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نفاذ رقمي للجميع digital access for all

An introduction to ICT Accessibility and Inclusive Design

Unit 7 - Web Accessibility fundamentals

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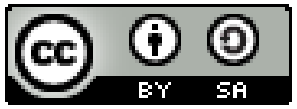
This course entitled “An Introduction to ICT Accessibility and Inclusive Design" was prepared and designed by Mada Center, Qatar.



Competencies

Mada ICT-AID Competency Framework

- D5.1

Objectives

- Introduce the broad scope of web accessibility
- Explore web accessibility barriers and potential solutions
- Explain the essential components of web accessibility
- Introduce principles, standards and checks for web accessibility

Learning Outcomes

→ By the end of this unit, you should be able to:

- Describe the guiding principles of web Accessibility
- Identify major features of HTML Accessibility
- Review the essential components of web Accessibility
- Discuss approaches towards ensuring Web Accessibility

Content

1. Scope of Web accessibility
2. Components, principles and standards of Web Accessibility
3. Towards checking Web Accessibility

1. Scope of Web Accessibility

Learning outcomes (1)

→ By the end of this section, you should be able to:

- Cite some examples of how people with disabilities use the Web
- Recognize challenges of using websites by people with disabilities
- Identify major Accessibility issues in websites
- Define web Accessibility for people with disabilities
- Define key terms in web Accessibility
- Generalize web accessibility for use on devices such as mobile phones, smart TVs, watches, and home appliances

1. Examples of How People with Disabilities Use the Web (1/4)

- **Visual impairments:**

Individuals with visual impairments utilize various assistive technologies to access the web. Screen readers, such as JAWS or NVDA, are software programs that read aloud the content of web pages. They navigate web pages by using keyboard shortcuts or a braille keyboard display. Websites with proper markup, accessible images with alternative text, and clear heading structures enhance the reading experience for screen reader users. Additionally, individuals with low vision often rely on screen magnification software, which enlarges the content on the screen, making it easier to read.

1. Examples of How People with Disabilities Use the Web (2/4)

- **Hearing impairments:**

For people with hearing impairments, accessing multimedia content on the web can be challenging. They heavily rely on captioning or transcripts to understand the audio aspects of videos. Closed captions synchronously display the spoken dialogue, sound effects, and other audio information in text form. Providing accurate captions ensures that individuals with hearing impairments can comprehend the audio content. Transcripts, which are text versions of audio or video content, are also valuable as they provide a written alternative for accessing the material.

1. Examples of How People with Disabilities Use the Web (3/4)

- **Mobility impairments:**

People with mobility impairments may have difficulty using a standard mouse or keyboard. They often rely on alternative input devices or technologies to browse the web. Switches, which are buttons triggered by different actions, allow for simplified control of web interfaces. Individuals can customize these switches to perform tasks like clicking, scrolling, or navigating menus. Another alternative is eye-tracking systems, which track eye movements to replace mouse functions. These technologies enable individuals with mobility impairments to interact with web content independently.

1. Examples of How People with Disabilities Use the Web (4/4)

- **Cognitive impairments:**

Individuals with cognitive impairments often require web content that is presented clearly and in a straightforward manner. Websites with consistent and intuitive layouts, simple language, and minimal distractions greatly assist users with cognitive disabilities. Text-to-speech software, such as ReadSpeaker or NaturalReader, can be utilized by individuals who struggle with reading comprehension. Visual cues, like arrows or animations, can aid in guiding users through web processes step by step. It is crucial to avoid complex navigation structures and provide clear instructions to help individuals with cognitive impairments navigate the web effectively.

2. Challenges of Using Websites by People with Disabilities (1/3)

- **Visual impairments:**

1. Inaccessible image descriptions or missing alternative text, making it difficult for screen reader users to understand the content.
2. Poor color contrast can make it hard for individuals with low vision to read text or distinguish between different elements on a webpage.

- **Hearing impairments:**

1. Lack of captions or transcripts for video content presents a significant challenge for people with hearing impairments, as they rely on textual alternatives to access audio information.
2. Websites with auto playing audio or video can be disruptive and overwhelming for individuals who use assistive technologies.

