

National Web Accessibility Guideline

August 2022

Young Power in Social Action (YPSA)

Handicap International-Humanity & Inclusion (HI)





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ACRONYM

BBS	Bangladesh Bureau of Statistics
CAPTCHA	Completely Automated Public Turing test to tell Computers and Humans Apart
CSS	Cascading Style Sheets
GDP	Gross Domestic Product
HCI	Human Computer Interface
HIES	Households Income and Expenditure Survey
HTML	Hypertext Markup Language
ICT	Information and Communications Technologies
JICA	Japan International Cooperation Agency
SARPV	Social Assistance and Rehabilitation for the Physically Vulnerable
SDG	Sustainable Development Goals
UNCRPD	UN Convention on the Rights of Persons with Disabilities
US	United States
WCAG	Web Content Accessibility Guidelines
WHO	World Health Organization

I. Background

Web accessibility means access to the web by everyone, regardless of their physical condition. It also indicates that websites, tools, and technologies are designed and developed so that persons with disabilities can use them. More specifically, people can perceive, understand, navigate, and interact with the Web, contribute to the Web. Persons with disabilities, and in particular persons who are blind or have visual impairments, do not have enough access to essential web-based services and opportunities in Bangladesh, due to the lack of accessibility among other reasons. Because of that, they are denied a variety of educational, employment, protection, health, cultural opportunities thus exacerbating their level of exclusion and discrimination.

Bangladesh Government has made one of its priorities to make all the public services digital and accessible for all citizens of Bangladesh and ensure the vision of turning the country into Digital Bangladesh decades ago. The Government has been working with this motto since 2009 and the a2i program of the ICT division has remained in the lead role to ensure this dream come true through different initiatives and innovation.

Now, the first primary steps for digitization was ensuring a Government web portal which is now the biggest web portal in the world. Currently, in Bangladesh, all the 57 Ministries, 353 Departments, 8 Divisions, 64 Districts, 491 Upazilas and 4554 Unions have active web portals integrated through the National Web Portal of Bangladesh. Most of the information and services is now available in the portal. Many Government services are now very easily available for the people because of this initiative. As the forms and other documents can be collected from anywhere, people no longer need to take all the time and stress for manual operation. Citizens have even become largely dependent on different e-services for seeking jobs, buying goods or shopping. Getting registered for competitive examinations to finding results are also being done using web portals. Newspapers, these days, also have their online versions.

The persons with disabilities in Bangladesh also use websites to receive various services and information using the required tools. But, some of the features are working as a barrier to letting that happen. As the websites are not fully accessible, they are not being able to use the service independently.

'Bangladesh Bureau of Statistics (BBS)', led national censuses 1981, 1991, and 2001 estimated prevalence rate of disability at 0.82, 0.47, and 0.60 respectively. Action Aid-Bangladesh and Social Assistance and Rehabilitation for the Physically Vulnerable (SARPV) put the disabled population at 8.8% of the total population, Bangladesh Protibandhi Kalayan Samiti records 7.8% (JICA, 2002), and WHO estimated around 10 -15% of the total population. But, the 5th Population and Housing Census 2011 showed the number of people with disabilities is only 1.4% of Bangladesh's total population which is 7.6% points lower than the HIES 2010 estimate of 9.01 % for the overall disability prevalence. The statistics on the prevalence of disability has indeed been a matter of serious debate in Bangladesh as most

of the estimates of disability prevalence generally appear to be underrated or sometimes excessive. For instance, in a survey Action Aid Bangladesh (1996) recorded 14.04% of people suffering from at least one form of impairment. Nevertheless, it is indisputable that disability is an issue that has a profound effect not only on a family but on society as a whole by reducing or eliminating the economic contribution of the members with disabilities, their family members, relatives, and close friends. The cumulative cost of disability is approximately US \$1.18 billion per year, which is about 1.74% of Bangladesh's GDP (BDS, Vol. XXXVII, December 2014). Considering this, to achieve its Vision 2021, the government of Bangladesh has prioritized "disability" as one of the major thematic areas of its development agenda. It has already put necessary policy frameworks in place to ensure disability-inclusive development. It has brought in several laws to protect persons with disabilities, namely "Persons with Disabilities Rights and Protection Act 2013" and "Neurodevelopmental Disability Protection Trust Act 2013", and ensured inclusion of disability in its National Education Policy, National Skills Development Policy, and other policy frameworks. Bangladesh has also ratified the UN Convention on the Rights of Persons with Disabilities (UNCRPD) and is highly committed to achieving the Sustainable Development Goals by 2030; thus, leaving no one behind, particularly those with disabilities.

This population cannot be a part of the national development if they are not given adequate facilities like the rest of the population. Starting from the beginning, Article 21 (2) of the Universal Declaration of Human Rights (United Nations 1948), adopted by the UN General Assembly in 1948, states that everyone has the right to equal access to public service in his country. According to the Constitution of Bangladesh, all citizens of the country have the right to enjoy their dignity, fundamental human rights and have social equality. Having said that, we would also like to add that according to the United Nation Convention on the Rights of Persons with Disabilities (UNCRPD) article 9 and 21, State parties are expected to take necessary measure to promote access for persons with disabilities to new information and communications technologies and systems, including the Internet. It also requires identifying and eliminating obstacles in Information, communications and other services, including electronic services and emergency services for persons with disabilities. It also promotes the design, development, production and distribution of accessible information and communications technologies (ICT) and systems at an early stage, so that these technologies and systems become accessible at minimum cost and encouraging the mass media, including providers of information through the Internet, to make their services accessible to persons with disabilities. According to the Persons with Disabilities Rights and Protection Act-2013, 'Accessibility' refers to opportunities given to persons with disabilities to access all facilities without any obstacles. This includes equal access to all social services such as infrastructure, communication, transportation, information and technology. Besides, digital accessibility and ICT offer fantastic opportunities to persons with disabilities, e. g. screen readers for persons with a visual impairment, video call for person with a hearing impairment, etc. So, in this age of inclusive development, when every member countries of the United Nations have committed to leaving no one behind to fulfil Sustainable Development Goals by 2030, not assuring equal access to the information and services provided by the states can be a huge barrier to that.

