

WCAG (Web Content Accessibility Guidelines) published by the The World Wide Web Consortium to ensure user interfaces/user experiences are accessible
Categories used:
 1.4.1 Use of Colour (Level A)
 1.4.5 Images of Text (Level AA)
 1.4.11 Non-text contrast (Level AA)
 1.4.6 Contrast (Enhanced) (Level AAA)

How we analysed software
 1. Inspected the screenshots side-by-side to understand whether the general user experience might be reduced
 2. Using relevant WCAG principles and the aid of quantitative tools such as the CIE D2000 Delta Calculator, we then classified each UI into a table.

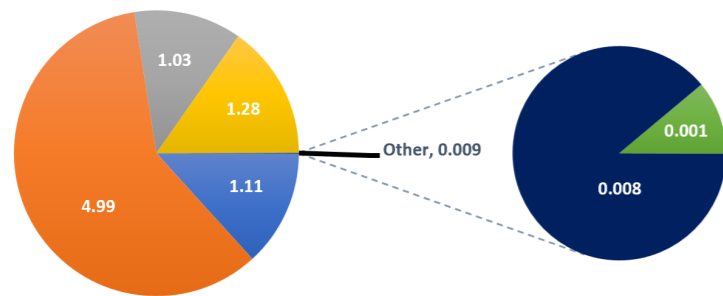
Our Suggestions
 1. UIs should have dedicated colour blind modes or multiple themes
 2. There should be an OS-Level of Support for daltonisation of images and videos

Future Work
 Investigate how the process can be fully automated and calibrate our results with a subjective user study and we hope to expand and release our dataset of screenshots

Colourblindness is the failure or decreased ability to distinguish between certain colours under normal lighting conditions.

Three types of colour blindness :

1. Protanopia, Deuteranopia (red-green)
2. Tritanopia and Tritanomaly (blue-yellow)
3. Achromatopsia which is full colourblindness.



Distribution of the varying types of colourblindness

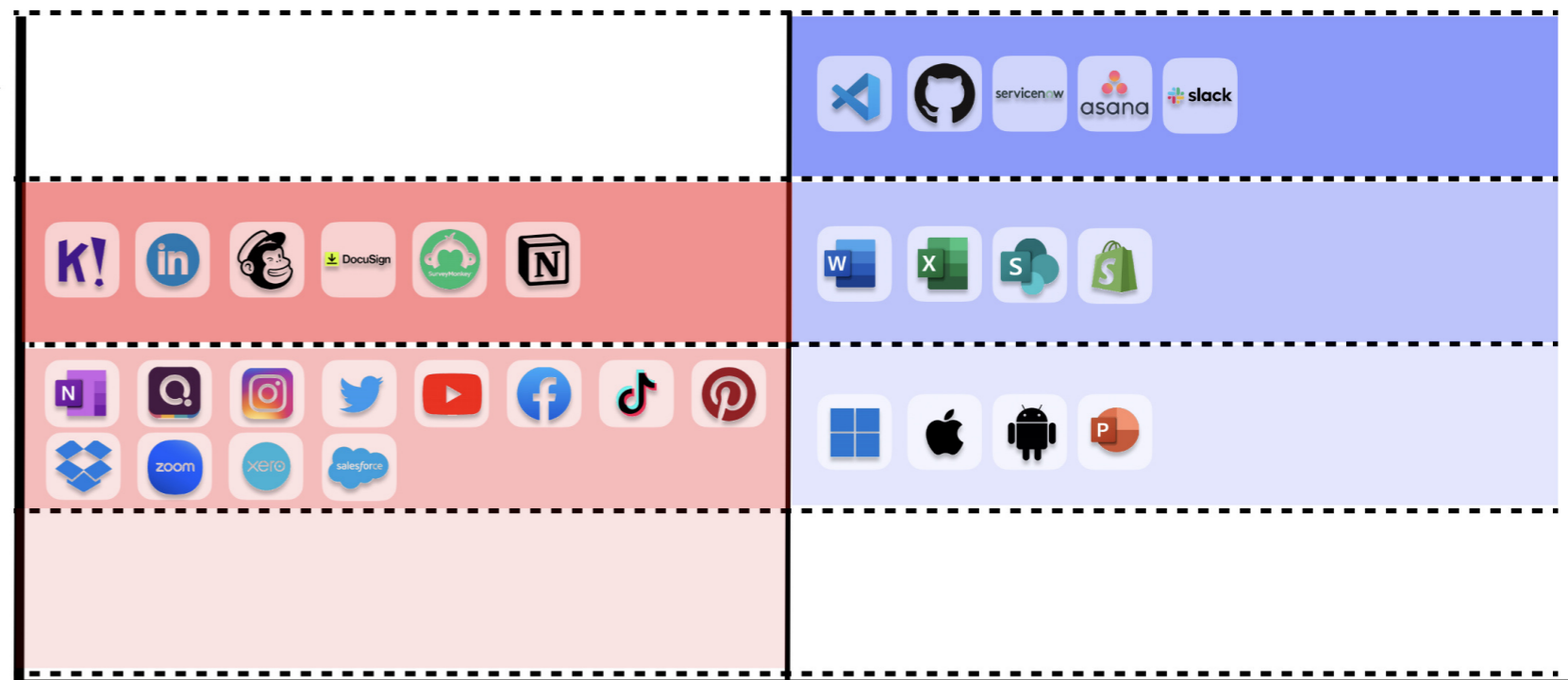
■ Protanomaly ■ Deuteranomaly ■ Protanopia
 ■ Deuteranopia ■ Tritanopia ■ Monochromacy

1 User experience / Aesthetics is kept

2 Core functionality is kept

3 Core functionality is partial and the UX experience is reduced

4 Core functionality is lost



No Colour Blind Mode

Colour Blind Mode