

# Accessibility.

DEVbabbl #3

**Goei'n avond!**

[tristandubbeld.nl](http://tristandubbeld.nl)

 **CodeSandbox**

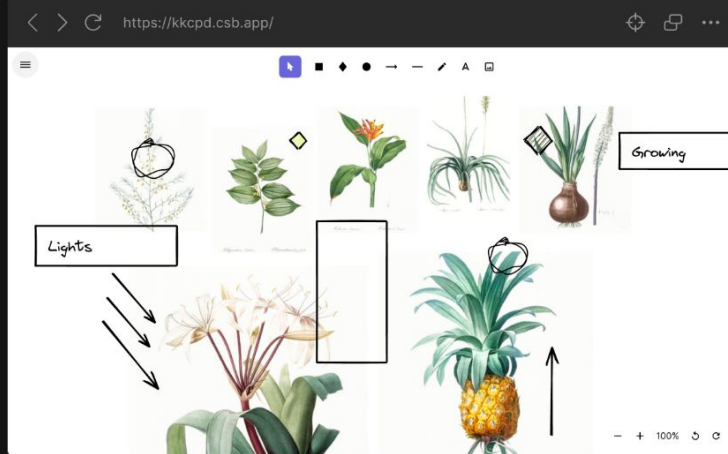


index.ts renderScene.js

- .codesandbox
  - project.json
  - workspace.json
- public
- scripts
- src
  - actions
  - components
  - css
  - data
  - element
  - excalidraw-app
  - hooks
  - locales
  - packages
  - renderer
    - index.js
    - renderElement.ts
    - renderScene.ts
    - roundReact.ts
  - scene
    - align.ts
    - analytics.ts
    - appState.ts
    - bug-issue-template.ts

Open in VS Code ↗

```
56 const strokeRectWithRotation = (  
57   context: CanvasRenderingContext2D,  
58   x: number,  
59   y: number,  
60   width: number,  
61   height: number,  
62   cx: number,  
63   cy: number,  
64   angle: number,  
65   fill: boolean = false,  
66 ) => {  
67   context.save();  
68   context.translate(cx, cy);  
69   context.rotate(angle);  
70   if (fill) {  
71     context.fillRect(x - cx, y - cy, width, height);  
72   }  
73   context.strokeRect(x - cx, y - cy, width, height);  
74   context.restore();  
75 };  
76  
77 const strokeDiamondWithRotation = (  
78   context: CanvasRenderingContext2D,  
79   width: number,  
80   height: number,  
81   cx: number,  
82   cy: number,  
83   angle: number,  
84 ) => {  
85   context.save();
```



Log - Application

Compiled successfully!

You can now view excalidraw in the browser.

Local: http://localhost:3000  
On Your Network: http://192.168.43.1:3000

Note that the development build is not optimized.  
To create a production build, use `yarn build`.

**Accessibility.**



**Waarom?**

We're all just temporarily abled.

**We're all just temporarily abled.**



**We're all just temporarily abled.**

**>40 slechter zicht.**

**>45 cognitief slechter.**

**25% van NL heeft een beperking.**

**Vergrijzing.**



**Eigen belang.**

**Arm breken.**

Solve for **one**, extend to **many**.



**Voor de business.**



**EU accessibility act 2025.**



**Boete.**



**Als webshop.**

**Klanten wegjagen.**

**Tjarda.**





**Realiteit is minder grappig.**



**Hoi, ik ben Tjarda  
en ik ben bijna blind...**

**...en dit is hoe ik jouw ontoegankelijke  
website gebruik.**





**Webshops zijn niet makkelijk  
voor iedereen.**

In 2022 werden er **50.829.406** verschillende toegankelijkheid fouten gedetecteerd op 1 miljoen gecontroleerde homepages. Dat zijn er **gemiddeld 50,8 per pagina.**

