websites and analyze them all.

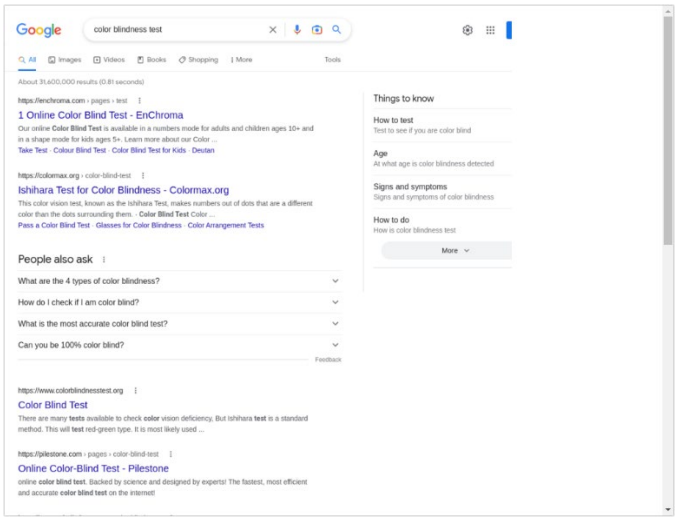
Google

I wanted to test Google because it is a website, I feel that a lot of people visit, including colorblind people, however, after reviewing it, it is very simple and isn't really impacted by colorblindness too much.

In order to properly test Google, simply putting in the website google.com will not work properly because it will not actually give any search results and would just be the landing page of Google with their logo and a search box, which seemed to be perfectly fine in testing. I decided to put in the search term "color blindness test" which looks like Image 1. With the regular Google site it is extremely easy to navigate, and everything is right where it feels like it should be at. When switching to different colorblindness's the Google website still looks very similar and easy to use.

The only problem I am able to find with Google's website when looking at different colorblindness's is in Greyscale/Achromatopsia. The links and everything look a little too faded/light, however, the website looks like it can still be easily used. With the greyscale colorblindness it is completely usable but could definitely be improved upon.

