Inclusivity, Accessibility Features and Tools

Outline

1. Introduction to Inclusivity and Accessibility Tools
2. Overview of Mobile Accessibility Tools
3. Specific Applications
4. Customizing Accessibility Tools
5. Computer Assistive Technologies
6. Customizing Screen Readers
7. Specifications for Installation

Introduction to Inclusivity and Accessibility Tools

Importance of accessibility in the digital age.

Accessibility in the digital age means ensuring that all people, including those with disabilities, can fully use and benefit from digital tools, websites, apps, and technologies.

Computer based accessibility

JAWS.

JAWS (Job Access With Speech) is a screen reader software developed by Freedom Scientific that enables blind or visually impaired users to access and interact with computers running Microsoft Windows.

Strength and Weakness

Strength	Weakness
Offers detailed and accurate reading of on-screen text, which includes reading documents, web pages, and software interfaces.	Can be expensive compared to other screen readers, which can be a barrier for some users.
It supports a wide range of Braille displays, enabling users to read in Braille if they prefer.	The numerous features and customizations can make JAWS complex to learn and use effectively, especially for new users.
Users can customize settings according to their needs, including speech rate, verbosity, and keyboard shortcuts.	JAWS can be demanding on system resources, which might slow down older or less powerful computers.
It supports multiple languages, making it accessible to a global audience.	JAWS is primarily designed for Windows, with limited functionality for Mac users.

Computer based accessibility

NVDA

NVDA (Non Visual Desktop Access) is a free, open-source screen reader for computers running Microsoft Windows, developed by NV Access, an Australian non-profit organization.

Strength and Weakness

Strength	Weakness
NVDA is completely free, making it accessible to users who might not afford expensive screen reading software like JAWS.	New users might find it challenging to learn and effectively use all of NVDA's features, especially without prior experience with screen readers.
NVDA is relatively lightweight, which means it doesn't require significant system resources and can run efficiently on older hardware.	The default voice options in NVDA may not be as high quality as those found in some commercial screen readers, though users can often install additional voices.
NVDA supports a wide range of applications, including web browsers, email clients, and office suites, providing comprehensive access to various software environments	NVDA, being free, lacks some advanced features available in commercial screen readers like JAWS

Computer based accessibility

Narrator

Narrator is the built-in screen reader developed by Microsoft for the Windows operating system. It helps blind or visually impaired users interact with their computer by reading aloud text on the screen and describing events such as notifications or calendar appointments.

Strength and Weakness

Strength	Weakness
Comes pre-installed with Windows, making it accessible and cost-free for users who need screen reading assistance.	It may not work as well with certain third-party applications or websites, especially those not optimized for accessibility.
It is relatively easy to set up and start using, with straightforward keyboard shortcuts and commands.	Some users report that Narrator can be slower and less responsive than other screen readers, particularly when handling complex tasks or large amounts of data.
Users can choose from different voices and adjust the speed, volume, and pitch to suit their preferences.	Although customizable, the quality of the synthesized voices may not be as high as those offered by some third-party solutions

Activating windows narrator

Press the Windows logo key + Ctrl + Enter together to start Narrator. Press these keys again to stop Narrator.

Computer based accessibility

Keyboard for the physical disabled

Persons with physical disabilities may face challenges using standard keyboards due to limited mobility, strength, or coordination.

