

# Accessibility

by Xceptance

## The Not so New Kid on the Block

Sales, Marketing, and Training Material by Xceptance

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# What is Accessibility?

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“**Accessibility** is the practice of making information, activities, and/or environments sensible, meaningful, and usable **for as many** people **as possible.**” [1]





**Vision**



**Hearing**



**Comprehension**



**Operating**

# 4 Principles of Accessibility

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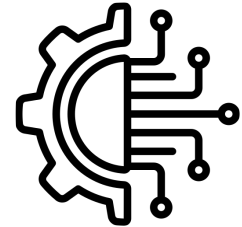
1. Perceivable



2. Operable



3. Understandable



4. Robust





**Recognizability** by One Human Sense



Three dessert glasses filled with pistachio tiramisu [2]

Accessibility  
Accessibility  
**Accessibility**  
*Accessibility*  
**Accessibility**  
*Accessibility*  
Accessibility

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Accessibility





Suchen und finden



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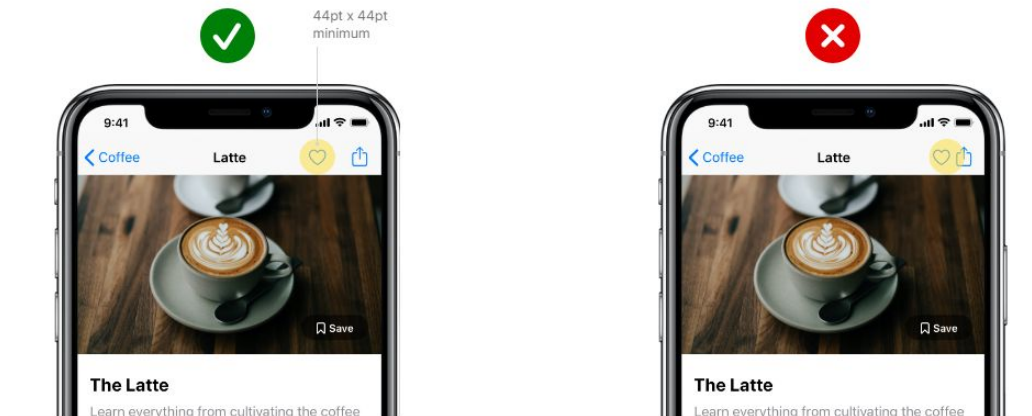
Accessibility

Accessibility

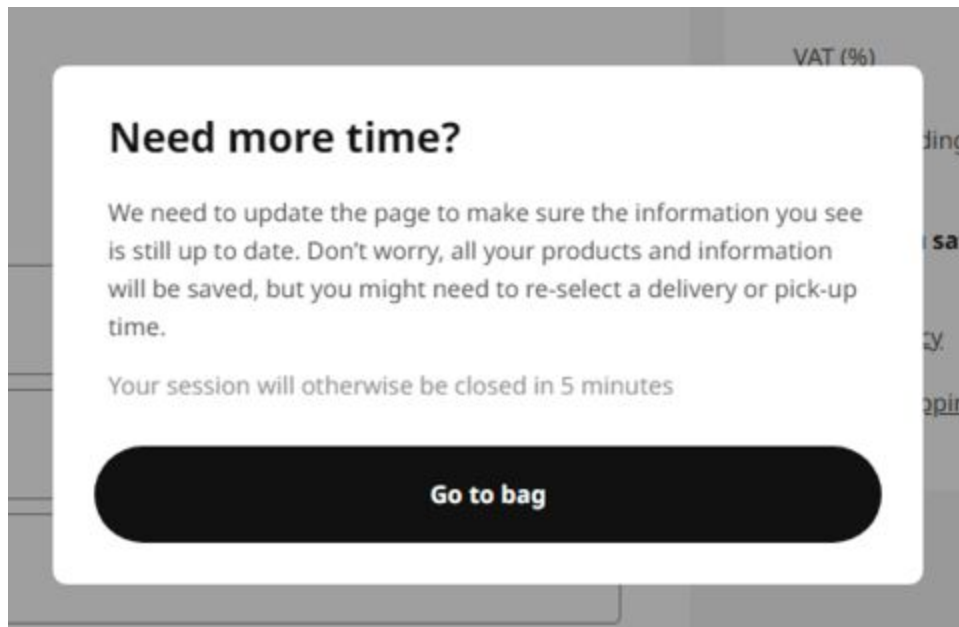




User Interface and Navigation should be **easily useable**



UI Design Dos and Don'ts for Hit Targets by Apple [3]