Images


Google
color blindness test
All
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More
Tools
About 31,600,000 results (0.81 seconds)
https://enchroma.com › pages › test
1 Online Color Blind Test - EnChroma
Our online Color Blind Test is available in a numbers mode for adults and children ages 10+ and in a shape mode for kids ages 5+. Learn more about our Color ...
Take Test · Colour Blind Test · Color Blind Test for Kids · Deutan
https://colormax.org › color-blind-test
Ishihara Test for Color Blindness - Colormax.org
This color vision test, known as the Ishihara Test, makes numbers out of dots that are a different color than the dots surrounding them. - Color Blind Test Color ...
Pass a Color Blind Test · Glasses for Color Blindness · Color Arrangement Tests
People also ask
What are the 4 types of color blindness?
How do I check if I am color blind?
What is the most accurate color blind test?
Can you be 100% color blind?
Feedback
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Color Blind Test
There are many tests available to check color vision deficiency, But Ishihara test is a standard method. This will test red-green type. It is most likely used ...
https://pilestone.com › pages › color-blind-test
Online Color-Blind Test - Pilestone
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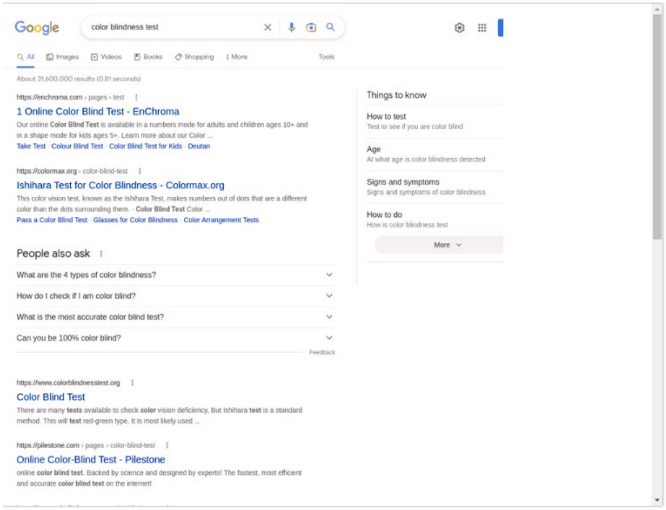
Things to know
How to test
Test to see if you are color blind
Age
At what age is color blindness detected
Signs and symptoms
Signs and symptoms of color blindness
How to do
How is color blindness test
More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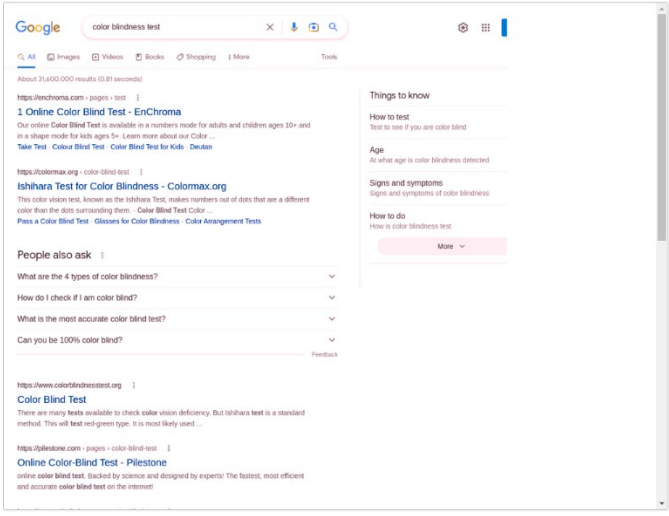
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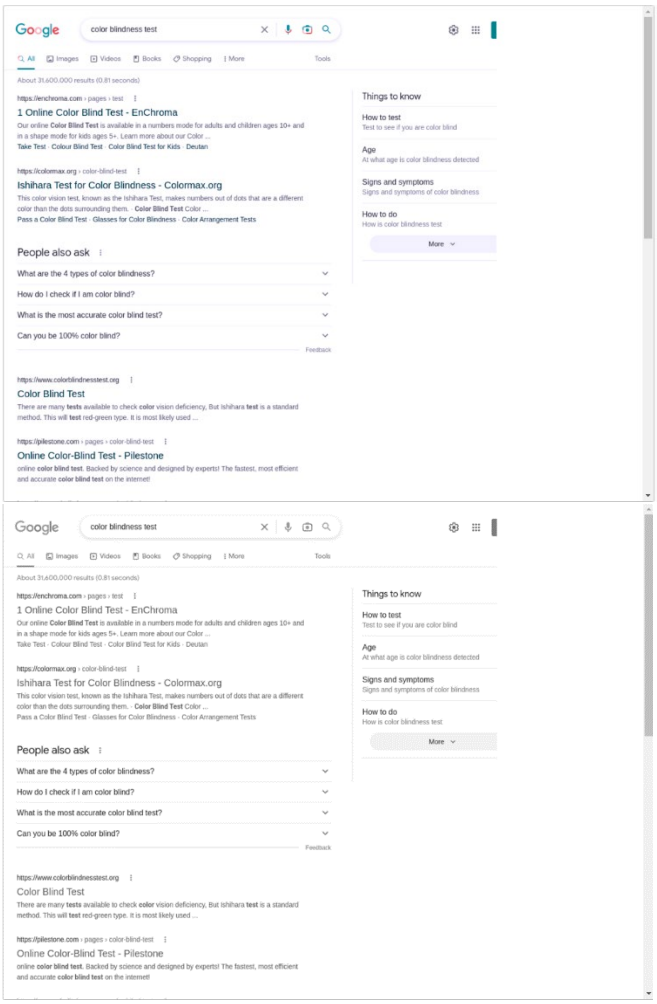


Microcenter

I initially wanted to evaluate a product page on Amazon, however, its bot protection stopped me from doing so, which is why I chose to evaluate Microcenter.

When evaluating Microcenter I picked on a random product page and evaluated the different colorblindness's from this page rather than doing it on the landing page, this is so I am able to get a wider range of information and stuff on the page to evaluate from. However, I did test the initial landing page and it seems to be alright.