Computer based accessibility

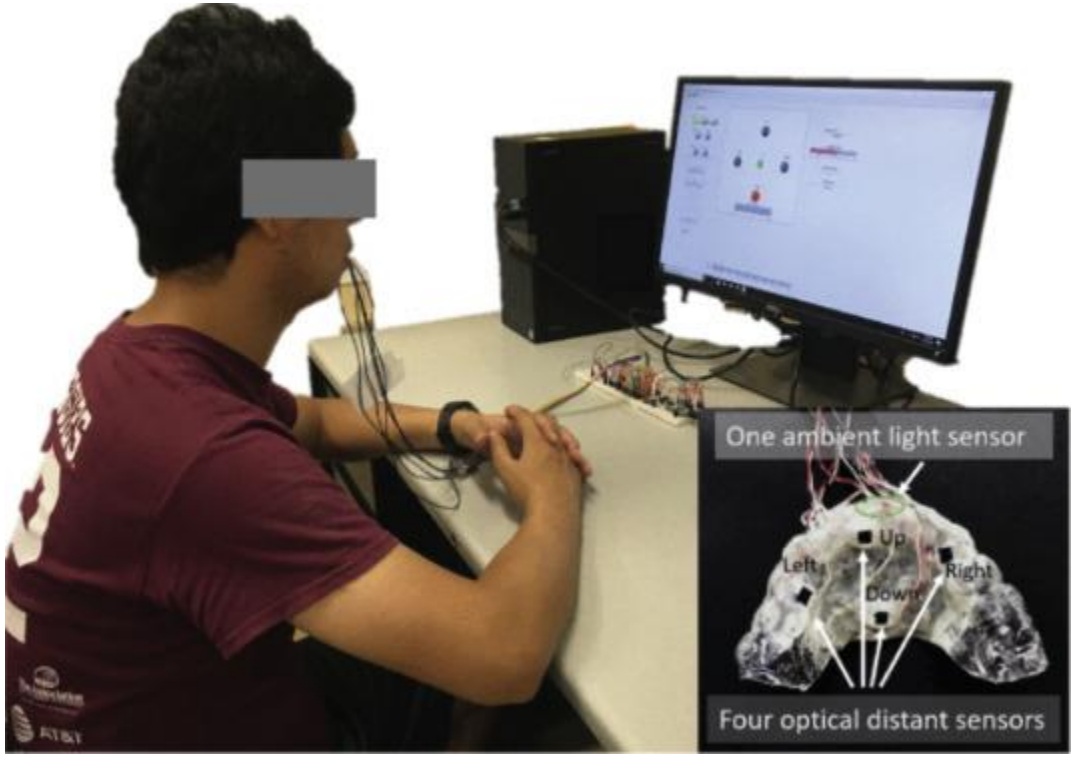
Joystick

A joystick is an assistive input device that can be used as an alternative to a keyboard or mouse, especially for persons with physical disabilities who have limited hand or arm movement.

Computer based accessibility

Infrared pointer

An infrared pointer is an assistive technology device that allows persons with severe physical disabilities to control a computer, tablet, or communication aid by pointing at items on the screen using infrared light.



Computer based accessibility

Sticky keys

Sticky Keys is an accessibility feature found in most operating systems (like Windows, macOS, and Linux) that allows users to press keyboard shortcut keys one at a time instead of all at once.

Computer based accessibility

Bounce keys

Bounce Keys is an accessibility feature available in many operating systems (like Windows and Linux) that helps users who may accidentally press keys multiple times due to tremors, spasms, or unsteady hands.

Computer based accessibility

Filter keys

Filter Keys is a Windows accessibility feature that helps users who have difficulty with keyboard control, such as those with tremors, poor coordination, or unsteady hands. It tells the computer to ignore brief or repeated keystrokes, making typing more accurate and manageable.

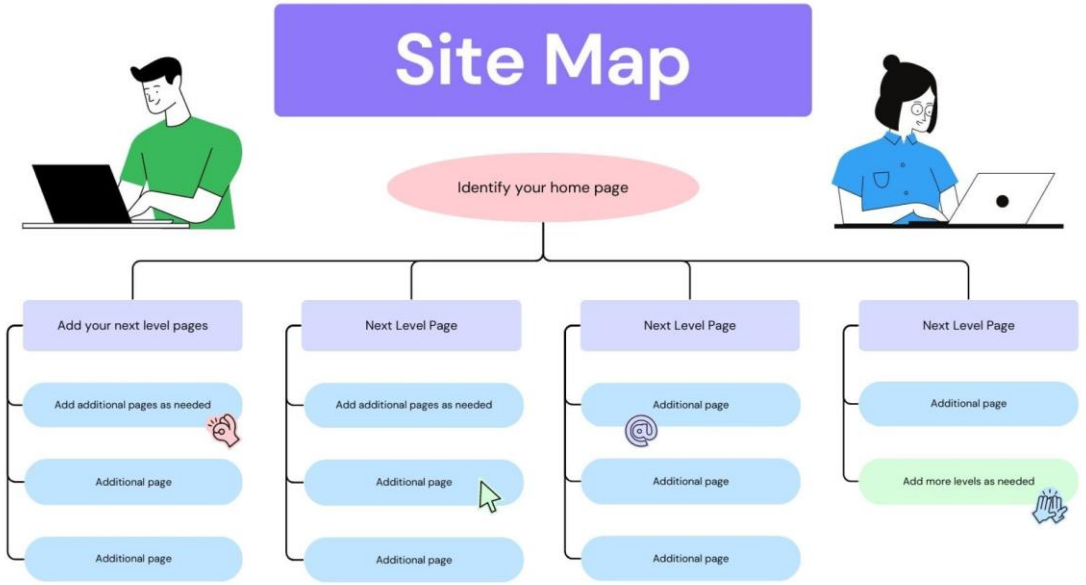
Memory cues

Memory cues (also called memory aids or prompts) are tools or techniques used to help people remember information, especially those with intellectual disabilities, brain injuries, dementia, or general memory challenges.

Computer based accessibility

Site Map.

