

Introduction to ScreenReaders

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Foothill – De Anza Community College District
California Community Colleges

Introduction to ScreenReaders

Day 1

10:00 AM	Introduction Objectives Introduction to ScreenReader Technology
11:45 AM	Lunch
1:00 PM	Activities with ScreenReaders Using Windows with ScreenReaders Introduction to: WindowEyes SuperNova
2:15 PM	Break
2:30 PM	Activities with Screen Readers Introduction to JAWS Introduction to NVDA
4:30 PM	End

Primary Goals

Participant will be able to do the following:

1. Understand the functional skills necessary to use a ScreenReader
 - a. Perform a series of structured activities with each Screenreader
 - b. Describe each ScreenReader
2. Understand how Screen Readers work
3. Understand the necessary skill set for use of a ScreenReader
4. Understanding of how to create screen reader-friendly materials

Introduction to Screen Readers

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Welcome

- Demonstrate four screen readers: JAWS, SuperNova, WindowEyes and NVDA
- Basics of how ScreenReader work, and considerations for evaluating them
- Hands-on experimentation
- Considerations for creating screen reader friendly materials
- Considerations for teaching screen readers skills to students

History of ScreenReader

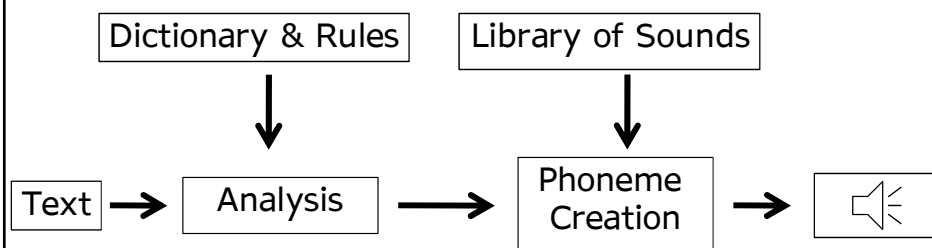
- TTS Overview

Synthetic rendering of textual information in an audible form.

1. Dictionary and rules used for textual analysis
2. Library of sounds used to create proper phonetic structures (phonemes)
3. Final rendering of speech waveform

History of ScreenReader

- How TTS works



History of ScreenReader

- Command Line Interface (CLI)
 - Text based
 - Specific command control
 - Linear Representation
- GUI Interface
 - Multiple synchronous operations
 - Visual symbology vs. abstract conceptualization
 - Issues of focus...

History of ScreenReaders

- Mac
 - Voiceover
- Linux
 - Emacspeak, YASR, Speakup
 - Gnopernicus, Orca, LSR
- Dos
 - Provox, Model T Reader, Tiny Voice
 - JAWS, Hal, Vocal-Eyes

History of Screen readers

Current brands we should be familiar with:

- JAWS
- WindowEyes
- Supernova/HAL
- NVDA
- VoiceOver

History of Screen readers

JAWS (Job Access With Speech)

- First released in 1989
- Originally for DOS
- JFW released 1995
- JAWS 9 current version

History of Screen readers

VocalEyes introduced in 1990

WindowEyes introduced in 1995

- Utilizes Windows keystrokes
- WindowEyes 7.5 current version

History of Screen readers

Supernova Access

- HAL for DOS released 1986
- HAL for Windows 95 released 1996
- Supernova released in 1998
- Supernova 12 current version

Core Competencies

- Basic OS Familiarity
- Application-Specific Knowledge
- Screen Reader-Specific Knowledge
- User Skills
- Knowledge of Focus
- Knowledge of Mode
- Knowledge of Content Type

Core Competencies

- Basic Understanding of Interface
- GUI Interface Basics
 - Focus : awaiting your command
 - Selection : specify
 - Activation: perform
 - Mouse Actions: combine focus, selection, activation

Core Competencies

- Knowledge of Application
 - Core features of application
 - Navigation style & potential
 - Keyboard commands
 - Basic understanding of interface layout

Core Competencies

- Knowledge of Screen Reader Application
 - Inspection features of screen reader
 - Navigation features of screen reader
 - Keyboard commands

Core Competencies

- User Skills
 - Touch typing
 - Auditory learning
 - Memory/Recall

Document Considerations

- Audio Representation of Visual Information
 - Design dependent
 - Proper use of structural elements
 - Requires advance labeling of charts/graphics
- Linearization of Documents
 - Priority of information
 - Sidebars, figures, and tables

Application Considerations

- Structure of Interface
 - Menu bars and Tool bars
 - Status and information displays
 - Application-specific keystrokes
- Competing Audio Feedback
- Accessible help files

Screen Reader Navigation

- Understanding of Structure
- Reliable Points of Reference
- Keyboard vs. Mouse Control
- Discovering the Unknown

Finding the Focus

- Interface Focus
- Screen Reader Focus
 - Document Object
 - Virtual Focus
- Home Base

Media Considerations

- Screen Reader Friendly Media:
 - Logical design and layout
 - Use of headings
 - Proper tags in HTML & XML docs
 - Simple tables

Comparing Screen Readers

- The Big Four
 - Window-EYES
 - SuperNova
 - JAWS
 - NVDA

Screen Reader Day Activity Materials List

Activities

- I. Where are you?
 - A. Windows Keyboard commands for navigation and interaction

TASKS

1. Bring up Desktop
2. Bring focus to task bar
3. Open the START menu
4. Open System Properties Dialogue
5. Find program in "Add/Remove Programs" Dialogue

Materials

1. Windows Keyboard Commands
2. Task List with specific commands (job aid)

- B. What's the time?