The link to the product page which I am testing this on is here: https://www.microcenter.com/product/662679/asus-rog-zephyrus-g15-ga503qs-bs96q-156-gaming-laptop-computer-gray

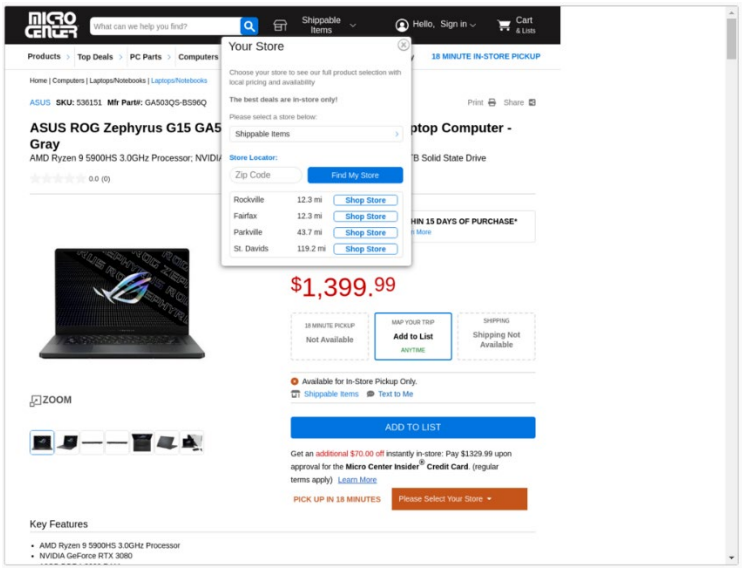
Protanopia – When reviewing this page with protanopia colorblindness, I am able to find everything easily and figure out all critical information such as store, price, adding to cart, and all details about the laptop very easily. The website is also easy to navigate and has good contrast between everything.

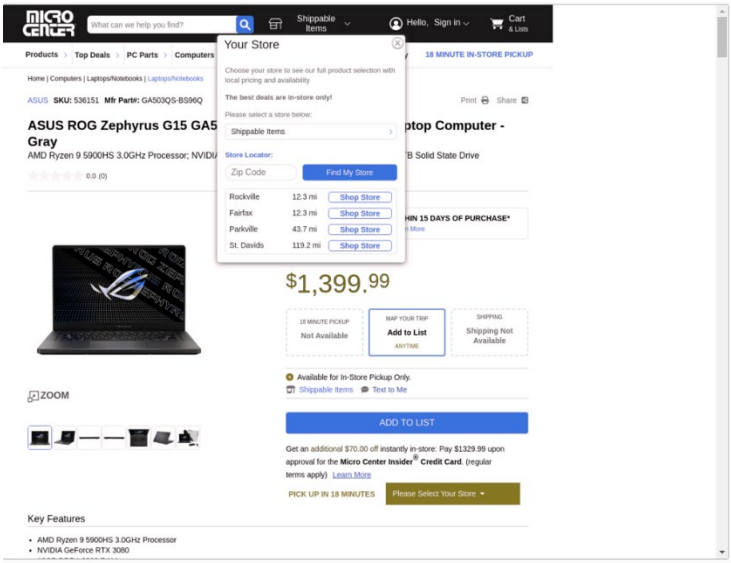
Deuteranopia – When reviewing this page with deuteranopia colorblindness everything also looks good and is clearly visible. However, the page it feels like needs to use less white as it's a little too bright and restricting some vision on certain things, making boundaries and divisions a little rough to look at.

Tritanopia – When reviewing this page with tritanopia colorblindness, I find it odd, however, I actually like it more than the regular website. Tritanopia makes the divisions and text stand out a little more and have a slight blue tint to everything, everything looks perfectly usable.

Greyscale/Achromatopsia – When reviewing this page with greyscale/achromatopsia everything is usable and not too bright or too dark or even very faded like other websites in review had problems with. There are minimal issues with text on images and being able to properly read it.

