

## ARS MAGNA™, version 1.0

Ars Magna™ is a program to generate anagrams — words or phrases with their letters rearranged to spell something else. For example, the letters in the word **dormitory** can be rearranged to spell **dirty room**. Given a name, a short phrase, or a word, Ars Magna™ finds all the anagrams which can be made from words in a dictionary which is included with the program.

What the program does -- a quick look

It looks like there are a lot of options, but it's not really that bad. The things the program asks you about are:

- which file you'd like to use for a dictionary (the program comes with a couple of dictionaries, or you can use your own)
- the phrase (or name, or...) that you'd like to try rearranging
- whether you'd like to read the anagrams on the screen, store them in a file, or just count them without printing them anywhere
- if you do want the anagrams on the screen, whether you'd like the program to pause after each screenful

If you don't like fancy frills, just press RETURN in response to every question (except when it asks for a phrase to anagram). You can also type HELP whenever you're asked a question.

Some phrases produce literally millions of anagrams, so you can stop the output at almost any point.

A quick example

Suppose you're interested in finding what you can spell with the letters in **Ronald Reagan**. Start up the program. Its first question is

Name of dictionary file [press RETURN to use "anagram dict"]?

Chances are that you don't have your own dictionary, and even if you do have your own, the ones supplied with Ars Magna™ may be more useful (more on this later). If you do have a dictionary, type its name here. Otherwise, press RETURN, and Ars Magna™ will use its usual dictionary.

The program can take words from several dictionaries, so the next question is

Next dictionary name [press RETURN if no more]?

Again, you're probably using only one dictionary — just press RETURN if so. If you have several dictionaries you'd like Ars Magna™ to take words from, you can type their names, one per line, and press RETURN after you've entered them all.

Fine print #1: You'll be asked the questions about dictionaries just once, at the beginning of the program, and the dictionaries you give will be used for each phrase you give the program to anagram. To use different dictionaries, you have to quit the program and start again.

Fine print #2: If your disk doesn't have the document "anagram dict" on it, the program won't let you just press RETURN for the first question.

Finally Ars Magna™ asks

What's the phrase you'd like to anagram?

Type in some name, word, or phrase of reasonable length (10 to 30 letters is about the right range).

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Capitalization, spaces, and punctuation don't matter. For instance, you could type **Ronald Reagan**.

Now you have to decide whether you'd like the anagrams displayed on a screen, stored in a document, or just counted:

Print to the screen, print to a file, or just count anagrams?

Type COUNT or a filename [or press RETURN for SCREEN]?

For now, you'd just like to browse through a few, so press RETURN to ask for the anagrams to be shown on the screen. A followup question

Want output to pause after each page [RETURN for YES]?

asks if you want the output to whiz by in a blur, or pause at the end of each screenful. You almost always want to press RETURN here so the output will pause.

Now there's a delay of a minute or so while the program scans the dictionary (more if you ask it to use more dictionaries). Because it stores a lot of information in memory during this, it may tell you that there's not enough memory to find anagrams for your phrase. If so, you might want to try a larger Macintosh (eg, change from a Mac 512K to a Mac Plus). On the other hand, if you have a lot of memory and plan to do several anagrams, increasing the size of your RAM cache on a Mac Plus may speed things up.

When Ars Magna™ predigests the dictionaries, it can immediately reject most words — for instance, you can't spell “bonzo” with the letters in **Ronald Reagan**. It tells you the number of usable words in the dictionary before trying to combine those words into anagrams. After you've used the program a while, this number gives you a feel for how good a phrase you've chosen.

Next, the program sorts the words in an order which seems to help find more interesting anagrams faster. For a long phrase, this may take a minute.

Finally, some results: **Ronald Reagan** can be rearranged to such things as **arranged loan** and **adrenal organ**. Each combination of words is printed only once, so you won't see **loan arranged** or **organ adrenal** — you have to rearrange the words yourself. (This reduces the amount of output considerably.)

After every 20 or so anagrams, Ars Magna™ stops and prints:

...more...