**83,9% tekst contrast.**

**55,4%** afbeeldingen.



**50,1%** lege links.

**46,1%** inputs zonder label.

**Klacht.**

**“Hoi ik ben Tjarda  
en ik ben bijna blind...”**

**“Met de site van Eneco is voor mij slecht te werken. Omdat ik blind ben, dien ik met spraaksoftware te werken op de pc. Een aantal sites zijn tegenwoordig goed bereikbaar voor mij. Maar de kwaliteit van de site van Eneco is zodanig, dat er door mij heel moeilijk mee te werken is. Graag een reactie.”**

A blurry, low-angle photograph of a person with a long, grey beard and hair, wearing a light-colored sweater, sitting at a dark wooden desk. They are looking at a silver laptop that is open in front of them. The background is a warm, reddish-brown wall. The text "Zo verlies je klanten." is overlaid in white, bold, sans-serif font across the center of the image.

**Zo verlies je klanten.**

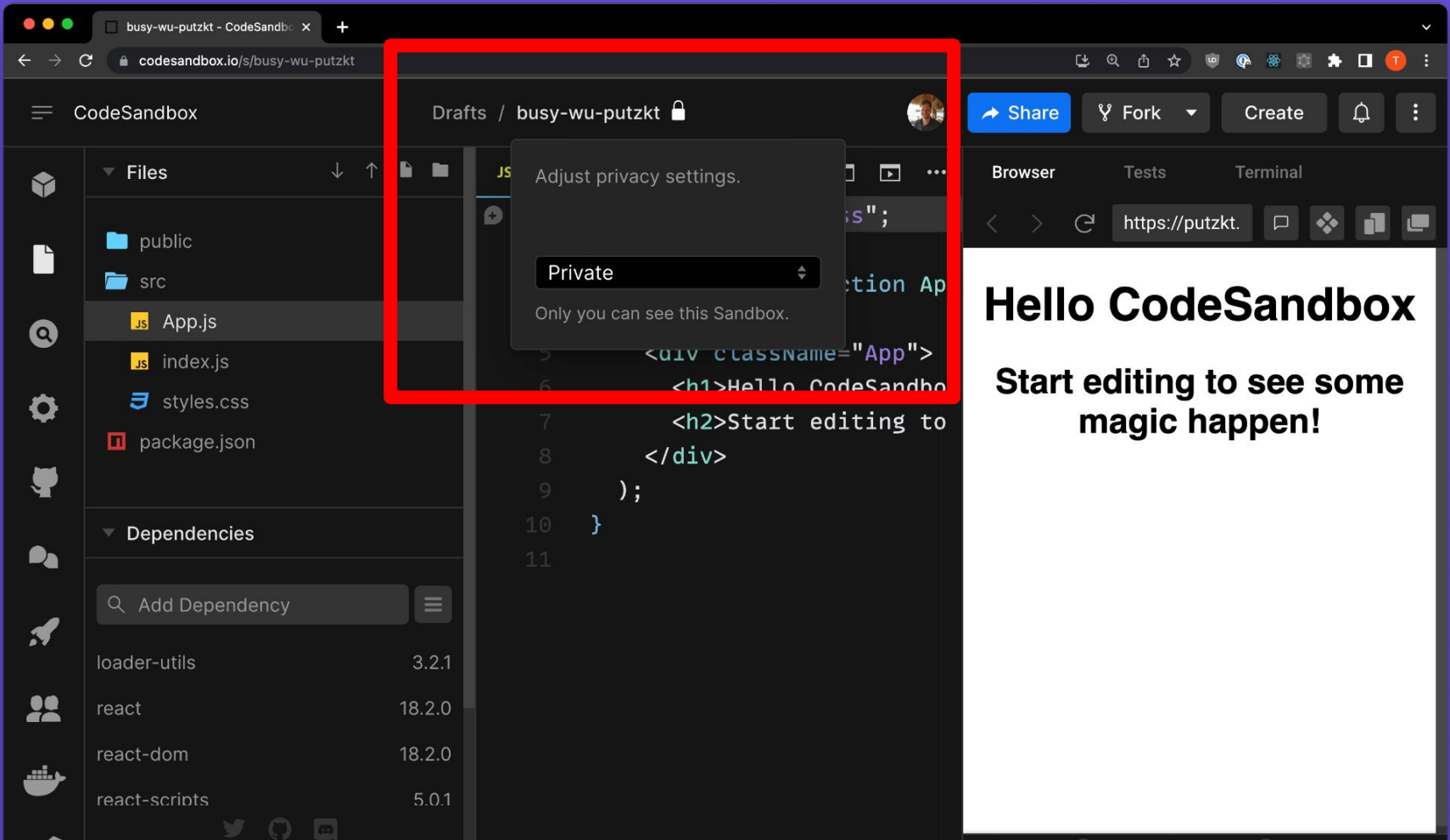
**Hoe ga je daar mee om?**

**Geen prioriteit.**



# Tip 1

Begin klein.



Drafts / busy-wu-putzkt

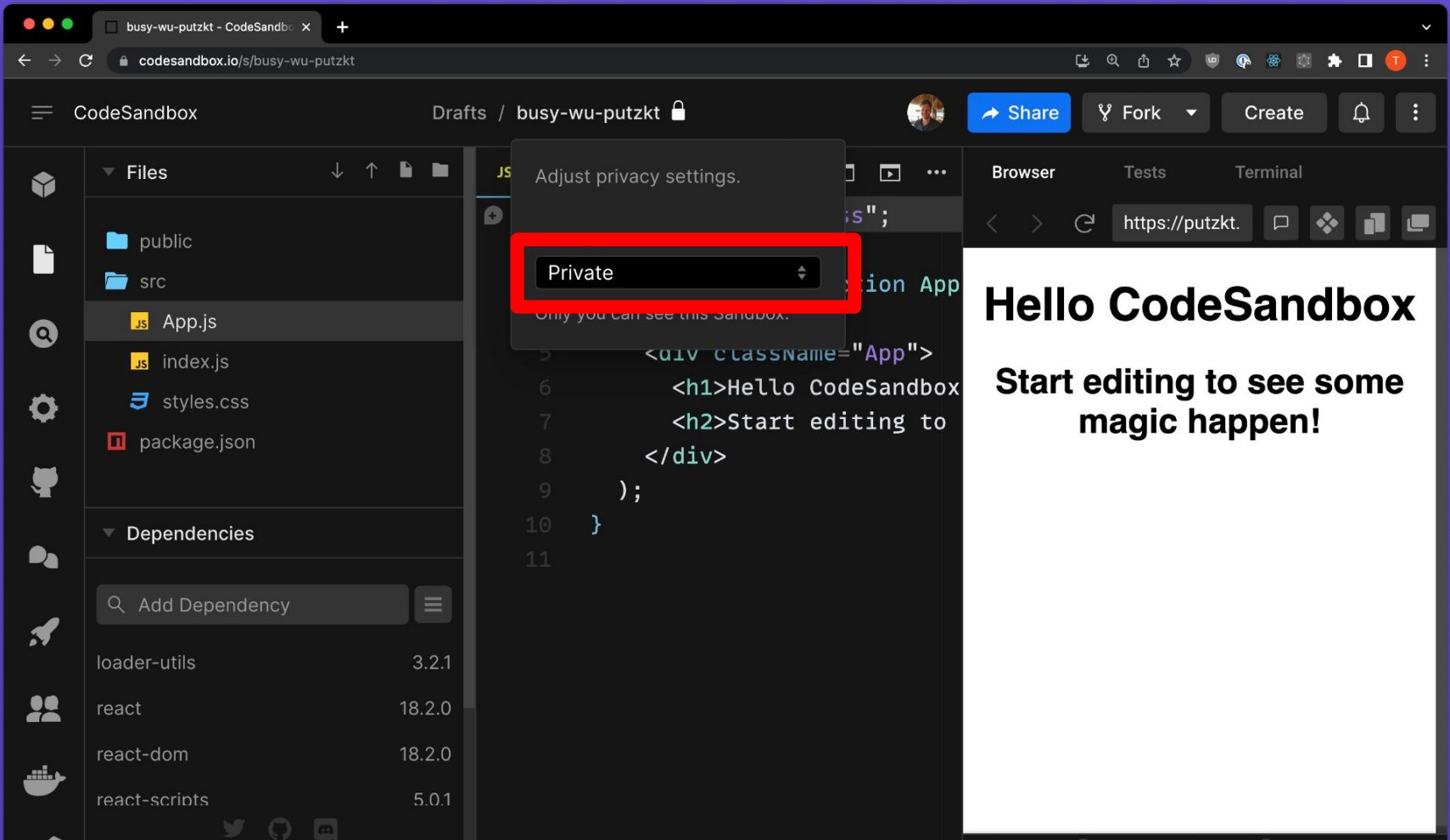
Adjust privacy settings.