II. Objective

The objective of this guideline is to provide web developers with the knowledge to develop accessible websites and web content following the WCAG 2.1 guideline. As the requirements for accessible websites come into effect in Bangladesh, the ability to create them will be an asset to web developers and other relevant stakeholders across the country.

III. Target Audience

This guideline is expected to support service providers, web developers, ICT specialists, programme managers, and public policy-makers across the country to better address the web accessibility issues of persons with disabilities in Bangladesh. It is primarily designed for web and mobile application developers, ICT specialists, program managers, policy-makers, and other decision-makers within the public and private sectors. Acknowledging that the disability-centred approach of this guideline may require multi-sectoral engagement, the guideline will also be useful for national-level programme managers and policy-makers from other sectors including all the departments, ministries, etc. of the Bangladesh government. These stakeholders can be partners in delivering services that support an all-inclusive approach to web accessibility. However, funding has always been a huge concern for the relevant stakeholders in Bangladesh; therefore, services and programs designed considering the low-resource setting will benefit most from the guidance presented here. Nonetheless, this guideline is relevant for all settings regardless of the physical, social, or economic context, and should, therefore, be considered as a National Guidance.

IV. Common barriers faced by Persons with Disabilities regarding Web Accessibility

- As most of the documents like notice and publications available on the websites are in Bangla inaccessible pdf format, persons with disabilities are not being able to read; and therefore access the information;
- Images used in most of the websites have no alternative texts to identify the purpose or explain the content of the image;
- The security codes and captcha codes are not available in audio and numerical format on most of the websites;
- The navigation shortcut key does not work on many websites;
- Label text remains empty in most of the websites;
- The videos published on the websites do not have description or translation (subtitles, embedded sign language video);
- 'Jump to main menu' and 'Jump to content' does not properly work on many of the websites;
- Text resize options does not work on the websites;
- 'Color change' option is not available on most of the websites;
- The number of timer-based web pages are inaccessible;
- Number webpages could not be synced with the screen reader software;
- Navigating through pop up window is inaccessible;
- The number of flash contents are inaccessible;
- There are difficulties while filling up online forms;
- The number of tables and flow charts do not address accessibility.

V. Understanding WCAG 2.1

Web Content Accessibility Guidelines (WCAG) explains how to make web content more accessible to persons with disabilities. WCAG covers web sites, applications, and other digital content. Web Content Accessibility Guidelines (WCAG) is developed through the W3C process in cooperation with individuals and organizations around the world, with a goal of providing a single shared standard for web content accessibility that meets the needs of individuals, organizations, and governments internationally.

WCAG is for those who want a technical standard. It is not an introduction to accessibility. It is the reference standard for web (and mobile application) accessibility. It is primarily intended for:

- Web content and application developers (page authors, site designers, etc.)
- Web authoring tool developers
- Web accessibility and application evaluation tool developers; and
- Others who want or need a standard for web accessibility, including for mobile accessibility

WCAG 2.1 is based on 4 design principles: perceivable, operable, understandable and robust. By focusing on use' or 'design considerations', not technology, they emphasise the need to think about the different ways that people interact with content which is also called Human Computer Interface (HCI). For example, users might:

- ✓ use a keyboard instead of a mouse
- ✓ change browser settings to make content easier to read
- ✓ use a screen reader to 'read' (speak) content out loud
- ✓ use a screen magnifier to enlarge part of a screen
- ✓ use voice commands to navigate a website

As mentioned above, WCAG is based on four main principles: Content must be perceivable, operable, understandable, and robust. The guidelines — also called success criteria — provide actionable information for creating better websites and mobile applications. To provide an organized structure, the guidelines are classified into three conformance levels:

Level A - Considered the least strict, Level A success criteria are essential for every website. If a website doesn't conform with WCAG Level A, it may have serious accessibility issues that prevent users with disabilities from using it.

Level AA - Websites that conform with WCAG Level AA can be considered reasonably accessible for most users. Most websites should aim for Level AA conformance. To meet this

goal, content must conform with all Level AA and Level A success criteria.

Level AAA - Digital content that conforms with WCAG Level AAA is considered optimally accessible. To earn Level AAA conformance, content must pass every guideline in WCAG (including Level AA and Level A success criteria). However, some Level AAA success criteria are extremely strict, and some types of content cannot conform with every guideline at this level.

Therefore, in order to meet the accessibility standards, websites should try to earn at least Level AA conformance with the latest version of WCAG and currently, the latest version is WCAG 2.1.

VI. Web Accessibility Framework

Following the WCAG 2.1 Guideline

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.

Success Criterion 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.

Controls, Input

If non-text content is a control or accepts user input, then it has a name that describes its purpose.

