

CONSTRUYENDO APLICACIONES

# Front-end Accesibles



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# Front-end Accesibles



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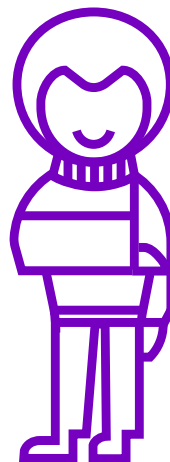
# 01 **Accesibilidad**

# accesibilidad





**permanente**



**temporal**



**situacional**





[Eleven pants]



### Sin daltonismo

Nueva contraseña

\*\*\*\*\*

Confirmar nueva contraseña

\*\*\*\*\*

Crear nueva contraseña

### Deuteranopía (rojo/verde)

Nueva contraseña

\*\*\*\*\*

Confirmar nueva contraseña

\*\*\*\*\*

Crear nueva contraseña



[LA NACION > Sociedad](#)

## **No podía validar su identidad en Mi Argentina por la falta de un ojo y logró hacerlo con uno de cartón: “Me indignó mucho”**

6 de julio de 2022

**Pablo Feighelstein recortó de una revista el ojo de Mike Wazowski de Monsters Inc., lo puso sobre su parche y logró engañar al sistema; “Funcionó en el primer intento”, contó a La Nación**

[Ir al contenido](#)



**lector de  
pantalla**



**gestos  
faciales**

# productos de apoyo



**control  
por voz**



**línea de  
braille**

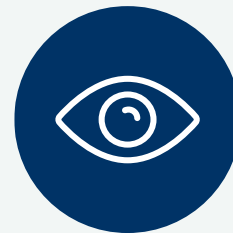


# WAI

La **Web Accessibility Initiative** o Iniciativa para la Accesibilidad Web es una rama del World Wide Web Consortium (W3C) que vela por la accesibilidad de la Web.

# WCAG

Las **Web Content Accessibility Guidelines** son una parte de las directrices o pautas de accesibilidad web publicadas por la WAI.



Las pautas de accesibilidad sobre el contenido web (WCAG) explican cómo hacer que la web sea más accesible para las personas con discapacidades.



WCAG puede aplicarse a sitios web, aplicaciones móviles y otros contenidos digitales.



WCAG es un estándar internacional y está conformado por tres niveles diferentes

# 02

## **Accesibilidad en el SDLC**







# 03

# Buenas Prácticas



- HTML Válido
- HTML Semántico
- Etiqueta Lang
- ARIA
- Nombres accesibles únicos

## Web Accessibility Basics

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Donec ac pharetra purus. Vivamus sit amet est at risus condimentum.

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Donec semper felis in ligula luctus, eu bibendum ligula vehicula. Interdum et malesuada fames ac ante ipsum primis in faucibus. Morbi nec sem malesuada nibh pharetra gravida eu sed lorem. Proin eget enim id massa rhoncus varius. Sed volutpat turpis a commodo semper. Nam vestibulum vitae est elementum ornare. Praesent id velit eget orci condimentum semper. Vestibulum eleifend pulvinar libero sed fermentum. Aliquam semper ex justo, a viverra massa bibendum sed. Morbi arcu nibh, malesuada sed magna at, pharetra maximus orci.

Ut sodales condimentum mollis. Nunc porta purus eu leo vestibulum, non egestas tellus dictum. Pellentesque nunc purus, finibus sit amet est ac, elementum eleifend magna. Suspendisse aliquet gravida sodales. Sed dapibus egestas elit nec ultrices. Morbi eleifend tellus ut turpis posuere, non tempus odio imperdiet. Sed accumsan lectus quis viverra dapibus.

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## Web Accessibility Basics

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Donec ac pharetra purus. Vivamus sit amet est at risus condimentum.

### Defining Common Accessibility Terms

Ut sodales condimentum mollis. Nunc porta purus eu leo vestibulum, non egestas tellus dictum. Pellentesque nunc purus, finibus sit amet est ac, elementum eleifend magna.

#### Disability

Fusce sit amet viverra augue. Nam eu faucibus nibh. Nam feugiat, libero a pharetra aliquet, ipsum dui vulputate est, et pretium sem elit a lacus.

