Apple's Universal Access Tools and the Mac OS

Apple provides assistive technology built right into your Mac 's operating system. Apple calls its array of built-in assistive technology software "Universal Access" tools. These tools improve access to and use of Macintosh computers. The Universal Access tools are accessed through various system control panels, including:

• CloseView

• Easy Access

• Speech

If these control panels are not installed on your iMac, you can install them from the System CD or download them from Apple 's website. Let 's examine each of these control panels and their features in detail.
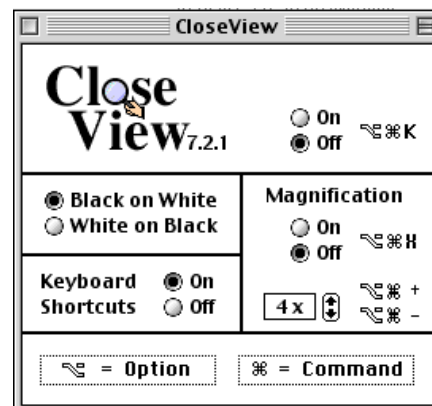
Close View Control Panel

CloseView is a screen magnifier. You can increase the magnification of whatever is onscreen up to 16 times their original size. Think of it as looking at your computer screen through a magnifying glass. Students with visual impairments would use this feature most often.

Use Close View

Follow these steps to open and use the Close View control panel:

1. From the Apple menu, select Control Panels then the CloseView control panel. The CloseView control panel opens.

2. Click **On** to activate CloseView. A black rectangle appears on the screen. The area inside the rectangle will be magnified once the magnification is turned on.

3.Click White-on-Black to reverse to white letters on a black background. It may be easier for some people with a visual impairment to see white-on-black rather than black-on-white.

4. Click the up or down arrows to select the degree of magnification.

The black rectangle grows and shrinks as you decide which magnification you want.

5. After selecting your desired level of magnification click **On** in the Magnification box to activate the magnification. You can also modify the level of magnification while it is active.

6. To turn the magnification off and on you can do it through the control panel window or use shortcut keys.

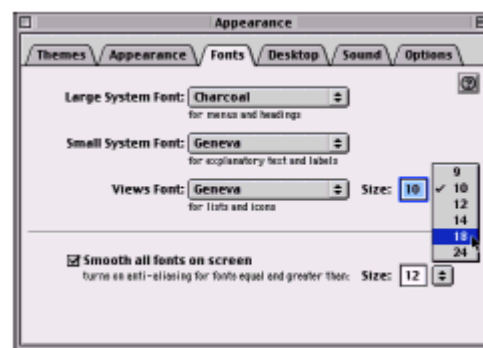7. Close the Close View control panel.

> **Keyboard Shortcuts:**
> OFF: ⌘- Option-X
> ON: ⌘-Option-O

Enlarging Font Size Using the Appearance Control Panel

While not technically part of Apple 's Universal Access package, the Appearance control panel can provide a measure of support for students who have trouble seeing small font sizes on the computer 's folders and window title bars.

The Appearance window appears with several options. Select the font options to increase the size and style of the font. The fonts are related to the Theme you have chosen. However, you can change the font size of file lists and icons.

Change the System Font Size for Folders and Window Title Bars

1.From the Apple menu, select Control Panels then open Appearance. The Appearance control panel opens.

2.Click the Fonts tab and enlarge the font size up to 24 points. You can select different fonts and sizes if desired.

3.The computer converts folder labels and window titles to your selected font size.

4.Close the Appearance control panel.
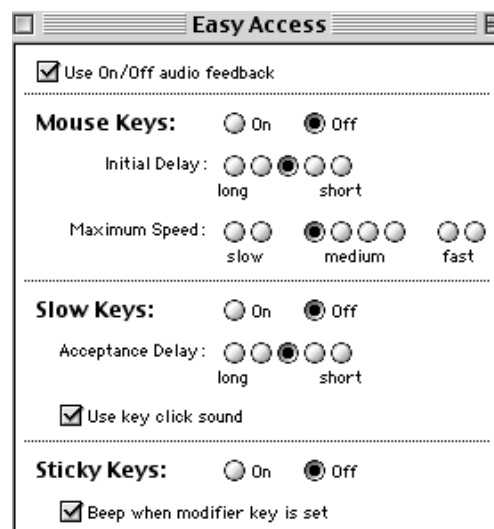
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Easy Access Control Panel

Easy Access is a control panel extension with a set of keyboard utilities including Mouse Keys, Slow Keys, and Sticky Keys. These programs provide modifications to keyboard entry and mouse use and are designed for people who have difficulties using the keyboard or the mouse.

