

DictionaryEdit

What is it?

DictionaryEdit is an application for editing the pronunciation dictionaries used by text-to-speech applications which use the Speech Manager, such as So To Speak, Speaker, the IRC client Homer, the game Strip-Mac and others. It uses the Speech Manager, and Drag and Drop if installed.

How much does it cost?

DictionaryEdit is shareware. In other words, if you use it, you must pay for it. I have put a lot of effort into making this program the best dictionary editor around (OK, there aren't all that many), with excellent ease of use, and a good-looking interface. If you use it for more than simply evaluation purposes, then you are obliged to send me either \$15 or £10, to the address below. When I receive your payment, I will email you details of how you can eliminate the 10-entry limit on dictionaries.

Please send your shareware fees, with your email address, to:

Simon Fraser
Santa Fe Institute
1399 Hyde Park Road
Santa Fe NM 87501

and if you have any queries regarding the software, feel free to e-mail to:

smfr@santafe.edu (Internet)

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DictionaryEdit may be freely distributed by non profit-making organizations and user groups, so long as it is accompanied by this documentation. It may **not** be distributed on CD-ROM or other media by profit-making organizations (e.g. on magazine cover disks) without my express permission, obtainable by e.mailing the address above.

Why use dictionaries?

Dictionaries are used to substitute words in the text to be spoken with others, either to correct idiosyncrasies in pronunciation, for localization purposes, or just for fun! They are kept in resources of type 'dict', which are loaded by the speaking application with the UseDictionary command.

From the Apple documentation:

No matter how sophisticated a speech synthesis system is, there will always be words

that it does not automatically pronounce correctly. The clearest instance of words that are often mispronounced is the class of proper names (names of people, place names, and so on).

One way to get around this fundamental limitation is to use a dictionary of pronunciations. Whenever a speech synthesizer needs to determine the proper phonemic representation for a particular word, it first looks for the word in its dictionaries. Pronunciation dictionary entries contain information that enables precise conversion between text and the correct phoneme codes. They also provide stress, intonation, and other information to help speech synthesizers produce more natural speech. If the word in question is found in the dictionary, then the synthesizer uses the information from the dictionary entry rather than relying on its own letter-to-sound rules.

You can open several dictionaries at the same time, cut and copy (or drag) entries between them, add new entries, and fill them by converting text into the phonemic representation that the dictionaries use.

How do I use it?

Opening files

Start up Dictionary Edit, and open the file, or application containing the dictionary (or you can just drag-and-drop onto the application icon). DictionaryEdit checks for 'dict' resources; if there is just one, that is opened straight away, and if there is more than one you are presented with a list of their names and IDs to choose one to edit. You may only edit one 'dict' resource per file at a time.

You can also open text files with DictionaryEdit. This opens a window in which you can view and edit the text (although you cannot save any changes you make), and also speak that text using one of the open dictionaries.

Editing dictionaries

After a dictionary has been successfully opened, you see this window shown below. On the left is a list of dictionary entries. Click on one to see its phonemic representation in the lower text box on the right. Click on the "Speak" button to hear it spoken using the current voice.

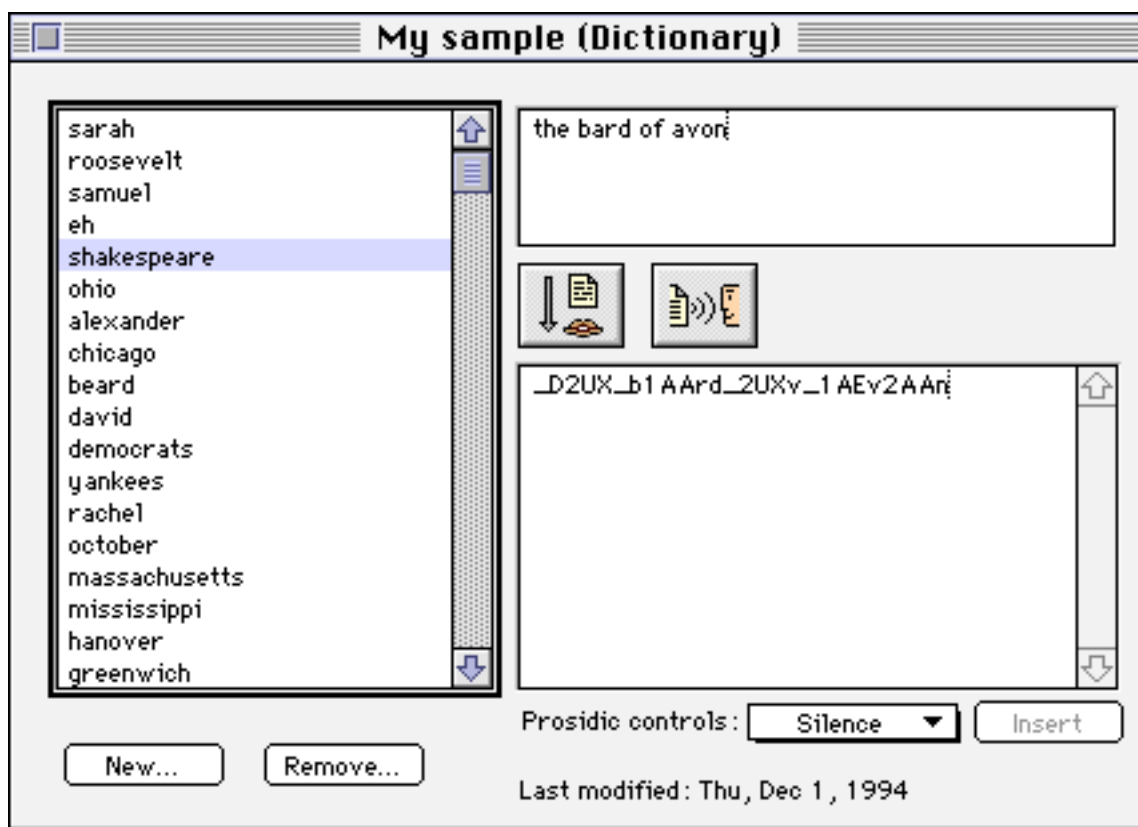
Click the "New..." button to create a new entry (or choose the "Entry: New word" menu item). Double-click (or choose "Entry: Edit word") to edit an entry, and click "Remove..." to delete one; you will be asked to confirm deletion. You can select multiple items in the list, and cut/copy them, paste them back into the same list, or into another window.

