

# Mitos e Verdades sobre testes de acessibilidade

Marcelo Sales  
Trilha Testes



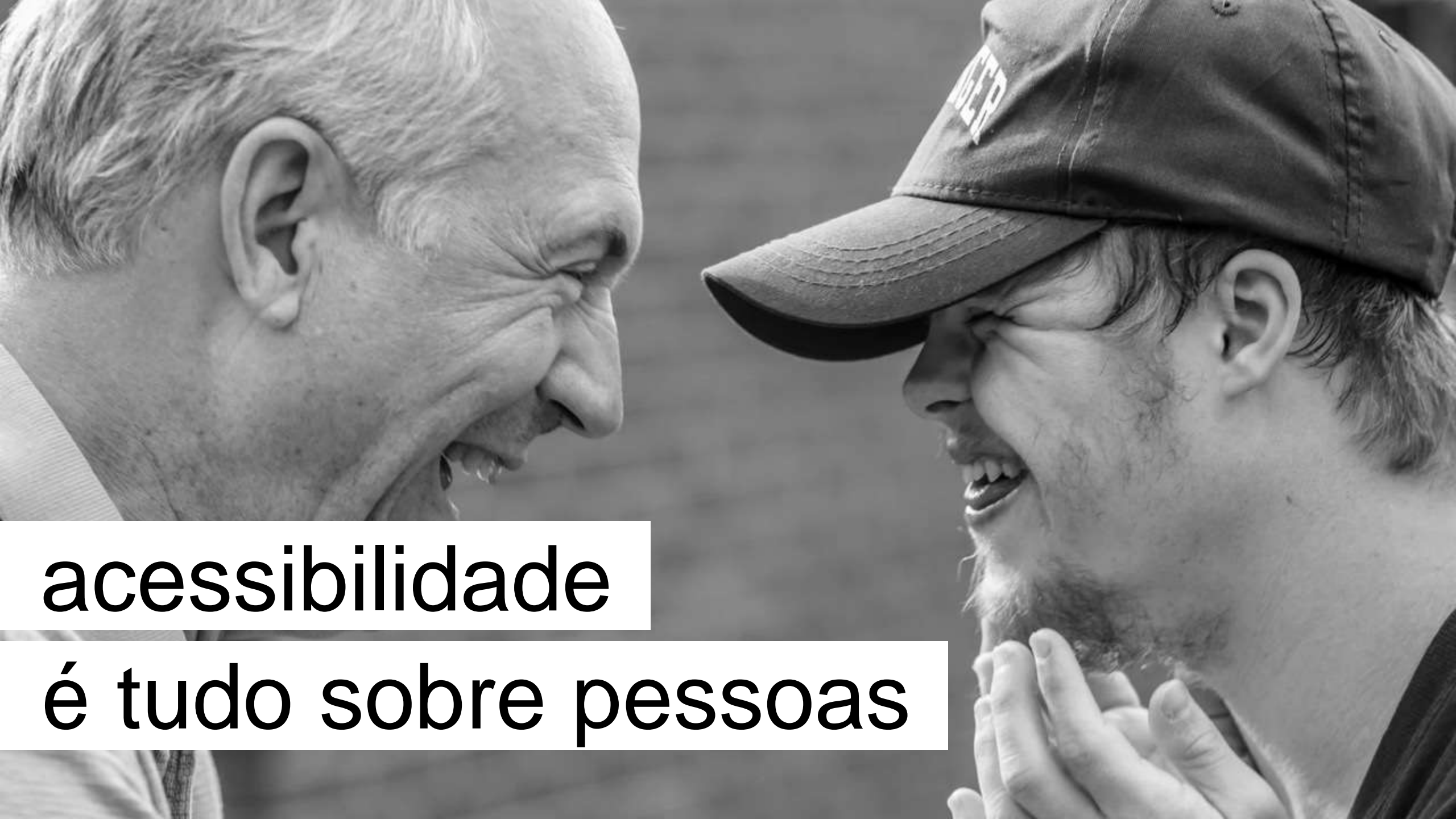
THE  
DEVELOPER'S  
CONFERENCE

2019 – Recife



<http://acessibilida.de>





**acessibilidade**

**é tudo sobre pessoas**



qual é a melhor

forma de avaliar defeitos

de acessibilidade?

**Não há uma regra!**

**Mas há boas práticas!**

Search:

Introduction to Web Accessibility

WebAIM Training

## WebAIM's WCAG 2 Checklist

Home > Articles > WCAG > WCAG 2 Checklist

### Article Contents

- [Perceivable](#)
- [Operable](#)
- [Understandable](#)
- [Robust](#)

### ! Important!

The following is **NOT** the Web Content Accessibility Guidelines (WCAG) 2. It is a checklist that presents our recommendations for implementing accessibility principles and techniques for those seeking WCAG conformance. The language used here significantly simplifies and condenses [the official WCAG 2.1 specification](#) and supporting materials to make it easier to implement and verify for web pages.

#### Guidelines for using this checklist:

- This checklist **should not be referenced in policies or in policy adoption**. While this is a useful resource for technical implementation of WCAG, it is not a comprehensive policy checklist. Official WCAG documentation provides much better mechanisms for implementing accessibility into policy or law.
- WCAG covers accessibility of all web content and is not technology specific. The language of this checklist has been simplified and targeted to identify most common techniques and failures for HTML and mobile content. It is, therefore, fairly limited and subject to technology changes, whereas WCAG is much less so.
- This checklist contains **WebAIM's interpretation of WCAG guidelines and success criteria and our own recommended techniques for satisfying those success criteria**. The first column of the table below links to the official WCAG 2.1 success criteria.