#### Assistive Technology

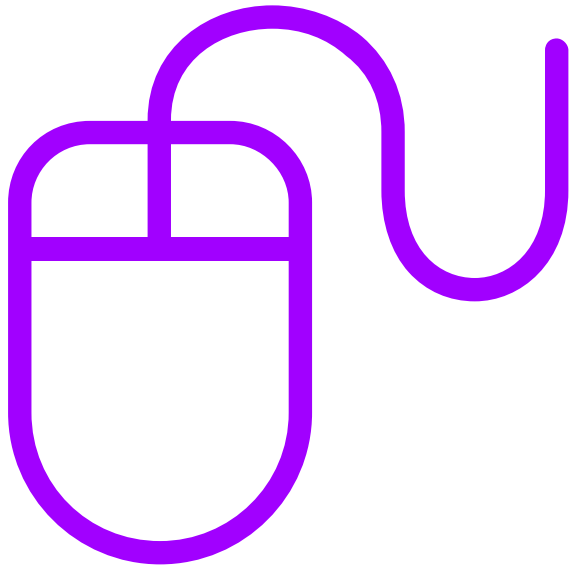
Duis eget efficitur risus. Proin euismod bibendum nulla, nec laoreet velit tincidunt ac. Integer sit amet ultrices nulla, et porttitor magna. Integer enim metus, rutrum ac velit ut, consequat maximus nulla. Maecenas malesuada mauris ut mi tristique fringilla. Mauris a libero nibh.

#### WCAG

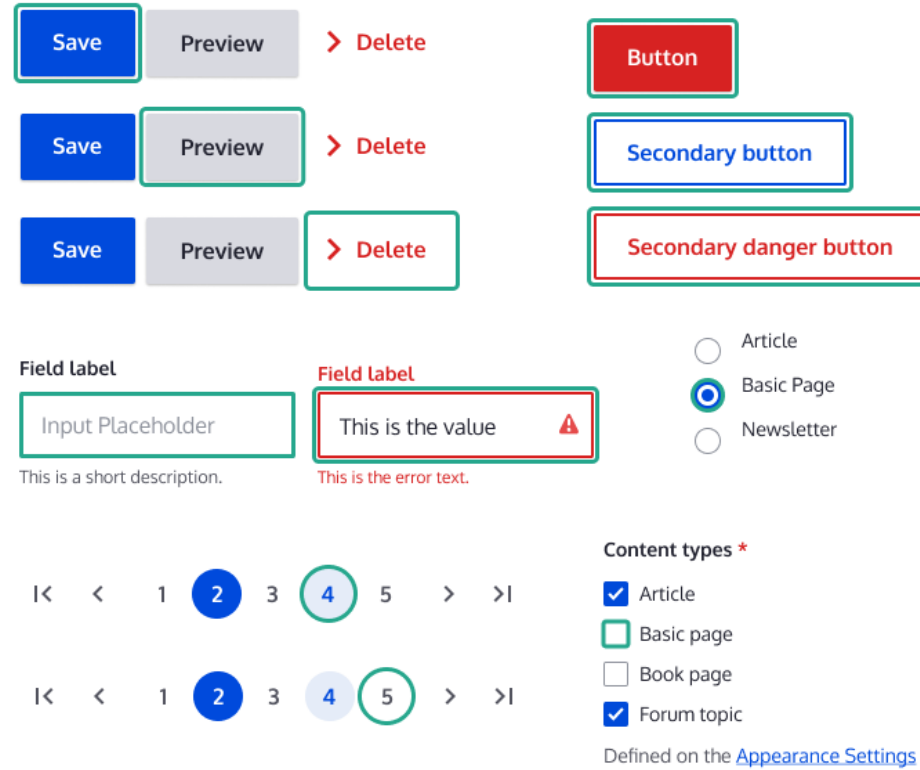
Curabitur quis nunc at massa congue consequat. Ut convallis porta mauris, et viverra nunc condimentum quis. Nunc euismod risus a iaculis tempus. Suspendisse sed massa id libero molestie tincidunt. Phasellus lacinia augue sit amet felis malesuada tincidunt.