Images




What can we help you find?
Shippable Items
Hello, Sign in
Cart
& Lists
Products
Top Deals
PC Parts
Computers
18 MINUTE IN-STORE PICKUP
Your Store
Choose your store to see our full product selection with local pricing and availability
The best deals are in-store only!
Please select a store below:
Shippable Items
Store Locator:
Zip Code
Find My Store
Rockville 12.3 mi Shop Store
Fairfax 12.3 mi Shop Store
Parkville 43.7 mi Shop Store
St. Davids 119.2 mi Shop Store
Home | Computers | Laptops/Notebooks | Laptops/Notebooks
ASUS SKU: 536151 Mfr Part#: GA503QS-BS96Q
Print
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ASUS ROG Zephyrus G15 GA5
Gray
AMD Ryzen 9 5900HS 3.0GHz Processor; NVIDI
B Solid State Drive
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$1,399.99
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Key Features
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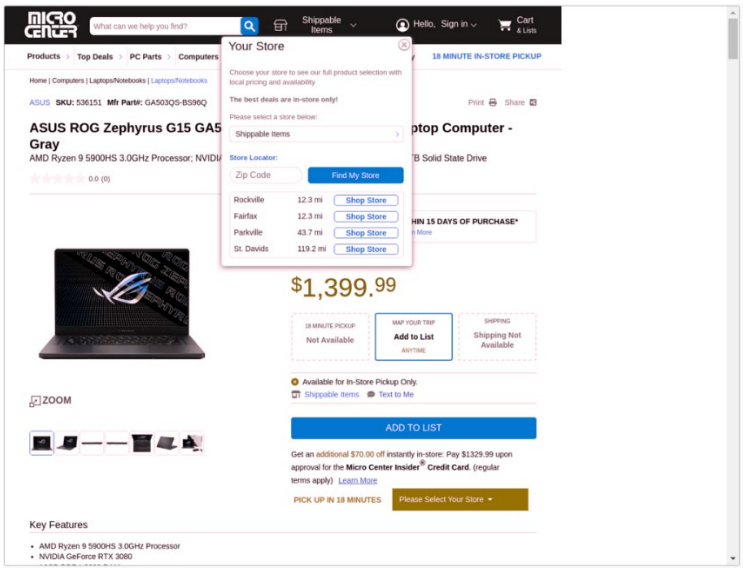
What can we help you find?
Shippable Items
Hello, Sign in
Cart
& Lists
Products
Top Deals
PC Parts
Computers
18 MINUTE IN-STORE PICKUP
Your Store
Choose your store to see our full product selection with local pricing and availability
The best deals are in-store only!
Please select a store below:
Shippable Items
Store Locator:
Zip Code
Find My Store
Rockville 12.3 mi Shop Store
Fairfax 12.3 mi Shop Store
Parkville 43.7 mi Shop Store
St. Davids 119.2 mi Shop Store
Home | Computers | Laptops/Notebooks | Laptops/Notebooks
ASUS SKU: 536151 Mfr Part#: GA503QS-BS96Q
Print
Share
ASUS ROG Zephyrus G15 GA5
Gray
AMD Ryzen 9 5900HS 3.0GHz Processor; NVIDI
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HIN 15 DAYS OF PURCHASE*
More
$1,399.99
18 MINUTE PICKUP
Not Available
MAP YOUR TRIP
Add to List
ANYTIME
SHIPPING
Shipping Not Available
Available for In-Store Pickup Only.
Shippable Items
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ADD TO LIST
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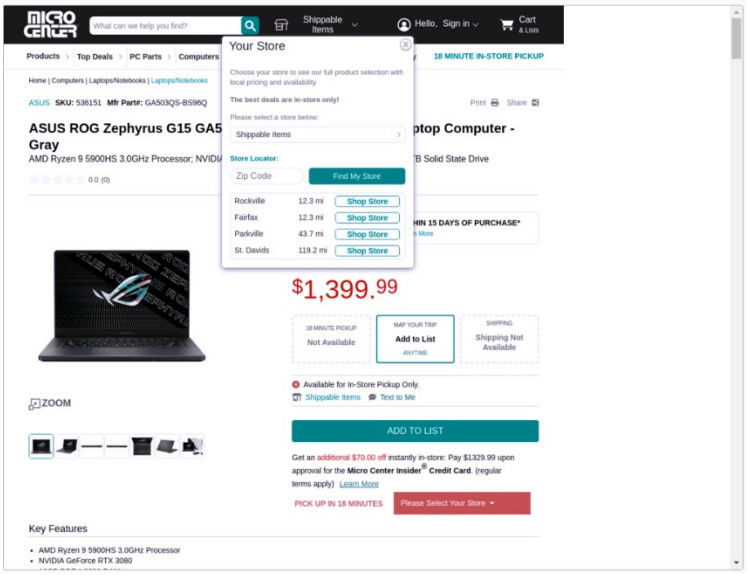
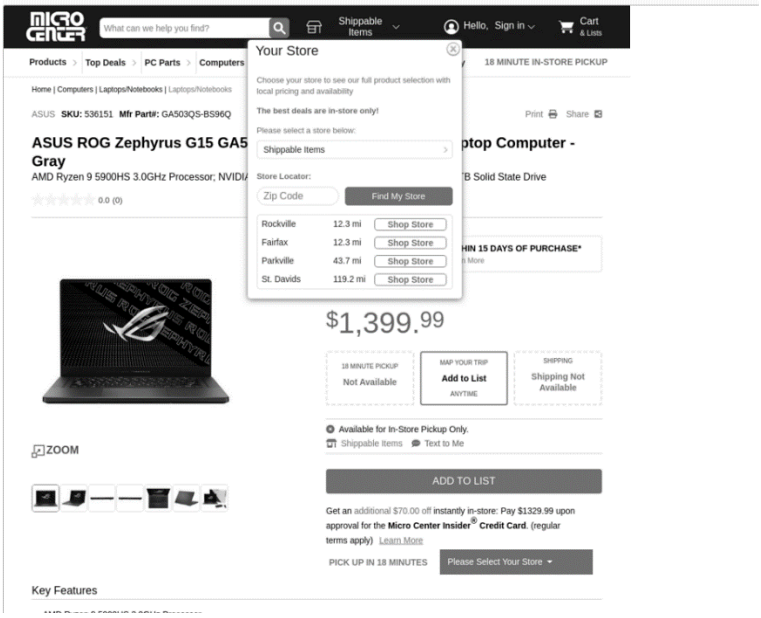