Last updated: Jul 30, 2018

#### Translations

- [French](#)
- [Dutch](#)

#### Related Resources

- [Web Content Accessibility Guidelines](#)
- [Section 508 Checklist](#)
- [Constructing a POUR Website](#)
- [WCAG Next](#)

# 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](#)

[Contents](#) [Filter](#) [Hide](#)

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

[Clear filters](#)

[Expand all sections](#)

[Share](#)

## 1. 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)

#### 1.2.7 Extended Audio Description (Prerecorded)

#### 1.2.8 Media Alternative (Prerecorded)

#### 1.2.9 Audio-only (Live)

### 1.3 Adaptable

#### 1.3.1 Info and Relationships

#### 1.3.2 Meaningful Sequence

#### 1.3.3 Sensory Characteristics

#### 1.3.4 Orientation

#### 1.3.5 Identify Input Purpose

#### 1.3.6 Identify Purpose

### 1.4 Distinguishable

#### 1.4.1 Use of Color

#### 1.4.2 Audio Control

#### 1.4.3 Contrast (Minimum)

#### 1.4.4 Resize text

#### 1.4.5 Images of Text

## 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](#)

[Show techniques and failures for 1.1.1](#)

[Understanding 1.1.1](#)

[SHARE](#) | [BACK TO TOP](#)

### 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: [Show full description](#)

[Show techniques and failures for 1.2.1](#)

[Understanding 1.2.1](#)

[SHARE](#) | [BACK TO TOP](#)

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

Captions are provided for all prerecorded audio content in synchronized media, except when as such.

# Accessibility Guidelines

Making work accessible creates a better experience across the board. Use this checklist to help build accessibility into your process no matter your role or stage in a project.

## The Checklist

**Check** the boxes of the guidelines that apply to your project

**Preview and copy** the checklist to your clipboard

**Paste** the checklist into a document, Slack, Trello—or however else your team organizes projects

[DESIGNERS](#)[ENGINEERS](#)[PROJECT MANAGERS](#)[QA](#)[EDITORIAL](#)

## Designers

- Make sure there is enough contrast between text and its background color

**According to the WCAG**, the contrast ratio between text and the text's background should be at least 4.5 to 1. If your font is at least 24 px or 19 px bold, the minimum drops to 3 to 1 (though, worth noting that this is a little fuzzy because numbered sizes aren't always reflective of the visual size type). Be especially careful of text over images.

<http://accessibility.voxmedia.com/>



**Dica “perdida” de ouro!**





## Accessibility Priority Tool

JANUARY 23, 2013 BY ROGER HUDSON

[ACCESSIBILITY](#), [WCAG 2.0](#), [WEB](#)

The Accessibility Priority Tool is a suggested mechanism for helping web content developers and organisations identify and correct issues that could reduce the ability of some people to access web content. The tool takes account of the needs and target audience of a site as well as a professional assessment of potential accessibility barriers when calculating an advice level for remediation. This advice level, in conjunction with the recorded information about the frequency and severity of each issue, can be used by the organisation to help prioritise efforts to improve the accessibility of their website.

The suggested Accessibility Priority Tool is not a solution to inaccessible web content, nor an alternative to the need for sites to comply with the Web Content Accessibility Guidelines advocated by the W3C. Rather, it is just a tool to help you decide which accessibility issues you should address now, and which you might be able to leave until a little later.

### Accessibility Barrier Scores revisited

I have been a strong supporter of the W3C Web Content Accessibility Guidelines for more than a dozen years, and enthusiastically embraced the move to version two (WCAG 2.0) at the end of 2008. Although I continue to be a keen advocate for WCAG 2.0, I have in recent times become increasingly concerned by the tendency of some people to view web accessibility solely from the perspective of WCAG 2.0 compliance.

In November 2011, I discussed some of these concerns in the article "[Accessibility Barrier Scores](#)". The article also outlined a suggested system for identifying potential web content accessibility barriers and their likely severity that could be used in conjunction with WCAG 2.0 when evaluating the accessibility of sites.

Over the last year, I have provided a number of clients with a completed version of the 2011

- [accessibility](#)
- [assistive technologies](#)
- [General info](#)
- [presentation](#)
- [regulations](#)
- [research reports](#)
- [usability](#)
- [video](#)
- [WCAG 2.0](#)
- [Web](#)

#### Recent Posts

- » [Automated kiosks and accessibility](#)
- » [Social Inclusion, Social Responsibility and Goldilocks](#)
- » [Accessible Forms 2: Required Fields and Extra Information](#)
- » [Global Accessibility Awareness Day](#)
- » [Accessible Forms 1: Labels and identification](#)

#### Recent Comments

[Access on Accessible forms using WCAG 2.0](#)

<http://usability.com.au/2013/01/accessibility-priority-tool/>

# Ferramenta de prioridade para acessibilidade!

## Pontuação de incidência (por tempo de uso)

- 0 – Não há falhas
- 1 – Problemas em até 25% do tempo
- 2 – Problemas entre 25 e 50% do tempo
- 3 – Problemas entre 50 e 75% do tempo
- 4 – Problemas em mais de 75% do tempo

