Operable

- Guideline 2.1 — Keyboard Accessible: Make all functionality available from a keyboard
- Guideline 2.2 — Enough Time: Provide users enough time to read and use content
- Guideline 2.3 — Seizures and Physical Reactions: Do not design content in a way that is known to cau
- Guideline 2.4 — Navigable: Provide ways to help users navigate, find content, and determine where th
- Guideline 2.5 Input Modalities: Make it easier for users to operate functionality through various in
- See also

This article provides practical advice on how to write your web content so that it conforms to the success criteria outlined in the **Operable** principle of the Web Content Accessibility Guidelines (WCAG) 2.0 and 2.1. Operable states that user interface components and navigation must be operable.

> **NOTE:** To read the W3C definitions for Operable and its guidelines and success criteria, see Principle 2: Operable — User interface components and navigation must be operable.

Guideline 2.1 — Keyboard Accessible: Make all functionality available from a keyboard

This guideline covers the necessity of making core website functionality available via a keyboard in addition to other means (e.g., mouse), so that users that rely on keyboard controls can access them.

Success criteria	How to conform to the criteria	Practical resource
2.1.1 Keyboard (A)	All functionality should be accessible using keyboard controls, unless it cannot be done using the keyboard (e.g., freehand drawing). Built-in controls should be used where possible (e.g., tabbing through form controls), and you should only build in custom functionality where needed.	See Use semantic UI controls where possible and Building keyboard accessibility back in
2.1.2 No keyboard trap (A)	When entering a section of functionality using the keyboard, you should be able to get out of that section again using *only* the keyboard. For example, if you press `Enter`/`Return` on a focused button to open an options window, you should be able to close that window again and return to the main content using the keyboard. This is very important so that keyboard users do not get trapped on specific sections of your apps.	
2.1.3 Keyboard — all functionality (AAA)	This is a further step beyond criterion 2.1.1. To achieve AAA conformance, all functionality should be accessible using keyboard controls — with no exceptions.	See Use semantic UI controls where possible and Building keyboard accessibility back in
2.1.4 Character Key Shortcuts (A)	If a single character key shortcut exists, then at least one of the following is true: single character key shortcuts can be turned off, remapped or are only active when the relevant user interface component is in focus.	Understanding Character Key Shortcuts

> **NOTE:** Also see the WCAG description for Guideline 2.1 Keyboard Accessible: Make all functionality available from a keyboard.

Guideline 2.2 — Enough Time: Provide users enough time to read and use content

This guideline covers situations in which functionality may have a time limit. For example, purchases sometimes need to be completed within a time limit for security reasons.

Success criteria	How to conform to the criteria	Practical resource
2.2.1 Timing is adjustable (A)	For functionality with time limits (e.g., completing a hotel or flight booking often has a time limit), the user should be given controls to allow them to adjust, extend or turn off the time limit. Exceptions to this are activities with time limits longer than 20 hours, real-time events (e.g., live multiplayer games), and any other activity that requires a time limit and would be invalidated if it were turned off.	
2.2.2 Pausing, stopping, hiding (A)	For moving/blinking content that starts automatically, lasts longer than 5 seconds, and is shown alongside other content, controls should be provided to pause, stop, or hide it. This does not apply to moving/blinking content that is essential to the experience. Examples include scrolling text and videos. For auto-updating information that starts automatically and is shown alongside other content, controls should be provided to pause, stop, or hide it, or to control the frequency of updates. This does not apply to auto-updating content that is essential to the experience. Examples include carousels or rotating announcements.	
2.2.3 No time limits (AAA)	This builds on criteria 2.2.1, stating that content that wants to pass AAA conformance should have no time limits.	
2.2.4 Suppress interruptions (AAA)	Any interruptions such as alerts or interstitial adverts should have functionality available to suppress or postpone them, unless it is an emergency alert.	
2.2.5 Re-authenticating (AAA)	If an authentication session expires during usage of a web app, the user can re-authenticate and continue their usage without losing any data.	

Success criteria	How to conform to the criteria	Practical resource
2.2.6 Timeouts (AAA)	If there is a timeout (caused by user inactivity) warn users at the start of a process so they will not be surprised that a timeout exists (or only allow the timeout to occur after 20 hours of inactivity).	Understanding Timeouts

> **NOTE:** Also see the WCAG description for Guideline 2.2 Enough Time: Provide users enough time to read and use content.

Guideline 2.3 — Seizures and Physical Reactions: Do not design content in a way that is known to cause seizures or physical reactions

This refers to content that, if not changed, could cause seizures in users with conditions such as epilepsy OR could cause physical reactions (like dizziness) for users with conditions such as vestibular disorders.