Time-Based Media

If non-text content is time-based media, then text alternatives at least provide descriptive identification of the non-text content.

Test

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.

Sensory

If non-text content is primarily intended to create a specific sensory experience, then text alternatives at least provide descriptive identification of the non-text content.

CAPTCHA

If the purpose of non-text content is to confirm that content is being accessed by a person rather than a computer, then text alternatives that identify and describe the purpose of the non-text content are provided, and alternative forms of CAPTCHA using output modes for different types of sensory perception are provided to accommodate different disabilities.

Decoration, Formatting, Invisible

If non-text content is pure decoration, is used only for visual formatting, or is not presented to users, then it is implemented in a way that can be ignored by assistive technology.

Guideline 1.2 Time-based Media

Provide alternatives for time-based media.

Success Criterion 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 labelled as such:

Prerecorded Audio-only

An alternative for time-based media is provided that presents equivalent information for prerecorded audio-only content.

Prerecorded Video-only

Either an alternative for time-based media or an audio track is provided that presents equivalent information for prerecorded video-only content.

Success Criterion 1.2.2 Captions (Prerecorded)**(Level A)**

Captions are provided for all prerecorded audio content in synchronized media, except when the media is a media alternative for text and is clearly labelled as such.

Success Criterion 1.2.3 Audio Description or Media Alternative (Prerecorded)**(Level A)**

An alternative for time-based media or audio description of the prerecorded video content is provided for synchronized media, except when the media is a media alternative for text and is clearly labelled as such.

Success Criterion 1.2.4 Captions (Live)**(Level AA)**

Captions are provided for all live audio content in synchronized media.

Success Criterion 1.2.5 Audio Description (Prerecorded)**(Level AA)**

Audio description is provided for all prerecorded video content in synchronized media.

Success Criterion 1.2.6 Sign Language (Prerecorded)
(Level AAA)

Sign language interpretation is provided for all prerecorded audio content in synchronized media.

Success Criterion 1.2.7 Extended Audio Description (Prerecorded)
(Level AAA)

Where pauses in foreground audio are insufficient to allow audio descriptions to convey the sense of the video, extended audio description is provided for all prerecorded video content in synchronized media.

Success Criterion 1.2.8 Media Alternative (Prerecorded)
(Level AAA)

An alternative for time-based media is provided for all prerecorded synchronized media and for all prerecorded video-only media.

Success Criterion 1.2.9 Audio-only (Live)
(Level AAA)

An alternative for time-based media that presents equivalent information for live audio-only content is provided.

Guideline 1.3 Adaptable

Create content that can be presented in different ways (for example simpler layout) without losing information or structure.

Success Criterion 1.3.1 Info and Relationships
(Level A)

Information, structure, and relationships conveyed through presentation can be programmatically determined or are available in text.

Success Criterion 1.3.2 Meaningful Sequence
(Level A)

When the sequence in which content is presented affects its meaning, a correct reading sequence can be programmatically determined.

Success Criterion 1.3.3 Sensory Characteristics
(Level A)

Instructions provided for understanding and operating content do not rely solely on sensory characteristics of components such as shape, colour, size, visual location, orientation, or sound.

NOTE

For requirements related to colour, refer to Guideline 1.4.

Success Criterion 1.3.4 Orientation**(Level AA)**

Content does not restrict its view and operation to a single display orientation, such as portrait or landscape unless a specific display orientation is essential.

NOTE

Examples, where a particular display orientation may be essential, are a bank check, a piano application, slides for a projector or television, or virtual reality content where binary display orientation is not applicable.

Success Criterion 1.3.5 Identify Input Purpose**(Level AA)**

The purpose of each input field collecting information about the user can be programmatically determined when:

- The input field serves a purpose identified in the Input Purposes for User Interface Components section; and
- The content is implemented using technologies with support for identifying the expected meaning for form input data.

Success Criterion 1.3.6 Identify Purpose**(Level AAA)**

In content implemented using markup languages, the purpose of User Interface Components, icons, and regions can be programmatically determined.

Guideline 1.4 Distinguishable

Make it easier for users to see and hear content including separating foreground from background.

Success Criterion 1.4.1 Use of Color**(Level A)**

Colour is not used as the only visual means of conveying information, indicating an action, prompting a response, or distinguishing a visual element.

NOTE

This success criterion addresses colour perception specifically. Other forms of perception are covered in Guideline 1.3 including programmatic access to colour and other visual presentation coding.

Success Criterion 1.4.2 Audio Control**(Level A)**

If any audio on a Web page plays automatically for more than 3 seconds, either a mechanism is available to pause or stop the audio, or a mechanism is

available to control audio volume independently from the overall system volume level.

NOTE

Since any content that does not meet this success criterion can interfere with a user's ability to use the whole page, all content on the Web page (whether or not it is used to meet other success criteria) must meet this success criterion. See Conformance Requirement 5: Non-Interference.

Success Criterion 1.4.3 Contrast (Minimum)

(Level AA)

The visual presentation of text and images of text has a contrast ratio of at least 4.5:1, except for the following:

Large Text

Large-scale text and images of large-scale text have a contrast ratio of at least 3:1.

Incidental

Text or images of text that are part of an inactive user interface component, that are pure decoration, that are not visible to anyone, or that are part of a picture that contains significant other visual content, have no contrast requirement.

Logotypes

Text that is part of a logo or brand name has no contrast requirement.