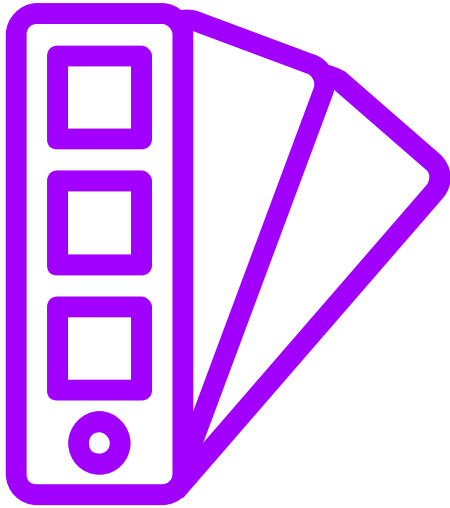
### Benefits of Accessibility

Donec semper felis in ligula luctus, eu bibendum ligula vehicula. Interdum et malesuada fames ac ante ipsum primis in faucibus. Morbi nec sem malesuada nibh pharetra gravida eu sed lorem. Proin eget enim id massa rhoncus varius.



- Navegación coherente y ordenada
- Elementos enfocables
- Indicador de foco visible
- Uso de la teclas: Tab | Shift + Tab
- Scroll con flechas: ← ↑ → ↓
- Tabla de contenido





- Soporte a modos de color especializados
- Soporte a tamaño de texto 200%
- Área interactiva fácil de activar: 44x44px
- Contraste de color mínimo 4,5:1
- No se aporta información solo con color

Sin daltonismo

Nueva contraseña

\*\*\*\*\*

Confirmar nueva contraseña

\*\*\*\*\*

Crear nueva contraseña

Deuteranopía (rojo/verde)

Nueva contraseña

\*\*\*\*\*

Confirmar nueva contraseña

\*\*\*\*\*

Crear nueva contraseña

Sin daltonismo

Nueva contraseña



\*\*\*\*\*

Confirmar nueva contraseña



\*\*\*\*\*

Las contraseñas no coinciden

Crear nueva contraseña

Deuteranopía (rojo/verde)

