Apple Pilot: An Authoring Alternative

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Having access to a computer means deciding on one of two options: either having the computer manage instruction, or using the computer to assist in the teaching process. Choosing the latter is referred to as computer-assisted instruction (CAI). Here again, there are two options: to purchase commercially prepared programs, or to design and author one's own.

Authoring one's own CAI programs allows one to make use of local input and materials, to have direct control over the content, and to create programs that meet one's needs. The problem has been, and probably will continue to be, for some time, the difficulty of finding a programming language that is both powerful and simple.

Only those who have labored long and hard with "FOR-NEXT" loops, "GOSUB" and "IF-THEN" statements in the BASIC programming language can appreciate the difficulties involved in authoring courseware. BASIC was never intended for educational use. Some excellent programs are available, but the factors of time, programming expertise, and machine capabilities have hindered teachers who want to create programs.

As the title suggests, the Apple PILOT programming language is an alternative. It is not the solution by any means, but it is a reasonably efficient way of displaying text and graphics to create CAI that rises above mere drill-and-practice.
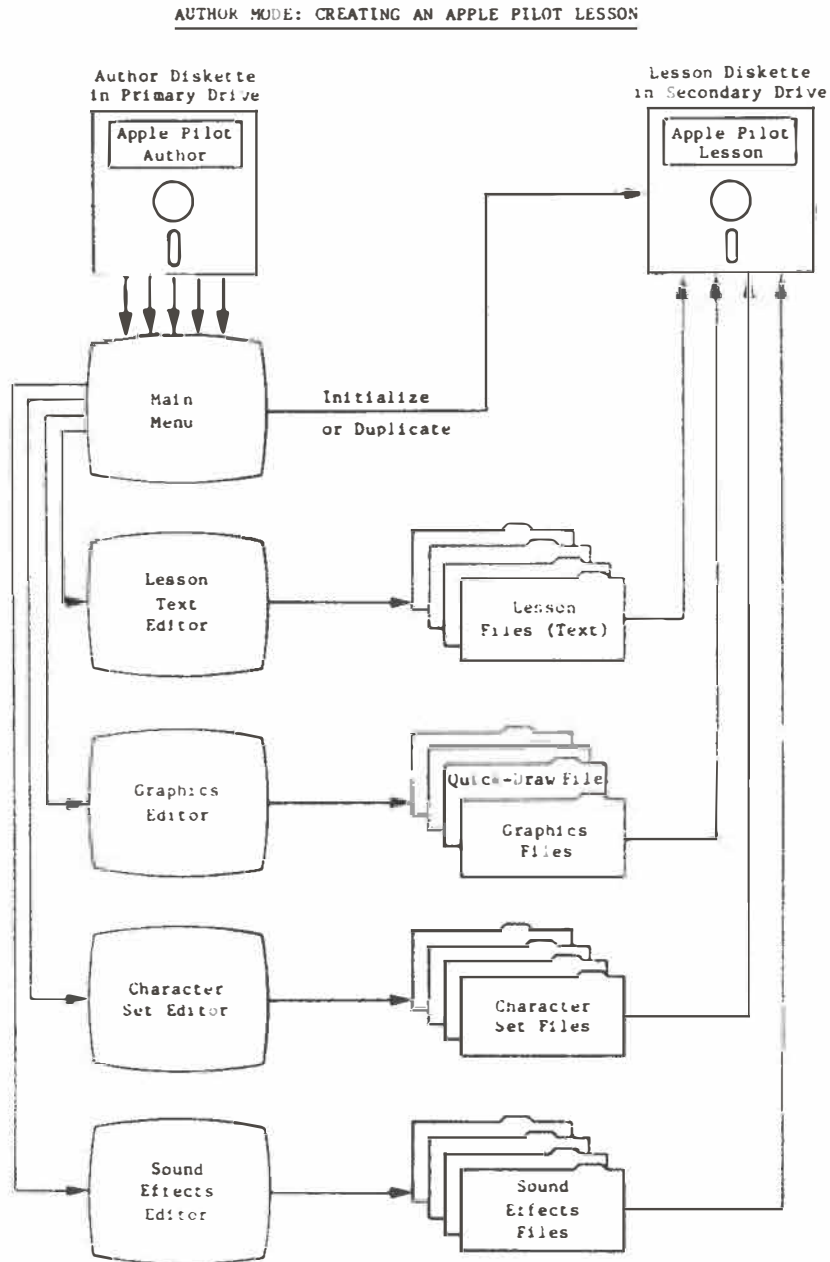
Apple PILOT is the link between an instructional design and the computer that presents it. It is a system, a framework, that allows one to direct the computer to do what one wishes. To use Apple PILOT, one must first learn its grammar which is a language as distinct as BASIC.