For all three programs in the Easy Access control panel, you may select to use On/Off audio feedback by selecting the checkbox at the top of the control panel.

Mouse Keys

MouseKeys lets a student control onscreen pointer movements by typing on the numeric keypad. This feature is useful for those who lack the ability to maneuver a mouse.

1. Activate Mouse Keys by clicking **On** in the Mouse Keys pane or by pressing ⌘- Shift-Clear at the same time.

2. Modify the delay time before the pointer begins moving onscreen from long to short by clicking the appropriate button.

3. Modify the speed at which the pointer moves across the screen as well.

Slow Keys

Slow Keys allows you to modify the length of time it takes for a keystroke to be registered. This feature can be useful for students who may require a shorter or longer delay in keystroke registration timing than the standard delay setting.

1. Click **On** in the Slow Keys section to Activate Slow Keys.

2. Change the Acceptance Delay setting from a long delay to a short delay by selecting the appropriate button. A longer delay setting increases the time it takes for a keystroke to register when the key is depressed.
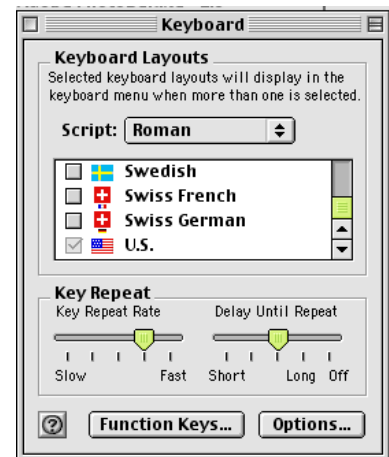
Sticky Keys

Sticky Keys provides a way for people who type with one finger or with a mouth stick to execute multi-key keyboard commands, such as capitalizing a letter, using Shit+ number keys, or keyboard shortcuts. This feature can also make key sequences more obvious. To see how Sticky Keys allows a student to type a capital letter, follow these steps:

1.In the Easy Access control panel, activate Sticky Keys by clicking it **On** or by pressing the **Shift key five times**.

2.You 'll hear a sound effect and see a small icon of an empty bucket appears at the far right side of the menu bar, which indicates that Sticky Keys is activated.

3.Type a capital letter using Sticky Keys by taking one finger and pressing the Shift key once. This locks the Shift key you just pressed. The next letter you press will be capitalized or respond as if both keys were held simultaneously.

Keyboard features

The Keyboard Control Panel also offers features that may be beneficial to students with disabilities.

1. Keyboard layouts include a Dvorak layout. Simply purchase key labels to re-label the keyboard.

2. The key Repeat rate can be adjusted or turned off. This will prevent multiple unwanted keystrokes to *happpppppen*.

3. Function Keys: you can assign certain actions to each of the 12 keys; e.g. open file, open application, etc.) If an application also uses the function keys, press the Option Key + the Function key for the customized action.

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Sound Features

Speech Recognition and Speech Synthesis on the Mac

Apple has created speech recognition and speech synthesis technologies to use within the Mac OS. These capabilities allow the computer to respond to voice commands and to read or speak onscreen text to the user. This functionality is useful to students with a range of challenges.

English Text-To-Speech and Mexican Spanish Text-To-Speech

There are two versions of text-to-speech software. It is used in OS 9 system functions, including the enabling of the Speech control panel and other software programs such as talking word processors. English Text-To-Speech is a feature which when installed converts onscreen text to spoken English words.
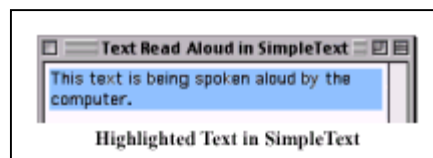

Speech Recognition and Speech Synthesis

Mexican Spanish Text-to-Speech offers all the same features of English Text-to-Speech, but in Spanish with a Mexican Spanish accent.
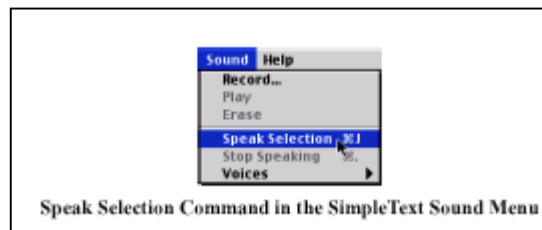
Speech Synthesis in Other Applications

Other applications use speech synthesis technology to speak responses or the onscreen content to the user. SimpleText, Apple 's basic text editor included with the Mac OS, is a sample of such a program. You can have text read aloud in Simple Text. Follow these steps:

1.Open SimpleText from the hard drive.