Type into the upper text box, and click the "Convert" button to insert the phonemic representation of the text into the lower box at the current cursor position. It will replace any highlighted text (as is standard text edit behaviour).

You can use the popup menu and the 'Insert' button to insert prosodic controls, which enable you to finely tune word pronunciation, into the phonemic text. Choose an item from the menu, and click 'Insert' to place it at the current cursor position. Turn on Balloon Help, and browse through the

menu for more information about the specific controls.

If you have the Drag Manager installed or are running under System 7.5 (in which it is permanently available), then you can use Drag-and-Drop to move dictionary items around in the list, to copy them to another window, or to drag them to the trash. Dragging a number of entries to the Finder will create a text clipping. Dragging this into another application will simply insert the names of the entries, separated by returns, as text. Dragging this back into the list box in a DictionaryEdit window will insert the entries, with their associated phonemes. The text boxes, and the text window that appears if you open a text file, can accept drags (as long as they contain text information), but you cannot drag from them.



Editing the dictionary header

Use the 'Edit header' item on the Special menu to show a dialog box with the header information contained in the dictionary. You will rarely need to alter these default settings. Use Balloon Help to get more information on the various items.

Saving files

"Save", and "Save as..." work in the usual way. If editing an existing dictionary, it will replace the one opened. If you choose "Save as...", or have created one from scratch, you can specify the resource ID of the dictionary in the save dialog box. You can specify your preferred resource ID,

resource name, and file type in the Preferences dialog, discussed below.

Setting preferences

Settings in the 'Preferences' dialog enable you to specify whether new dictionary entries should be upper or lower case when they are created, and also gives you the option of converting the case of dictionaries when they are opened. Although Apple's supplied sample dictionary uses uppercase entries, others (e.g. that provided with Speaker 1.1.4) are in lowercase.

The screenshot shows a dialog box titled "Default 'dict' resource details". It contains the following fields and options:

- ID:** A text field containing the value "128".
- Name:** A text field containing the value "Dictionary".
- Save files for:** A dropdown menu currently showing "Other".
- Type:** A text field containing the value "DICT".
- Preferred entry case:** Two radio buttons: "Lowercase" (which is selected) and "UPPERCASE".
- Convert on open:** A checked checkbox.
- Speech:** A checked checkbox labeled "Continue speech in background".
- Buttons:** "Cancel" and "OK" buttons at the bottom right.

You can also specify some setting for newly-saved dictionary resources, namely the ID and name of the `dict` resource, and its file type. Speaker's dictionary file has type 'dict', whereas most other speech applications seem happy to open files of type 'rsrc'.

There is also a check box with which you can specify whether DictionaryEdit continues to speak if put into the background. Apple recommend that this is switched off, but it can be fun to leave DictionaryEdit speaking a long text file.

Preferences, and voice settings, are saved in a file called "DictionaryEdit prefs" in the Preferences folder, in the System Folder.

Changing the default voice

Use the 'Change voice' item on the Special menu to select which voice to use to speak dictionary entries, and text files. The new voice will only be used for dictionaries and text files opened *after* changing the voice; the previous voice will still be used for already-open windows.

To use the large, high quality voices, you will need to increase the memory partition of

DictionaryEdit to at least 1600k. To do this, quit the program, highlight its icon in the Finder, and choose 'Get Info...' from the File menu. Enter 1600 in the 'Preferred size' box, close the window and re-launch DictionaryEdit.

Getting help

On-line help is available on the "Special" and "Help" menus, and balloon help is provided for most things.

The Author, thanks etc.