Success Criterion 1.4.4 Resize text

(Level AA)

Except for captions and images of text, text can be resized without assistive technology up to 200 per cent without loss of content or functionality.

Success Criterion 1.4.5 Images of Text

(Level AA)

If the technologies being used can achieve the visual presentation, the text is used to convey information rather than images of text except for the following:

Customizable

The image of text can be visually customized to the user's requirements;

Essential

A particular presentation of the text is essential to the information being conveyed.

NOTE

Logotypes (text that is part of a logo or brand name) are considered essential.

Success Criterion 1.4.6 Contrast (Enhanced)

(Level AAA)

The visual presentation of text and images of text has a contrast ratio of at least 7:1, except for the following:

Large Text

Large-scale text and images of large-scale text have a contrast ratio of at least 4.5:1.

Incidental

Text or images of text that are part of an inactive user interface component, that are pure decoration, that are not visible to anyone, or that are part of a picture that contains significant other visual content, have no contrast requirement.

Logotypes

Text that is part of a logo or brand name has no contrast requirement.

Success Criterion 1.4.7 Low or No Background Audio

(Level AAA)

For prerecorded audio-only content that (1) contains primarily speech in the foreground, (2) is not an audio CAPTCHA or audio logo, and (3) is not vocalization intended to be primarily musical expression such as singing or rapping, at least one of the following is true:

No Background

The audio does not contain background sounds.

Turn Off

The background sounds can be turned off.

20 dB

The background sounds are at least 20 decibels lower than the foreground speech content, with the exception of occasional sounds that last for only one or two seconds.

NOTE

Per the definition of "decibel" background sound that meets this requirement will be approximately four times quieter than the foreground speech content.

Success Criterion 1.4.8 Visual Presentation

(Level AAA)

For the visual presentation of blocks of text, a mechanism is available to achieve the following:

- Foreground and background colours can be selected by the user.
- Width is no more than 80 characters or glyphs (40 if CJK).
- Text is not justified (aligned to both the left and the right margins).
- Line spacing (leading) is at least space-and-a-half within paragraphs, and paragraph spacing is at least 1.5 times larger than the line spacing.
- Text can be resized without assistive technology up to 200 per cent in a way that does not require the user to scroll horizontally to read a line of text on a full-screen window.

Success Criterion 1.4.9 Images of Text (No Exception)

(Level AAA)

Images of text are only used for pure decoration or where a particular presentation of text is essential to the information being conveyed.

NOTE

Logotypes (text that is part of a logo or brand name) are considered essential.

Success Criterion 1.4.10 Reflow

(Level AA)

Content can be presented without loss of information or functionality, and without requiring scrolling in two dimensions for:

- Vertical scrolling content at a width equivalent to 320 CSS pixels;
- Horizontal scrolling content at a height equivalent to 256 CSS pixels.

Except for parts of the content that require a two-dimensional layout for usage or meaning.

NOTE

320 CSS pixels is equivalent to a starting viewport width of 1280 CSS pixels wide at 400% zoom. For web content which are designed to scroll horizontally (e.g. with vertical text), the 256 CSS pixels is equivalent to a starting viewport height of 1024px at 400% zoom.

NOTE

Examples of content that require a two-dimensional layout are images, maps, diagrams, video, games, presentations, data tables, and interfaces where it is necessary to keep toolbars in view while manipulating content.

Success Criterion 1.4.11 Non-text Contrast**(Level AA)**

The visual presentation of the following have a contrast ratio of at least 3:1 against adjacent colour (s):

User Interface Components

Visual information required to identify user interface components and states, except for inactive components or where the appearance of the component is determined by the user agent and not modified by the author;

Graphical Objects

Parts of graphics required to understand the content, except when a particular presentation of graphics is essential to the information being conveyed.

Success Criterion 1.4.12 Text Spacing**(Level AA)**

In content implemented using markup languages that support the following text style properties, no loss of content or functionality occurs by setting all of the following and by changing no other style property:

- Line height (line spacing) to at least 1.5 times the font size;
- Spacing following paragraphs to at least 2 times the font size;
- Letter spacing (tracking) to at least 0.12 times the font size;
- Word spacing to at least 0.16 times the font size.

Exception: Human languages and scripts that do not make use of one or more of these text style properties in written text can conform using only the properties that exist for that combination of language and script.

Success Criterion 1.4.13 Content on Hover or Focus**(Level AA)**

Where receiving and then removing pointer hover or keyboard focus triggers additional content to become visible and then hidden, the following are true:

Dismissable

A mechanism is available to dismiss the additional content without moving pointer hover or keyboard focus unless the additional content communicates an input error or does not obscure or replace other content;

Hoverable

If pointer hover can trigger the additional content, then the pointer can be moved over the additional content without the additional content disappearing;

Persistent

The additional content remains visible until the hover or focus trigger is removed, the user dismisses it, or its information is no longer valid.

Exception: The visual presentation of the additional content is controlled by the user agent and is not modified by the author.

NOTE

Examples of additional content controlled by the user agent include browser tooltips created through the use of the HTML title attribute.

NOTE

Custom tooltips, sub-menus, and other nonmodal popups that display on hover and focus are examples of additional content covered by this criterion.

2. Operable

User interface components and navigation must be operable.

Guideline 2.1 Keyboard Accessible

Make all functionality available from a keyboard.