2. Challenges of Using Websites by People with Disabilities (2/3)

- **Mobility impairments:**

1. Websites with complex navigation structures or those that require precise mouse movements can be challenging for individuals with limited hand mobility.
2. Lack of keyboard accessibility and focus indicators prevent people who cannot use a mouse from navigating or interacting with web content effectively.

2. Challenges of Using Websites by People with Disabilities (3/3)

- **Cognitive impairments:**

1. Websites with cluttered layouts, inconsistent design, or complex language can be overwhelming for individuals with cognitive impairments, making it hard for them to understand and engage with the content.
2. Processes that require complex decision-making, such as multi-step forms or intricate navigation, can be confusing and overwhelming.

3. Major Accessibility Issues in Websites (1/5)

- **Insufficient alternative text for images:**
  - Images without descriptive alternative text make it impossible for individuals with visual impairments who rely on screen readers to understand the content. It is crucial to provide accurate and meaningful alternative text for every image on a website.
- **Poor color contrast:**
  - Low color contrast between text and background makes it difficult for individuals with visual impairments or color blindness to read or discern the content. Websites should ensure a sufficient contrast ratio to improve readability and accessibility.

3. Major Accessibility Issues in Websites (2/5)

- **Insufficient heading structure:**
  - Properly structured headings help users navigate through a webpage using assistive technologies like screen readers. Websites that lack or misuse heading tags prevent users from understanding the page hierarchy and finding relevant content easily.
- **Inadequate link descriptions:**
  - Links with generic text like "click here" or "read more" make it difficult for users with screen readers to understand the link's purpose. Descriptive link text should be used to convey the destination or target of the link.

3. Major Accessibility Issues in Websites (3/5)

- **Lack of skip navigation option:**
  - Websites without a "skip to main content" link or skip navigation option force users to navigate through repetitive content, causing frustration for users who rely on assistive technologies. Including a skip navigation link allows users to bypass repetitive elements and go directly to the main content.
- **Inaccessible forms and inputs:**
  - Complex forms or inputs without proper associated labels or clear instructions can create barriers for users with mobility or cognitive impairments.
  - Users relying on screen readers might struggle to understand the purpose of form fields without proper labels.

3. Major Accessibility Issues in Websites (4/5)

- **Inaccessible PDF or document formats:**
  - PDFs and other document formats often pose accessibility challenges, as they may lack proper structure, alternative text, or other accessibility features.
- **Lack of Keyboard Focus Indicators:**
  - If there are no clear visual indicators showing which element currently has keyboard focus, users may struggle to determine their location on the page or understand how to interact with the content.
- **Unpredictable or excessive animations:**
  - Excessive blinking, flashing, or moving content can trigger migraines, seizures, or distract users with cognitive impairments

3. Major Accessibility Issues in Websites (5/5)

- **Inaccessible error messages:**
  - Unclear or lacking error messages affect users with disabilities trying to understand issues in form submissions.
- **Inaccessible CAPTCHAs:**
  - CAPTCHAs that rely only on visual identification can pose significant challenges for individuals with visual impairments or color blindness, making it nearly impossible for them to solve.

4. Web Accessibility (1/2)

Web accessibility refers to the design and development of websites, tools, and technologies in a manner that enables individuals with disabilities to utilize them.

- **Key principles and considerations for web accessibility include:**

1. **Perceivable:** Web content and user interface elements should be presented in a way that users with disabilities can perceive.
2. **Operable:** Users should be able to interact with and navigate the website using a variety of devices and input methods, including keyboards and assistive technologies.

4. Web Accessibility (2/2)

2. **Understandable:** Information and the operation of the user interface must be clear and straightforward.
3. **Robust:** Web content must be developed to work well with current and future technologies.

5. Key Terms in Web Accessibility Include (1/7):

- **Disability:**

"A physical, mental, cognitive, or developmental condition that impairs, interferes with, or limits a person's ability to engage in certain tasks or actions or participate in typical daily activities and interactions."