## Pontuação de gravidade (com base no impacto de uso)

- 1 – **Muito pouco inconveniente**  
(não é provável que impeça alguém de acessar o conteúdo)
- 2 – **Pouco Inconveniente**  
(não é provável que impeça alguém de acessar o conteúdo, mas pode afetar um grupo de pessoas)
- 3 – **Média inconveniência**  
(pode ser complicado para algumas pessoas acessarem o conteúdo)
- 4 – **Grande inconveniência**  
(pode impedir o acesso de algumas pessoas para determinados conteúdos)
- 5 – **Incomodo Extremo**  
(impedirá o acesso ao site ou a executar funções básicas)

Arquivo Página Inicial Inserir Layout da Página Fórmulas Dados Revisão Exibir Ajuda Diga-me o que você deseja fazer

Colar

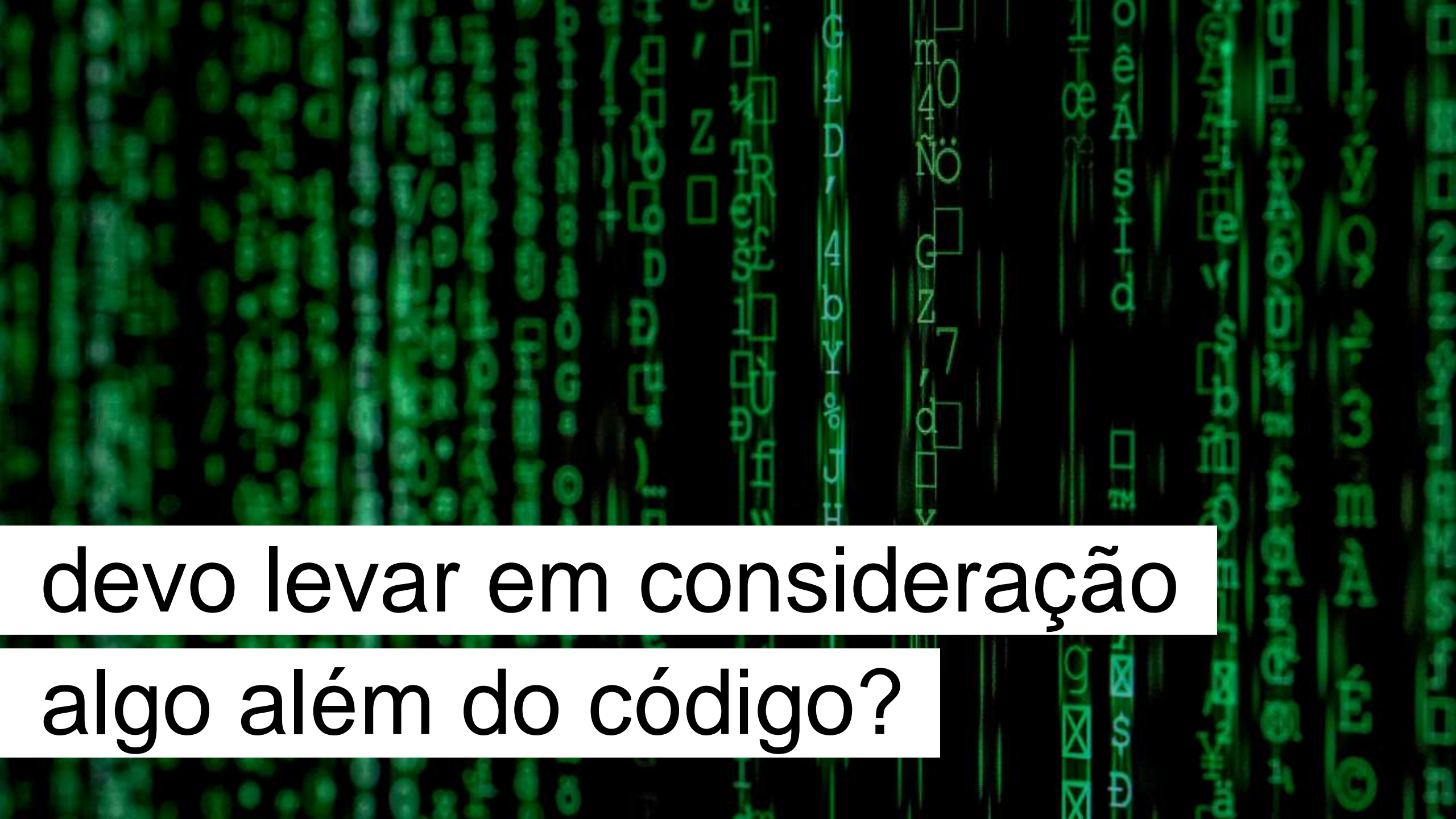
Fonte: Calibri 11

Alinhamento: Quebrar Texto Automaticamente, Mesclar e Centralizar

Número: Geral

Formatação Condicional, Formatar com Tabela

	A	B	C	D	E	F	G	H
1	Item	Description of Access Barrier	Reference	Incidence	Severity	Access barrier	Comments	Importance
2			WCAG 2.0	scores 0 - 4	scores 1 -5	advice		ranking
3		<b>TEXT ALTERNATIVES &amp; COLOUR</b>						
4	1	Images without appropriate text alternatives (alt text)	1.1.1	2	2	Medium		5
5	2	Complex images or graphs without equivalent text alternative	1.1.1	2	4	High		5
6	3	Background (CSS) images for informative/ functional content without a non-CSS alternative	1.1.1	1	1	Low		4
7	4	Background (CSS) images for informative/ functional content without a visible text alternative	1.1.1	1	4	Medium		3
8	5	Use of CAPTCHA without describing the purpose and/or providing alternatives for different disabilities	1.1.1	0	1	None		5
9	6	Pages that use colour alone to convey information or functionality	1.4.1			None		4
10	7	Insufficient colour contrast between foreground (text) and background colours (with and without images enabled)	1.4.3			None		4
11		<b>STRUCTURE &amp; NAVIGATION</b>						