Success Criterion 2.1.1 Keyboard

(Level A)

All functionality of the content is operable through a keyboard interface without requiring specific timings for individual keystrokes, except where the underlying function requires input that depends on the path of the user's movement and not just the endpoints.

NOTE

This exception relates to the underlying function, not the input technique. For example, if using handwriting to enter text, the input technique (handwriting) requires path-dependent input but the underlying function (text input) does not.

NOTE

This does not forbid and should not discourage providing mouse input or other input methods in addition to keyboard operation.

Success Criterion 2.1.2 No Keyboard Trap

(Level A)

If keyboard focus can be moved to a component of the page using a keyboard interface, then focus can be moved away from that component using only a keyboard interface, and, if it requires more than unmodified arrow or tab keys or other standard exit methods, the user is advised of the method for moving the focus away.

NOTE

Since any content that does not meet this success criterion can interfere with a user's ability to use the whole page, all content on the Web page (whether it is used to meet other success criteria or not) must meet this success criterion.

Success Criterion 2.1.3 Keyboard (No Exception)

(Level AAA)

All functionality of the content is operable through a keyboard interface without requiring specific timings for individual keystrokes.

Success Criterion 2.1.4 Character Key Shortcuts

(Level A)

If a keyboard shortcut is implemented in content using only letter (including upper- and lower-case letters), punctuation, number, or symbol characters, then at least one of the following is true:

Turn off

A mechanism is available to turn the shortcut off;

Remap

A mechanism is available to remap the shortcut to use one or more non-printable keyboard characters (e.g. Ctrl, Alt, etc);

Active only on focus

The keyboard shortcut for a user interface component is only active when that component has focus.

Guideline 2.2 Enough Time

Provide users enough time to read and use the content.

Success Criterion 2.2.1 Timing Adjustable

(Level A)

For each time limit that is set by the content, at least one of the following is true:

Turn off

The user is allowed to turn off the time limit before encountering it; or

Adjust

The user is allowed to adjust the time limit before encountering it over a wide range that is at least ten times the length of the default setting; or

Extend

The user is warned before time expires and given at least 20 seconds to extend the time limit with a simple action (for example, "press the space bar"), and the user is allowed to extend the time limit at least ten times; or

Real-time Exception

The time limit is a required part of a real-time event (for example, an auction), and no alternative to the time limit is possible; or

Essential Exception

The time limit is essential and extending it would invalidate the activity; or

20 Hour Exception

The time limit is longer than 20 hours.

NOTE

This success criterion helps ensure that users can complete tasks without unexpected changes in content or context that are a result of a time limit. This success criterion should be considered in conjunction with Success Criterion 3.2.1, which puts limits on changes of content or context as a result of user action.

Success Criterion 2.2.2 Pause, Stop, Hide

(Level A)

For moving, blinking, scrolling, or auto-updating information, all of the following are true:

Moving, Blinking, Scrolling

For any moving, blinking or scrolling information that (1) starts automatically, (2) lasts more than five seconds, and (3) is presented in parallel with other content, there is a mechanism for the user to pause, stop, or hide it unless the movement, blinking, or scrolling is part of an activity where it is essential; and

Auto-updating

For any auto-updating information that (1) starts automatically and (2) is presented in parallel with other content, there is a mechanism for the user to pause, stop, or hide it or to control the frequency of the update unless the auto-updating is part of an activity where it is essential.

NOTE

For requirements related to flickering or flashing content, refer to Guideline 2.3.

NOTE

Since any content that does not meet this success criterion can interfere with a user's ability to use the whole page, all content on the Web page (whether it is used to meet other success criteria or not) must meet this success criterion. See Conformance Requirement 5: Non-Interference.

NOTE

Content that is updated periodically by software or that is streamed to the user agent is not required to preserve or present information that is generated or received between the initiation of the pause and resuming presentation, as this may not be technically possible, and in many situations could be misleading to do so.

NOTE

An animation that occurs as part of a preload phase or similar situation can be considered essential if interaction cannot occur during that phase for all users and if not indicating progress could confuse users or cause them to think that content was frozen or broken.

Success Criterion 2.2.3 No Timing

(Level AAA)

Timing is not an essential part of the event or activity presented by the content, except for non-interactive synchronized media and real-time events.

Success Criterion 2.2.4 Interruptions

(Level AAA)

Interruptions can be postponed or suppressed by the user, except for interruptions involving an emergency.

Success Criterion 2.2.5 Re-authenticating

(Level AAA)

When an authenticated session expires, the user can continue the activity without loss of data after re-authenticating.

Success Criterion 2.2.6 Timeouts

(Level AAA)

Users are warned of the duration of any user inactivity that could cause data loss unless the data is preserved for more than 20 hours when the user does not take any actions.

NOTE

Privacy regulations may require explicit user consent before user identification has been authenticated and before user data is preserved. In cases where the user is a minor, explicit consent may not be solicited in most jurisdictions, countries or regions. Consultation with privacy professionals and legal counsel is advised when considering data preservation as an approach to satisfy this success criterion.

Guideline 2.3 Seizures and Physical Reactions

Do not design content in a way that is known to cause seizures or physical reactions.

Success Criterion 2.3.1 Three Flashes or Below Threshold

(Level A)

Web pages do not contain anything that flashes more than three times in any one second period, or the flash is below the general flash and red flash thresholds.

NOTE

Since any content that does not meet this success criterion can interfere with a user's ability to use the whole page, all content on the Web page (whether it is used to meet other success criteria or not) must meet this success criterion. See Conformance Requirement 5: Non-Interference.