- **Accessibility:**

"Accessibility is the degree to which a product, device, service, or environment is available to as many people as possible. It can be viewed as the "ability to access" and benefit from some system or entity. The concept often focuses on people with disabilities or special needs."

5. Key Terms in Web Accessibility Include (2/7):

- **Assistive technologies:**

"Technologies (software or hardware) that increase, maintain, or improve the functional capabilities of individuals with disabilities when interacting with computers or computer-based systems."

- **Screen readers:**

"Software programs that allow blind users or users with visual impairments to read the text that is displayed on the computer screen with a speech synthesizer or braille display."

5. Key Terms in Web Accessibility Include (3/7):

- **Form controls:**

"Objects that users interact with, such as drop-downs, checkboxes, and text fields. Form controls must be properly labeled so that users understand the purpose of the control. "

- **Form validation:**

"Feedback that lets a user know if they filled out a form with the necessary information and in the correct way."

- **Label:**

"A visible or hidden descriptive name given to checkboxes, drop-down menus, controls, dialogs, and other website features so the user can understand their purpose. A label is presented to all users while the name may only be exposed by assistive technology."

5. Key Terms in Web Accessibility Include (4/7):

- **Visual Focus:**

"Where the user's focus is on a Web page; generally represented by a dashed box that appears around items on the page and associated with tabbing."

- **Text alternative:**

"Text that is programmatically associated with non-text content such as charts or images so that the non-text content can be described by a screen reader. Not used for images that are purely decorative and have no meaning."

- **WAVE:**

"One of several web accessibility evaluation tools which are software programs or online services that help you determine if web content meets accessibility guidelines."

5. Key Terms in Web Accessibility Include (5/7):

- **Landmark:**

"Identifies sections of a page so users, especially those using assistive technology, can know where they are on a web page. This helps them better navigate and skip over blocks of content."

- **Heading:**

"Helps organize content on a web page. Also used by browsers, plug-ins, and assistive technologies to navigate Web pages."

- **Functionality:**

"All actions a user may initiate on a website including navigating, searching for information, making a reservation, making a purchase, and accessing services."

5. Key Terms in Web Accessibility Include (6/7):

- **CAPTCHA:**

"Security technique that requires a user to input a distorted set of characters from an image to access a web page or function."

- **Button:**

"An element that links to website pages, sections, external links, form submission or other content."

- **Blocks of text:**

"More than one sentence of text, for example a paragraph, which also helps to organize content on a web page."

5. Key Terms in Web Accessibility Include (7/7):

- **Language of parts:**

"A WCAG Success Criterion which ensures that the language in different sections of a website is identified so that different types of assistive technologies can pronounce them correctly and know, for example, if they should be reading from L to R or R to L."

- **Navigation order:**

"The order in which a user navigates through a website using a keyboard."

- **WAI-Accessible Rich Internet Applications Suite (ARIA):**

"A suite of web standards that define how to make web content and applications more accessible to people with disabilities. It especially helps with dynamic content and advanced user interface controls developed with HTML, JavaScript, and related technologies."

6. Web Accessibility Across Devices (1/3)

Web accessibility can be generalized and applied to various digital devices, including mobile phones, smart TVs, watches, and home appliances. Here are some key aspects that should be considered for ensuring web accessibility on these devices:

- **Responsive Design:** Devices have different screen sizes and resolutions, so websites must be designed responsively to adapt and provide an optimized user experience across a range of devices.
- **Text Size and Font:** Users should have the ability to adjust the size and style of the text to accommodate various visual impairments. Providing options for font customization can enhance readability.

6. Web Accessibility Across Devices (2/3)

- **Color Contrast:** Ensuring appropriate color contrast is essential to make content readable for individuals with visual impairments. Text and background colors should have sufficient contrast levels.
- **Navigation and Menus:** Clear and intuitive navigation menus should be provided, allowing users to easily locate and access different sections of a website or application. Hierarchical structures, logical grouping, and keyboard accessible navigation are important considerations.
- **Keyboard Accessibility:** Users with mobility impairments may rely on keyboard navigation instead of touch gestures. Websites and applications should be operable using a keyboard alone, with clear focus indicators and logical tab navigation order.