Nueva contraseña



\*\*\*\*\*

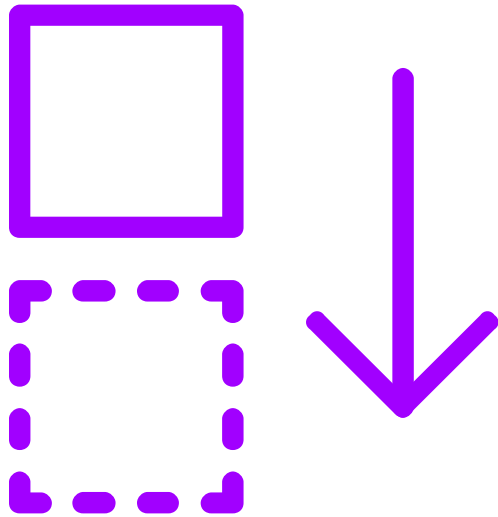
Confirmar nueva contraseña



\*\*\*\*\*

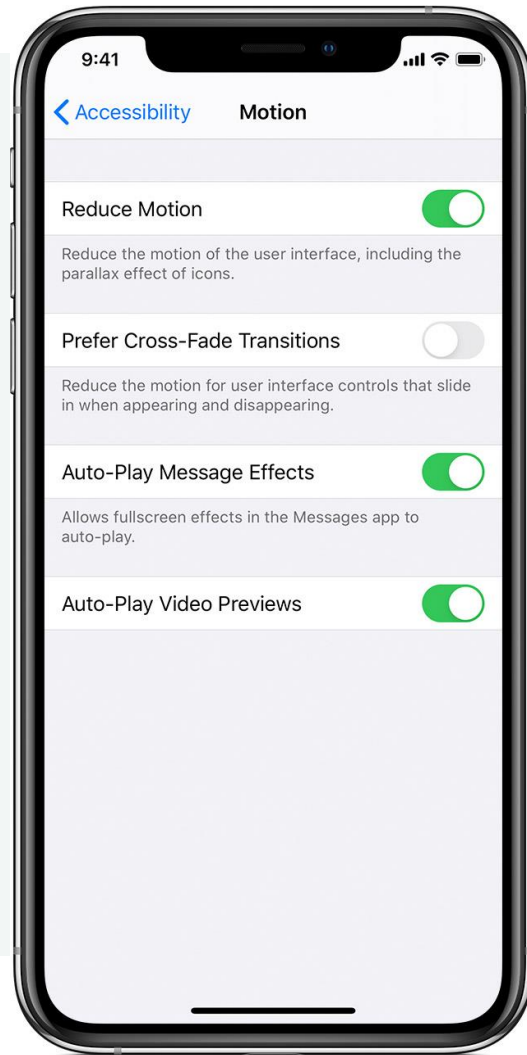
Las contraseñas no coinciden

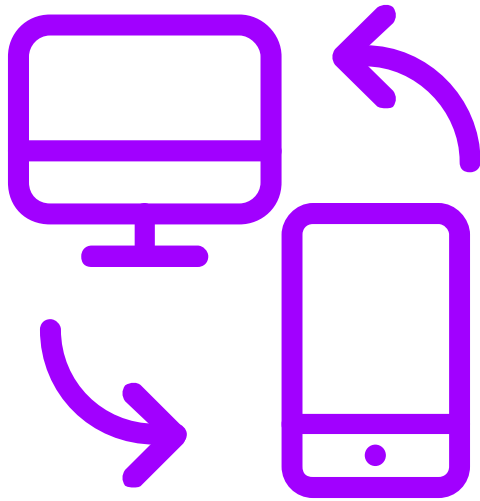
Crear nueva contraseña



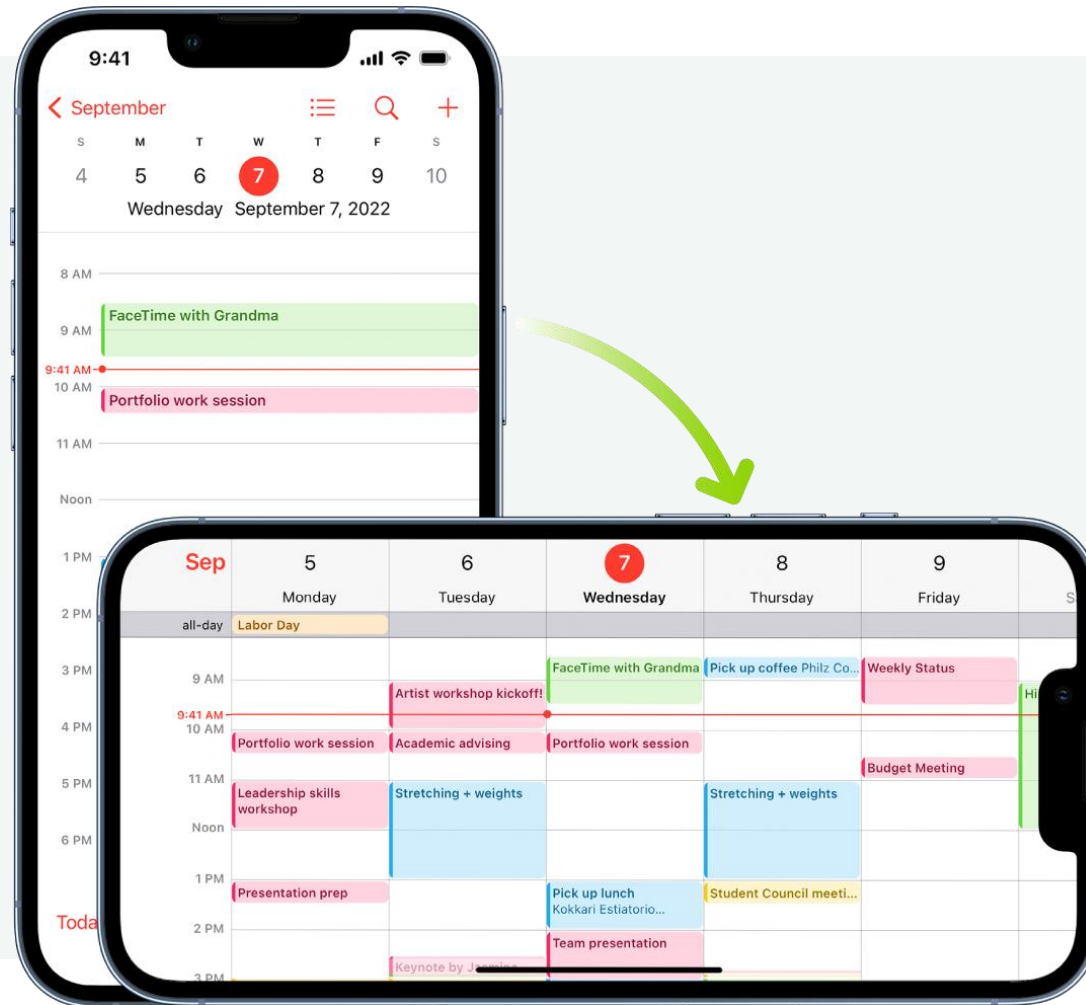
- Limitar animaciones
- Parpadeo no más de 3 veces por segundo
- Pausa de animaciones y vídeos
- Soporte a opción *prefers-reduced-motion*

