

# Specifications

APPLE PASCAL™, incorporating UCSD PASCAL™, offers extended features in a complete, interactive package employing today's most sophisticated structured programming language. It provides advanced capabilities that boost performance and cut development time for large business, scientific, and educational programs.

The software package provides a powerful set of tools for the serious programmer:

## EDITOR

- Fast, screen-oriented editor for program development and word processing
- 80-character lines (upper/lower case) available with external CRT terminal
- 80-character lines available in standard APPLE using horizontal scrolling.

## COMPILER

Standard PASCAL plus extensions for strings, disk files, graphics, system programming:

- Hi-Res Graphics: "Turtlegraphics": simplifies display production:  
INITTURTLE, PENCOLOR, TURNT0, TURN, MOVE, TEXTMODE GRAFMODE
- Text: GOTOXY procedure for cursor addressing  
Split screen or horizontal scrolling  
FUNCTION KEYPRESS tells whether character available
- Library Routines:  
FUNCTION RANDOM  
PROCEDURE RANDOMIZE  
FUNCTION PADDLE  
FUNCTION BUTTON  
PROCEDURE TLOUT  
FUNCTION KEYPRESS  
And more.

## FILER

General purpose program for manipulating disk files

## SYSTEM UTILITIES

- CALCULATOR — performs basic calculations
- SETUP — allows examination and modification of system operating environment

PASCAL operates in a 48K Apple with one disk drive and an Apple Language Card. An external 80-column terminal can be attached. The package includes:

Language card (16K RAM, 2K ROM)  
5 diskettes, including  
Integer Basic  
Applesoft Extended Basic  
PASCAL System

IC puller  
Full set of manuals  
1 PASCAL reference card  
(Order No: A2B0006)

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For the number of your local dealer  
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**800-662-9238**

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# WHAT IS APPLE PASCAL™?

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## Questions and Answers about PASCAL

Q: What is PASCAL ?

A: PASCAL is a relatively new programming language first implemented in 1970 by its inventor, Professor Niklaus Wirth. It was devised to overcome some of the problems and deficiencies in existing programming languages. The language is named after the famous mathematician Blaise Pascal.

Q: What improvements does PASCAL offer with respect to other languages?

A: There are two innovations that set PASCAL apart from other contemporary programming languages. The first is its consistent, straightforward design that makes programming easier for a number of reasons, not the least of which is that there is less to remember. With this simplicity comes a great deal of power, since PASCAL offers recursive routines, elegant features for structuring programs in terms of the user's needs, and relatively efficient use of storage space without sacrificing speed.

The second innovation lies in its use of data structures. Instead of having to state a problem only in terms of abstract computer-science structures (such as arrays or files), you can create data structures that reflect the way you are already used to thinking about your work.

Q: What are the major benefits of using PASCAL ?

A: There are a large number of benefits:

- PASCAL simplifies development of large problems by providing convenient mechanisms for breaking down a complex problem into manageable parts.
- PASCAL has built in error-checking that reduces debugging time, thus lowering programming costs. This error-checking goes beyond the usual syntax testing provided by other languages. It includes type and range checking that catches many logical errors.
- PASCAL lowers maintenance costs. It is easier

to find errors due to the clear structure and modularity of PASCAL. Every programming manager knows how difficult it can be for a second programmer to "pick up" a program written by someone else. This problem is minimized by PASCAL.

- PASCAL programs, in their ready-to-run, compiled form, take less space and execute more quickly than their equivalents in BASIC.
- PASCAL is extensible – you can add your own commands and data types so that the program will reflect your needs, not those of the language designer. You cannot do this in BASIC, FORTRAN or COBOL.
- PASCAL can run large, powerful applications on inexpensive hardware.

Q: Why is PASCAL said to be the future major language for microcomputers?

A: It gives the full power of a mature, sophisticated language in an inexpensive, microprocessor-based environment. Apple's PASCAL is not a stripped-down mini-PASCAL, but a full-feature implementation.

Q: I already know BASIC. How difficult is it to learn PASCAL ?

A: You can get results while discovering how easy it is to learn this new language. Programmers appreciate the easy, free style of PASCAL that saves them time and money, and most BASIC users can write their own PASCAL programs after a few hours of reading the manuals and working with the system.

Q: What is UCSD PASCAL™? How is it different from other Pascals?

A: UCSD PASCAL is the full PASCAL language, and includes a complete operating system with utilities and extensions for commercial programming and system development. It has the advantage of being supported and standardized by a major university.

Q: Can the Apple run PASCAL programs written for other computers?

A: PASCAL is more uniform from installation to installation than BASIC. Most PASCAL programs found in magazines and books will run in APPLE PASCAL. All programs written for any computer in UCSD PASCAL will run directly on the Apple.

Q: I already have an APPLE II. What else do I need to program in PASCAL ?

A: The minimum requirements are 48K of memory, at least one disk drive, and our new Language System.

Q: What is the Language System?

A: The Language System consists of 16K of write-protectable memory on a plug-in card, the Auto-Start ROM, and software that allows you to take advantage of this additional memory with Apple's BASIC languages as well as PASCAL. This package gives the Apple user a full 64K of RAM. The Language System comes with many tutorial and reference manuals.

Q: How much does it cost?

A: The complete package has a suggested retail price of \$495.

Q: When will this package be available?

A: The Language System including PASCAL will be available in the third quarter of '79.

Q: I do not have an 80 character display device in my home, can I still program in PASCAL ?

A: Yes, Apple's ability to scroll horizontally easily accommodates PASCAL formats on the standard 40-character CRT.

Q: If I have questions when I'm programming in PASCAL, can I get help from Apple?

A: Yes. The Apple hot line service is available five days a week.

Q: How do I buy PASCAL ?

A: See your nearest Apple dealer.