6. Web Accessibility Across Devices (3/3)

- **Captions and Transcripts:** For multimedia content such as videos, including closed captions and transcripts makes the content accessible to users who are deaf or hard of hearing.
- **Audio Control:** Users should have the ability to control audio elements (e.g., volume control, pause/play) and adjust captions, especially when using devices like smart TVs or home appliances.
- **Device and Browser Compatibility:** Consideration should be given to optimizing web accessibility across different devices, browsers, and assistive technologies. Compatibility testing is crucial to ensure consistent access.

Quizzes (1)

1. List some major accessibility issues typically encountered in websites?
2. How do people with disabilities use the Web, and can you provide some specific examples?

2. Components, Principles and Standards of Web Accessibility

Learning outcomes (2)

→ By the end of this section, you should be able to:

- Identify Features of Accessible Websites
- Review the essential components of web Accessibility
- Identify major features of HTML Accessibility
- Define the scope of the W3C accessibility standards
- Explain how W3C accessibility standards are developed
- List examples of WCAG adoption in policies internationally

1. Features of Accessible Websites (1/9)

Accessible websites are crucial for ensuring equal access to information for all users, regardless of their abilities or disabilities. The key features that make websites more accessible and inclusive:

1. **Alternative Text (Alt Text):** Alt text (alternative text), also known as alt tags or alt attributes, is a textual description that is added to HTML elements, primarily images, but also used for other non-text content like charts, diagrams, or multimedia elements. Alt text is essential for ensuring web accessibility as it provides a means for people with visual impairments or those who use screen readers to understand the content of images.

1. Features of Accessible Websites (2/9)

- **Key Guidelines for Writing Alt Text**

1. Be concise: Keep alt text brief while still providing enough descriptive information.
2. Be descriptive: Include relevant details that help convey the purpose and content of the image.
3. Avoid unnecessary details: Omit non-essential details that do not contribute to the understanding of the image.
4. Don't use "image of" or "picture of" in the alt text: Screen readers automatically identify images as such, so these phrases are redundant.
5. Avoid overusing keywords: Instead, focus on creating descriptive and meaningful alt text.
6. Be mindful of context: Consider the surrounding content and how the image relates to it.

1. Features of Accessible Websites (3/9)

2. **Color Contrast:** Color contrast refers to the difference in lightness and darkness between two colors used in design, particularly text and background. It plays a vital role in ensuring readability and accessibility of content on websites, especially for individuals with visual impairments or color vision deficiencies.

- The Web Content Accessibility Guidelines (WCAG) define specific color contrast ratio requirements to ensure accessibility.
- WCAG recommends a minimum contrast ratio of 4.5:1 for standard text and 3:1 for large text (18pt or 14pt bold) for most elements. However, certain components like logos or incidental text may have different requirements.

1. Features of Accessible Websites (4/9)

3. **Descriptive Links:** Descriptive links, also known as meaningful links or informative links, are hyperlinks on websites that provide clear and concise information about the destination or purpose of the link. Descriptive links improve usability, accessibility, and overall user experience by guiding users and helping them navigate through content more efficiently.

- **Examples of Non-Descriptive vs. Descriptive Links**

1. Non-Descriptive Link: "Click here to learn more."

→ Descriptive Link: "Learn more about our services."

2. Non-Descriptive Link: "Download the document."

→ Descriptive Link: "Download the user guide for XYZ software."

1. Features of Accessible Websites (5/9)

4. Skip Navigation Links

A Skip navigation link is a technique used in website design to provide an option for users to bypass repetitive or non-essential navigation menus and directly access the main content of a web page. They improve accessibility and make it easier for users who rely on screen readers or keyboard navigation to reach the core content without having to tab through lengthy navigation menus.

