



Apple II History



Apple II Pascal Information

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APPLE PASCAL

Applesoft was easy to use because it was interactive. You entered a command, and could immediately try it out. The disadvantage was a lack of more powerful commands, and it could be difficult to create large and complex programs. Efforts were begun within Apple to develop a more comprehensive language for the II, one that could be updated and modified if necessary. Since Applesoft was in ROM, it was more expensive and difficult for the end-user to install any upgrades to that language.

In 1979 Apple Pascal and the Language System was released. It sold for the steep price of \$495, and came on four 5.25 floppy disks (all in the format of the Pascal disk system, of course). It also included the ROMs to change 13 sector disk controllers into 16 sector controllers, and the Language Card to plug into slot 0. As discussed previously, the Language Card was a 16K RAM card that made an Apple II into a full 64K RAM computer. Because of the extra available RAM, the Pascal system could load into memory without having to avoid the space used by the Applesoft



(or Integer BASIC) interpreter. And with some complicated bank switching, even routines in the Monitor could be used if needed.

Apple chose to use the Pascal standard defined by the University of California at San Diego (UCSD). To make portability between various different computers possible, UCSD Pascal programs were compiled into a specialized code called "P-code". This "P-code" program could then be executed on any computer that had a proper interpreter. An Apple Pascal program could, then, run a little faster than an Applesoft program (since it was compiled), but not as fast as assembly language. The extra power it provided made it an attractive choice for some programmers.

The earliest version of Apple Pascal got complaints from users because it would not support lowercase (for those who had modified their Apple to display lowercase), and it was so large that it was quite awkward to use by those who owned only one disk drive.

Since the original UCSD Pascal language was designed to work with a full 80 columns of text, this was somewhat of a problem for the 40-column Apple II. For those Apple II's that did not have an 80-column card, Apple Pascal would display half of the screen at a time. In the Pascal Editor, entry of a line longer than 40 columns would cause the screen to scroll to the left. Using the arrow keys to move back to the left would scroll the screen back the other way. If needed, you could jump directly to the other half of the screen by pressing Ctrl-A. [1]

The limitation of Apple Pascal came from the need for a user to own the Language Card (or one of the later equivalent 16K RAM cards), and the fact that it was incompatible with the large library of DOS 3.2 programs and files that were already available. Eventually, with the proliferation of the 64K Apple IIe and 128K Apple IIc, a platform for Pascal applications was available. However, by that time the primary disk system being promoted by Apple for the II was ProDOS, and Apple never officially released a version of their original UCSD Pascal that would run under that operating system.

The Apple Pascal system has evolved up to version 1.3, which will support the more advanced features of the Apple IIe and IIc, but does not work as well with the IIGS as some would like. Instead, IIGS programmers now have versions of Pascal distributed by third party companies (like ORCA/Pascal from ByteWorks) created to take full advantage of that machine in 16-bit mode.

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