

A11Y

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What Does It Mean?

Web accessibility means that **people with disabilities** can use the web.

More specifically, web accessibility means that people with disabilities can **perceive, understand, navigate and interact** with the web and that they can **contribute to the web**.

Why Accessibility is **Important?**



1,415,000

Based on Irna report we have 1,415,000 disable people in our country.

Globally, it is estimated that approximately 1.3 billion people live with some form of vision impairment.



**1 in 5 people have a
disability**

THE WEB IS ALREADY ACCESSIBLE

Why Developers Should Care?

- We are making it inaccessible
- Human Rights
- Legal Issue
- Reach a large audience

WebAIM Checklist


www.webaim.org

POUR

All websites should be

- Perceivable
- Operable
- Understandable
- Robust

Types of Disabilities

- Attention-Deficit/Hyperactivity Disorders
 - Blindness or Low Vision
 - Brain Injuries
 - Deaf/Hard-of-Hearing
 - Learning Disabilities
 - Physical Disabilities
 - Speech and Language Disabilities
- 
- A decorative light blue triangle is located in the bottom right corner of the slide.

HOW TO BROWSE THE WEB?



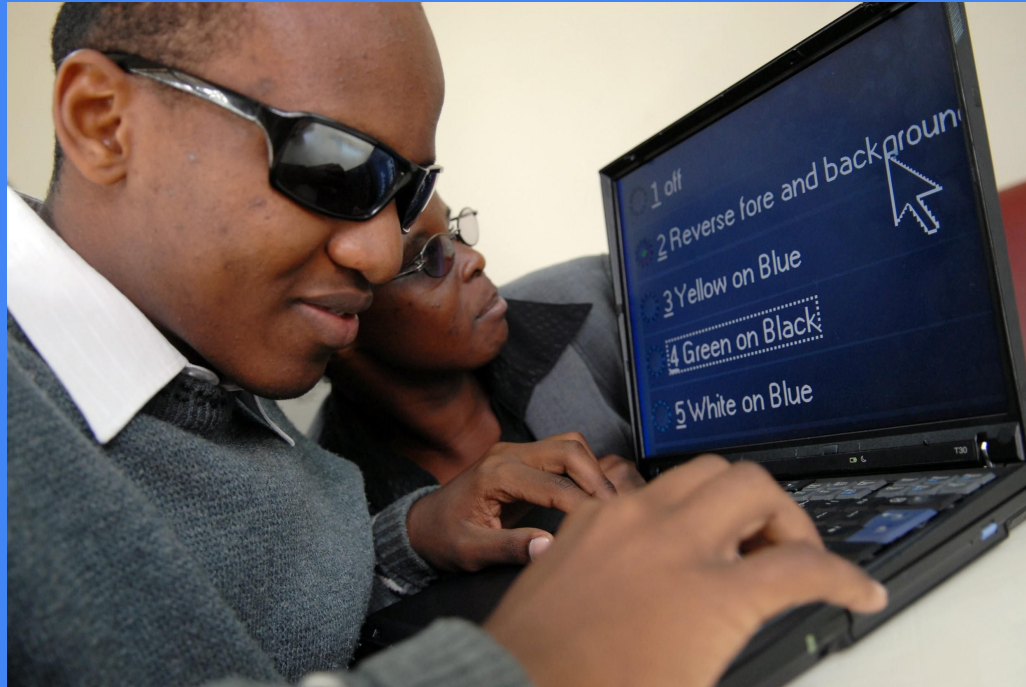
Head Wand & Mouthstick



Single Switch



Screen Readers



Add Keyboard Shortcuts



Tabbable Elements

- **Tab**: Move Forward One Item
- **Shift + Tab**: Move Backward One Item

<a>

<button>

<input>

<select>

<textarea>

<iframe>

TabIndex

```
<div tabindex="0"> I am focusable </div>
```

Negative value: The element should be focusable but should not be reachable via sequential keyboard navigation.

0: should be focusable and reachable by sequential keyboard navigation.

Maximum Value: 32767

Skip Link

Focus Control

```
var currentElement = document.activeElement
```

Tabtrapping


- Select your modal
- Find and select all focusable children
- Convert them to an Array
- Find the first and last tabbable item inside the modal
- Listen for keydown event
- Check to see if it is the tab key
- Also check if shift is being held down
- If moving forward and on the last item, focus the first item
- If moving backward and on the first item, focus the last item

Most Popular Desktop Screen Readers

- JAWS (Windows)
- ZoomText (Mac and Windows)
- Window-Eyes (Windows)
- NVDA (Windows)
- VoiceOver (Mac)
- ChromeVox(Browser)

The Accessibility Tree

The Accessibility Tree is a subset of the DOM tree that contains accessible objects for every DOM element that should be exposed to assistive technology, such as screen readers.



Alternate Text

Alternate Text Is Important

```
index.html x
1  <!-- Flickr -->
2  
3
4  <!-- Facebook -->
5  
6
7  <!-- Twitter -->
8  
9  |
```

Writing Good Alt Text

- Be accurate
- Be succinct
- Don't be redundant
- Don't use "image of" or "graphic of"

<http://webaim.org/techniques/alttext/>

Alt Text Tips

`alt=""` intentionally skip element

`alt="UPPERCASE"` individually reads letters

Hiding Things From Screen Readers

Display: none;
Visibility: hidden;
<input hidden />

Hide from user but show to screen readers

```
.screenreader {  
    position: absolute;  
    left: -1000px;  
    width: 1px;  
    height: 1px;  
    overflow: hidden;  
}
```

Labels are **super-duper important**

```
<label for="username">Enter your username</label>  
<input type="text" id="username" />
```

It is **okay** to visually hide it!



ARIA roles

Adding an ARIA role overrides the native role semantics in the accessibility tree.


It is a set of attributes to help enhance the semantics of a web site or web application.

<https://w3c.github.io/using-aria/>



ARIA roles

alert, alertdialog, application, directory, document, feed, grid, gridcell, group, log, marquee, menu, menubar, menuitemcheckbox, menuitemradio, none, note, presentation, scrollbar, search, status, switch, tab, tablist, tabpanel, timer, toolbar, tooltip, treegrid, treeitem



Semantic HTML

<https://developer.mozilla.org/en-US/docs/Web/HTML/Element>

Live regions


aria-live - off/polite/assertive

aria-relevant - additions/removals/text/all

Colors

Install NoCoffee Simulator to experience how people with disabilities see your website

Use color palette accessibility checker to test colors that you are using



Tools for Accessibility Testing

Accessibility Developer Tools Chrome Extension

Tenon.io

Wave Toolbar

Tota11y

a11y



Development Assistance

eslint-plugin-jsx-a11y

What About **Persian** Accessibility?



Questions