1. Features of Accessible Websites (6/9)

Characteristics of Skip Navigation Links

- **Clear and Visible:** Skip navigation links should be clearly visible at the top of the web page, preferably before the main content, allowing users to easily locate and interact with them. Use contrasting colors or underlines if necessary to make them stand out.
- **Accessible Focus:** Ensure that skip navigation links receive focus when users navigate using a keyboard or assistive devices. This helps users recognize that the skip link is active and available for use.
- **Concise and Informative:** Use descriptive text within the skip navigation link to indicate its purpose. For example, "Skip to Main Content" or "Jump to Section Navigation".

1. Features of Accessible Websites (7/9)

5. **Form Accessibility:** Form accessibility refers to the design and development practices that make web forms usable and accessible to all users, including those with disabilities.

- **Characteristics of Accessible Forms (1/3):**

1. **Meaningful Field Labels:** Each form field should have a clear and descriptive label that is associated with the input element using appropriate HTML markup Labels and should be in close proximity to the corresponding fields providing context to help users understand the purpose of each input.

1. Features of Accessible Websites (8/9)

- **Characteristics of Accessible Forms (2/3):**

2. **Keyboard Accessibility:** Ensure that all form elements, including input fields, checkboxes, radio buttons, and buttons, can be accessed and interacted with using the keyboard alone. Users should be able to navigate through form elements in a logical order and easily select options or provide input.

   Designing websites that can be navigated using just a keyboard is essential for users who have motor disabilities and cannot use a mouse. Implement keyboard accessibility techniques, such as ensuring that all interactive elements can be accessed and activated using keyboard controls.

1. Features of Accessible Websites (9/9)

- **Characteristics of Accessible Forms (3/3):**

3. **Error Identification and Validation:** Clearly identify and describe any errors or validation requirements within the form. Provide concise and meaningful error messages that assist users in correcting their input.
4. **Assistive Technology Compatibility:** Test the form's compatibility with popular screen readers, keyboard-only navigation, and other assistive technologies.
5. **Clear and Simple Language:** Using plain and straightforward language enhances understanding for all users, especially those with cognitive disabilities, learning differences, or limited English proficiency. Strategies for clear and simple language include avoiding jargon, using short sentences, breaking content into smaller sections, and providing explanations for complex terms.

2. The Essential Components of Web Accessibility

- **Content:** This includes the text, images, videos, and other elements that make up a web page. Web content should be coded in a way that is accessible to people with disabilities.
- **Web Browsers and Media Players**
- **Assistive Technology**
- **users'** knowledge, experiences, and in some cases, adaptive strategies using the web.
- **Developers** encompass a wide range of individuals including designers, coders, authors, and more. This group also includes developers with disabilities as well as users who actively contribute content.
- **Authoring Tools:** These are the tools that people use to create web content.
- **Evaluation tools:** These are the tools that people use to test web content for accessibility.

3. Major Features of HTML Accessibility (1/3)

HTML accessibility refers to the practice of using HTML markup in a way that makes web content accessible to all users, including those with disabilities. By incorporating specific features and techniques, HTML can enhance the accessibility of web content.

- **Semantic Structure:** HTML provides a range of semantic elements that help convey the structure and meaning of content to assistive technologies. Elements like <header>, <nav>, <main>, <article>, <section>, and <footer> enable screen readers and other assistive technologies to navigate and understand the content more effectively.

3. Major Features of HTML Accessibility (2/3)

- **Heading Structure**: Properly structured and hierarchical headings (e.g., <h1>, <h2>, <h3>) are essential for users who rely on screen readers or require an overview of the content. Headings should reflect the information hierarchy and provide meaningful headings for each section of content.
- **Alternative Text for Images:** Include the alt attribute in <img> elements to provide alternative text for images.
- **Accessible Forms:** Use semantic form elements such as <form>, <input>, <label>, and <button>. Ensure that each form control has a corresponding <label> to provide context. Use the aria-label attribute when a visible label is not possible. Implement proper validation and error messages.