Success Criterion 2.3.2 Three Flashes**(Level AAA)**

Web pages do not contain anything that flashes more than three times in any one second period.

Success Criterion 2.3.3 Animation from Interactions**(Level AAA)**

Motion animation triggered by interaction can be disabled unless the animation is essential to the functionality or the information being conveyed.

Guideline 2.4 Navigable

Provide ways to help users navigate, find content, and determine where they are.

Success Criterion 2.4.1 Bypass Blocks**(Level A)**

A mechanism is available to bypass blocks of content that are repeated on multiple Web pages.

Success Criterion 2.4.2 Page Titled**(Level A)**

Web pages have titles that describe the topic or purpose.

Success Criterion 2.4.3 Focus Order**(Level A)**

If a Web page can be navigated sequentially and the navigation sequences affect meaning or operation, focusable components receive focus in an order that preserves meaning and operability.

Success Criterion 2.4.4 Link Purpose (In Context)**(Level A)**

The purpose of each link can be determined from the link text alone or from the link text together with its programmatically determined link context, except where the purpose of the link would be ambiguous to users in general.

**Success Criterion 2.4.5 Multiple Ways
(Level AA)**

More than one way is available to locate a Web page within a set of Web pages except where the Web Page is the result of, or a step in, a process.

**Success Criterion 2.4.6 Headings and Labels
(Level AA)**

Headings and labels describe the topic or purpose.

**Success Criterion 2.4.7 Focus Visible
(Level AA)**

Any keyboard operable user interface has a mode of operation where the keyboard focus indicator is visible.

**Success Criterion 2.4.8 Location
(Level AAA)**

Information about the user's location within a set of Web pages is available.

**Success Criterion 2.4.9 Link Purpose (Link Only)
(Level AAA)**

A mechanism is available to allow the purpose of each link to be identified from the link text alone, except where the purpose of the link would be ambiguous to users in general.

**Success Criterion 2.4.10 Section Headings
(Level AAA)**

Section headings are used to organize the content.

NOTE

"Heading" is used in its general sense and includes titles and other ways to add a heading to different types of content.

NOTE

This success criterion covers sections within writing, not user interface components. User Interface components are covered under Success Criterion 4.1.2.

Guideline 2.5 Input Modalities

Make it easier for users to operate functionality through various inputs beyond the keyboard.

**Success Criterion 2.5.1 Pointer Gestures
(Level A)**

All functionality that uses multipoint or path-based gestures for operation can be operated with a single pointer without a path-based gesture unless a

multipoint or path-based gesture is essential.

NOTE

This requirement applies to web content that interprets pointer actions (i.e. this does not apply to actions that are required to operate the user agent or assistive technology).

Success Criterion 2.5.2 Pointer Cancellation

(Level A)

For functionality that can be operated using a single pointer, at least one of the following is true:

No Down-Event

The down-event of the pointer is not used to execute any part of the function;

Abort or Undo

Completion of the function is on the up-event, and a mechanism is available to abort the function before completion or to undo the function after completion;

Up Reversal

The up-event reverses any outcome of the preceding down-event;

Essential

Completing the function on the down-event is essential.

NOTE

Functions that emulate a keyboard or numeric keypad key press are considered essential.

NOTE

This requirement applies to web content that interprets pointer actions (i.e. this does not apply to actions that are required to operate the user agent or assistive technology).

Success Criterion 2.5.3 Label in Name

(Level A)

For user interface components with labels that include text or images of text, the name contains the text that is presented visually.

NOTE

A best practice is to have the text of the label at the start of the name.

Success Criterion 2.5.4 Motion Actuation

(Level A)

Functionality that can be operated by device motion or user motion can also be operated by user interface components and responding to the motion can be disabled to prevent accidental actuation, except when:

Supported Interface

The motion is used to operate functionality through an accessibility-supported interface;

Essential

The motion is essential for the function and doing so would invalidate the activity.

Success Criterion 2.5.5 Target Size

(Level AAA)

The size of the target for pointer inputs is at least 44 by 44 CSS pixels except when:

Equivalent

The target is available through an equivalent link or control on the same page that is at least 44 by 44 CSS pixels;

Inline

The target is in a sentence or block of text;

User Agent Control

The size of the target is determined by the user agent and is not modified by the author;

Essential

A particular presentation of the target is essential to the information being conveyed.

Success Criterion 2.5.6 Concurrent Input Mechanisms

(Level AAA)

Web content does not restrict the use of input modalities available on a platform except where the restriction is essential, required to ensure the security of the content, or required to respect user settings.

3. Understandable

Information and the operation of the user interface must be understandable.

Guideline 3.1 Readable

Make text content readable and understandable.

Success Criterion 3.1.1 Language of Page

(Level A)

The default human language of each Web page can be programmatically determined.

Success Criterion 3.1.2 Language of Parts

(Level AA)

The human language of each passage or phrase in the content can be programmatically determined except for proper names, technical terms, words of indeterminate language, and words or phrases that have become part of the vernacular of the immediately surrounding text.

Success Criterion 3.1.3 Unusual Words

(Level AAA)

A mechanism is available for identifying specific definitions of words or phrases used in an unusual or restricted way, including idioms and jargon.

Success Criterion 3.1.4 Abbreviations

(Level AAA)

A mechanism for identifying the expanded form or meaning of abbreviations is available.