The background of the image is a black screen filled with vertical columns of green text and symbols, resembling a computer terminal or code editor. The text is mostly illegible due to blurring and low contrast, but some recognizable characters like 'D', 'G', 'N', 'O', and 'A' are visible. A white rectangular box is superimposed on the lower half of the image, containing the text.

devo levar em consideração  
algo além do código?

## Tecnologia Assistiva

- Leitores de telas;
- Ampliadores de tela (zoom);
- Apps de reconhecimento de voz;
- Múltiplos devices.

## Dispositivos de entrada

- Mouse;
- Teclado;
- Mesa digitalizadora (tablet);
- Telas touch;
- Reconhecimento de voz;
- Controle efetuado por cabeça, boca ou olho.

## Dispositivos de saída

- Tela (diferentes resoluções);
- Tela (responsividade);
- Caixas de som;
- Touch físico (linha braille);
- Impressora (customização de impressão).

## Configurações

- Tamanho da fonte;
- Ampliação/Redução;
- Imagens (on/off);
- Javascript (ativado/desativado);
- CSS customizado.

## Deficiências/Habilidades

- Visual
  - Acuidade (miopia/astigmatismo)
  - Baixa visão/Cegueira
  - Daltonismo
- Auditiva
  - Surdez total/parcial
- Motora
  - Lesão traumática
    - Perda/Dano de membro(s)
    - Lesão na medula espinhal
  - Doenças e condições congênitas
    - Paralisia cerebral
    - Distrofia muscular
    - Esclerose múltipla
    - Artrite
    - Mal de Parkinson/Tremores
- Cognitiva
  - Dislexia
  - Déficit ou dificuldades
    - Memória/Atenção
    - Leitura/Compreensão

é possível

automatizar?

# **SIM!**

Mas apenas entre 30 a 40%  
do total dos testes!

[karlgroves.com](http://karlgroves.com)

# Web Accessibility Testing: What Can be Tested and How

Written on September 15, 2012



WCAG Level	Level A	Level AA	Level AAA
Auto	25%	17%	23%
Manual Ver. %	29%	41%	24%
Manual Only %	46%	41%	53%



em que momento

devo testar?

Durante todo o processo de desenvolvimento e sempre que possível...

Mas e o Design System?

Elementos acessíveis não garantem sistemas acessíveis!

Cuidado com ferramentas, frameworks e plugins de terceiros

Eles podem não estar acessíveis... aliás, com certeza não estarão!

# DICA:

Leitores de telas também podem ser utilizados para validação de código front-end “mal feito” ...

O “humano” pode não perceber “problemas invisíveis”, mas a “ferramenta” com certeza, vai!



devo confiar

em validadores automatizados?



**Manuel Matuzović**

@mmatuzo

31 de maio de 2019

“Se o Lighthouse nos diz que nosso site é 100% acessível, isso não significa que ele é. Para provar, construí o local mais inacessível possível e mesmo assim obtive um “score” perfeito.”



Accessibility

**Building the most inaccessible site possible with a perfect Lighthouse score**

An experiment that proves that automatic accessibility testing is only a first step and that manual testing is vital.

[matuzo.at](https://matuzo.at)

é possível

testar protótipos?

# SIM!



De certa forma... sim...

Digo, é possível, mas nem tanto...

Bom... normalmente você só consegue validar coisas como:

- Contraste
- Simulação de daltonismo
- Sugestão de cores

The background of the image is a black screen filled with vertical columns of green digital code, including letters, numbers, and symbols, creating a 'matrix' or 'data stream' effect. The text is overlaid on this background in two white boxes.

quais ferramentas

utilizar?





# Lighthouse

Plugin para Chrome

<https://github.com/GoogleChrome/lighthouse>

http://designinclusivo.com/



Performance



Accessibility



Best Practices



SEO



Progressive  
Web App

0-49 50-89 90-100

## Passed audits (12)

- The page contains a heading, skip link, or landmark region
- Background and foreground colors have a sufficient contrast ratio
- Document has a <title> element
- [id] attributes on the page are unique
- <html> element has a [lang] attribute
- <html> element has a valid value for its [lang] attribute