Ikea Inactivity Warning in Checkout

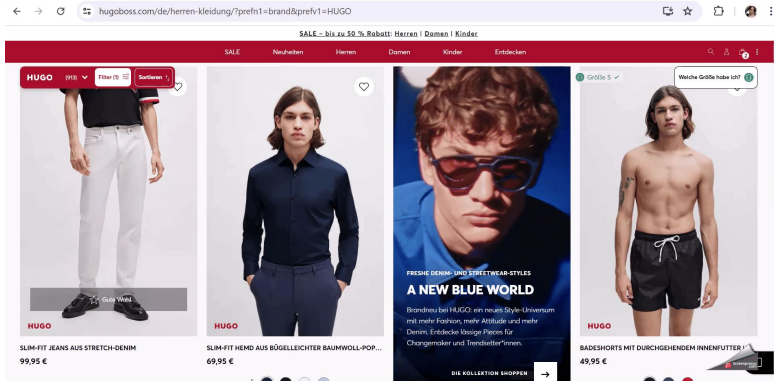


# Cognitive Restrictions

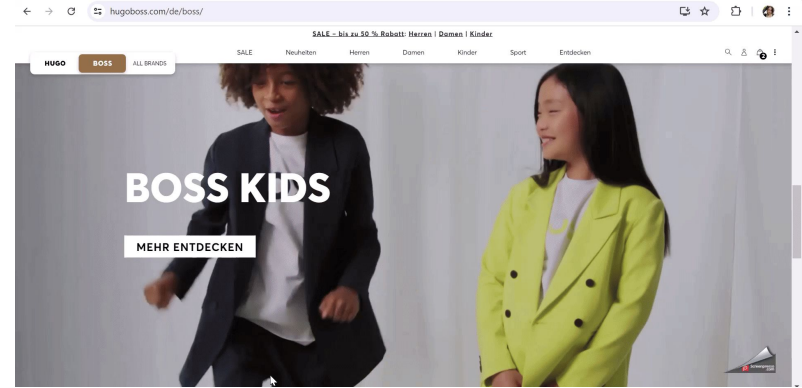
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- Possibility to stop Movement or Audios

PLP [5]



Homepage [4]





Usage of clear and **simple language** & **predictable** and coherent **interfaces**



Chat



People



Raise



React



View



More



Camera



Mic



Share



Leave

Visible Controls for "Teams" Meeting setup

[< Sign In](#) ×

## Create an Account

Create an account to access your Ulta Beauty Rewards™, Favorites and more.

First name


  
  

Last name

Email address

⚠ Enter a valid email address

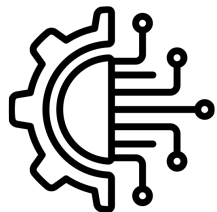
Password

Password must:

- ✗ Be at least 8 characters in length.
- ✗ Contain an uppercase letter.
- ✓ Contain a lowercase letter.
- ✗ Contain a digit (0-9).
- ✓ Not include spaces.
- ✗ Contain a special character.

Ulta Beauty - Registration [6]



Websites/Applications **work across** platforms, browsers and devices with assistive **technologies**



Different Device Types [7]



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What has to be done?