To see more output, just press RETURN to see such gems as **angola ran red** or **an oral danger**. In general, the good anagrams show up at the beginning, so after a while the Chief Executive's output will degenerate into drivel like **old ear nag ran**. When you've had enough of one anagram, type STOP in response to “...more...”.

Fine print: At any point, you can respond to a question by typing HELP or QUIT. Even the “...more...” prompt counts as a question.

When you type STOP, Ars Magna™ asks you for another phrase. Since there are disappointingly few for **Ronald Reagan**, try **Ronald Wilson Reagan**. There are a remarkable number of these Reaganagrams.

After a while, reading this output will blur your eyes and you'll tire of writing down the good ones on little scraps of paper. You can make Ars Magna™ store the anagrams in a file and peruse them at your leisure with a word-processing program. When it asks you the question

Print to the screen, print to a file, or just count anagrams?

Type COUNT or a filename [or press RETURN for SCREEN]?

Just type the name of a document; Ars Magna™ will create it if it's not there. If there's anything in the file, it'll ask if you want to add more stuff to the end of the file or replace what's already there.

When reading this output, it helps tremendously to change the whole file to a large size of a readable font (such as Boston, or some of the LaserWriter serif fonts).

In-depth fine print: When Ars Magna™ creates a document, it's a Macintosh “text-only” document, but has no type information to make it easy to open from the desktop. One way to examine the document is to open the application (such as MacWrite or Edit), select the Open command from the File menu, and select the document with your anagrams. You can also select both the application and the document on the desktop and select Open from the Finder's File menu.

When you ask for output to a file, the program prints every thousandth anagram to the screen as well. This helps you see how fast the “drivel factor” is increasing and lets you stop the file output when you think you're not going to find much more interesting. You'll also see dots printed to give you an idea of how fast the anagrams are being found. One row of 40 dots is 1000 anagrams.

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If you don't have a hard disk, the output can easily fill up your disk -- right now, the program will not tell you when your disk becomes full. (Yes, this is a bug; I hope to fix it soon.)

Instead of printing to a file or the screen, you can have the program just count the anagrams it finds. To do this, type COUNT when it asks where to store the output. As with file output, you'll see dots and every thousandth anagram printed on the screen.

### Pausing or stopping the output

When anagrams shown the screen are interrupted by

...more...

you can type STOP to go on to the next anagram (or, as always, type QUIT to leave the program). But when you didn't ask for the screen output to be paused, or when you're just counting or filing the anagrams, there's no opportunity to type STOP. Just press the space bar and Ars Magna™ will give you a chance to type STOP or continue.

Unfortunate fine print: actually, the program doesn't notice the space key until the next time it prints an anagram or a dot. If you give it an extremely difficult phrase, it may spend a very long time before it notices that you'd like its attention. You may just have to turn off or restart the Macintosh. Sorry.

Also, you can freeze output at any point by pressing and holding the mouse button.

### Other dictionaries, and name anagrams

While listening to your favorite Doors song, you might start to wonder: just what do they mean by that weird line about **Mr. Mojo risin'**? Feeding that phrase through the program doesn't help much: why would they be singing about **I is Jr. Mormon**?

The problem is that the program uses only the words in the dictionaries you tell it to use. If you use the document "anagram names" instead of the usual "anagram dict", the program will tell you that the Doors' lead singer **Jim Morrison** was really singing about himself.

Name anagrams have other uses. For instance, **Michael Morton** can be rearranged to **Liam Rochemont** or **Normalie Motch**. These name anagrams make great pseudonyms (or "anonyms") because it's hard to guess the author's identity but easy to prove it to a disbeliever.

You can use any text-only document with one word per line as a dictionary, so foreign-language anagrams are easy. If you have words or names you want used that aren't in the standard dictionary, you can store them in a new text document and use both the standard dictionary and your new dictionary.

You may find that longer dictionaries (such as those used by spelling checkers) aren't very good, for several reasons. First, although they have a lot of words not found in this small one, most of those words are long, and hard to use in anagrams anyway. Also, many compound words have been removed from this dictionary (for instance, there's no "dogfood" because both "dog" and "food" are in the dictionary). Last, many plurals have been removed and "s" has been put in the dictionary as a word. This way, instead of having the program print both "dogs food" and "foods dog", you'll see only "dog food s" — you have to figure out which word or words to add the "s" to.