Private

Only you can see this Sandbox.

Browser Tests Terminal  
https://putzkt.  
**Hello CodeSandbox**

**Start editing to see some magic happen!**



Adjust privacy settings.

Private

Only you can see this Sandbox.

Browser

Tests

Terminal

https://putzkt.

# Hello CodeSandbox

Start editing to see some  
magic happen!

# Tip 2

Gebruik de juiste `<HTML />`.

```
Users > tristan > Desktop > <code>slide.html > ...  
1 <code><button>Volgende slide</button>  
2  
3 <code><ul>  
4   <code><li>Tip over klein beginnen</li>  
5   <code><li>Tip over de juiste elementen gebruiken</li>  
6   <code><li>Tip over geen spoilers sorry</li>  
7 <code></ul>  
8  
9 <code><form>  
10  <code><label for="asdf">Naam</label>  
11  <code><input type="text" id="asdf" />  
12  <code><button type="submit">Verzenden</button>  
13 <code></form>  
14  
15
```

Ln 15, Col 1 Spaces: 4 UTF-8 LF { HTML

**Géén** role="button"

## Patterns



### Read This First

No ARIA is better than Bad ARIA. Before using any ARIA, [read this to understand why](#).



### Accordion (Sections With Show/Hide Functionality)

An accordion is a vertically stacked set of interactive headings that each contain a title, content



### Alert

An alert is an element that displays a brief, important message in a way that attracts the user's attention without interrupting the user's task.



### Alert and Message Dialogs

An alert dialog is a modal dialog that interrupts the user's workflow to communicate an important message and acquire a response.

# Chat GPT



The screenshot shows a web browser window with the address bar displaying "chat.openai.com/chat". The browser tab is titled "HTML-tips van de AI.". The chat interface shows a user message and a response from ChatGPT.

**T** Waarom ben je zo slecht in het schrijven van toegankelijke html?

 Als AI-taalmodel ben ik niet in staat om HTML te schrijven, omdat ik alleen in tekst kan communiceren. Bovendien ben ik geprogrammeerd om zo duidelijk en toegankelijk mogelijk te communiceren, dus ik doe mijn best om mijn antwoorden begrijpelijk en toegankelijk te maken voor iedereen.

