

BOOK REVIEWS

Darnell Salyer, a Professor of Chemistry at Eastern Kentucky University, reviews a book on animation techniques for the Apple II in this issue. Based on his description, this book should be quite helpful to those readers who wish to spice up their programs with some eye-catching graphics. This is Darnell's first appearance in this column, but his article on the Apple random number generator appeared in the Newsletter two years ago. Also, he has worked with John Moore at Project SERAPHIM reviewing Apple software. In the second review, Dennis Seivers continues his fine series of book reviews on interfacing. This time the focus of attention is the IBM-PC. The final review looks at computer applications in the flavor and fragrance industries, an area that is probably somewhat unfamiliar to many readers.

Do you have some special area of computer expertise that you would like to share with your colleagues? If so, why not write to me and ask if there are books in your field of interest that you might review. Of course, it is always interesting to hear from the readers. Even if you don't wish to review a book, but want to share some comments or suggestions, write to Dr. Harry E. Pence, Book Review Editor, Department of Chemistry, SUNY-Oneonta, Oneonta, NY 13820.

ANIMATION MAGIC WITH YOUR APPLE IIe AND IIc

by Ron Person

Osborne McGraw-Hill, 2600 Tenth St., Berkeley, CA 94710

1985, 274 pages, paperbound, \$15.95

Reviewed by Darnell Salyer*

Animation Magic is a veritable treasure chest of useful tools for creating animation sequences, graphics, and games. The book should be of considerable interest and value to intermediate or advanced programmers who are producing CAI and computer applications materials, and wish to add enhanced graphics and animation. A familiarity with Applesoft Basic is needed, but Person presents demonstrations and explanations of all programs and routines which will expand the user's programming skills. Non-chemical examples are used, but the techniques should be generally applicable. The programs will also execute on II, II+, and Apple look-a-like machines with at least 48 K of memory and DOS 3.3 or ProDOS.

The initial chapter, "An Animation Primer", is a general discussion with no programming, followed by Programming Your Game, which emphasizes structured programming with a master control and carefully arranged subroutines. Chapter Three gives an elementary introduction to creating, saving, loading, relocating, and using shape tables; table directories, and memory mapping. The relationship of color to shapes is considered.

Chapter Four extends the discussions and examples to shape animation. Easy to follow steps are given for using two large utility programs, Shape Maker and Advanced Shape Maker, to create cells for sequences and motions. Featuring a flashing cursor "pen" and enlarged grid, these are menu-driven and provide operation modes of pen-up, pen-down, draft, plot, edit, save, etc. The utilities eliminate much of the work of creating figures or shapes. They require relatively little direct use of machine language programming. A third utility, Table Maker, groups collections of shapes in a single shape table. Advanced programmers may be led to create their own utility programs.

Many useful small routines are found in Chapter Five on Backgrounds. Among the most notable are:
Color Pattern Fill (painting areas) Via XDRAW a closed boundary on the graphics screen is filled with single color or a pattern. This is useful for easily filling a buret, volumetric flask, etc.
Cut and Paste/Copying Screen Sections An original image can be duplicated at a different screen location, reproduced upside down or mirrored.
Rubber Band Box Via XDRAW, SCALE, AND ROT, the programmer-turned-artist can create rectangles and ovals of various sizes at a desired screen location.
 Excellent paragraphs and small demo programs summarize the use of software switches to change graphics pages and page-flipping animation.

Collision detection and target identification are covered in Chapter Six, while Chapter Seven moves away from programming details to a brief discussion of form, objectives, strategies, and visual features of programs or games, which will lead to more effective interaction.

Chapter Eight concerns refining programs and includes lettering, titles, pull-down and pull-up menus, icons, and creation of function keys. Special Effects of Chapter Nine include motions of a bouncing ball, collisions, and rebound, calculated or manually entered motion paths, and motions under the influence of gravity.

TURTLE, ROUNDUP, and JERRI THE JUGGLER are demo programs which illustrate various forms of simple motions up to that of an animated runner.

The SCREEN ARTIST utility is introduced for creating backgrounds. It may be used independently of the animation programs to create bit-map files for title screens, enhanced graphics, or pictures. Programs may then add/remove other features by way of other utilities which write on the HIRES screens or by HPLOTing.

Approximately one-third of the pages of Animation Magic are listings of the programs, and these were found to be remarkably error free. A printer's error was found on page 2, where Apple III should be II. It is instructional to type the programs as they are studied, executed, and debugged, but the time saved may be worth \$19.95 for the Animation Magic Toolkit, which may be ordered from an address in the book. The reviewer's order was filled in eight weeks.

Companion works by Person include Macintosh Game Animation, and the IBM PC and PCjr version of Animation Magic, both from Osborne McGraw-Hill. Corresponding toolkit diskettes are also available, the former from Person and the latter from Osborne McGraw-Hill.

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INTERFACING TO THE IBM PERSONAL COMPUTER

by Lewis C. Eggbrecht

Howard W. Sams Co., Inc., 1985, 246 pages, paperbound, \$15.95
available from Group Technology, Ltd., Box 87, Check, VA 24072

Reviewed by Dennis Seivers*

Interfacing to the IBM Personal Computer is a valuable reference for those seriously interested in designing interface projects for the IBM PC computer. This fully indexed book is written in moderately technical language. Illustrations are well-placed and accent the text very well. Unlike many books in this field, a relatively small number of pages are devoted to specific project construction. Rather, the discussion is more generic in nature and explores bus and circuit design.

The discussion begins with a full exploration of the 8088 microprocessor. Each feature is fully described along with its use and means of access. This permits direct use of the microprocessor in circuit interfacing. This is one of the better descriptions of the 8088 done in a moderately technical, abbreviated manner.

The expansion bus configuration is explored in a similar manner. The author provides readers with some interesting ideas for application of the bus circuit but does not design the circuit.

The section on timing cycles is extremely well done and quite useful. The author develops the use of the internal clock as well as several other possible sources of timing signals. In this chapter information is given on the machine language needed to access these timing circuits. Most of the program considerations are found elsewhere. This material is further explored by consideration of both the hardware and software triggers of timing devices.

The chapter on interrupt usage is fairly typical of the use of computer interrupts for data collection and transmission. Machine language and BASIC techniques for programming the interrupts are supplied without any specific application in mind. I rather prefer this, as it allows for the construction of a library of useful routines to be created for future use.

The system and memory maps are comprehensive. This chapter is mostly a series of charts with a minimum of explanation. Dialogue is rarely needed, as this material is used chiefly for reference.

The section on data transmission and acquisition speed synchronization is one not generally found in most interfacing books. The treatment is clear and detailed. Many unique problems are associated with high speed data transfer, and several solutions are discussed.