A site map (or sitemap) is a structured list or diagram that shows the layout and organization of pages on a website. It helps both users and search engines understand how the content is organized and connected.



Mobile phone accessibility

1. TalkBack
2. Magnifiers
3. Select to Speech
4. Dark theme
5. Cash Reader
6. Be My Eyes
7. Voice aloud reader
8. Google lens

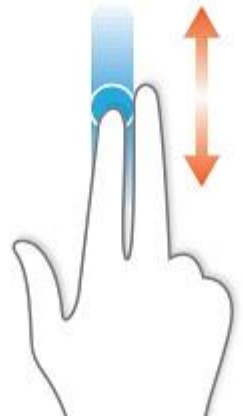
Talkback

Enabling Talkback

Go to Settings -> Special function -> Accessibility -> TalkBack (Turn on/off)

TalkBack

After enabling talkBox your device usability will change to scroll on your screen please use two fingers and to click on any icon you have to double click (double tap tap).



Magnifiers

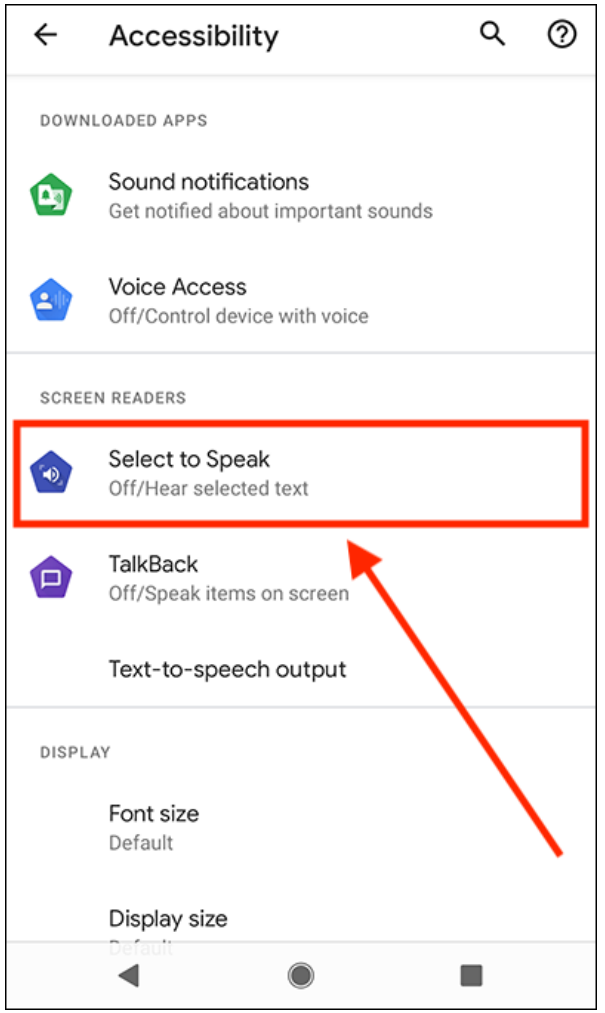
Enabling Magnifiers

Go to Settings -> Special function -> Accessibility -> Magnification (Turn on/off)

Select to Speak

Enabling Select to speak

Go to Settings -> Special function -> Accessibility -> Select to speak (Turn on/off)



Select to Speak

Select to speak

To use select to speak click on the  human icon and then highlight the content you want read for you and the phone will read

Dark theme

Enable Dark theme

Go to Settings -> Special function -> Accessibility -> Dark theme (Turn on/off)

Mobile Accessibility Tools.

