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.

A few projects are described in detail and include the use of the cassette port for TTL output and the use of the parallel printer card for data output. The methods described are not new, but many users are unaware of the techniques needed for these simple interface designs. The ever-popular game card is a standard interface port, and the author describes several uses. A variety of high voltage and high current control devices are described. These include a lamp driver, stepper motor driver (two types), and a classic relay driver. Schematic diagrams and software routines are provided, and these projects should find many applications.

BASIC programming techniques are described to utilize these interface projects. The use of BASIC and machine language drivers teaches many important concepts. The programming chapter is very well done but does assume some prior experience with machine language entry and BASIC.

If you are looking for predesigned projects and software, this book is not for you. Should you be interested in designing a special interface for your laboratory, this book could answer many technical questions related to the hardware and software components. The experienced user will find this a useful reference, while the intermediate user should learn a great deal from this book.

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COMPUTERS IN FLAVOR AND FRAGRANCE RESEARCH

Craig B. Warren and John P. Walradt, editors
American Chemical Society, Washington, D.C.
1984, 164 pages, hardbound, $29.95
Reviewed by Harry E. Pence*

Computer use has been expanding rapidly in all types of industrial chemical laboratories, so it should surprise few readers that this trend also extends to the flavor and fragrance industries. Since changes in these industries are not always widely followed, the specific directions of computer development may not be familiar to most of us. This book consists of a series of papers presented at a symposium sponsored by the Division of Agricultural and Food Chemistry at the 186th Meeting of the American Chemical Society, Washington, DC, August 28-September 2, 1983.

The first five articles deal with using computers for structure-activity correlations, information handling, and statistical analysis. Many of the processes in these articles, such as computer-assisted molecular design, information storage, and information retrieval, will be familiar to those who regularly follow computer developments in chemistry, but the specific applications are sufficiently different to be of interest. In addition, sensory scientists must collect and process data from evaluation panels, individuals who express their opinions about the flavor and/or odor of possible new products. These panels play a key part in product development, and the computer can contribute significantly to this work.

Most chemists are aware that the pharmaceutical industry has played a pioneering role in research on computer-assisted molecular synthesis but may not be familiar with similar work done in the flavor and fragrance industry. These papers discuss several methods that are being studied to find structure- activity correlations. Taken together, they present a useful perspective on some of the progress in this area. Even though the relation between sensory properties of flavor compounds and their molecular properties is not yet understood, progress is being made towards predicting the odor and/or taste of new products.

Computer processing of information from evaluation panels is especially important since it can both decrease the cost and increase the reliability of these procedures. The criteria here can be complicated. As an example, the public may associate effectiveness of medicines with unpleasant taste, and consumers can be just as likely to reject a product that tastes too good as one that tastes too bad. To quantitatively measure these trends, statistical analysis plays a role that is as important as analytical instrumentation and measures of organic reactivity.

Of course, the computer is not essential for this work. Acceptable products were produced long before the development of the microprocessor, but the computer offers savings of both time and expense when used for product modeling and optimization. It can streamline the process by recording evaluations, organizing data, and determining the most effective new product formulations.

Start by marking â€œInterfacing to the IBM Personal Computerâ€ as Want to Read: Want to Read savingâ€¦ Want to Read.Â Reveals how to exploit the IBM PC's open architecture for interfacing a variety of external devices, covering the different BUS structures, display adapters, diskettes, printer, hard disks, mice, and other matters. Get A Copy. Amazon. "IBM Personal Computer Technical Reference"* (#5005): This manual is designed to provide hardware design and interface information. The publication also provides Basic Input/Output System (BIOS) information as well as programming support material. The manual is intended for programmers, engineers involved in hardware and software design, designers, and interested persons who have a need to know how the 5150 is designed and works. Twenty-five years ago, IBM changed the world. It wasn't intentional. When Big Blue announced a microcomputer called the IBM Personal Computer on August 12, 1981, it hoped only to make a nice profit. The company did make money--but more important, the IBM PC, also known as the Model 5150, made a significant impact on the culture. Today, for instance, we call our desktops and laptops PCs, not microcomputers. The vast majority of the ubiquitous machines scattered around our offices and homes are direct descendents of IBM's 25-year-old box. David J. Bradley. Photograph: Charles Harris. F