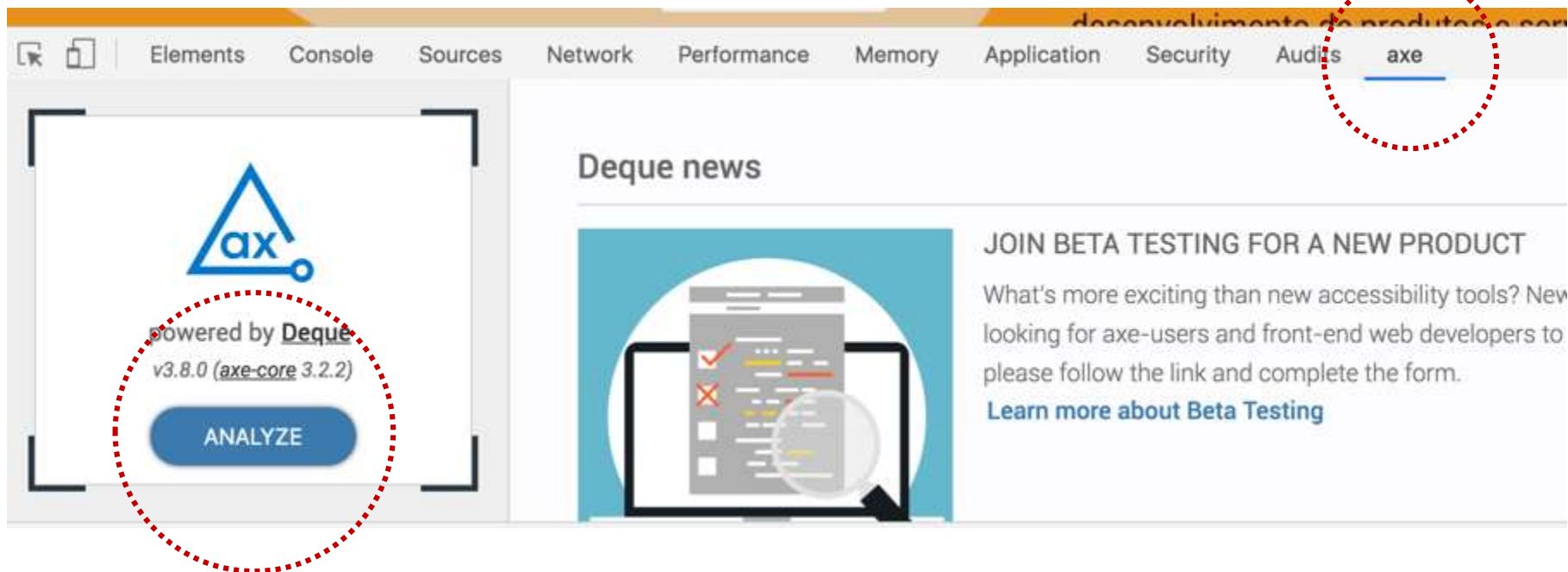
## AXE – Deque

Plugin para Chrome e Firefox + App para Android e iOS

<https://www.deque.com/axe/>

### Congratulations!

No accessibility violations found in the current state of the page. Now you should rerun axe on every state of the page (including expanding accordians, modals, sub-menus, error messaging and more). You should also perform manual testing using assistive technologies like NVDA, VoiceOver and JAWS.

A screenshot of the Chrome DevTools interface. The 'axe' tab is selected in the top right corner, highlighted with a red dotted circle. The main content area shows the AXE audit results. On the left, there is a panel with the AXE logo, the text 'powered by Deque v3.8.0 (axe-core 3.2.2)', and a blue 'ANALYZE' button, all enclosed in a red dotted circle. The right side of the panel shows a 'Deque news' section with a heading 'JOIN BETA TESTING FOR A NEW PRODUCT' and a paragraph of text: 'What's more exciting than new accessibility tools? New looking for axe-users and front-end web developers to please follow the link and complete the form.' Below the text is a link: 'Learn more about Beta Testing'.

# Upgrade to axe Pro today

Automatically catch tons of accessibility bugs with axe. Catch even more with axe Pro. (Free for a limited time.)



# Home Itau

<https://www.itau.com.br/>



DASHBOARD



OPTIONS

Assigned to:

Automated tests run: 10/09/2019

Guided tests run: **Not started**



7  
issues found  
7 automatically  
0 guided



## GUIDED TESTS

Collapse additional tests

Below are some guided tests that will step you through finding more issues for things we can't test for automatically. We highly recommend performing these tests, especially if we've detected (★) any of these elements on your site.

Below are some guided tests that will step you through finding more issues for things we can't test for automatically. We highly recommend performing these tests, especially if we've detected (★) any of these elements on your site.

### PAGE INFORMATION ★



The page info tests will walk you through testing the page's title and primary language.

[Learn more about the Page information tool](#)

**TEST PAGE INFORMATION**

### LISTS ★



The lists tests will walk you through testing the page's lists (ul, ol, and dl).

[Learn more about the Lists tool](#)

**TEST LISTS**

### IMAGES ★



The images tests will walk you through testing the page's images.

[Learn more about the Images tool](#)

**TEST IMAGES**

### HEADINGS ★



The headings tests will walk you through testing the page's headings.

[Learn more about the Headings tool](#)

**TEST HEADINGS**

### FORMS ★



Test forms on your page to ensure users can fill them out accurately and submit them.

[Learn more about the Forms tool](#)