Wikipedia

I wanted to also do another website which is commonly used and I figured out that Wikipedia would be a great website to do this test on. I am testing specifically with the Color blindness page, linked here: https://en.wikipedia.org/wiki/Color_blindness . A critical element of this page which I am looking at is the actual picture which shows a lot of dots and colors which has the number 74 in it.

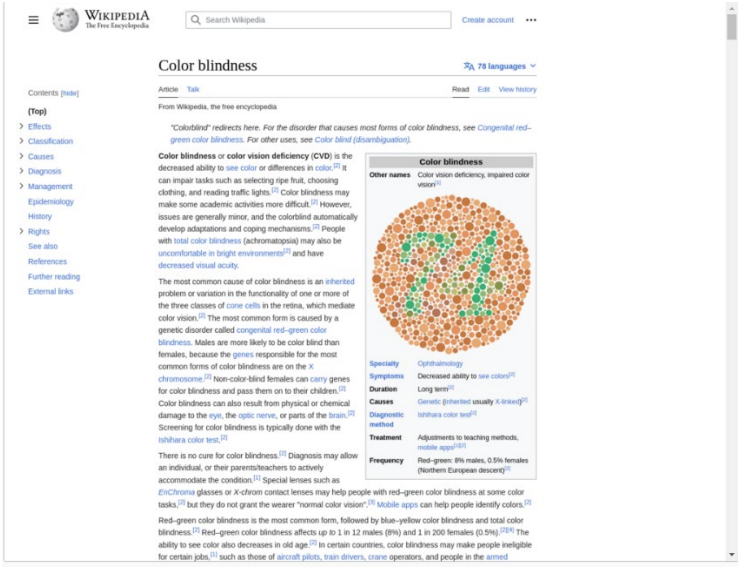
Protanopia – The Wikipedia page itself looks good with this type of colorblindness, however, we are able to see that the image with the number is no longer there/has the number clearly visible or is at least very difficult to see.