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# WCAG - Web Content Accessibility Guidelines

**XCEPTANCE**

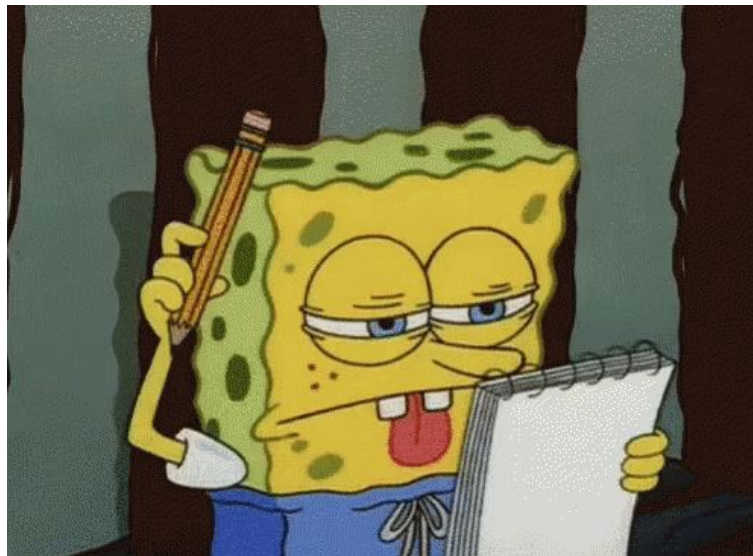
Principles	Guidelines	Level A	Level AA	Level AAA
1. Perceivable	1.1 Text Alternatives	1.1.1		
	1.2 Time-Based Media	1.2.1 - 1.2.3	1.2.4 - 1.2.5	1.2.6 - 1.2.9
	1.3 Adaptable	1.3.1 - 1.3.3		
	1.4 Distinguishable	1.4.1 - 1.4.2	1.4.3 - 1.4.5	1.4.6 - 1.4.9
2. Operable	2.1 Keyboard Accessible	2.1.1 - 2.1.2		2.1.3
	2.2 Enough Time	2.2.1 - 2.2.2		2.2.3 - 2.2.5
	2.3 Seizures	2.3.1		2.3.2
	2.4 Navigable	2.4.1 - 2.4.4	2.4.5 - 2.4.7	2.4.8 - 2.4.10
3. Understandable	3.1 Readable	3.1.1	3.1.2	3.1.3 - 3.1.6
	3.2 Predictable	3.2.1 - 3.2.2	3.2.3 - 3.2.4	3.2.5
	3.3 Input Assistance	3.3.1 - 3.3.2	3.3.3 - 3.3.4	3.3.5 - 3.3.6
4. Robust	4.1 Compatible	4.1.1 - 4.1.2		





Nope. Nope, it is NOT.





And how do I achieve Accessibility?



