Module 6- Web and Document Accessibility

This course entitled "Foundation in Assistive Technology " was prepared and designed by Mada Center, Qatar.

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Learning Objectives / Outcomes

A. Understand the importance of web and documents accessibility.
B. Familiarize with web and documents accessibility standards.
C. Identify the basic elements required to ensure web and documents accessibility.
D. Improve the learner knowledge and skills in creating websites and documents that are more accessible to users with various disabilities.

Introduction to Web Accessibility

Web accessibility is about creating web content, design, and tools that can be used by everyone regardless of ability. Here is an introduction to the basics of web accessibility.

What is Web Accessibility?

We have all experienced it: the annoyance at a slow-loading website, the squinting at badly designed font, or the despair of trying to navigate a mobile unfriendly page. While these problems may be a slight inconvenience to us, for people with disabilities, they can completely restrict their internet use.

Web accessibility is the need for websites to utilize tools and technologies developed to aid the perception, understanding, contribution, navigation, and interaction of a person with disabilities on the site. Integrating accessibility can seem intimidating to those that are just getting acquainted with it, but it is a vital element of user experience. Accessibility should be built into the web development and design process, rather than trying to retrofit it as an afterthought.

Why is Web Accessibility Important?

According to the World Health Organization's (WHO) 2011 world report on disabilities, **15% of the world's population possesses some sort of disability.** This includes physical disabilities, as well as cognitive and neurological disabilities. Rates of disability are only set to increase due to population ageing and the increase in chronic health conditions.

1 Billion

of the World's population live with a disability

People with disabilities should be able to enjoy the same access to information as those without. Luckily, there are technologies available to reduce or remove the barriers to their digital access. The provision of these benefits ensures that everyone, regardless of age, physical or mental capabilities, can use the internet and have good web experience.

Besides making the internet a more inclusive place for everyone, a good accessibility strategy also has business benefits. Accessibility is a component of design and development that touches on almost every element of the website's creation. It overlaps the aspects of mobile-friendly designs, device independence, multi-modal interaction, usability, search engine optimization (SEO) and more. Accessible websites can have better search results, reduced maintenance costs, increased audience reach, and demonstrate corporate social responsibility (CSR). Therefore, having a well-designed, accessible website does not just make the website available to those with disabilities, but it can also significantly improve the user experience for all users of your site.

Reasons to improve Web accessibility:

If you have an audience which may likely have some type of disability, then it obviously makes sense to focus on **web accessibility**. Yet, what many website owners do not realize is that **improving web accessibility can benefit your website in numerous ways.** Here are the four big reasons we should improve web accessibility.

1- Web Accessibility Increases Audience

An estimated 15% of the world's population has some form of disability. There are also temporary disabilities, such as if a person were to break his/her fingers or arm. As the world population lives longer and gets older, we are likely to see more age-related disabilities such as vision impairment. Unfortunately, only an exceedingly small percentage of websites are accessible by people with disabilities. If you take the step to make your website accessible, you might find yourself with a big edge over the competition. As W3.org points

out, people with disabilities are particularly likely to be loyal customers of websites that work well for them, and word-of-mouth marketing can be significant among these groups.

2- Legal Compliance

Depending on the nature of the website, it may be legally required to comply with **web accessibility** standards. Several nations (including Canada, EU, and UK) currently have web accessibility laws. It is likely that we will see more countries adopt such accessibility laws, especially for websites in the public sector.

As for Qatar, in 2011, the Supreme Council of Information and Communication Technology (ictQATAR) took a major step towards ensuring all of Qatar experiences the full benefits of technology today with the introduction of the Qatar's first e-Accessibility Policy.

The policy aims to ensure people with disabilities in Qatar have equal access to the technologies that can enrich their lives, and covers a range of e-Accessibility issues, including websites, telecommunications services, handsets, ATMs (Automated Teller Machine), government services, access to assistive technologies and digital content. The policy was effective immediately and the ministry was appointed to oversee the implementation of the policy across sectors and monitor progress.

3- Web Accessibility Improves Website Quality

Following **web accessibility** standards will not just help people with disabilities but makes the website more accessible for ALL users. For example:

Using ALT Text: ALT text helps visually impaired users understand images, but it is also particularly important, people using Image Search, and for when images fail to render.

Simpler Website Designs: People with cognitive disabilities have trouble understanding complex web designs and navigation. But simpler website designs also can reduce bounce rate, improve conversions, and make mobile browsing easier for users.

Including Transcripts: Video and audio transcripts are important for people with hearing disabilities, but it is also good web practice to include transcripts for people who prefer to read or who may be in a situation where they cannot listen to audio (such as when using the web at a café or library without headphones).