Als je hulp nodig hebt bij het schrijven van toegankelijke HTML, kan ik je



**Tip 3**


**Afbeeldingen**



**Relevantie**



**Julian Hoogendoorn**  
Oprichter De Nieuwe Gevers



**Tristan Dubbeld**  
Frontend Developer bij CodeSandbox



**Sven Hoffmann**  
Oprichter Byte-Sized



**Leon Stam**  
Backend Developer Elephant









**John van den Broek**  
Front-end developer Elephant



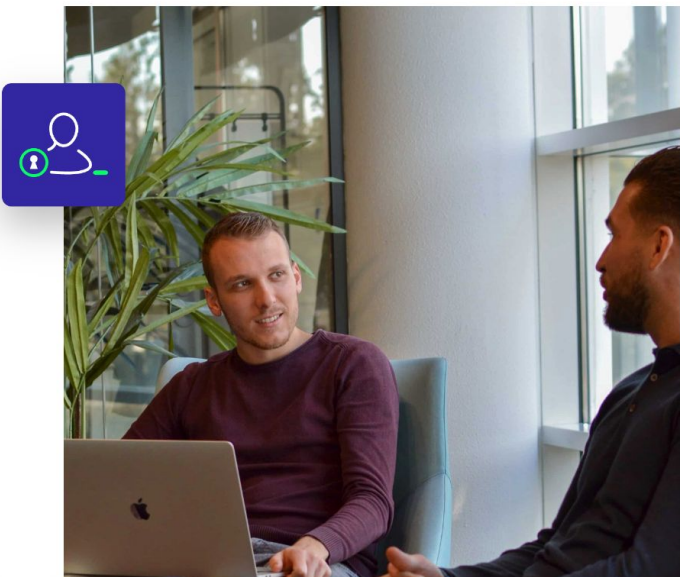
**Tom Harms**  
Front-end developer Elephant

De dev meetup in regio Dordrecht

DEVbabbl #3   Programma   **Sprekers**   Aanmelden   Routebeschrijving

 <p><b>Julian Hoogendoorn</b> Oprichter De Nieuwe Gevers</p>	 <p><b>Tristan Dubbeld</b> Frontend Developer bij CodeSandbox</p>	 <p><b>Sven Hoffmann</b> Oprichter Byte-Sized</p>
 <p><b>Leon Stam</b> Backend Developer Elephant</p>	 <p><b>John van den Broek</b> Front-end developer Elephant</p>	 <p><b>Tom Harms</b> Front-end developer Elephant</p>

## Aanmelden



Meld je nu aan voor de DEVbabbl meetup, op **donderdag 16 maart**. Het aantal mensen dat we per event kunnen toelaten is beperkt, schrijf je daarom op tijd in.

Voornaam

E-mailadres

Versturen

DEVbabbl een meetup door Eli x +

elephantcs.nl/devbabbl/

De dev meetup in regio Dordrecht

DEVbabbl #3


Programma

Sprekers

**Aanmelden**

Routebeschrijving

## Aanmelden



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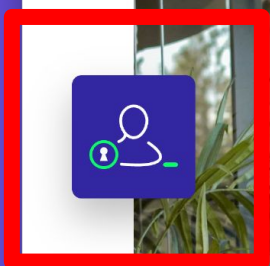
**Voornaam**

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Versturen



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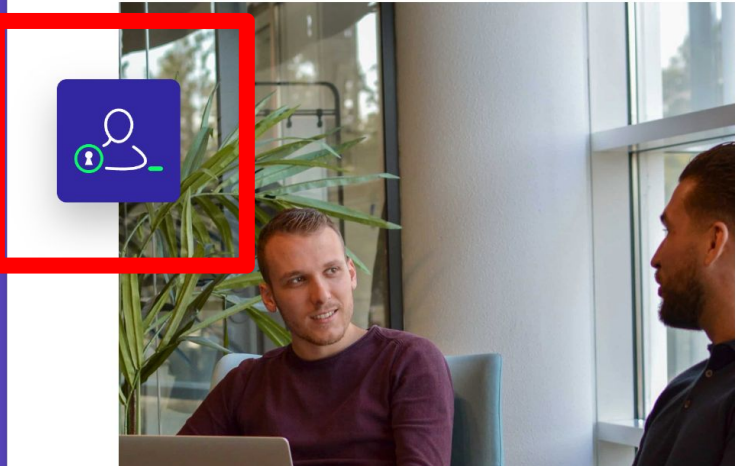


DEVbabbl een meetup door Eli x +

elephantcs.nl/devbabbl/

De dev meetup in regio Dordrecht    DEVbabbl #3    Programma    Sprekers    **Aanmelden**    Routebeschrijving