2.In the New Document window, type a sentence.

3.Select the sentence by triple-clicking it or by pressing and dragging through it.

4.From the Sound menu, select Speak Selection. The computer speaks the contents of the highlighted sentence.

Highlighted Text in SimpleText

Speak Selection Command in the SimpleText Sound Menu

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Sound Control Panel

The Sound Control Panel provides a choice of
several different alert sounds that the user
hears when an "illegal" action occurs. You
can also add your own sound or message
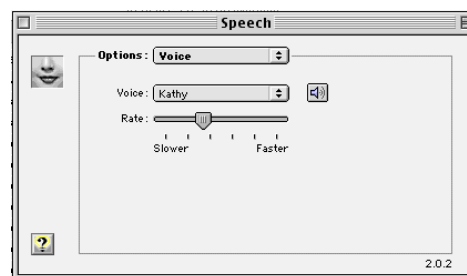through this feature. The alert volume can be
set.

Speech Control Panel

The Speech Control Panel offers a number of features that allow students to

listen to spoken onscreen text. You can set the Voice
that will read text read aloud in Simple Text. You
can also have the computer read any message that
appears in a box to the user.
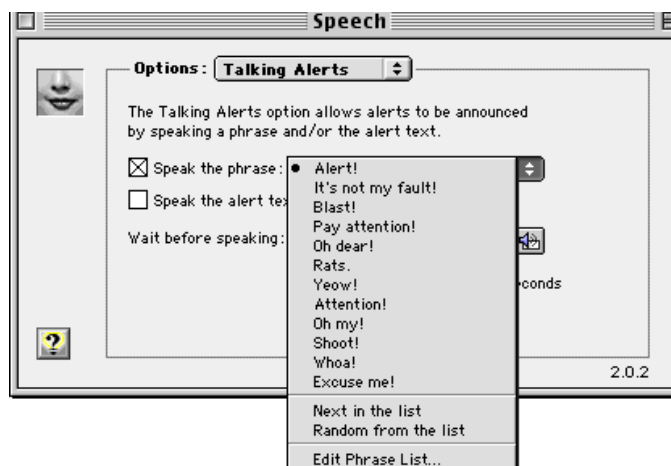
To activate the Speech Options, follow these steps:

1.From the Apple menu, select Control Panels then
Speech.

2. Select **Voice** from the Options menu

3. Explore different **Voice Options** to change the voice or the rate of speech.

Talking Alerts

 Talking Alerts is a feature that speaks the
contents of any alert message that appears
on your computer screen.

1. Select **Talking Alerts** from the Options
menu.

2. Select the Speak the phrase: checkbox
and your preference for the alert phrase.
This phrase is spoken just before an alert
message is read. The *Next in the list* and

Random from the list options provide the most variety. Edit the contents of this list by selecting *Edit Phrase List*.

3. If you want the message read without the alert, clear the first box and **X** the *speak the alert text* option.

Speakable Items

Speakable Items is another program available in the Apple menu that allows a student to speak commands to the computer. They can speak a limited number of commands that the computer then executes, including closing windows, opening applications and folders, and telling what the time is. To use Speakable Items follow these steps:

1. Make sure Speech Recognition software has been installed from the OS 9 install CD. If it has, the Speech Recognition extension appears in the Extensions folder inside the System folder. If necessary, install this software using a custom installation.

2. Open the Apple menu and select Speakable Items

3.A list of Speakable Items appears. Click on one to bring up a window. Test Speakable Items by asking the computer, "Tell me a joke," or "What time is it?"

8.A student can add an item to the Speakable Items folder by selecting an item, such as a new folder, file, or application and saying "Make this speakable." The item can then be opened and closed with speakable commands.

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Add this to Favorites folder
Add this to the Apple Menu
Change view to list
Change view to pop up
Close all windows
Close this window
Eject this volume
Empty the trash
Find by content
Find original of this
Make this speakable
Move this to the trash
Open File Sharing
Open SimpleText
Open Speech Introduction
Open the Chooser
Open the Speakable Items folder
Open the Speech control panel
Put computer to sleep
Put this away
Quit this application
Show me what to say
Shut down the computer
Sort window by name
Switch to Next Application
Tell me a joke
Turn Speakable Items off
Undo the last command
What day is it?
What time is it?
Zoom this window
```

Apple 's Universal Access features go a long way toward making the computer-using experience more accessible to all learners.

Adapted in part from LAUSD, 2001