Success Criterion 3.1.5 Reading Level

(Level AAA)

When text requires reading ability more advanced than the lower secondary education level after removal of proper names and titles, supplemental content, or a version that does not require reading ability more advanced than the lower secondary education level, is available.

Success Criterion 3.1.6 Pronunciation

(Level AAA)

A mechanism is available for identifying specific pronunciation of words where the meaning of the words, in context, is ambiguous without knowing the pronunciation.

Guideline 3.2 Predictable

Make Web pages appear and operate in predictable ways.

Success Criterion 3.2.1 On Focus

(Level A)

When any user interface component receives focus, it does not initiate a change of context.

Success Criterion 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 behaviour before using the component.

Success Criterion 3.2.3 Consistent Navigation

(Level AA)

Navigational mechanisms that are repeated on multiple Web pages within a set of Web pages occur in the same relative order each time they are repeated unless a change is initiated by the user.

Success Criterion 3.2.4 Consistent Identification

(Level AA)

Components that have the same functionality within a set of Web pages are identified consistently.

Success Criterion 3.2.5 Change on Request

(Level AAA)

Changes of context are initiated only by user request or a mechanism is available to turn off such changes.

Guideline 3.3 Input Assistance

Help users avoid and correct mistakes.

Success Criterion 3.3.1 Error Identification

(Level A)

If an input error is automatically detected, the item that is in error is identified and the error is described to the user in text.

Success Criterion 3.3.2 Labels or Instructions

(Level A)

Labels or instructions are provided when content requires user input.

Success Criterion 3.3.3 Error Suggestion

(Level AA)

If an input error is automatically detected and suggestions for correction are known, then the suggestions are provided to the user, unless it would jeopardize the security or purpose of the content.

Success Criterion 3.3.4 Error Prevention (Legal, Financial, Data)

(Level AA)

For Web pages that cause legal commitments or financial transactions for the user to occur, that modify or delete user-controllable data in data storage systems, or that submit user test responses, at least one of the following is true:

Reversible

Submissions are reversible.

Checked

Data entered by the user is checked for input errors and the user is provided with an opportunity to correct them.

Confirmed

A mechanism is available for reviewing, confirming, and correcting information before finalizing the submission.

Success Criterion 3.3.5 Help

(Level AAA)

Context-sensitive help is available.

Success Criterion 3.3.6 Error Prevention (All)

(Level AAA)

For Web pages that require the user to submit information, at least one of the following is true:

Reversible

Submissions are reversible.

Checked

Data entered by the user is checked for input errors and the user is provided an opportunity to correct them.

Confirmed

A mechanism is available for reviewing, confirming, and correcting information before finalizing the submission.

4. Robust

Content must be robust enough that it can be interpreted by a wide variety of user agents, including assistive technologies.

Guideline 4.1 Compatible

Maximize compatibility with current and future user agents, including assistive technologies.

Success Criterion 4.1.1 Parsing

(Level A)

In content implemented using markup languages, elements have complete start and end tags, elements are nested according to their specifications, elements do not contain duplicate attributes, and any IDs are unique, except where the specifications allow these features.

NOTE

Start and end tags that are missing a critical character in their formation, such as a closing angle bracket or a mismatched attribute value quotation mark are not complete.

Success Criterion 4.1.2 Name, Role, Value

(Level A)

For all user interface components (including but not limited to: form elements, links and components generated by scripts), the name and role can be programmatically determined; states, properties, and values that can be set by the user can be programmatically set; and notification of changes to these items is available to user agents, including assistive technologies.

NOTE

This success criterion is primarily for Web authors who develop or script their own user interface components. For example, standard HTML controls already meet this success criterion when used according to specification.

Success Criterion 4.1.3 Status Messages

(Level AA)

In content implemented using markup languages, status messages can be programmatically determined through role or properties such that they can be presented to the user by assistive technologies without receiving focus.

5. Conformance

This section lists requirements for conformance to WCAG 2.1. It also gives information about how to make conformance claims, which are optional. Finally, it describes what it means to be accessibility supported since only accessibility-supported ways of using technologies can be relied upon for conformance. Understanding Conformance includes further explanation of the accessibility-supported concept.

5.1 Interpreting Normative Requirements

The main content of WCAG 2.1 is normative and defines requirements that impact conformance claims. Introductory material, appendices, sections marked as "non-normative", diagrams, examples, and notes are informative (non-normative). Non-normative material provides advisory information to help interpret the guidelines but does not create requirements that impact a conformance claim.

The key words MAY, MUST, MUST NOT, NOT RECOMMENDED, RECOMMENDED, SHOULD, and SHOULD NOT are to be interpreted properly.

5.2 Conformance Requirements

In order for a Web page to conform to WCAG 2.1, all of the following conformance requirements must be satisfied:

5.2.1 Conformance Level

One of the following levels of conformance is met in full.

- For Level A conformance (the minimum level of conformance), the Web page satisfies all the Level A Success Criteria, or a conforming alternate version is provided.
- For Level AA conformance, the Web page satisfies all the Level A and Level AA Success Criteria, or a Level AA conforming alternate version is provided.
- For Level AAA conformance, the Web page satisfies all the Level A, Level AA and Level AAA Success Criteria, or a Level AAA conforming alternate version is provided.

NOTE

Although conformance can only be achieved at the stated levels, authors are encouraged to report (in their claim) any progress toward meeting success criteria from all levels beyond the achieved level of conformance.