3. Major Features of HTML Accessibility (3/3)

- **Tables:** Use <table>, <thead>, <tbody>, <tfoot>, <th>, and <td> elements for creating tables. Provide a <caption> to summarize the purpose of the table. Use <th> for header cells and scope attributes to associate header cells with data cells.
- **ARIA Roles and Attributes:** Use ARIA roles and attributes to enhance the accessibility of dynamic content and custom widgets. Examples include role="navigation", aria-label, and aria-describedby. Use ARIA roles sparingly and in conjunction with semantic HTML.
- **Focus Management:** Ensure that the focus order follows a logical sequence. Use the tabindex attribute to control the order in which elements receive focus. Ensure that interactive elements (links, buttons, form controls) are accessible via keyboard navigation.

4. The Scope of the W3C Accessibility Standards (1/2)

The scope of the W3C (World Wide Web Consortium) Accessibility Standards refers to the range or extent of what these standards cover. These standards are developed by the W3C Web Accessibility Initiative (WAI) and aim to promote accessibility of the World Wide Web for people with disabilities. The scope of these standards includes:

- **Web Content Accessibility Guidelines (WCAG):** These guidelines provide recommendations for making web content more accessible to different disabilities, including visual, auditory, physical, speech, cognitive, and neurological disabilities.
- **Authoring Tool Accessibility Guidelines (ATAG):** These guidelines address the accessibility of authoring tools that are used to create web content. It ensures that these tools have features and functionalities that support the creation of accessible content.

4. The Scope of the W3C Accessibility Standards (2/2)

- **User Agent Accessibility Guidelines (UAAG):** These guidelines focus on the accessibility of user agents, which are software applications that retrieve and render web content. It includes web browsers, media players, assistive technologies, and other tools that enable interaction with web content.
- **Accessible Rich Internet Applications (ARIA):** ARIA provides a set of attributes and properties that enhance the accessibility of web content and web applications. It helps developers in creating more interactive and dynamic content that can be properly interpreted by assistive technologies.

5. How W3C Accessibility Standards are Developed (1/5)

- **Working Groups:**

The development process begins with the formation of a dedicated Working Group within the W3C. These Working Groups consist of experts from various organizations and stakeholders who have expertise in different aspects of accessibility.

- **Charter:**

The Working Group creates a charter that outlines the scope, goals, and deliverables of the standardization effort. The charter also defines the timeline and expectations for the group's work.

5. How W3C Accessibility Standards are Developed (2/5)

- **Public Input:**

During the development process, the Working Group seeks public input on draft documents and proposals. This input can come from a variety of sources, including individuals, organizations, and public comment periods. This helps ensure that multiple perspectives and requirements are considered in the standards development.

- **Drafting:**

The Working Group drafts the proposed accessibility standards, guidelines, or specifications. This involves analyzing existing research, best practices, and technical considerations to create a comprehensive and effective set of standards.

5. How W3C Accessibility Standards are Developed (3/5)

- **Review and Iteration:**

The drafts are then reviewed by the Working Group members and other stakeholders, including experts and representatives from organizations. Feedback is gathered, and the drafts are iterated upon based on these reviews and discussions. The Working Group aims to address any issues, resolve conflicts, and refine the specifications to ensure they are of high quality and meet the stated goals.

5. How W3C Accessibility Standards are Developed (4/5)

- **Candidate Recommendation:**

Once the working draft is considered mature and stable, it advances to the Candidate Recommendation stage. This signifies that the Working Group believes the specification is ready for widespread implementation and testing. It is often at this stage that implementation experience and interoperability evaluations are sought.

- **Testing and Implementation:**

During and after the Candidate Recommendation stage, the accessibility standards are implemented by software developers and organizations to validate their effectiveness and practicality. This implementation feedback is crucial in identifying any remaining issues and refining the standards further.

5. How W3C Accessibility Standards are Developed (5/5)

- **Maintenance and Updates:**

Once a standard is published, it generally undergoes ongoing maintenance to address emerging issues, provide clarifications, and incorporate new technologies or practices. The Working Group may release updated versions or supplementary guidelines to ensure the accessibility standards remain relevant in the face of evolving technologies and accessibility needs.