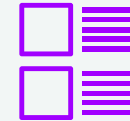
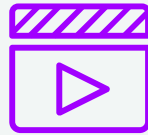
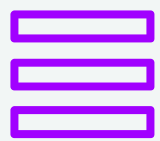






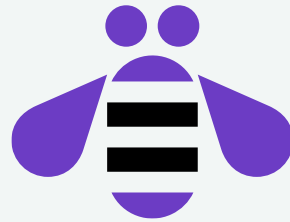
- Soporte a distintos dispositivos y resoluciones
- Cambio de orientación
- Controles táctiles: mano o lápiz óptico
- Habilitar cambio de tamaño o zoom





**[w3.org/WAI/tutorials](https://www.w3.org/WAI/tutorials)**

# 04 Herramientas



[w3.org/WAI/ER/tools](https://w3.org/WAI/ER/tools)



Tool	axe-core	axe Accessibility Tool browser extension	axe Accessibility Linter
<b>License</b>	Open Source Mozilla Public License 2.0	Free Deque Software License Terms	Free Axe Accessibility Linter License
<b>Supported by</b>	Deque Systems	Deque Systems	Deque Systems
<b>Repository / Link</b>	<a href="#">axe-core</a> <a href="#">@axe-core/react</a>	<a href="#">axe-DevTools Web Accessibility Testing</a>	<a href="#">axe Accessibility Linter</a>
<b>Output</b>	Browser console Additional libraries are required to output to specific formats	JSON* CSV* *axe DevTools account is required to export the results	Source code Catches accessibility issues in your source code (HTML, React, Markdown, and Vue)
<b>Accessibility Standards</b>	WCAG 2.0 Level A WCAG 2.0 Level AA WCAG 2.1 Level A WCAG 2.1 Level AA Common accessibility best practices		
<b>Levels</b>	<ul style="list-style-type: none"> <li>• Minor</li> <li>• Moderate</li> <li>• Serious</li> <li>• Critical</li> </ul>		