NOTE

It is not recommended that Level AAA conformance be required as a general policy for entire sites because it is not possible to satisfy all Level AAA Success Criteria for some content.

5.2.2 Full pages

Conformance (and conformance level) is for full Web page(s) only, and cannot be achieved if part of a Web page is excluded.

NOTE

For the purpose of determining conformance, alternatives to part of a page's content are considered part of the page when the alternatives can be obtained directly from the page, e.g. a long description or an alternative presentation of a video.

NOTE

Authors of Web pages that cannot conform due to content outside of the author's control may consider a Statement of Partial Conformance.

NOTE

New A full page includes each variation of the page that is automatically presented by the page for various screen sizes (e.g. variations in a responsive Web page). Each of these variations needs to conform (or needs to have a conforming alternate version) in order for the entire page to conform.

5.2.3 Complete processes

When a Web page is one of a series of Web pages presenting a process (i.e., a sequence of steps that need to be completed in order to accomplish an activity), all Web pages in the process conform at the specified level or better. (Conformance is not possible at a particular level if any page in the process does not conform at that level or better.)

An online store has a series of pages that are used to select and purchase products. All pages in the series from start to finish (checkout) conform in order for any page that is part of the process to conform.

5.2.4 Only Accessibility-Supported Ways of Using Technologies

Only accessibility-supported ways of using technologies are relied upon to satisfy the success criteria. Any information or functionality that is provided in a way that is not accessibility supported is also available in a way that is accessibility supported. (See Understanding accessibility support.)

5.2.5 Non-Interference

If technologies are used in a way that is not accessibility supported, or if they are used in a non-conforming way, then they do not block the ability of users to access the rest of the page. In addition, the Web page as a whole continues to meet the conformance requirements under each of the following conditions:

1. when any technology that is not relied upon is turned on in a user agent,
2. when any technology that is not relied upon is turned off in a user agent,
and
3. when any technology that is not relied upon is not supported by a user agent

In addition, the following success criteria apply to all content on the page, including content that is not otherwise relied upon to meet conformance, because failure to meet them could interfere with any use of the page:

- 1.4.2 - Audio Control,
- 2.1.2 - No Keyboard Trap,
- 2.2.2 - Three Flashes or Below Threshold, and
- 2.3.1 - Pause, Stop, Hide.

NOTE

If a page cannot conform (for example, a conformance test page or an example page), it cannot be included in the scope of conformance or in a conformance claim.

For more information, including examples, see [Understanding Conformance Requirements](#).

VII. A Quick Checklist for Web Accessibility

- Provide text alternatives for non-text content
- Provide an alternative to video-only and audio-only content
- Provide captions for videos with audio
- Logical structure
- Present content in a meaningful order
- Use more than one sense for instructions
- Don't use presentation that relies solely on colour
- Don't play audio automatically
- Accessible by keyboard only
- Don't trap keyboard users
- Time limits have user controls
- Provide user controls for moving content
- No content flashes more than three times per second
- Provide a 'Skip to Content' link
- Use helpful and clear page titles
- Maintain logical order
- Ensure every link's purpose is clear from its context
- Page has a language assigned
- Elements do not change when they receive focus
- Elements do not change when they receive input
- Clearly identify input errors
- Label elements and give instructions
- No major code errors
- Build all elements for accessibility
- Live videos have captions
- Users have access to audio description for video content
- Text can be resized to 200% without loss of content or function
- Don't use images of text
- Offer several ways to find pages
- Use clear headings and labels
- Ensure keyboard focus is visible and clear
- Tell users when the language on a page changes
- Use menus consistently
- Use icons and buttons consistently
- Suggest fixes when users make errors
- Reduce the risk of input errors for sensitive data
- Provide sign language translations for videos
- Provide extended audio description for videos

- Provide a text alternative to videos
- Provide alternatives for live audio
- The contrast ratio between text and background is at least 7:1
- Audio is clear for listeners to hear
- Offer users a range of presentation options
- Don't use images of text
- Accessible by keyboard only, without exception
- No time limits
- Don't interrupt users
- Save user data when re-authenticating
- No content flashes more than three times per second
- Let users know where they are
- Every link's purpose is clear from its text
- Break up content with headings
- Explain any strange words
- Explain any abbreviations
- Ensure that users with nine years of school can read your content
- Explain any words that are hard to pronounce
- Don't change elements on your website until users ask
- Provide detailed help and instructions
- Reduce the risk of all input errors

VIII. Conclusion

Web accessibility benefits everyone. As the population ages, technologies advance and commercial activities and the provision of information increase via the internet, where incorporating accessibility into the design and functionality of websites, applications and ICT generally will benefit businesses and customers regardless of their physical conditions. Therefore, organizations and web developers must always consider who is accessing their website and the technologies they are using to attract users.

For instance, persons with print disabilities use screen reading software as assistive technology in order to access the computer and internet. They use the keyboard to navigate and give commands without looking at the monitor or screen. Screen Reading Software read aloud the content or texts that are shown on the screen. Thus, websites should be properly designed, coded and maintain accessibility guideline to ensure accessibility. An accessible website is one that can be used by all its intended visitors, taking into account their Various abilities. Inaccessible websites can pose significant barriers to persons with disabilities. Although, in Bangladesh, some of the development has been made. Persons with disabilities are being able to access many of the services by themselves. But, until or unless the whole population do not come to the same page regarding web accessibility in these days where technology is taking over the world, holistic development will not be easy to have.



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