6. Examples of WCAG Adoption in Policies Internationally (1/3)

Many countries and organizations around the world have indeed adopted WCAG as part of their policies to promote digital accessibility. Several examples of WCAG adoption in various countries are as follows:

- **United States - Section 508:** Section 508 of the Rehabilitation Act requires federal agencies to ensure accessibility of their electronic and information technology for individuals with disabilities. The U.S. Access Board has recently revised the Section 508 standards to correspond with WCAG 2.0.
- **European Union - Web Accessibility Directive:** The EU has embraced the Web Accessibility Directive, which mandates accessibility for public sector websites and mobile applications. This directive references the EN 301 549 standard, which is based on WCAG 2.0.

6. Examples of WCAG Adoption in Policies Internationally (2/3)

- **Canada - Common Look and Feel (CLF) Standards:** The Canadian government has put into effect the Common Look and Feel (CLF) Standards, which include guidelines for web accessibility. These standards are in accordance with WCAG 2.0 and aim to guarantee accessibility of websites belonging to federal government entities.
- **United Kingdom - Public Sector Bodies Accessibility Regulations:** The United Kingdom has implemented the Public Sector Bodies Accessibility Regulations, which require public sector websites and mobile applications to adhere to specific accessibility standards. Compliance with WCAG 2.1 is referenced as the standard for meeting these regulations.

6. Examples of WCAG Adoption in Policies Internationally (3/3)

- **Australia - Digital Service Standard:** Accessibility is an essential requirement within Australia's Digital Service Standard, which uses WCAG as the benchmark for achieving accessibility. Government websites and digital services are obligated to adhere to these standards.

Quizzes (2)

1. Provide examples of features that contribute to the accessibility of a website.
2. Provide examples of countries or regions that have adopted WCAG (Web Content Accessibility Guidelines) in their policies.

3. Towards Checking Web Accessibility

Learning outcomes (3)

→ By the end of this section, you should be able to:

- Check web pages to identify potential accessibility features and barriers
- Explain how accessibility features fit under principle(s) and success criteria
- Discuss approaches towards ensuring Web Accessibility

1. Web Accessibility Checking (1/5)

Checking web pages for accessibility features and potential barriers involves a combination of manual evaluation and the use of automated tools. Here's a step-by-step guide to help you assess web page accessibility

1. Web Accessibility Checking (2/5)

- **Type of checking:**

1. Manual Testing (1/3)

Manual testing for websites refers to the process of manually evaluating and assessing a website's functionality, usability, compatibility, and performance. It involves the human tester actively exploring and interacting with the website, simulating end-user behaviors and scenarios. This type of testing is crucial to identify bugs, usability issues, and ensure a high-quality user experience. Some key aspects of manual testing for website accessibility:

- **Keyboard Navigation**: Verify that all interactive elements can be accessed and used using only a keyboard.

1. Web Accessibility Checking (3/5)

1. Manual Testing (2/3)

- **Text Alternatives**: Check if images have descriptive alternative text and ensure that links and buttons have meaningful text.
- **Color Contrast**: Evaluate the color contrast between text and background.
- **Headings and Structure**: Confirm a logical heading structure is in place, using <h1> through <h6> tags appropriately.
- **Forms**: Test forms for logical structure and ensure that all form fields have proper labels.
- **Multimedia**: Check if multimedia content (audio, video) has captions and transcripts.

1. Web Accessibility Checking (4/5)

1. Manual Testing (3/3)

- **Focus Indicators**: Verify that focus indicators are visible and clear for keyboard users.
- **Link Purpose**: Ensure that the purpose of each link can be determined from its text or context.
- **Browser Zoom**: Test if the web page remains usable when zoomed in up to 200%.
- **Readable Font**: Confirm that the font size is adjustable, and text remains readable when enlarged.

1. Web Accessibility Checking (5/5)

2. Automated Testing

Automated accessibility testing for websites involves using specialized tools to assess the compliance of a website against accessibility standards and guidelines. These tools automate the process of inspecting website elements and identifying accessibility issues.