Removing Flickering Content: People with seizures and neurological disorders can have serious problems with flickering content, such as automatic animations, and this type of content should be removed. Removing flickering content is also good practice for all users, as it is generally considered annoying and distracting.

Allowing More Time for Tasks: People with physical disabilities often require more time for tasks such as filling in forms, so you should allow more time before the page times-out. This is also good practice for all users and can improve conversion rates.

Including Multiple Contact Options: If your only method of contact is a phone number, this can be problematic for people with hearing disabilities. But it is also good practice to include multiple methods of contact, as studies show people prefer having options like phone, email, and Live Chat.

Accessibility Standards

The Web Content Accessibility Guidelines (WCAG) was developed by the World Wide Web Consortium (W3C) with the purpose of setting a series of internationally shared guidelines governing the standards of web content accessibility to make websites, devices, and content accessible to users with disabilities. Content under the WCAG refers to web content which is the information on a web page or web application, which includes:

Natural information such as text, images, and sounds

Code or markup that defines structure, presentation, etc.

There are three versions of WCAG applied currently: WCAG 2.0,2.1, and 2.2. WCAG 2.0 was published in 2008 and became an ISO standard in 2012. WCAG 2.1 was published in 2018. All requirements ("success criteria") from 2.0 are included in 2.1, with a few additional success criteria in 2.1. However, the guidelines are backward-compatible, meaning that content that conforms to WCAG 2.1 also conforms to WCAG 2.0. On October 5, 2023, WCAG 2.2 was released which includes nine new success criteria that were not present in WCAG 2.1.

The WCAG forms the basis of most legislation on accessibility across the world. Legislation like the Title III of the Americans with Disabilities Act (ADA), the Accessibility for Ontarians with Disabilities Act (AODA), etc. adopt the WCAG at level AA as the minimum standard of conformance. Some countries have indirect references to the WCAG. The European Standard EN 301 549 for the EU Web Accessibility Directive for example, does not explicitly state its adoption of the WCAG but includes all the requirements from the guidelines.

WCAG's success criteria are categorized into three levels of conformance, Level A, AA, and AAA.

Level A (Must Have)
This covers the most basic requirements of accessibility features and is the minimum degree of accessibility that must be satisfied. Failure to conform to this level will result in a completely inaccessible website.

Level AA (Should Have)
This level addresses some of the more common barriers to entry for people with disabilities. This is the highest level of conformance required by most websites as it ensures that the biggest accessibility barriers are removed.

Level AAA (Good to Have)
This is the highest level for accessibility under WCAG and it is more difficult to achieve by most sites. Achieving this level is desirable but not of the utmost necessity.

The Four Principles of Accessibility

The principles of web accessibility are the foundations of content produced for the web and for anyone who wants to use the web. These principles are known as POUR, which is an acronym that describes functional accessibility:

- **Perceivable** - Perceivability refers to the information and elements of user interface that must be presented in a manner that can be perceived by the senses and that nothing is left undetectable or invisible. To most web users, perceivability is based primarily on visuals, but for those that are unable to, sound and touch are used instead.
- **Operable** - Interactive interface elements such as controls, buttons, navigation and more should be operable. This means that a user must be able to operate interface elements by first identifying them, and for most by physically clicking, tapping, swiping, or rolling. For those that cannot interact in these ways, voice commands or the use of other assistive devices like head wands and eye trackers.
- **Understandable** - This means that technology should be clear and consistent in the presentation and format, with predictable patterns of usage and design. End users should have no issue in comprehending the meaning and purpose of the information presented in the content while discerning the user flow and operation of the interface.
- **Robust** - Robustness is the ability for content to function reliably by a wide variety of technologies, including assistive devices.

The lack of any one of these four principles will thus make the web inaccessible to users with disabilities.

The Components of Web Accessibility

Web accessibility is an aspect that covers every element of a website. The different components of the website should be interconnected and complementary to each other to create a site that is functional and available for the benefit of those with disabilities.

These components include:

Content

Content comprises the information on a web page or web applications, such as text, images, and sounds; or the code, script, or markup that defines the structure, presentation, etc. of the site.

User agents

User agents are the web browsers, mobile phone browsers, media players, plug-ins, assistive technology, and other software that acts on behalf of a user.

Authoring tools

This is the software that creates websites such as code editors, content management systems, blogs, etc.

Evaluation tools

Tools to help you review the effectiveness of your accessibility attributes and to help track your remediation efforts.