**TEST FORM**

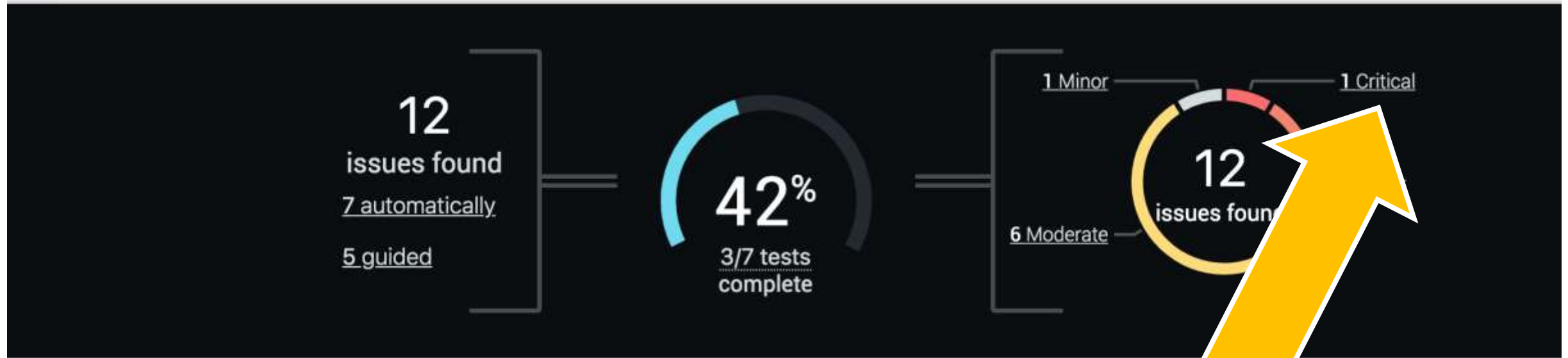
### BUTTONS AND LINKS ★



The buttons and links tests will walk you through testing the page's buttons and links.

[Learn more about the Buttons and links tool](#)

**TEST BUTTONS AND LINKS**



## GUIDED TESTS

Collapse additional tests

Below are some guided tests that will step you through finding more issues for things we can't test for automatically. We highly recommend performing these tests, especially if we've detected (★) any of these elements on your site.

**PAGE INFORMATION** ★ ⋮

Steps 3 of 3 100%

0 issue found

20m spent testing

completed test  
on 10/09/2019 at 10:45:27 AM

**LISTS** ★ ⋮

Steps 3 of 3 100%

5 issues found

3m spent testing

completed test  
on 10/09/2019 at 11:06:23 AM

**IMAGES** ★ 👁 ⋮

The images tests will walk you through testing the page's images.

[Learn more about the Images tool](#)

**TEST IMAGES**

12  
issues found  
7 automatically  
5 guided



## GUIDED TESTS

Below are some guided tests that will step you through finding more issues for things we can't test for at the moment. Run these tests, especially if we've detected (★) any of these elements on your site:

### PAGE INFORMATION ★

Steps 3 of 3 100%

0 issue found

20m spent testing  
marcelo.valerio@itau-unibanco.com.br  
completed test  
on 10/09/2019 at 10:45:27 AM

### LISTS ★

Steps 3 of 3 100%

5 issues found

3m spent testing  
marcelo.valerio@itau-unibanco.com.br  
completed test  
on 10/09/2019 at 11:06:23 AM

### HEADINGS ★

The headings tests will walk you through testing the page's headings.

### FORMS ★

Test forms on your page to ensure users can fill them out accurately and submit them.

expand all collapse all

### Images must have alternate text (1/1)

Status: critical

Found: Automatically

Found by:

Found on: 10/09/19 at 9:18am

see more details

[Open URL in new tab](#) [More info on this issue](#)

#### URL

https://www.itau.com.br/

#### Selector

#section18 > .container > .no-row-modal > .row > .enter.row > .image-with-text\_image.col-sm-6 > .img-fluid

#### Source code

```

```

#### Description

Ensures <img> elements have alternate text or a role of none or presentation

#### Recommendation to fix

Fix any of the following:

- Element does not have an alt attribute
- aria-label attribute does not exist or is empty
- aria-labelledby attribute does not exist, references elements that do not exist or references elements that are empty
- Element has no title attribute or the title attribute is empty
- Element's default semantics were not overridden with role="presentation"
- Element's default semantics were not overridden with role="none"

para você

para empresas



serviços

ajuda

busca

opções de acesso

agência

conta



## Cliente-itaú-sorrindo-e-fechando-acordos-com-aperto-de-mao.jpg



### Acordo Planos Econômicos: tenho dinheiro a receber?

O acordo de Planos Econômicos está disponível e você pode receber um dinheiro extra, se possuir ação judicial. Não perca tempo, entre em contato (11) 3003-4280 ou 0800-7214280.