- **Accessibility Checker Tools:** Use automated tools like WAVE (Web Accessibility Evaluation Tool), Axe, or Google Lighthouse to scan your web page for accessibility issues.
- **Browser Developer Tools**: Use browser developer tools (e.g., Chrome DevTools) to inspect elements for accessibility properties and issues.

2. Principle and Success Criteria (1/4)

- **Accessibility features directly address the four core principles of accessibility:**

Accessibility features are guided by principles and success criteria defined in accessibility standards such as the Web Content Accessibility Guidelines (WCAG). How accessibility features align with the principles and success criteria:

1. **Perceivable**: Features like alt text for images, captions for videos, proper heading structure, and text alternatives for non-text content make information accessible to people with sensory disabilities.
2. **Operable**: Features like keyboard navigation, resizable text, clear focus indicators, consistent navigation patterns, and compatibility with assistive technologies enable people with physical or motor disabilities to interact with content effectively.

2. Principle and Success Criteria (2/4)

3. **Understandable**: Features like clear and consistent language, easy-to-follow instructions, and content organized logically enhance comprehension for people with cognitive or learning disabilities.
4. **Robust**: Features like proper HTML markup, use of ARIA attributes where required, compatibility with different browsers and assistive technologies, as well as resilience to errors, ensure accessibility for a wide range of users and devices.

2. Principle and Success Criteria (3/4)

Success criteria are specific guidelines within each principle that define the level of accessibility that should be achieved. They provide measurable criteria against which the accessibility of a website is evaluated. Each success criterion has a specific level of conformance (A, AA, and AAA) indicating the level of accessibility achieved.

- Accessibility features correspond to specific success criteria. For example, providing alternative text for images aligns with Success Criterion 1.1.1 (Non-text Content) which requires text alternatives for non-text content.

2. Principle and Success Criteria (4/4)

- Implementing accessibility features that address multiple success criteria helps to meet the desired level of conformance (A, AA, AAA) within each principle.
- The combination of various accessibility features across the principles collectively guarantees a more inclusive and accessible experience for all user groups.

3. Approaches Towards Ensuring Web Accessibility (1/3)

There are various approaches towards ensuring web accessibility. Here are some key approaches:

- **Designing with accessibility in mind:** One approach is to incorporate accessibility considerations from the initial stages of web design. This involves using accessible design principles, considering color contrast, providing alternative text for images, using proper heading structure, and ensuring keyboard accessibility. By proactively designing for accessibility, developers can create a more inclusive web environment.
- **Adhering to Web Content Accessibility Guidelines (WCAG):** WCAG provides a comprehensive set of guidelines and success criteria for web accessibility. Following WCAG ensures that web content is accessible to people with disabilities.

3. Approaches Towards Ensuring Web Accessibility (2/3)

- **Conducting accessibility audits and testing:** Regular accessibility audits and testing are crucial to identify any barriers or issues in web content. Audits can be done using automated testing tools, manual testing, and by involving users with disabilities through user testing sessions.
- **Providing accessibility training and resources:** Education and awareness play a significant role in ensuring web accessibility. By offering accessibility training to web developers, content creators, and designers, you can empower them with the knowledge and skills needed to implement accessibility features correctly. Additionally, providing accessible design resources and documentation can serve as references to guide developers in creating accessible web content.

3. Approaches Towards Ensuring Web Accessibility (3/3)

- **Promoting user feedback and continuous improvement:** Inviting user feedback and actively engaging with individuals with disabilities who use your web content can provide valuable insights. Users can provide feedback on the accessibility of your website and suggest improvements. Actively incorporating user feedback and continuously iterating upon the web content based on accessibility review and user input helps in improving overall accessibility.

Quizzes (3)

1. What are the main accessibility tools for automated testing?
2. What does it mean to design with accessibility in mind?

Final Evaluation

1. What are the key features of HTML that contribute to web accessibility?
2. What are the essential components for creating a fully accessible website?
3. How can user feedback contribute to enhancing web accessibility?
4. How do elements like headings, alt text, and semantic markup impact accessibility?

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Thank you

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