How to Create an Accessible Website

Accessibility relies on the collaboration of the components mentioned. Here are some basic guidelines on how to ensure that the interface and development of a website are created for accessibility.The following principles that describe accessibility solutions are developed and benchmarked by the W3C Web Accessibility Initiative (WAI), in conformance to WCAG standards.

- **Text alternatives:** Use text alternatives to convey the context and purpose of visual content. Text alternatives render the information of visual content into electronic text that can be presented in a form that best fits the requirements of the user. Examples of which include read-aloud recordings of text, enlargement of text sizes, or the option of text to be read on braille devices.
- **Providing text transcripts and captions for audio content:** Multimedia, while providing users with a richer and more diversified experience on the web, can be limiting to those with audio or visual impairments.

Providing text transcripts and captions for audio content, such as recordings of a radio interview; or adding a sign language interpretation of audio content can help overcome these limiting factors.

- **Presentation of content:** Content should be presented in different formats and users should be able to change the presentation of content. Examples of multiple content presentations include allowing options for content to be read aloud, displaying content in custom color combinations, using correct color contrasts, or creating mobile-friendly content.

- **Avoid content that flashes, is time-based, or that autoplay:** Content perception and comprehension are not made equal. Some users may need more time to read instructions, type, or complete tasks on a website. Care should be taken to adjust time-sensitive elements on a website and to use dynamic content that does not interrupt, pause, blink, or scroll. Content that is animated and that that flashes at certain rates can also be harmful to those with photosensitive disorders. Such content should be avoided or a warning of the nature of the content should be presented beforehand.

- **Accessible navigation:** Navigation is an essential element of user experience and creating a site with well-organized content can provide users with disabilities an equal opportunity to experience the website fully based on their needs. Some important aspects to consider regarding accessible navigation is to understand how users interact with site structures such as hierarchical menus, search boxes, site maps.

- **Make text content readable and understandable:** Text content should be readable and understandable in all the formats in which it is presented. The level of comprehension of the text should be presented to cater to the broadest audience possible so that it is inclusive to those with learning disabilities and cognitive limitations. Providing measures to ensure that users are helped to avoid, and correct mistakes are also essential. This can help people who do not see or hear the content or may not recognize implicit relationships, sequences, and other cues on web elements such as forms.

- **Have content appear and operate in predictable ways:** Ensure that the content on your site follows a predictable and consistent pattern and interface. A consistent design can help users learn to navigate the site quickly and follow predictable patterns to achieve certain goals on a site.
- **Display an accessibility statement:** Demonstrate your commitment to your web accessibility efforts to your customers and stakeholders by including an accessibility statement on your site. An accessibility statement should include the accessibility guidelines and standards your website will be following including the intended level of accessibility, contact information in the event that visitors find issues with the accessibility of the site, and an acknowledgement of any exceptions to the standards based on limitations of the site. You can use an accessibility statement generator to quickly create a complete and compliant statement.

Testing for Web Accessibility

Once you have implemented solutions to accessibility, you should review your site for compliance with the required standards. However, the process does not end there. Your site should be evaluated throughout your website's development or redesign process. This can ensure that issues are detected early and resolved easily. While there are many tools available to assist in the evaluation process, Monsido's comprehensive governance and evaluation tools can determine if your site meets all the accessibility compliance requirements and provides a dashboard overview of issues to help you optimize your site's accessibility.

Building an accessible website is the right thing to Do

For centuries, people with disabilities were pushed out of society and did not have access to basic services. Even today, with many laws and regulations for accessibility, people with disabilities can still find themselves excluded from society and it can be difficult to participate in daily life. The web has opened many doors for people with disabilities.

Web accessibility is the moral thing to do. And, because it has so many other benefits for your website and overlaps with other website quality issues such

as mobile design there is no reason why you should not improve accessibility to allow people with disabilities to take full advantage of what the web has to offer.

Web accessibility is not the toughest nut to crack. All it takes is some commitment to learning the common issues and their solutions. A good rule of thumb is to never leave accessibility planning as the last project in designing a website. Rather, accessibility should be incorporated from the very beginning of the site planning and creation and subsequently to every project that follows.

Introduction to Document Accessibility

For the majority of us maneuvering through websites, reading attachments to emails, completing applications, and requesting online information seems to be a relatively easy task. But for three out of every one hundred individuals that, either due to low vision or blindness, use a screen reader, tasks like these can be daunting.

Imagine how frustrating it would be to attempt to apply for a class at a local college only to find out the online document you are using to apply has not been properly formatted for accessibility and your screen reader cannot read it. Even worse would be maneuvering to the "contact us" page on the website, only to have the same experience when trying to obtain an email address or a phone number for assistance.