Deuteranopia – With the Wikipedia page with deuteranopia, the image itself has the number a little visible, but is hard to see. However, the page itself is looking a little rough, and I believe that making it use less full white will make it look better to help prevent difficulties seeing.

Tritanopia – With tritanopia the number is very visible, and the webpage looks decent. Everything is visible with tritanopia, and the website has less of a harsh white than without colorblindness's.

Greyscale/Achromatopsia – With greyscale/achromatopsia, the number is barely visible for me, however, is still fairly visible. The website itself, however, looks quite a bit worse, and a lot of text is faded, specifically where they use the light blue links. A lot of different things are much more difficult to see.

Images



Color blindness

78 languages

From Wikipedia, the free encyclopedia

"Colorblind" redirects here. For the disorder that causes most forms of color blindness, see Congenital red–green color blindness. For other uses, see Color blind (disambiguation).

Color blindness or **color vision deficiency** (**CVD**) is the decreased ability to see color or differences in color.[2] It can impair tasks such as selecting ripe fruit, choosing clothing, and reading traffic lights.[1] Color blindness may make some academic activities more difficult.[3] However, issues are generally minor, and the colorblind automatically develop adaptations and coping mechanisms.[2] People with total color blindness (achromatopsia) may also be uncomfortable in bright environments[3] and have decreased visual acuity.

The most common cause of color blindness is an inherited problem or variation in the functionality of one or more of the three classes of cone cells in the retina, which mediate color vision.[2] The most common form is caused by a genetic disorder called congenital red–green color blindness. Males are more likely to be color blind than females, because the genes responsible for the most common forms of color blindness are on the X chromosome.[2] Non-color-blind females can carry genes for color blindness and pass them on to their children.[2] Color blindness can also result from physical or chemical damage to the eye, the optic nerve, or parts of the brain.[2] Screening for color blindness is typically done with the Ishihara color test.[2]

There is no cure for color blindness.[2] Diagnosis may allow an individual, or their parents/teachers to actively accommodate the condition.[1] Special lenses such as *EnChroma* glasses or *X-chrom* contact lenses may help people with red–green color blindness at some color tasks,[2] but they do not grant the wearer "normal color vision".[3] Mobile apps can help people identify colors.[2]

Red–green color blindness is the most common form, followed by blue–yellow color blindness and total color blindness.[1] Red–green color blindness affects *up to* 1 in 12 males (8%) and 1 in 200 females (0.5%).[2][4] The ability to see color also decreases in old age.[2] In certain countries, color blindness may make people ineligible for certain jobs,[1] such as those of aircraft pilots, train drivers, crane operators, and people in the armed

Color blindness

Other names	Color vision deficiency, impaired color vision[1]
Specialty	Ophthalmology
Symptoms	Decreased ability to see colors[2]
Duration	Long term[2]
Causes	Genetic (inherited usually X-linked)[2]
Diagnostic method	Ishihara color test[2]
Treatment	Adjustments to teaching methods, mobile apps[3][2]
Frequency	Red–green: 8% males, 0.5% females (Northern European descent)[2]