veja mais informações

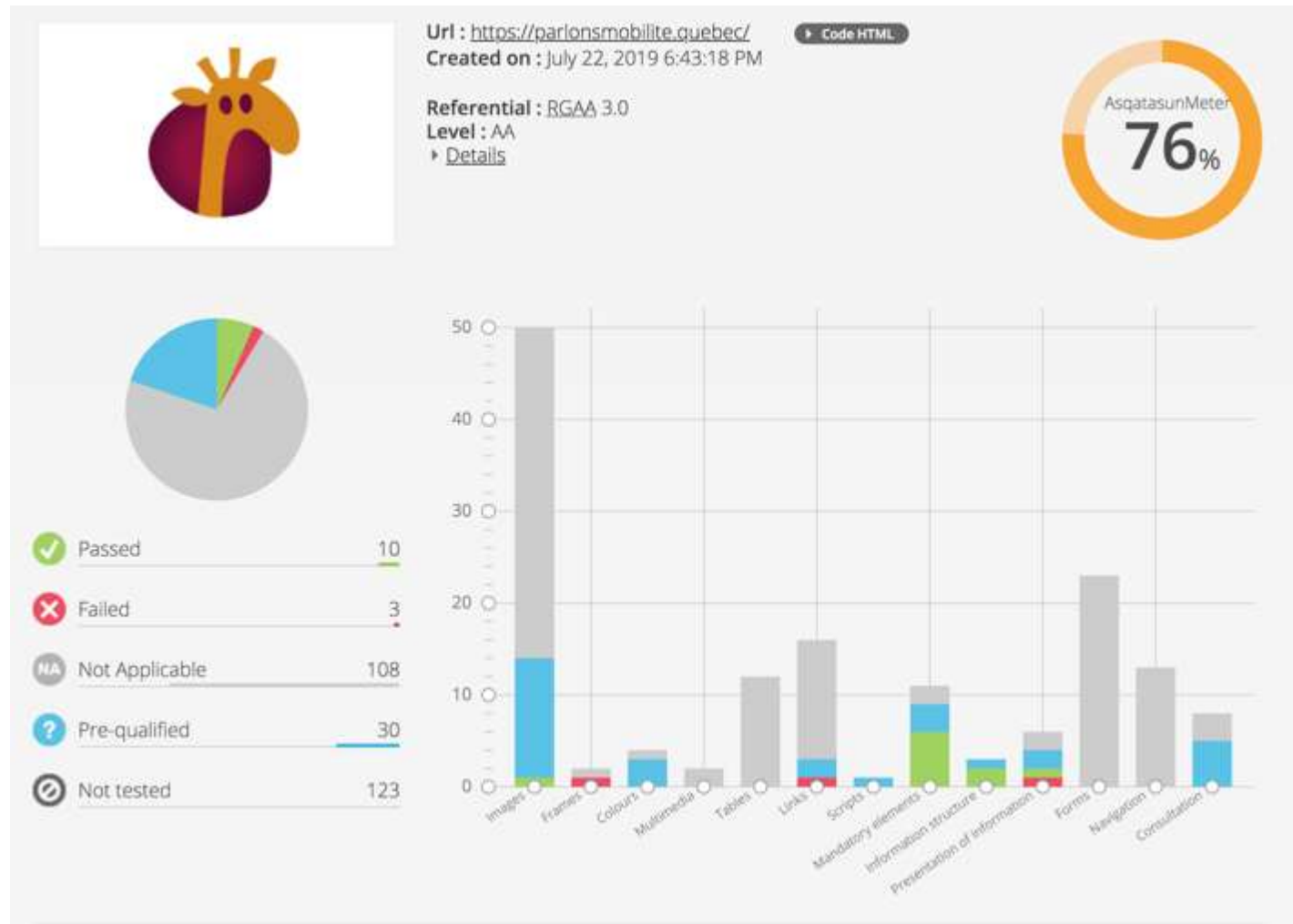




# Asqatasun

App para testes de aplicação em ambiente de desenvolvimento (Docker / NPM)

<https://github.com/Asqatasun/Asqatasun>



# axe for iOS

axe for iOS is nearly here. Stay tuned for the pending release.

[Follow the Repo](#)



<https://www.deque.com/blog/writing-automated-tests-accessibility/>

By Marcy Sutton

January 03, 2018

#### Categories

[A11y for Developers](#)

#### Tags

[accessibility automation](#)[automated testing](#)[aXe-core](#)[Shift Left](#)

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## Writing Automated Tests for Accessibility

Web accessibility is all about making sites and applications that everyone can use, especially people with disabilities. With a rather large list of competing priorities when building for the web, from accessibility to performance to security, it makes sense to automate parts of the process. Manual testing is a necessity for accessibility, however, a certain amount of the effort can and should be spent on automation, freeing up human resources for more complex or nuanced tasks.

Automated testing is a great way to start weaving accessibility into your website, with the ultimate goal of *shifting left* more and more towards the UX and discovery process. Automated testing definitely can't catch everything, but it's a valuable way to address easy wins and prevent basic fails. Build accessibility into your UI code, document features for teams, and ideally, prevent regressions in quality from deploying to production.

In this post, we'll highlight the strengths and weaknesses of automated testing for web accessibility to both add value to your workflow and support people with disabilities.

### Free humans up for more complex tasks

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# Skip the WCAG! User test with people with disabilities instead

Published 14 September 2017, by Hampus Sethfors

If you're trying to make your website or app accessible, you've probably stumbled over the Web Content Accessibility Guidelines (WCAG). But don't waste your energy trying to understand them. Just don't.

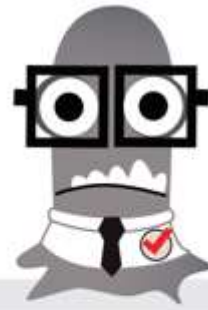


The background of the image is a black field filled with vertical columns of green digital code, including letters, numbers, and symbols, creating a data stream or binary code effect.