The PILOT language has four major components. These components are discussed in the remainder of this paragraph and are illustrated in Figure 1. First, the lesson text editor allows one to create commands which display the text portions of a lesson. Second, the graphics editor allows one to draw lines, boxes, circles, and ovals and to fill these shapes with any of six colors. The graphics can be drawn using either the keyboard keys or the game paddles. Both make possible the creation of reasonably detailed and complex drawings or diagrams. Third, the character set editor allows one to produce a set of new or different characters such as special mathematics symbols or the Russian, Hebrew, or Japanese alphabets! Finally, the sound effects editor allows one to compose music or sound effects to incorporate into a lesson.

Figure 1

DIAGRAM OF AUTHOR MODE

The following diagram shows how Author Mode works. The Main Menu lets
the author use various editors to create different kinds of files.
The files are combined into a PILOT lesson which is stored on a Lesson
diskette.

AUTHOR MODE: CREATING AN APPLE PILOT LESSON

Author Diskette
in Primary Drive

Lesson Diskette
in Secondary Drive

Apple Pilot
Author

Apple Pilot
Lesson

Main
Menu

Initialize
or Duplicate

Lesson
Text
Editor

Lesson
Files (Text)

Graphics
Editor

Quick-Draw File

Graphics
Files

Character
Set Editor

Character
Set Files

Sound
Effects
Editor

Sound
Effects
Files

Reprinted from *Apple Pilot Editor's Manual,* page 7.

Each of these four components is straight forward and easy to use. As one works in each, directions and guidance are either given or are available at the touch of a key. Of course, to use the system confidently and competently, one must invest considerable time. Perhaps the most attractive feature of this system is the fact that it assumes no previous programming experience. Learning the system is simply a matter of learning the commands used to direct the computer to perform an action and the correct grammar for the action to be performed.

As few as five commands are needed for most courseware programs. For example, "T:" means print whatever follows the colon on the screen; "A:" means accept a student's answer to a question; "M:" means match the student's response to one you have decided upon; "J:" means jump to another set of instructions; and "G:" means display a graphic which you previously created. Each of these commands is followed by an instruction. For example, "T:Hello!" is a command for "Hello!" to be displayed. Using these commands and instructions to display text or questions, to accept and match student responses, and then to jump to an appropriate section for review or enrichment is the basis of any courseware.

Apple PILOT offers features not easily attainable using BASIC and an unmodified Apple II Plus computer. PILOT makes the mixing of text and graphics very easy, something that requires a great deal of programming expertise using BASIC. PILOT text is also available in upper and lower case, a significant feature when the program is being used for primary children. Text editing, that is, the insertion or deletion of text, as well as copying whole portions of text are possible with little difficulty. As well, student response can be recorded in a file for later analysis.

The Apple PILOT system consists of two disks and two manuals. The author disk is the manager of the system used to build the program, while the lesson disk is used to store the completed programs. To author using PILOT, an Apple II or Apple II Plus with at least 48K bytes of memory and dual disk drives are needed. The two manuals that accompany the system are simply excellent. They are clear, concise, and comprehensive. All that is needed to begin programming is interest, enthusiasm, spare time, and - oh yes - a micro!

Editor's note: Apple Pilot is one of the software pieces available through the School Book Branch.

Decimal's In

Knowing her husband's habit of sampling everything she baked, a woman left a note on a dozen freshly baked tarts: "Counted - one dozen!"

On her return she found only ten tarts and a new note: "Think metric!"

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