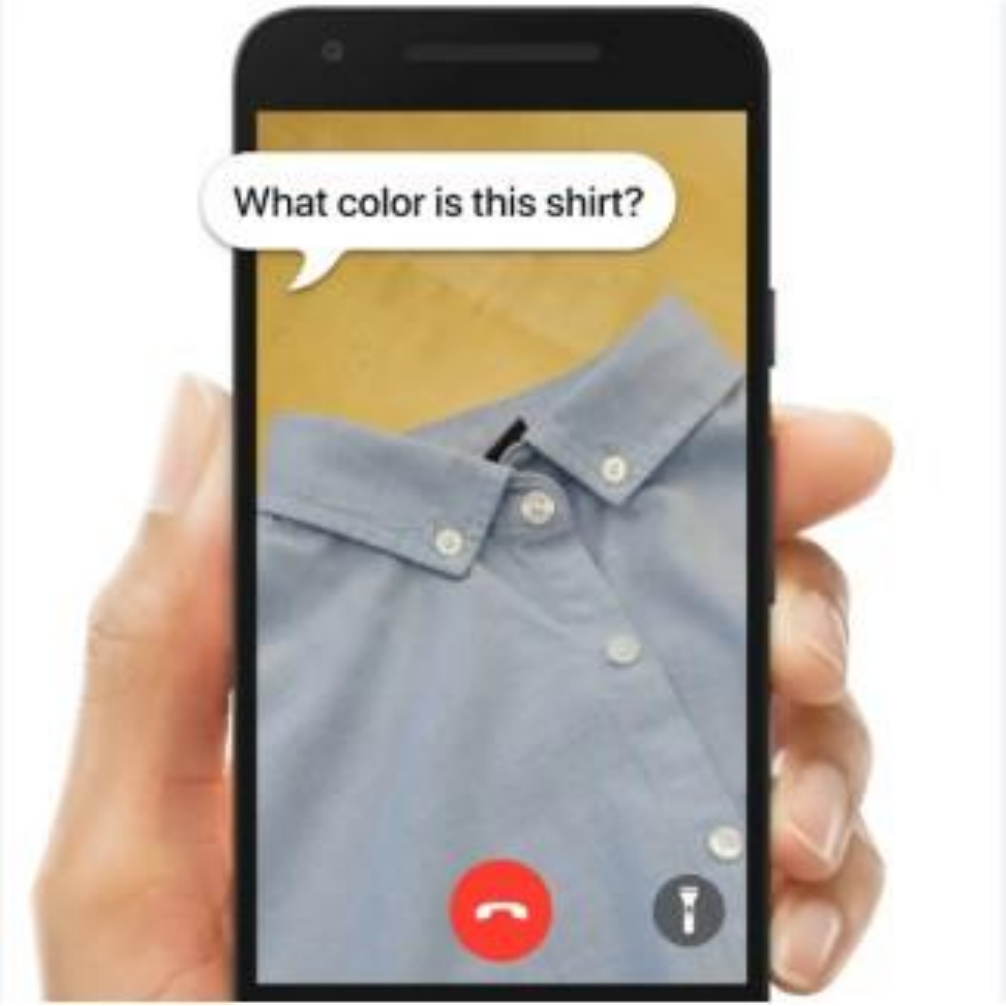
Cash reader app

Cash Reader is the mobile app that identifies the largest number of world currencies: from Europe to Australia and Uganda currency. Assistive technology which reads money

Mobile Accessibility Tools.

Be my eyes

Be My Eyes is a Danish mobile app that aims to help blind and visually impaired people to recognize objects and cope with everyday situations. An online community of sighted volunteers receive photos or videos from randomly assigned affected individuals and assist via live chat



Mobile Accessibility Tools.

Voice Aloud Reader

Voice Aloud Reader, designed to read aloud web pages, news articles, lengthy emails, TXT, PDF, DOC, DOCX, RTF, OpenOffice documents, EPUB, MOBI, PRC, AZW, and FB2 eBooks

Mobile Accessibility Tools.

Google Lens

Google Lens is an image recognition technology developed by Google, designed to bring up relevant information related to objects it identifies using visual analysis based on a neural network

Mobile Accessibility Tools.

Lookout

is a mobile app developed by Google that uses artificial intelligence (AI) and the phone's camera to help blind and visually impaired users understand their surroundings by identifying objects, text, people, and more in real-time.

Mobile Accessibility Tools.

Kibo

(short for Knowledge In a Box) is a multi-platform solution from Trestle Labs aimed at making printed, handwritten, and digital content instantly accessible via audio, translation, and digitization

Customizing Screen Readers.

Adapting technology to suit a user's personal needs specially for persons with disabilities is essential for inclusion, comfort, and independence.

Most modern devices allow for custom settings that enhance accessibility, usability, and safety.

Customizing Screen Readers.

Display Settings.

- **Text Size & Zoom (Ctrl +/-)** Increase font size or zoom screen for users with low vision.
- **High Contrast Modes** Improves readability for those with visual impairments.
- **Color Filters / Inversion** Helpful for color blindness or light sensitivity.

Hardware requirements

- **Minimum Hardware Requirements**
- **Processor**: 1.5 GHz processor or higher
- **RAM**: 4 GB RAM or more
- **Hard Disk Space**: At least 10 GB of free hard disk space for installation and additional space for user data
- **Graphics**: DirectX 9 graphics device with WDDM 1.0 driver
- **Display**: Minimum screen resolution of 1024x768

Hardware requirements

- **Recommended Hardware Requirements**
- **Processor**: 2 GHz multi-core processor or higher
- **RAM**: 8 GB RAM or more
- **Hard Disk Space**: Solid State Drive (SSD) with at least 20 GB of free space
- **Graphics**: DirectX 10 graphics device with WDDM 1.2 driver or higher
- **Display**: Full HD (1920x1080) or higher resolution

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