DictionaryEdit is written in Metrowerks Pascal, with assistance from ResEdit, the Drag and Speech managers, Adobe PhotoShop with the Alien Skin Drop Shadow filter, (dare I mention it) Microsoft Word, PrintToPict, Van Morrison, Peter Gabriel, lots of coffee and many late nights. It is distributed as a fat binary; in other words, it runs native on both 680x0 and PowerPC Macs.

Many thanks to my beta testers, who patiently put up with buggy early versions of the software. They include John Fenton, Sean McMains, Haskia Hasson, Eric Weidl and several others, to all of whom I am grateful.

Other software by the author:

- Buzzz!—an AfterDark module which animates realistic-looking swarms of insects and shoals of fish, using high-quality rendered graphics.

"Man! it's SU-GOI! (A Japanese word for Far-Out!)" "I honestly have tears in my eyes. They [the fish] are magnificent." "I think this is the best no-nonsense, simulation type AD module ever written."

- Mazin' Shapes—another AD module, this time iterating a simple mathematical transformation to produce a stunning variety of colorful patterns.

"Nice job!" "It looks wonderful" "Wow! What a great screen saver module!"

- ColorMacsBug—a little thing to change the colors used by the MacsBug debugger screen. Well, when you see it often, you get tired of black and white. ;-)

"A nifty hack indeed. I like it."

These are all available on your local Sumex or Umich mirror (where you got this, perhaps?).

DictionaryEdit uses the CIconButton CDEF for the 'Convert' and 'Speak' buttons:

CIconButton CDEF 1.0 from Digital Alchemy

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Version History

Version 1.3 (December 1995)

Recompiled using Metrowerks CodeWarrior, now a fat binary! Fixed some bugs in the process.

Preferences, and voice settings are now saved in a Prefs file, so DictionaryEdit can be run off locked media and file servers. Added functions to encourage users to pay the shareware fee.

Updated the snail and email addresses.

Version 1.2.1

Much better performance under low memory conditions.

Pressing the 'Enter' key with a dictionary window foremost now speaks the phenomes, rather than entering invisible characters into the text.

Changes to the dictionary currently selected in the text window are implemented immediately now.

Removed the 'Shut up' buttons, and used a single button for speaking and silencing instead.

Version 1.2

Tidied up dictionary-editing procedures.

Fixed a couple of file-handling bugs; DictionaryEdit now closes properly files in which no 'dict' resources are found, and saves new files properly.

Added info about Strip-Mac to help.

Version 1.1.2

Fixed more resource file bugs (some Speech Manager routines change the current resource file).

Fixed bugs on freeing speech channels when the Speech Manager is not present.

Added 'DATA' file type in open dialog (for Homer's data file).

Added a 'dict' for speaking the help text. There are one or two Easter Eggs in there...

Version 1.1.1—first public release

Minor dialog changes. Tidied coloured buttons in main window.

Fixed a fairly serious bug that manifested itself when editing dictionaries in applications (failure to set current resource file properly).

Made dictionary reading routines more sensitive to corrupted dictionaries; added errors to report defective fields or entries.

Version 1.1—released to beta-testers

Choose voice dialog now returns the correct error message when there is not enough memory to open the speech channel. If memory is low, it returns to the default voice.

Implemented Undo, mainly in text editing panels. Added auto scrolling in list when dragging selections. Fixed bug so that cell selections are correctly recognized in a scrolled list. Added hand cursor, and hand+ cursor to show that items are being copied if the option key is down.

Added smart 3D interface. Fixed some cosmetic bugs, mostly to do with updating windows. New icons (rebuild your desktop, or use Save-a-BNDL to see them).

Speech now pauses properly when the application is sent into the background, and resumes when it is brought to the front. Added a preference to continue speech in the background.

The voice selected in the 'Choose voice' dialog is now saved, so that the program will use it next time (if available). The rate, pitch and modulation settings are also saved. The Reset button now works as well. Fixed some bugs in dictionary testing with text files.

Worked on 'Choose dict' dialog—the scroll bar now works, though the 2 list approach isn't ideal. Arrow keys work in this list now as well.

New 'About' box, different from the welcome screen, with shareware message etc. Also made new menu item for opening text files. Drawing improved on B&W screens.

Fixed several memory leaks, moved some strings from code into resources.

Version 1.0.4—released to beta testers

Added Drag and Drop (cool!).

Lots of interface bugs worked on, mostly fixed.

Changing dictionary when speaking a text file now closes all previously used dictionaries (by re-allocating the speech channel), rather than just accumulating the new one.

Added Edit header dialog, with balloon help.

Changed Prefs dialog, added default ID, name and file type options. Eliminated 'update date' option (it is now always updated). Added balloon help.

Date format now uses format specified in Control Panels.

Put Speech and Drag manager versions in About box.

Choose voice dialog completely reworked. No longer requires StdTTS extension; volume slider added.

Version 1.0.2—not released

Added ability to open text files, and speak them using one of the open dictionaries.

Total entry length now properly updated when dictionary is saved.

Fixed bugs in gestalt routines—Speech Manager now properly detected.

Version 1.0β

First version sent out to beta-testers.