Success criteria	How to conform to the criteria	Practical resource
2.3.1 Three flashes, or below threshold (A)	Content doesn't contain any aspect that Flashes more than three times per second, or flashing content is below acceptable flash and red flash thresholds.	
2.3.2 Three flashes (AAA)	Content doesn't contain any aspect that Flashes more than three times per second.	
2.3.3 Animations from Interactions (AAA)	Allow users to disable animations from interactions (unless the animation is essential).	Understanding Animations from Interactions

> **NOTE:** Also see the WCAG description for Guideline 2.3 Seizures and Physical Reactions: Do not design content in a way that is known to cause seizures or physical reactions.

Guideline 2.4 — Navigable: Provide ways to help users navigate, find content, and determine where they are

The conformance criteria under this guideline relate to ways in which users can be expected to orientate themselves, and find the content and functionality they are looking for on the current page or other pages of the site.

Success criteria	How to conform to the criteria	Practical resource
2.4.1 Bypass blocks (A)	A mechanism should be provided that allows the user to skip straight to the main content or functionality available on the page, past the repeated features (such as the company logo or navigation). This is often achieved using "skip links" — links put at the top of the page source that link to the main content and are hidden by CSS. If a proper structure of headings and semantic containers is provided to navigate with (for example [section](https://developer.mozilla.org/en-US/docs/Web/HTML/Element/section), [aside](https://developer.mozilla.org/en-US/docs/Web/HTML/Element/aside), etc.), then an added "skip link" is not needed.	*Need to add a section on "skip links".*

Success criteria	How to conform to the criteria	Practical resource
2.4.2 Include page title (A)	Each web page should include an informative [title](https://developer.mozilla.org/en-US/docs/Web/HTML/Element/title), the content of which describes the page's content/purpose.	See Adding a title.
2.4.3 Logical focus order (A)	The "tabbing order" of focusable page features (e.g., links, buttons, form inputs) makes logical sense, meaning that the page is still usable by non-sighted/keyboard users.	See Use semantic UI controls where possible for general advice on tabbing to controls. If you need to place elements in an unusual layout, it is better to make sure the source order is sensible, then use CSS features like positioning to handle the layout.
2.4.4 Link purpose (in context) (A)	The purpose/destination of a link can be determined from the link text, or from its surroundings (e.g., the surrounding text). Exceptions are where the link purpose is ambiguous to *all* users (see ambiguous to users in general for a useful explanation of this).	See Use meaningful text labels. Also note that you should minimize instances where multiple copies of the same text are linked to different places. This can cause problems for screen reader users, who will often bring up a list of the links out of context — several links all labeled "click here", "click here", "click here" would be confusing.
2.4.5 Multiple navigation mechanisms (AA)	You should provide at least two general navigation mechanisms to find pages on your website, for example navigation menu, breadcrumb trail, site search, site map, list of related links, etc. The only exception to this is where a page is one step in a process, so should only logically have links to the previous and next steps.	Most of these mechanisms can be created using fully supported HTML features, for example see Search field , Creating a navigation menu, Styling links as buttons.
2.4.6 Headings and labels (AA)	Heading (e.g., [<h2>](https://developer.mozilla.org/en-US/docs/Web/HTML/Element/heading_elements)) and [label](https://developer.mozilla.org/en-US/docs/Web/HTML/Element/label) elements clearly describe the purpose of the content and form elements they are supposed to be describing.	See Use semantic UI controls where possible, Use meaningful text labels, The basics of headings and paragraphs, The <label> element. Note that you should avoid duplicating headings or labels (e.g. multiple instances of "Further information"), unless the structure allows you to differentiate between them easily.

Success criteria	How to conform to the criteria	Practical resource
2.4.7 Visible focus for focusable elements (AA)	When tabbing through focusable elements such as links or form inputs, there should be a visual indicator to show you which element currently has focus. This is usually a dotted or blue outline by default (depending on browser, platform, etc.), but this can be overridden by CSS.	See Use semantic UI controls where possible.
2.4.8 Location within site (AAA)	When on a page inside a complex site or set of steps, the user should be given an indicator of where they are in the site, for example a breadcrumb trail, sitemap or text such as "Form page 2 of 10".	
2.4.9 Link purpose (link only) (AAA)	This criterion builds on 2.4.4, stating that to conform to AAA, the purpose/destination of a link should be determinable from the link text alone, even if out of context.	See Use meaningful text labels. Also note that you should minimize instances where multiple copies of the same text are linked to different places. This can cause problems for screen reader users, who will often bring up a list of the links out of context — several links all labeled "click here", "click here", "click here" would be confusing.
2.4.10 Section headings (AAA)	As well as creating a useful document structure, headings should also accurately describe and break up content areas into logical sections. Note that this criterion refers to headings and titles in general web content (e.g., headings within text content). Headings and titles for user interfaces are a special case covered in criterion 4.1.2.	See The basics of headings and paragraphs.
2.4.11 Focus not obscured (Minimum) (AA)	When a user interface component receives keyboard focus, the component is not entirely hidden due to containing author-created content. **Note:** If the interface's content can be repositioned by the user, then only the initial position of the user-movable content is considered for testing to conform to this standard. Also, content opened by the user may obscure the component receiving focus. Furthermore, if the user can reveal the focused component without changing keyboard focus, the component with focus is not considered hidden for conformance and testing purposes.	Check out Understanding focus not obscured (Minimum) to learn more about this standard.