Now, imagine if you were trying to complete a job application, apply for some kind of assistance, or email your doctor instead?

Making accessible documents and web pages allows individuals who use a screen reader to maneuver through documents, utilize document properties for contact information and document styles to jump from one part of a document to another, to hear descriptions from picture and image tags to help understand the images on the pages, and to have equal access to information that most of us take for granted.

Public agencies are required to have accessible webpages, but the staff designing them or writing the content do not always understand what makes them accessible. Here is information that can help you ensure accessibility when creating documents.

What is an accessible document?

An accessible document is a document created to be as easily readable by a sighted reader as a low vision or non-sighted reader. Making a document accessible is easiest when we are in the original stages of creating a document. To learn all of the aspects of accessibility can take several courses over several hours, however, a few basic principles will make every document you create more accessible.

- **Document Properties:** Whether you are using a word processing, spreadsheet, or presentation program, every document has an area where you can enter Document Properties. Document Properties allow the creator to enter information about the Title, Author, Key Search Words, Language, and Subject Matter of the document. Best practices for Document Properties are to include the Company Name, Address, and Phone Number in the Author field as contact information for the reader. Also, strategically utilizing key search words, including common misspellings will assist in bringing the document higher in a search list. Although many program installations take care of this automatically, it is important to check that the reading language is set to English.
- **Add Alternative Text to Images, pictures, clip art, charts, tables, shapes, embedded objects, inked entries, signatures, video, or audio files:** Alternative text provides an audible description of a non-text object when an individual using a screen reader hovers over an image with their cursor. Alternative Text is also known as Alt Text or alt text. In most programs, you can right click on an object and select format to enter alternative text. Sometimes, you may have to press F1 or help to find how to enter alternative text.

- **Use styles in long documents:** Use the program's built in or custom style menus to create titles, headings, lists, and normal paragraphs. Whenever possible, use heading styles in numerical order. When creating lists, use only round bullets as very few fancier bullets are recognizable or read by today's screen readers.
- **Specify column header rows in tables:** Design tables with as simple a structure of rows and columns as possible and specify which row is your column header or row title.

- **Use meaningful hyperlinks:** When formatting a hyperlink, be as meaningful as possible. For instance, do not use the following sentence with the word "here" as the hyperlink (e.g., "To apply click here.") Use a hyperlink that describes the item such as "To apply go to the fillable College Application."
- **Avoid using blank cells for formatting or paragraph marks for spacing between lines or paragraphs.** Blank cells in a spreadsheet and formatting marks in a word document create a stutter sound on the screen reader that can become annoying to a listener. It is better to use cell padding, cell spacing, and paragraph and line spacing when creating documents.
- **Avoid using watermarks that are images:** Watermarks are typically defined as "background" which is not read by a screen reader so most things that are placed as a watermark in a document are lost on the reader using a screen reader.

- **Include closed captions for all audio files.** Accessibility is as important to individuals with low or no hearing ability as it is for people with site challenges. Therefore, include closed captions for all audio files in a document or presentation.
- **Utilize Accessibility Check tools in the newer versions of most programs:** You can learn more by taking a class or by utilizing the accessibility checker tools now present in most of the newer versions of office programs.

- **Add a space or small image or text box at the start of each document with an accessibility disclaimer:** An accessibility disclaimer tells readers who and where to call for assistance with the document or presentation should they have difficulty reading or understanding it.

When creating documents, presentations, spreadsheets, and audio presentations in the future try to think about what it might be like to hear what is in the document, spreadsheet, or presentation you are creating. Is it layered with graphics that have not been fused into an image? Has alternate text been added to each image or graphic to describe it? Is there a place where someone will find information on who to call should they have difficulty reading it? Is the layout and structure logical and easy to follow? Is there captioning for every audio file?

Beginning now to thoughtfully create our documents and presentations will make accessibility easier for everyone in the future.

Learning activities/ Instructional strategies

- Lecture: Either in-person or online session will provide the lecture and discussion about the AT assessment process.
- Group discussion: during the lecture, active participation is required for learners to contribute to the group discussion regarding the best practice for web and document accessibility.

Assessment Methods

Group presentation project:
Each team will handle a document or a website and will evaluate the accessibility of it. They will suggest the necessary adjustments for the websites and apply the necessary changes for the document in order to make it accessible. Then the groups will present their work to the whole group.

Resources and additional materials

- [Web accessibility fundamentals – W3C website](#)
- [What is web accessibility – YouTube](#)
- [Document Accessibility – Centre for Inclusive Design website](#)
- [Mada Digital Accessibility Portal](#)