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78 languages
Article Talk
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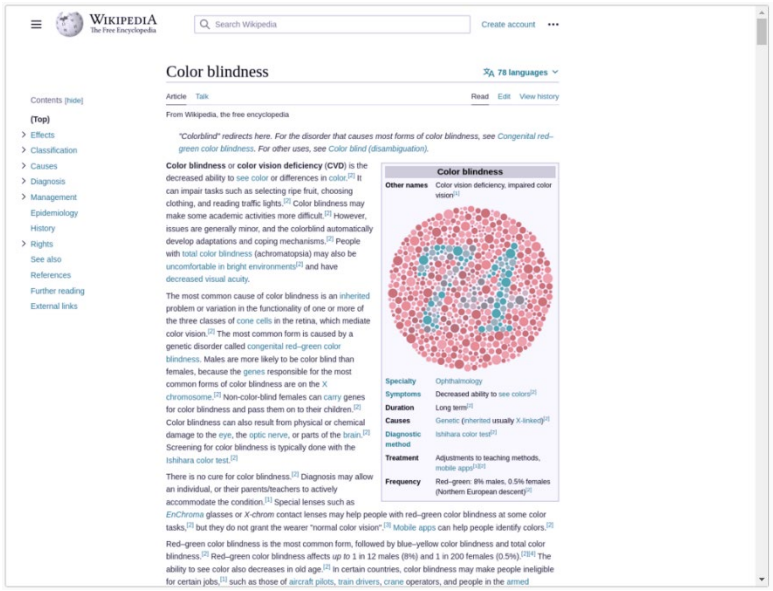

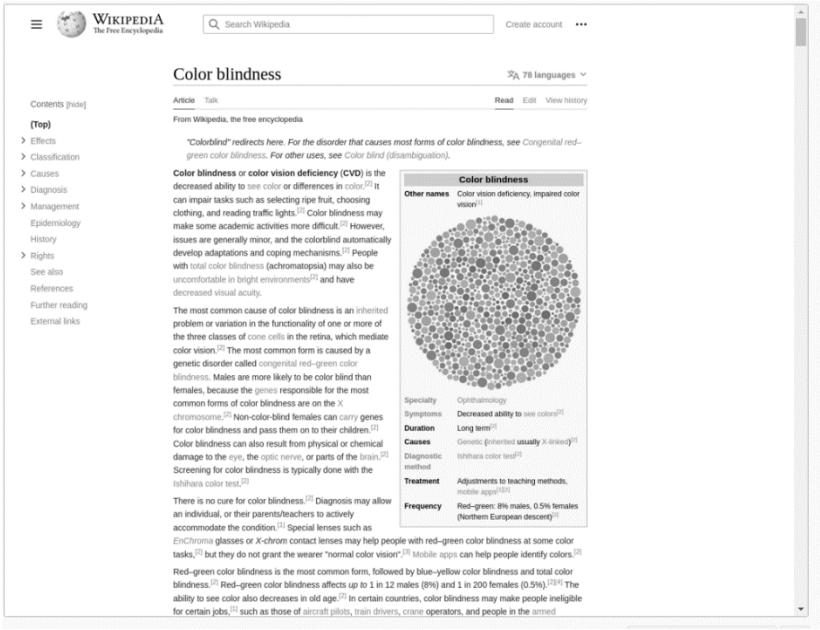

Overview

A lot of websites seem to handle colorblindness decently well. However, when there are issues with websites there usually is not a way to fix them. I think websites should be including more built in tools to help with colorblindness, such as a dark mode, and high contrast mode.

It seems that when coding with HTML, CSS, and general website frameworks and languages there isn't really any sort of built-in way of handling colorblindness, which I wish

there would be more of. Although, generally, most websites seem to work OK with different colorblindness's. The Wikipedia page, which has the colorblindness test image really goes to show what someone may be missing on a website.

This lab really has me also thinking about other disabilities and how people are able to interact with websites, as demonstrated to me by this lab it is clear a lot of websites (I tested a lot more than the ones shown on this document) do not understand principles of colorblindness or basic accessibility. Website designers and programmers really need to make easy to use customizability options for people with disabilities such as a dark theme or high contrast theme or themes built for specific colorblindness's, as well as make sure that other types of disabilities are able to use the website properly. I feel that to make sure website designers and programmers are able to do this they need to test it themselves, for example, the website we used for the lab showed how people with different colorblindness's actually see the website, and that website programmers and designers can do different things to test different disabilities such as full blindness or people who have trouble navigating websites by use of their hands.

I have neither given nor received unauthorized aid in completing this work, nor have I presented someone else's work as my own.

Dalton Murray