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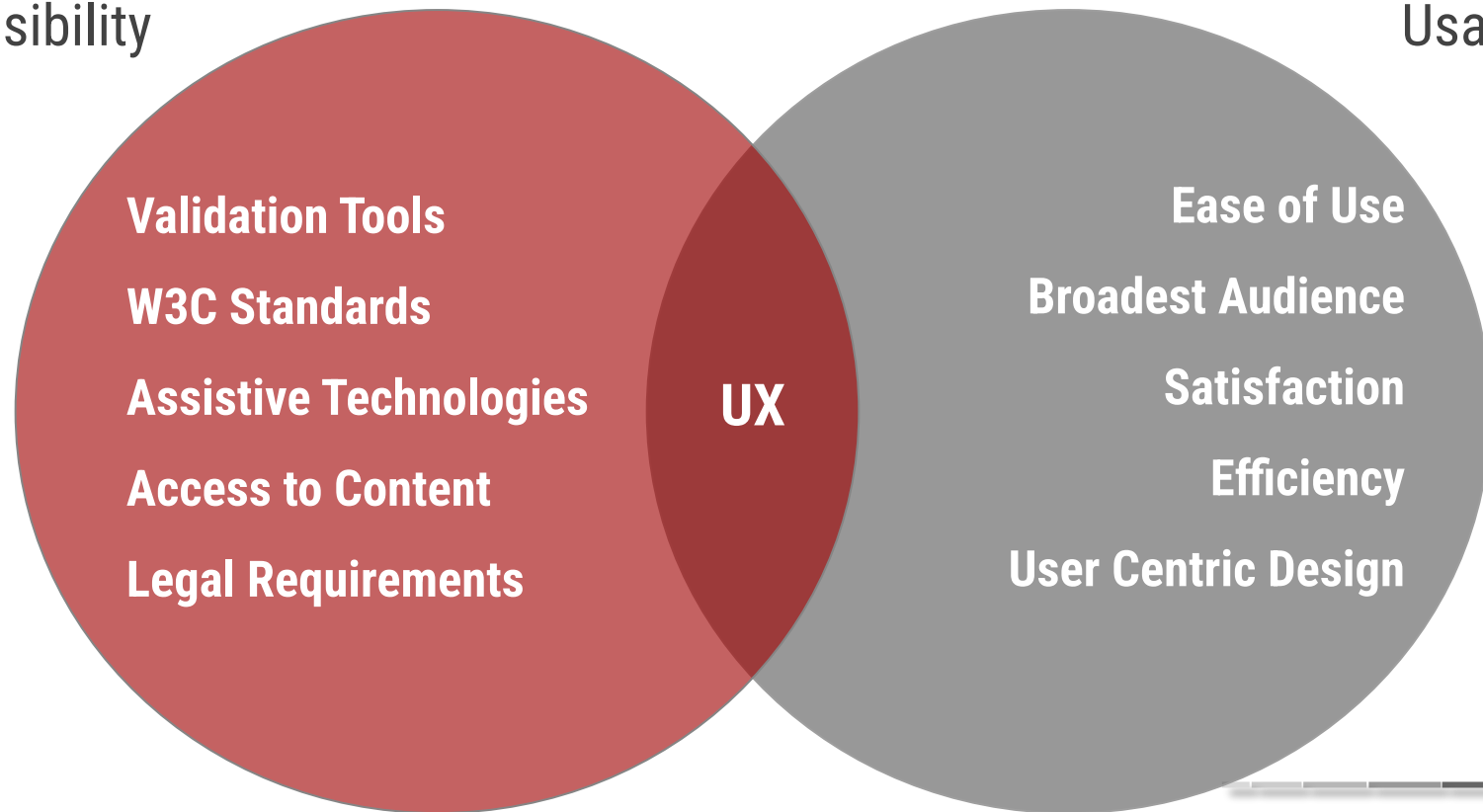
# Accessibility - More than WCAG

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# Accessibility - More than WCAG

Accessibility

Usability



**Validation Tools**

**W3C Standards**

**Assistive Technologies**

**Access to Content**

**Legal Requirements**

**UX**

**Ease of Use**

**Broadest Audience**

**Satisfaction**

**Efficiency**

**User Centric Design**

# Tools

Support to achieve Accessibility

Overview and Explanations

Software

Developer Tools and Browser  
Extensions

Add-Ons and Implementations



# Overview and Explanations

- W3C - Web Accessibility Initiative (WAI)
- Quick Reference

The screenshot displays the 'How to Meet WCAG (Quick Reference)' tool. At the top, it states 'A customizable quick reference to Web Content Accessibility Guidelines (WCAG) 2 requirements (success criteria) and techniques.' The interface includes a navigation bar with 'Contents', 'Filter', and 'Hide' options. A yellow banner indicates 'Selected Filters: WCAG 2.2: all success criteria and all techniques.' Below this, the main content area is titled 'Principle 1 - Perceivable' and contains 'Guideline 1.1 - Text Alternatives' and 'Guideline 1.2 - Time-based Media'. A left sidebar provides filtering options for 'WCAG Version' (set to 2.2), 'Tags' (including Developing, Interaction Design, Content Creation, Visual Design), 'Levels' (Level A, AA, AAA), and 'Techniques' (Sufficient, Advisory). The main content area shows detailed information for '1.1.1 Non-text Content - Level A', including a description, a link to 'Show full description', and an 'Understanding 1.1.1' button. Similar information is provided for '1.2.1 Audio-only and Video-only (Prerecorded) - Level A' and '1.2.2 Captions (Prerecorded) - Level A'. The interface also features 'Clear filters', 'Expand all sections', and 'Share' buttons.

## How to Meet WCAG (Quick Reference)

A customizable quick reference to Web Content Accessibility Guidelines (WCAG) 2 requirements (success criteria) and techniques. [Show About & How to Use](#)

Selected Filters: WCAG 2.2: all success criteria and all techniques. [Clear filters](#) [Expand all sections](#) [Share](#)

### Principle 1 - Perceivable

Information and user interface components must be presentable to users in ways they can perceive.