Success criteria	How to conform to the criteria	Practical resource
2.4.12 Focus not obscured (Enhanced) (AAA)	Follows the rules as 2.4.11 except when a user interface component receives focus, no part of the component can be hidden by author-created content. If the interface is configurable, only the initial positions of user-movable content are considered for testing and meeting of this standard.	Check out Understanding focus not obscured (Enhanced) (Level AAA) to learn more about this standard.
2.4.13 Focus appearance (AAA)	When the keyboard focus indicator is visible, the area of the focus indicator meets all the following: • Must be at least as large as the area of a `2px` thick perimeter of the unfocused component or sub-component, which includes component's content, border, and background, excluding outer shadows or glow effects. • Needs to have a contrast ratio of at least 3:1 between the same pixels in the focused and unfocused states The exceptions to this are: • The focus indicator is determined by the user and cannot be adjusted by the author. • The focus indicator and the indicator's background color are not modified by the author.	Check out Understanding focus appearance (Level AAA) to learn more about this standard.

> **NOTE:** Also see the WCAG description for Guideline 2.4 Navigable: Provide ways to help users navigate, find content, and determine where they are.

Guideline 2.5 Input Modalities: Make it easier for users to operate

functionality through various inputs beyond keyboard

The conformance criteria under this guideline ensures that users are able to interact with digital technology using different input methods beyond a keyboard or mouse (including touchscreen, voice, device motion, or alternative input devices).

Success criteria	How to conform to the criteria	Practical resource
2.5.1 Pointer Gestures (A)	All functionality that can be operated with a pointer can be operated with single-point actions. Path-based or multi-point gestures are not required to operate any functionality. Exceptions exist.	Understanding Pointer Gestures
2.5.2 Pointer Cancellation (A)	For functionality that can be operated using a single-pointer at least one of the following is true: no down-event, abort/undo, up reversal or essential.	Understanding Pointer Cancellation
2.5.3 Label in Name (A)	For each user interface component that includes a visible text label, make sure the accessible name matches (or includes) the visible text in the label.	Understanding Label in Name
2.5.4 Motion Actuation (A)	Ensure that for functionality that can be triggered by a) device motion (like shaking, tilting) or b) user gestures detected by device sensors (including a camera) that both of the following are true: 1) motion actuation can be disabled, and 2) the functionality can be operated without using device motion or user gestures. Exceptions exist.	Understanding Motion Actuation
2.5.5 Target Size (AAA)	The size of an actionable item's touch target must be at least 44 CSS pixels in both width and height. Exceptions exist.	Understanding Target Size
2.5.6 Concurrent Input Mechanisms (AAA)	Make sure people can use and switch between different modes of input when interacting with digital content including touchscreen, keyboard, mouse, voice commands, or alternative input devices. An essential exception exists.	Understanding Concurrent Input Mechanism

Success criteria	How to conform to the criteria	Practical resource
2.5.8 Target size minimum (AA)	Target size for pointer inputs should be at least `24px` wide by `24px` tall except for the following areas: • **Spacing:**Targets that are less than `24px x 24px` are positioned so that if a `24px` diameter circle is centered on each target's bounding box, the circles do not intersect with any other target or the circle for another undersized target. • **Equivalent:** A separate control that achieves the same function that meets this standard is available on the same page. • **Inline:** The target is located within a line of text with its size constrained by the line height or surrounding non-target text. • **User agent control:** The target's size is determined by the user agent and has not been modified by the author. • **Essential:** A particular presentation of the target is essential or legally required for the information being conveyed.	Check out Understanding target size minimum

> **NOTE:** Also see the WCAG description for Guideline 2.5: Input Modalities: Make it easier for users to operate functionality through various inputs beyond keyboard.

See also

- WCAG
  1. Perceivable
  2. Operable

3. Understandable
4. Robust

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