If you look at the dictionary files, they're a little funny, because they've been compressed to fit on a single-sided disk. Ars Magna™ will read ordinary text files just as well, though, so it should be easy for you to add your own dictionaries.

Fine print for nerds: The compression scheme is to prefix each word with a number telling how many characters it has in common with the previous word. A word with no prefix has no beginning letters in common with the previous one. Thus, if the dictionary contained "aardvark" and "aardwolf" in sequence, the second word would be compressed to "4wolf".

### Why doesn't this look like a Macintosh program?

There are several reasons:

- I wrote Ars Magna™ to be portable — the program should be easy to convert for nearly any computer.

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- I'm sure there's a much better way to organize the program, to make it easier to sift through the millions of garbage anagrams to find a few good ones. I haven't figured out how to do this yet, so I thought I'd write the simple version and solicit suggestions on how to do the user interface right.
- If people paid more for shareware products, I could afford to spend the time to improve them.

### Miscellany

**Ars Magna** is Latin for "great art" (modest, eh?). I first learned this from James Woods, who also writes anagram-finding programs. What's it an anagram for? Take a guess.

Not-so-fine print: Like many shareware programs, this one hasn't been tested by professional Quality Assurance people. It may have awful bugs. As with all shareware, you should be careful — protect and/or back up your disks before trying it. I know of no dangerous bugs in this release, but I can't be liable for damages caused by any problems in the program.

### Advertising supplement

This program is distributed courtesy of the Boston Computer Society's Macintosh Group. The BCS is one of the world's premier user groups, with over 20,000 members and more than 4,000 in the Mac Group. The BCS offers innumerable meetings every month, with subgroups devoted to nearly every personal computer and many areas of the computing field. They also give seminars, hold beginner's sessions, and sell inexpensive public-domain software.

Membership in the BCS is a bargain at only \$35 per year. You can reach them at (617) 367-8080 (or DOS-8080), or write them at One Center Plaza, Boston MA, 02108, USA. Support the BCS!

**Boston Computer Society** is also an anagram for **it's our competency boost**, which I guess says something about what they're doing to promote computer literacy.

### Further reading

Interested in anagrams? Here's some serious and not-so-serious reading on the topic:

- Howard W. Bergerson's Palindromes and Anagrams is the best book I've seen on the topic. It's reprinted by Dover books, and is still in print in paperback at this writing.
- Word Ways is a small quarterly journal of word games and other fun. Their May 1984 issue included an article on the Reaganagrams found by a predecessor of Ars Magna™ (for instance, **Ronald Wilson Reagan is No darlings, no ERA law!**). You can get subscription and back issue information from Word Ways, Spring Valley Road, Morristown, NH 07960.
- A. K. Dewdney's "Computer Recreations" column in Scientific American has spent some time on anagrams, notably in their October 1984 issue. (Note that **Computer Recreations** jumbles to **erotica procurements**, while **Scientific American** is **face inane criticism!**)

### The bottom line

This program isn't free; it's shareware. Try it out for a while. If you find it's a fun diversion, you are obligated to license it for a small fee. If not, remove it from your disks. Either way, please pass it on and include this documentation and both dictionaries.

To become a licensed user, send \$10.00 with your name and address to:

Mike Morton  
132 Sherman St., Apt. 11  
Cambridge, MA 02140

If you'd like to hear about new versions of the program, enclose a stamped, self-addressed envelope.

Please also write me about...

...found a nifty anagram with the program? Discovered a secret meaning in your name? Got an interesting rearrangement for your local movie marquee? I'd love to see it. The best ones will be included in future versions of this documentation.

...did you expect to find a word in the dictionary, but didn't? Send it in; perhaps I'll include it. Same for names in the "anagram names" document. If you have a complete dictionary in Macintosh format, I

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might be interested in that.

...got suggestions for the program? Little gripes about this program or major suggestions for how to redo the user interface are welcome. The C source might be released someday; send me an SASE if you'd like to know about this.

Have fun!