#### Guideline 1.1 - Text Alternatives

Provide text alternatives for any non-text content so that it can be changed into other forms people need, such as large print, braille, speech, symbols or simpler language.

##### 1.1.1 Non-text Content — Level A

All non-text content that is presented to the user has a text alternative that serves the equivalent purpose, except for the situations listed below. [Show full description](#) [Understanding 1.1.1](#)

[Show techniques and failures for 1.1.1](#)

#### Guideline 1.2 - Time-based Media

Provide alternatives for time-based media.

##### 1.2.1 Audio-only and Video-only (Prerecorded) — Level A

For prerecorded audio-only and prerecorded video-only media, the following are true, except when the audio or video is a media alternative for text and is clearly labeled as such: [Understanding 1.2.1](#)

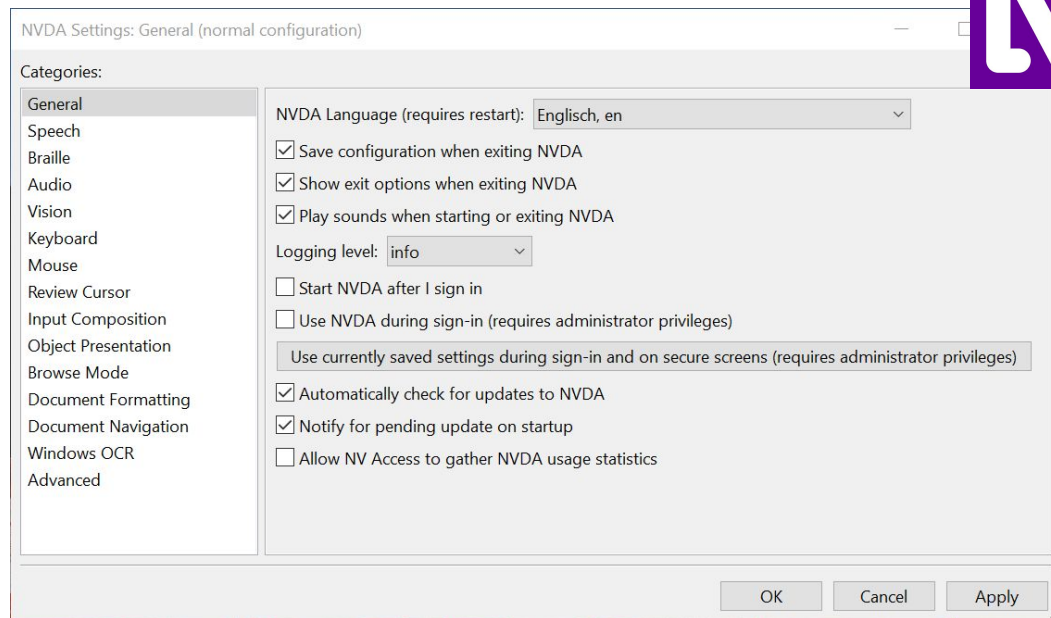
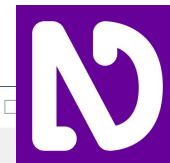
[Show full description](#)

[Show techniques and failures for 1.2.1](#)

##### 1.2.2 Captions (Prerecorded) — Level A

Captions are provided for all prerecorded audio content in synchronized media, except when the media is a media alternative for text and is clearly labeled as such. [Understanding 1.2.2](#)

- Screen Reader
- Operating System Native
- External - NVDA





- Developer Tools
  - Score System
    - Google Lighthouse
  - Integrated Features

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## Accessibility

These checks highlight opportunities to [improve the accessibility of your web app](#). Automatic detection can only detect a subset of issues and does not guarantee the accessibility of your web app, so [manual testing](#) is also encouraged.