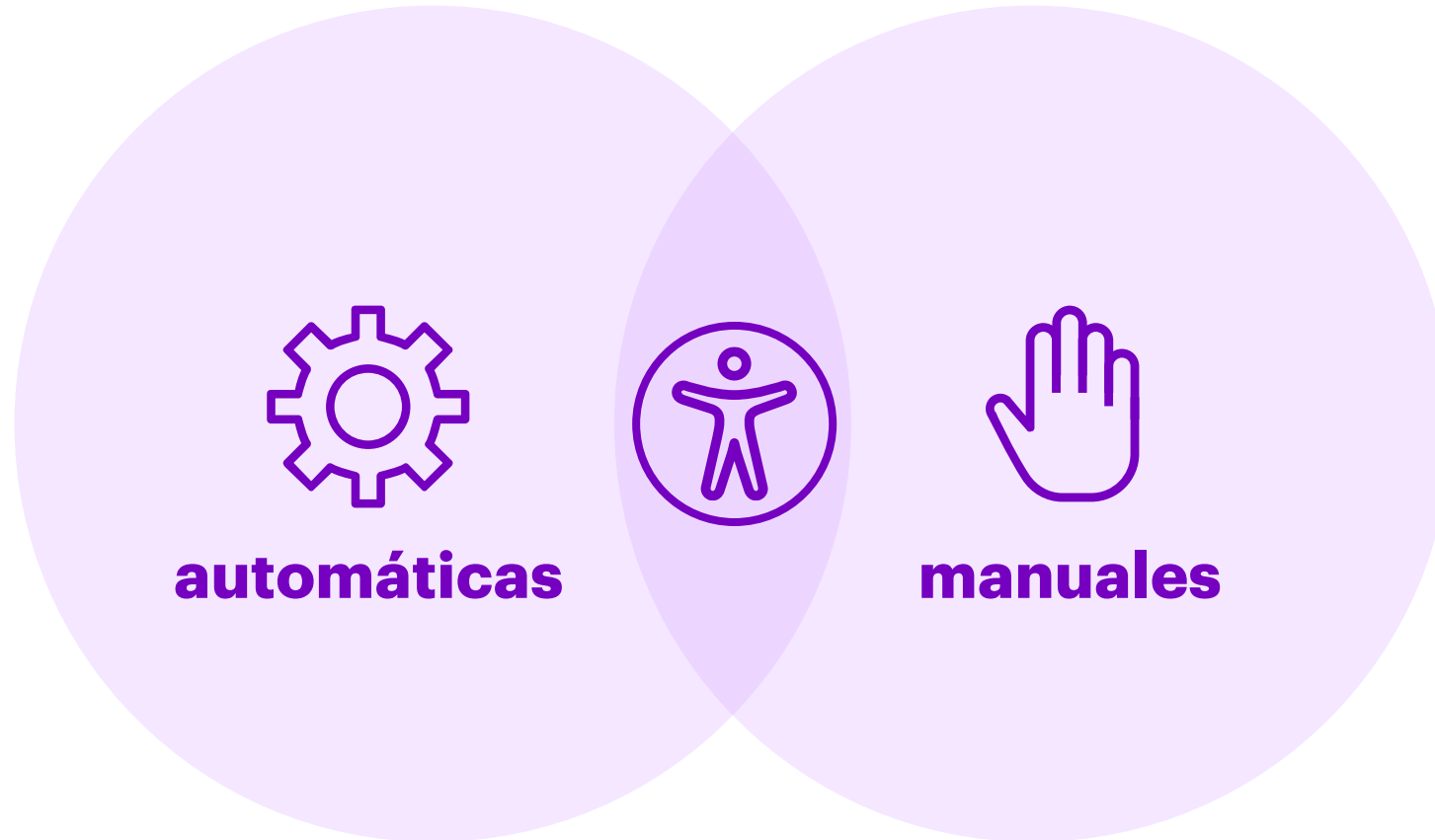
Tool	Equal Access Checker	Accessibility Insights for Web	Google Lighthouse
<b>License</b>	Free and Open Source Creative Commons Attribution (CC BY) license	Free and Open Source MIT License	Free Apache License 2.0
<b>Supported by</b>	IBM	Microsoft	Google
<b>Type of Tool</b>	Browser extension supports Chrome and Firefox. Tools available also for Node, Karma and GitHub.	Browser extension supports Chrome and Edge. Tools also for Android and Windows.	Browser extension supports Chrome
<b>Repository / Link</b>	<a href="#">equal-access</a>	<a href="#">accessibility-insights-web</a>	
<b>Output</b>	XLS HTML Identifies the source of accessibility issue and suggestions to fix it	HTML Identifies common, high-impact accessibility issues by using automatic and manual tests.	HTML JSON Automated auditing, performance metrics, and best practices. Only as an early warning indicator.
<b>Accessibility Standards</b>	WCAG 2.0 Level A WCAG 2.0 Level AA WCAG 2.1 Level A WCAG 2.1 Level AA IBM Accessibility rules	WCAG 2.1 Level AA	WCAG 2.1 Level AA