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**Voornaam**

**E-mailadres**

Versturen



### Read This First

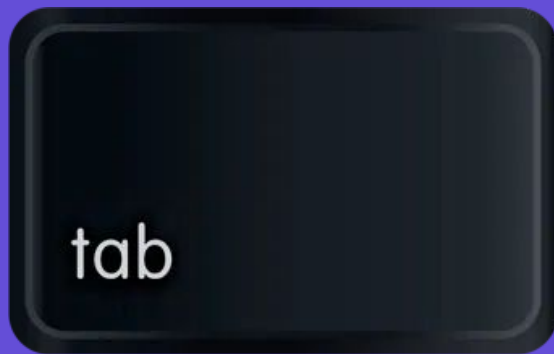
No ARIA is better than Bad ARIA. Before using any ARIA, [read this to understand why](#).

```
<svg aria-hidden>  
  <title>Decorative icon</title>  
</svg>
```

```
<svg>
  <title>Circle</title>
  <desc>
    I'm a circle and that description
    is here to demonstrate how I can
    be described, but is it really
    necessary to describe a simple
    circle like me?
  </desc>
</svg>
```

**Laatste tip**

**Gebruik je toetsenbord.**



**Meer tijd voor a11y?**

**Doe research!**

**A, AA, AAA**

**Terug naar de privacy picker.**



**Files**

- public
- src
- App.js
- index.js
- styles.css
- package.json

**Dependencies**

Add Dependency

loader-utils	3.2.1
react	18.2.0
react-dom	18.2.0
react-scripts	5.0.1

Adjust privacy settings.

Private

Only you can see this Sandbox.

```
JS  
5 <div classname="App">  
6 <h1>Hello CodeSandbox</h1>  
7 <h2>Start editing to see some magic happen!</h2>  
8 </div>  
9 );  
10 }  
11
```

# Hello CodeSandbox

Start editing to see some magic happen!

Understanding Success Criteri x +

w3.org/WAI/WCAG22/Understanding/on-input.html

WCAG 2.2 Understanding Docs *Informative explanations, not required to meet WCAG* About WCAG Understanding Docs W3C® Web Accessibility Initiative WAI

All Understanding Docs ↑ Guideline: Predictable ← Previous SC: On Focus Next SC: Consistent Navigation →

## Understanding SC 3.2.2: On Input (Level A)

**Success Criterion (SC)**

Changing the setting of any [user interface component](#) does not automatically cause a [change of context](#) unless the user has been advised of the behavior before using the component.

**Intent**

The intent of this Success Criterion is to ensure that entering data or selecting a form control has predictable effects. Changing the setting of any user interface component is changing some aspect in the control that will persist when the user is no longer interacting with it. So checking a checkbox, entering text into a text field, or changing the selected option in a list control changes its setting, but activating a link or a button does not. Changes in context can confuse users who do not easily perceive the change or are easily distracted by changes. Changes of context are appropriate only when it is clear that such a change will happen in response to the user's action.

**Note**

This Success Criterion covers changes in context due to changing the setting of a control. Clicking on links or tabs in a tab control is activating the control, not changing the setting of that control.

**Note**

**Page Contents**

- Intent
- Benefits
- Examples
- Techniques
- Key Terms

How to Meet WCAG (Quickref) | w3.org/WAI/WCAG21/quickref/#on-input

Selected Filters: WCAG 2.1: all success criteria and all techniques.

- 2.5 Input Modalities
  - 2.5.1 Pointer Gestures
  - 2.5.2 Pointer Cancellation
  - 2.5.3 Label in Name
  - 2.5.4 Motion Actuation
  - 2.5.5 Target Size
  - 2.5.6 Concurrent Input Mechanisms
- 3. Understandable
  - 3.1 Readable
    - 3.1.1 Language of Page
    - 3.1.2 Language of Parts
    - 3.1.3 Unusual Words
    - 3.1.4 Abbreviations
    - 3.1.5 Reading Level
    - 3.1.6 Pronunciation
  - 3.2 Predictable
    - 3.2.1 On Focus
    - 3.2.2 On Input**
    - 3.2.3 Consistent Navigation
    - 3.2.4 Consistent Identification
    - 3.2.5 Change on Request
  - 3.3 Input Assistance
    - 3.3.1 Error Identification
    - 3.3.2 Labels or Instructions
    - 3.3.3 Error Suggestion
    - 3.3.4 Error Prevention (Legal, Financial, Data)
    - 3.3.5 Help
    - 3.3.6 Error Prevention (All)
- 4. Robust
  - 4.1 Compatible