### NAMES AND LABELS

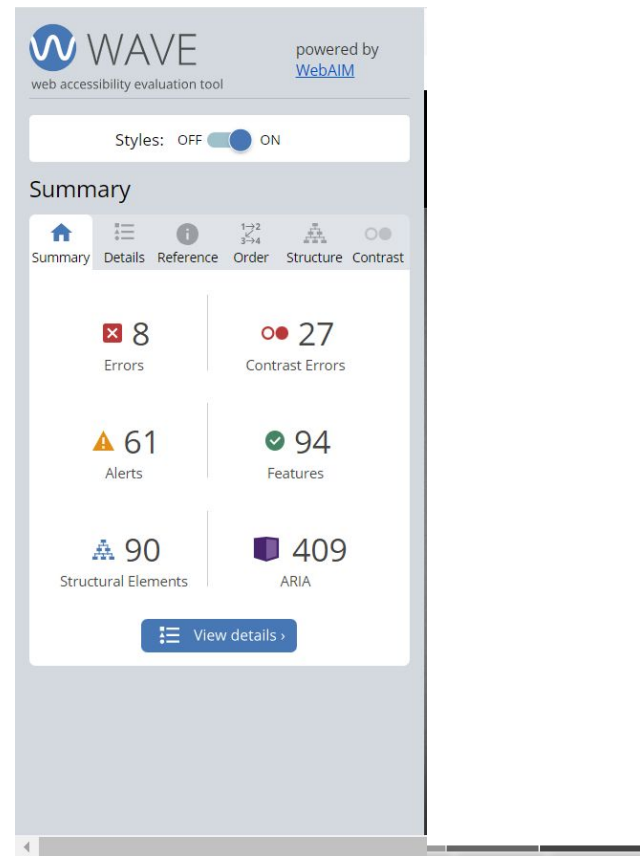
- ▲ Image elements do not have `[alt]` attributes
- ▲ Form elements do not have associated labels
- ▲ Links do not have a discernible name

These are opportunities to improve the semantics of the controls in your application. This may enhance the experience for users of assistive technology, like a screen reader.

### BEST PRACTICES

- ▲ `[user-scalable="no"]` is used in the `<meta name="viewport">` element or the `[maximum-scale]` attribute is less than 5.
- ▲ Touch targets do not have sufficient size or spacing.

- Browser Extensions - WAVE Tool
- Overall Guideline Checkers
  - Contrast Checkers



## WebAIM - Contrast Checker

**Foreground**

Hex Value  
# FF0000

Color Picker Alpha  
1

Lightness

**Background**

Hex Value  
# 363636

Color Picker

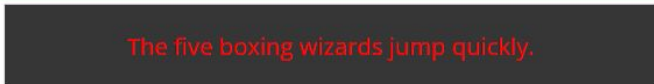
Lightness

Contrast Ratio  
**3.02:1**

### Normal Text

WCAG AA: **Fail**

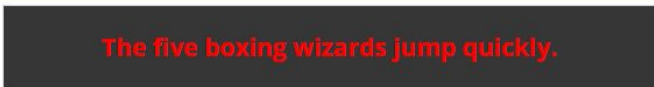
WCAG AAA: **Fail**



### Large Text

WCAG AA: **Pass**

WCAG AAA: **Fail**



### Graphical Objects and User Interface Components

WCAG AA: **Pass**



## WebAIM - Contrast Checker

The image shows the WebAIM Contrast Checker interface. It features two main sections: 'Foreground' and 'Background'. Each section includes a 'Hex Value' input field, a 'Color Picker' (a horizontal bar with a slider), and an 'Alpha' input field. Below these are 'Lightness' sliders. The foreground color is #0B713F and the background color is #FFFFFF. The resulting 'Contrast Ratio' is displayed in a green-bordered box as 6.09:1.

### Normal Text

WCAG AA: **Pass**

WCAG AAA: **Fail**

The five boxing wizards jump quickly.

### Large Text

WCAG AA: **Pass**

WCAG AAA: **Pass**

The five boxing wizards jump quickly.