# 05

## **Pruebas de Accesibilidad**

# pruebas de accesibilidad



# Test manual de accesibilidad

WCAG 2.1 A Success Criteria	Keyboard-Only Testing	Non-Audio Testing	Screen Reader Testing
1.2.1 Audio-only and Video-only		☑	
1.2.2 Captions		☑	
1.2.3 Audio Description or Media Alternative		☑	
1.3.2 Meaningful Sequence	☑		☑
1.3.3 Sensory Characteristics	☑	☑	☑
1.4.1 Use of Color	☑		☑
1.4.2 Audio Control	☑		☑
2.1.1 Keyboard	☑		☑
2.1.2 No Keyboard Trap	☑		☑
2.1.4 Character Key Shortcuts	☑		
2.2.1 Timing Adjustable	☑		☑
2.2.2 Pause, Stop, Hide	☑		☑
2.3.1 Three Flashes or Below Threshold	☑		☑
2.4.1 Bypass Blocks	☑		☑
2.4.3 Focus Order	☑		☑
2.4.4 Link Purpose (In Context)	☑		☑
2.5.1 Pointer Gestures	☑		

# Checklist WCAG 2.1 A

Guideline	Success Criterion & Checklist	How to test
<b>1.1 Text Alternatives</b>	<p>1.1.1 Non-text Content</p> <ul style="list-style-type: none"> <li>All <a href="#">non-text content</a> that is presented to the user has a <a href="#">text alternative</a> that serves the equivalent purpose. <ul style="list-style-type: none"> <li>If non-text content is a control or accepts user input, then it has a name that describes its purpose.</li> <li>If non-text content is time-based media, then text alternatives at least provide descriptive identification of the non-text content.</li> <li>If non-text content is a test or exercise that would be invalid if presented in text, then text alternatives at least provide descriptive identification of the non-text content.</li> <li>If non-text content is primarily intended to create a <a href="#">specific sensory experience</a>, then text alternatives at least provide descriptive identification of the non-text content.</li> <li>Alternative forms of CAPTCHA using output modes for different types of sensory perception are provided to accommodate different disabilities.</li> <li>If non-text content is <a href="#">pure decoration</a>, is used only for visual formatting, or is not presented to users, then it is implemented in a way that it can be ignored by <a href="#">assistive technology</a>.</li> </ul> </li> </ul>	<p>Check with axe-core. Rules: <a href="#">area-alt</a>, <a href="#">aria-meter-name</a>, <a href="#">aria-progressbar-name</a>, <a href="#">image-alt</a>, <a href="#">input-image-alt</a>, <a href="#">object-alt</a>, <a href="#">role-img-alt</a>.</p> <p>Check manually that the text descriptions provided by “alt” and “title” attributes are clear and descriptive.</p>
	<p>1.2.1 Audio-only and Video-only</p> <ul style="list-style-type: none"> <li>An <a href="#">alternative for time-based media</a> is provided that presents equivalent information for prerecorded audio-only content.</li> <li>Either an alternative for time-based media or an audio track is provided that presents equivalent information for prerecorded video-only content.</li> </ul>	<p>Check with axe-core. Rule: <a href="#">audio-caption</a>. Additional: Check manually if transcripts are available for audios or videos.</p>

# Demo Pruebas Accesibilidad



# 06 **Recursos**

# Recursos

- [W3C Accessibility](#)
- [WCAG Overview](#)
- [WCAG 2.1 Level AA standard](#)
- [WAI-ARIA \(Accessible Rich Internet Applications\)](#)
- [W3C Valuable examples and case studies](#)
- [MDN Web Docs about Accessibility](#)
- [Accessibility Fundamentals](#)
- [Access Guide](#)
- [Microsoft Inclusive Design](#)
- [Accessibility by Google](#)
- [axe DevTools Chrome browser extension](#)
- [axe-core Developer Guide](#)
- [Equal Access Accessibility Checker](#)
- [Accesibility Insights](#)
- [NVDA screen reader](#)
- [JAWS screen reader](#)
- [Chrome screen reader browser extension](#)
- [A11y Project](#)
- [Accessibility in Material Design](#)



# Fran Pérez

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**accenture**

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# Gracias