### 3.2.2 On Input — Level A

Changing the setting of any user interface component does not automatically cause a change of context unless the user has been advised of the behavior before using the component. Understanding 3.2.2

Sufficient  Advisory  Failures

#### Sufficient Techniques

Note: Other techniques may also be sufficient if they meet the success criterion. See [Understanding Techniques](#).

- G80: Providing a submit button to initiate a change of context
  - H32: Providing submit buttons
  - H84: Using a button with a select element to perform an action
  - FLASH4: Providing submit buttons in Flash
  - PDF15: Providing submit buttons with the submit-form action in PDF forms
  - SL10: Implementing a Submit-Form Pattern in Silverlight
- G13: Describing what will happen before a change to a form control that causes a change of context to occur is made
- SCR19: Using an onchange event on a select element without causing a change of context

Note: A change of content is not always a change of context. This success criterion is automatically met if changes in content are not also changes of context.

#### Advisory Techniques

- G201: Giving users advanced warning when opening a new window

#### Failures

- F36: Failure of Success Criterion 3.2.2 due to automatically submitting a form and given a value
- F37: Failure of Success Criterion 3.2.2 due to launching a new window without prior warning when the selection of a radio button, check box or select list is changed

## Bonus tip

Leer hoe een **screen reader** werkt.

WS Understanding WCAG 2.1 | WAI x +

w3.org/WAI/WCAG21/Understanding/

**WCAG 2.1 Understanding Docs** *Informative explanations, not required to meet WCAG* [About WCAG Understanding Docs](#) **W3C** Web Accessibility Initiative WAI

All Understanding Docs

# All WCAG 2.1 Understanding Docs

**Summary**

Understanding documents provide detailed information about success criteria. They are informative, not prescriptive. [Understanding Documents](#).

**Landmarks**

- Understanding Docs navigation
- complementary navigation
- main
- complementary
- Page footer
- Site footer

**Page Contents**

- Perceivable
- Operable
- Understandable
- Robust
- Other Understanding Documents

## Perceivable

### 1.1 Text Alternatives

- [1.1.1 Non-text Content](#)

### 1.2 Time-based Media

- [1.2.1 Audio-only and Video-only \(Prerecorded\)](#)
- [1.2.2 Captions \(Prerecorded\)](#)
- [1.2.3 Audio Description or Media Alternative \(Prerecorded\)](#)
- [1.2.4 Captions \(Live\)](#)
- [1.2.5 Audio Description \(Prerecorded\)](#)
- [1.2.6 Sign Language \(Prerecorded\)](#)

WS Understanding WCAG 2.1 | WAI x +

w3.org/WAI/WCAG21/Understanding/

WCAG 2.1 Understanding Docs

Informative explanations, not required to meet WCAG

W3C Web Accessibility Initiative WAI

All Understanding Docs

# All WCAG 2.1 Under

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- [1.2.5 Audio Description \(Prerecorded\)](#)

## Headings

- 3: 3.3 Input Assistance
- 2: Robust
- 3: 4.1 Compatible
- 2: Other Understanding documents
- 1: All WCAG 2.1 Understanding Docs
- 2: Perceivable
  - 3: 1.1 Text Alternatives
  - 3: 1.2 Time-based Media
  - 3: 1.3 Adaptable
  - 3: 1.4 Distinguishable
- 2: Operable
  - 3: 2.1 Keyboard Accessible
  - 3: 2.2 Enough Time
  - 3: 2.3 Seizures and Physical Reactions
  - 3: 2.4 Navigable
  - 3: 2.5 Input Modalities
- 2: Understandable
  - 3: 3.1 Readable
  - 3: 3.2 Predictable