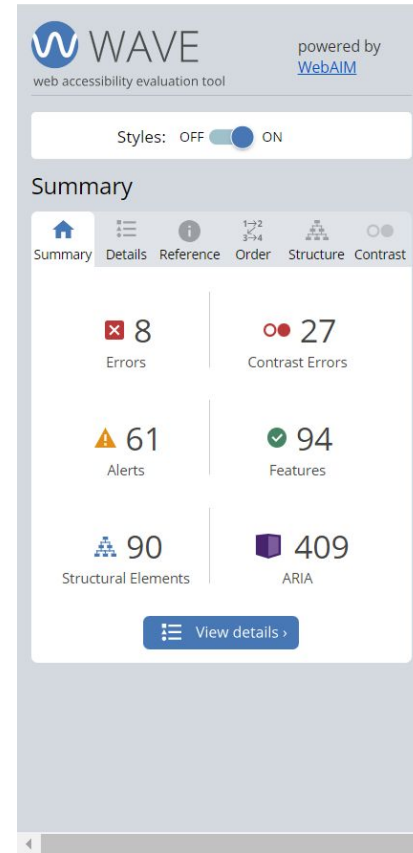
### Graphical Objects and User Interface Components

WCAG AA: **Pass**

Text Input

**Contrast Ratio** of at least **4.5:1** for **normal text** and **3:1** for **large text**

- Browser Extensions - WAVE Tool
- Overall Guideline Checkers
  - Contrast Checkers
  - Tab Order
  - Reference and ARIA Tags



## ➤ Roles

- Defines Type of User Interface Element
  - i.e.: role="checkbox"

## ➤ States

- Changeable with and without User Interaction
  - i.e.: aria-checked="true"



Remember me

## ➤ Properties

- Rarely Change
  - i.e.: aria-labelledby="chk1-label"

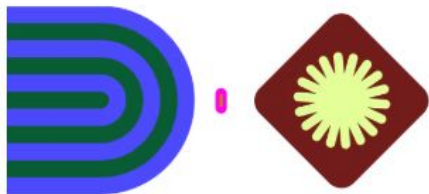


# Add-Ons and Implementations

- Add-Ons in Third Party Systems - [Figma](#)
- Features similar to Developer Tools

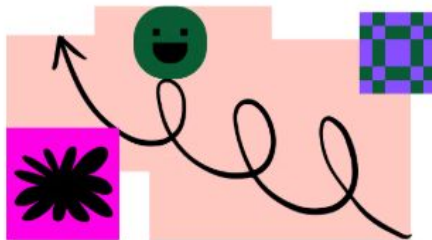
## Figma Design

Design and prototype  
in one place



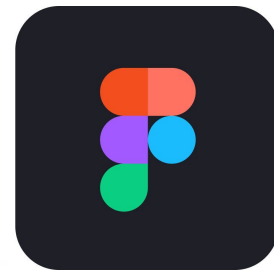
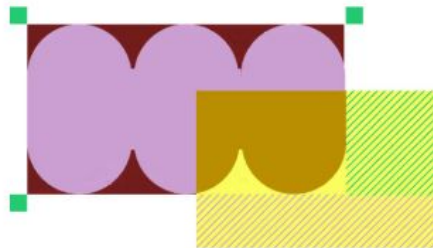
## FigJam

Collaborate with a  
digital whiteboard



## Dev Mode

Translate designs into code



# Add-Ons and Implementations

- Implementations
  - Toolbars - Adaptive Accessibility Menu
    - [Github ranbuch](#)

install package:

```
npm install accessibility
```

include script:

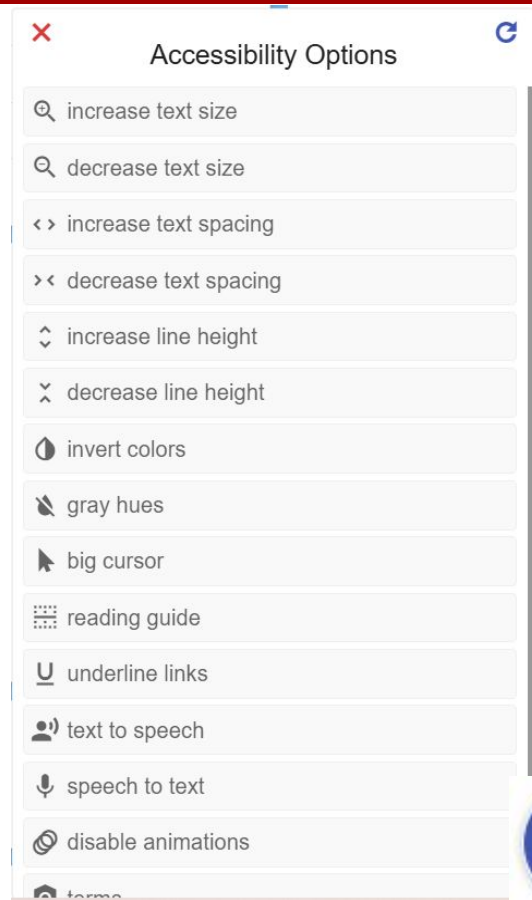
```
<script type="text/javascript" src="node_modules/accessibility/dist/main.bundle.js"></script>
```

or import:

```
import { Accessibility } from 'accessibility';
```

initialize component

```
window.addEventListener('load', function() {  
  new Accessibility();  
}, false);
```





# Add-Ons and Implementations

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Paid Toolbars

UserWay - Level Access

The image shows a screenshot of the ZWILLING website. The main content area features a "SUMMER SAVINGS EVENT:" banner with the text "Save up to 50%" and a "SHOP NOW" button. Below the banner are product categories: KNIVES, COOKWARE, ELEC, and AGE. An accessibility menu is overlaid on the right side, titled "Accessibility Menu (CTRL+U)". The menu contains several options: Contrast +, Highlight Links, Bigger Text, Text Spacing, Pause Animations, Hide Images, Cursor, Line Height, and Tooltips. The "Df Dyslexia Friendly" option is highlighted with a red border. At the bottom of the menu, there is a "Report a Problem" link and a "Manage" button. The UserWay logo is visible in the bottom right corner of the menu.

Vianova Urlaub

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Live Example

- Problems found on **Vianova Urlaub**:
  - Navigation is **incomplete and inconsistent**
  - **Focus** is **missing** or unclear on multiple Buttons and Fields
  - **Content** is
    - visually challenging
    - cannot be stopped
    - cannot be reached
  
- Lighthouse Report shows **Score** of **over 90** while

# Testing

## Tools:

- Google Lighthouse
- WAVE Tool
- Keyboard Navigation
- Screen Reader
  - NVDA - Windows
  - VoiceOver - macOS / iOS
  - Talkback - Android

## Bug Reporting:

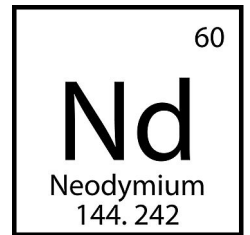
- Summary
- Environment / Device / Location
- Steps to Reproduce
- Affected / Broken WCAG Guideline
- Suggestions and Hints
- Images / Screenscasts



Test Suite Creation - In Progress

Involves:

- WAVE Tool Check
- Lighthouse Report Analysis
- Keyboard Navigation Check
- ARIA Roles in HTML Structure
- Contrast Checks e.g. Color Blindness



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# Accessibility in the Development Process

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# Accessibility in the Development Process

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## Client

Defining  
Standards

## Design

Considering  
Accessibility/WCAG  
in Design Process

## Stories

Referencing and  
Describing  
Accessibility/WCAG

## Development

Implementation and Testing of:

- Responsive Design
- Semantic HTML Structure
- ARIA Roles and Similar
- Keyboard, Focus and Hover Elements
- Screen Reader
- WCAG 2.2 AA



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- [1] <https://www.seewritehear.com/learn/what-is-accessibility/>
- [2] <https://dishes-delicious.de/2479/cremiger-pistazien-tiramisu/>
- [3] <https://developer.apple.com/design/tips/>
- [4] <https://www.hugoboss.com/de/boss>
- [5] <https://www.hugoboss.com/de/herren-kleidung/?prefn1=brand&prefv1=HUGO>
- [6] <https://www.ulta.com/>
- [7] <https://www.envigo.co.in/blog/social-media-marketing/responsive-web-design-how-to-design-for-multiple-devices>