Tasks

1. Use screenreader key commands to read system time
2. Review Windows Keyboard commands

Materials

1. Windows Keyboard Commands
2. Task List with specific commands (job aid)

- C. What program are you using?

Tasks

1. Have students go to Start Menu (or special folder) and open the program or folder that corresponds to their computer number
2. Attempt to perform a basic function of the program
3. Everyone switch seats
4. Using keyboard commands and screen-reader specific commands, identify which program is now open

Materials

1. **Windows Keyboard Commands**
2. **Task List with**
 - a. **Specific commands highlighted (job aid)**
 - b. **Specific program assignment**

II. Read a Word Document

Tasks

1. Open Microsoft Word
2. Open document
3. Read document

Materials

1. Windows Keyboard Commands
2. Task List with specific commands (job aid)

III. Create/Edit a Word Document

Tasks

1. Open Microsoft Word
2. Open document or create new document
3. Edit/create document

Materials

1. Windows Keyboard Commands
2. Task List with specific commands (job aid)
3. Document to edit, or requirements for fresh document

IV. Read a PDF

Tasks

1. Open PDF document (multiple ways)
2. Read document

Materials

1. Windows Keyboard Commands
2. Sample document(s)

Windows® Keyboard Commands

General keyboard-only commands

F1	Starts Windows Help
F10	Activates menu bar options
SHIFT+F10	Opens a shortcut menu for the selected item (this is the same as right-clicking an object)
CTRL+ESC	Opens the Start menu (use the ARROW keys to select an item)
CTRL+ESC or ESC	Selects the Start button (press TAB to select the taskbar, or press SHIFT+F10 for a context menu)
ALT+DOWN ARROW	Opens a drop-down list box
ALT+TAB	Switch to another running program (hold down the ALT key and then press the TAB key to view the task-switching window)
SHIFT	Press and hold down the SHIFT key while you insert a CD-ROM to bypass the automatic-run feature
ALT+SPACE	Displays the main window's System menu (from the System menu, you can restore, move, resize, minimize, maximize, or close the window)
ALT+- (ALT+hyphen)	Displays the Multiple Document Interface (MDI) child window's System menu (from the MDI child window's System menu, you can restore, move, resize, minimize, maximize, or close the child window)
CTRL+TAB	Switch to the next child window of a Multiple Document Interface (MDI) program
ALT+ <i>underlined letter in menu:</i>	Opens the menu
ALT+F4	Closes the current window
CTRL+F4	Closes the current Multiple Document Interface (MDI) window
ALT+F6	Switch between multiple windows in the same program (for example, when the Notepad Find dialog box is displayed, ALT+F6 switches between the Find dialog box and the main Notepad window)

General folder/shortcut control

F4	Selects the Go To A Different Folder box and moves down the entries in the box (if the toolbar is active in Windows Explorer)
F5	Refreshes the current window.
F6	Moves among panes in Windows Explorer
CTRL+G	Opens the Go To Folder tool (in Windows 95 Windows Explorer only)
CTRL+Z	Undo the last command
CTRL+A	Select all the items in the current window
BACKSPACE	Switch to the parent folder

Windows Explorer tree control

Numeric Keypad *	Expands everything under the current selection
Numeric Keypad +	Expands the current selection
Numeric Keypad -	Collapses the current selection.
RIGHT ARROW	Expands the current selection if it is not expanded, otherwise goes to the first child
LEFT ARROW	Collapses the current selection if it is expanded, otherwise goes to the parent

Microsoft Natural Keyboard keys

Windows Logo	Start menu
Windows Logo+R	Run dialog box
Windows Logo+M	Minimize all
SHIFT+Windows Logo+M	Undo minimize all
Windows Logo+F1	Help
Windows Logo+E	Windows Explorer
Windows Logo+F	Find files or folders
Windows Logo+D	Minimizes all open windows and displays the desktop
CTRL+Windows Logo+F	Find computer
CTRL+Windows Logo+TAB	Moves focus from Start, to the Quick Launch toolbar, to the system tray (use RIGHT ARROW or LEFT ARROW to move focus to items on the Quick Launch toolbar and the system tray)
Windows Logo+TAB	Cycle through taskbar buttons
Windows Logo+Break	System Properties dialog box
Application key	Displays a shortcut menu for the selected item