# DESAFIO



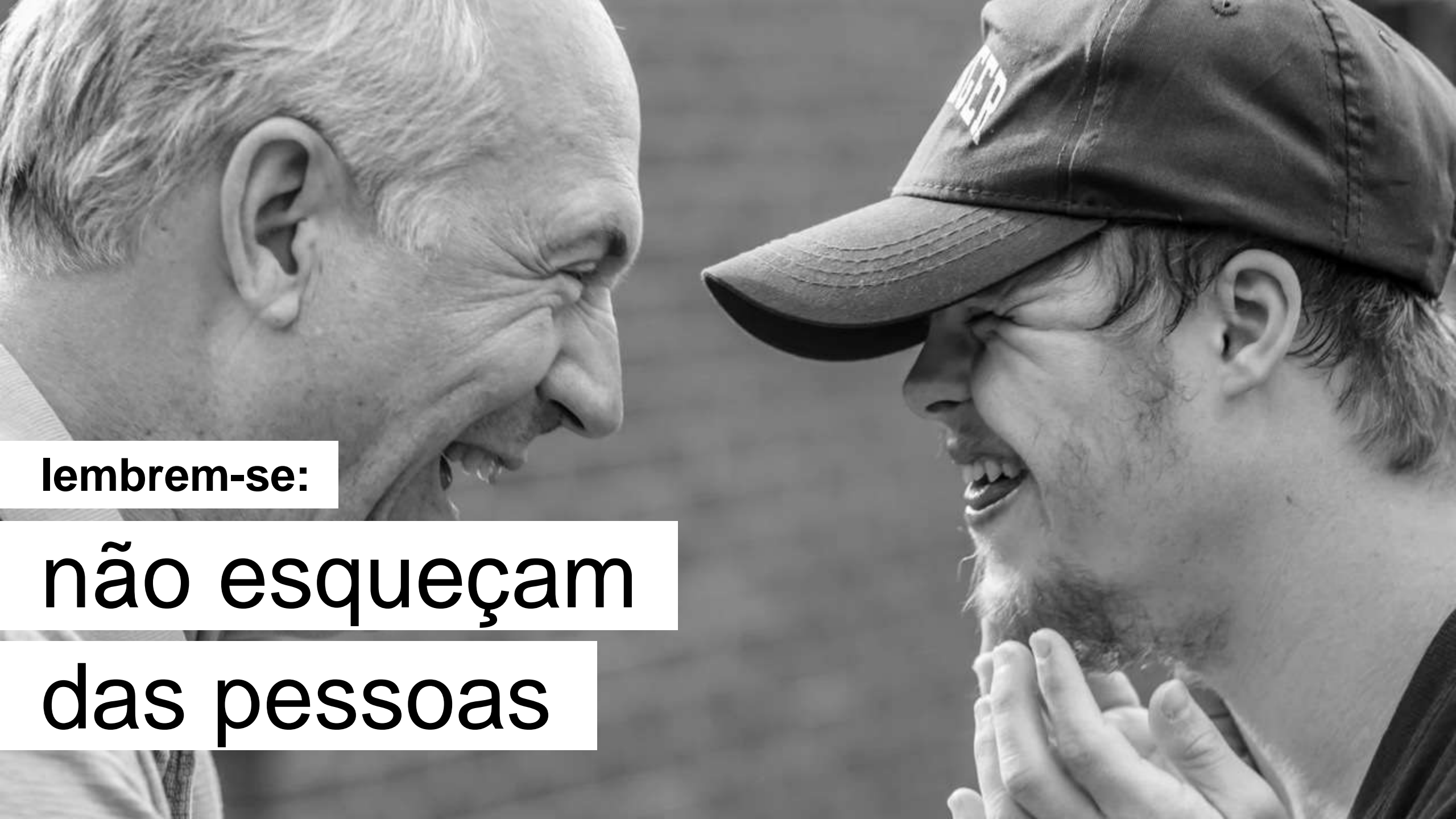
# Accessibility Testing



By Matt Obee and Alon Fridman Waisbard

- 1 Learn about the diversity of disabilities and the effects of aging.
- 2 Use a tool like WAVE to scan a web page for accessibility problems.
- 3 Share your favourite accessibility testing tool.
- 4 Research the benefits of inclusive design.
- 5 Read the 12 guidelines of WCAG 2.0. Write a short post on one of them.
- 6 Learn about assistive technologies, and share one you liked (hardware).
- 7 Unplug your mouse, leave the touchpad alone, and navigate using the keyboard.
- 8 Read a book about accessibility.
- 9 Disable images in the browser. Can you understand the page?
- 10 Test with a screen reader and share one useful tip.
- 11 Turn your screen off and rely on a screen reader.
- 12 Read an article about accessibility and share it with someone.
- 13 Watch a video about accessibility and share it with someone.
- 14 Find a problem that might affect someone who is deaf.
- 15 Find a problem that might affect someone who is colourblind.
- 16 Find a problem that might affect someone who can't use their hands.
- 17 Find a problem that might affect someone with dyslexia.
- 18 Use a tool to test for colour contrast problems.
- 19 Find 5 accessibility experts to follow on Twitter.
- 20 Write a simple accessibility checklist.
- 21 Look for invisible keyboard focus when tabbing through a page.
- 22 Learn why semantic HTML is important.
- 23 Find missing semantic information (e.g. headers, landmarks, links and buttons).
- 24 Learn about accessibility law in your country.
- 25 Explore W3C's Before and After demonstration.
- 26 Find an accessibility issue on a website, and report it.
- 27 Learn how to use your mobile device screen reader.
- 28 Download and test a word document for accessibility issues.
- 29 Find 3 accessibility issues without using an evaluation tool.
- 30 Review the complexity of a website's content with the Hemingway app.





**lembrem-se:**

**não esqueçam**

**das pessoas**

**Vídeo**  
**Design for Patrick... Design for Everyone!**



Foto três é uma pessoa segurando uma cebola.

<https://youtu.be/whioDJ8doYA>



# OBRIGADO 😊

Instagram e Twitter [@msales](#)

LinkedIn [linkedin.com/in/msales78](https://www.linkedin.com/in/msales78)

<http://acessibilida.de>

<http://designinclusivo.com>

<http://guiawcag.com>



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