## Page Contents

- Perceivable
- Operable
- Understandable
- Robust
- Other Understanding Documents

<https://www.w3.org/WAI/WCAG21/Understanding/>



WS Understanding WCAG 2.1 | WAI x +

w3.org/WAI/WCAG21/Understanding/

WCAG 2.1 Understanding Docs *Informative explanations, not required to meet WCAG* [About WCAG Understanding Docs](#) W3C Web Accessibility Initiative WAI

All Understanding Docs

# All WCAG 2.1 Understanding Docs

**Summary**

*Understanding documents* provide detailed explanations for Web Content Accessibility Guidelines (WCAG) guidelines and success criteria. They are informative, not prescriptive. [Learn more about Understanding Documents.](#)

**Level 4 Headings**

**Page Contents**

- Perceivable
- Operable
- Understandable
- Robust
- Other Understanding Documents

## Perceivable

### 1.1 Text Alternatives

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- [1.2.5 Audio Description \(Prerecorded\)](#)
- [1.2.6 Sign Language \(Prerecorded\)](#)



jobs, the work, and more. It's completely meaningless. I also believe this is a wonderful thing.

[READ THIS POST →](#)

### Turn 1 piece of dev content into 10+ — use the buffalo stick

Learn how the best developer experience engineers multi-leverage ideas to turn one piece of content into 10+. This is THE secret to effective devel.

[READ THIS POST →](#)

### Checking Slack and email during vacation is bad for you AND your team. Please stop doing it.

Taking real, fully disconnected time off is good for your health and for your team. But you have to ACTUALLY disconnect to get the benefits.

[READ THIS POST →](#)

### How to Draw a Map to a More Fulfilling Career

If we want a happy, fulfilling

burned out to enjoy your success)? You need to apply constant, gentle pressure.

[READ THIS POST →](#)

### Please stop multitasking. I'm begging you. Please.

The greatest trick we ever pulled on ourselves as knowledge workers was convincing ourselves we could juggle multiple projects with no consequences.

[READ THIS POST →](#)

### The defaults matter

No matter what you're building — habit, tool, or company culture — choosing the right defaults is critical. Learn how to use inertia to your advantage.

[READ THIS POST →](#)

### More pie

They say “no good deed goes unpunished”. When we finish

deliberate practice and continuous feedback. Small improvements add up fast.

[READ THIS POST →](#)

### Be weird & fun (as a business strategy)

Every once in a while you get lucky enough to work on a project that taps into everything you love. I led one recently — and it goes live TODAY.

[READ THIS POST →](#)

### Intention vs. Drift

There are two ways to create. Either we intentionally make progress toward goals, or we drift & see what happens. For best results, I think we need both.

[READ THIS POST →](#)

### Convince your team to learn fast and try not to make a mess

was wrong. Ability doesn't matter if you don't do the work.

[READ THIS POST →](#)

### Output vs. Outcome

When you define work, do you focus on the output or the outcome? Learn what the difference is — and why it matters.

[READ THIS POST →](#)

### Don't Be Nice. Be Kind.

“If you can't say something nice, don't say anything at all” is terrible advice that often backfires. Let's find another way of looking at caring for people.

[READ THIS POST →](#)

### Yeet. Delete. Repeat.

We need to ship fast, learn fast — and do it all without



**Veel frontend.**

**Design.**

**Backend.**

**CMS inrichten voor screen reader  
specifieke teksten.**

**Multi language.**

**Help content managers.**



**Overtuig project management om er iets  
aan te doen.**

**Voor iedere discipline geldt:**

**Niet alles tegelijk.**



**DARK MODE USERS USING LIGHT MODE**



**LIGHT MODE USERS USING DARK MODE**

**Accessibility  
is voor iedereen.**

**Kleine verbeteringen,  
groot effect.**

**Begin.**