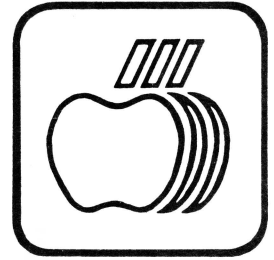


open apple gazette



Fifth Edition

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The Third Wave and Comdex

Most of us Apple /// owners have asked or been asked the question more than once what will happen to the /// once the much rumored Lisa is announced. Industry trade publications such as InfoWorld have been referring to Apple's Lisa frequently and make no mention of the ///.

Apple hosted a luncheon called the Third Wave for software developers at the Hilton Hotel during Comdex in Las Vegas. The speakers from Apple made it obvious that Apple is committed to the ///. The /// is a part of their marketing efforts in the future.

Taylor Pohlman one of the speakers representing Apple highlighted some of the features of the Apple /// from a software developers viewpoint. Features such as; the Apple /// was the first microcomputer to do bank switching, and the first to use a variable clock speed. The Apple /// operating system (SOS) is designed to address 512K of RAM.

While the IBM PC is outselling the Apple ///, Apple's market research indicates when you look at the amount of memory being used there are more 256K Apple ///s sold than IBM PC's with an equivalent amount of memory.

Those software developers present were given the opportunity to use an Apple ///, a Profile, any of the languages currently available for the ///, a Monitor ///, and the new Unifile, for a sixty day period and then either purchase the equipment at a substantial discount, or return the equipment to Apple and pay only for the return freight. The vast majority of the software developers took Apple up on the offer. So look for the amount of Software for the /// to increase rapidly.

Tim Gill from Quark Engineering was one of two speakers outside Apple. Tim spoke of his companies future commitment to the /// and that Quark has software products being developed for the /// which will not be ready to release for approximately a year and a half.

Catalyst and Discourse from Quark are absolutely fantastic. These are two superb pieces of software which in conjunction with Profile really wakes the Apple /// up. Catalyst lets you switch between programs, such as Advanced Version VisiCalc to Word Juggler to System Utilities without rebooting your ///. At the same time Discourse can be printing out that long report you wrote. No longer do you have to wait for the printer to completely print out a document before you can use your computer again. This is possible because Apple /// SOS supports interrupts. Interrupts enable the /// with Discourse to operate your printer while you are doing something else with your Apple ///. These two products from Quark are the first products that really take advantage of this capability of the ///.

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CLUB INFORMATION

MEETINGS

Meetings are held at 7:30 PM on the third Wednesday of each month. The location is the Board Room of the California Bar Association offices at 555 Franklin St. San Francisco.

MEMBERSHIP

Annual membership dues are \$25 from the date application received. Your check payable to the Original Apple ///rs may be mailed to the address below.

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ARTICLE SUBMISSION POLICY

The Open Apple Gazette welcomes any and all articles dealing with the Apple /// Computer and its associated hardware and software. Articles may be submitted double spaced and typewritten, or on the APPLE WRITER /// word processor. We will send your disk back to you as soon as we output the article on our printer.

Public Domain Software for the ///

Public domain software for the Apple [] was undoubtedly one of the primary reasons for its success. This software enabled owners to learn more about their machines and how to use them profitably. Public domain software for the /// has been slow in coming but here are some of the first that are available. The Applecon program from Apple Computer Inc. will greatly add to the library of public domain software for the ///. You can help with this by sending us programs you have converted to or written for the ///.

Applecon from Apple Computer Inc.

Applecon is a new utility for the Apple /// which converts Applesoft BASIC programs to Apple /// Business BASIC programs to the extent that they can be machine converted. This program will not convert any copy protected programs or diskettes. This utility will take an Applesoft (Apple II) program and move it up to SOS and into Apple Business BASIC and then will make the proper changes. Those lines it cannot convert directly

into Business BASIC will be flagged into a REM statement for you to correct. The disk comes with several pages of documentation on the disk in a text file. The file can be read by Apple Writer ///, or you can output it via the Pascal System.

File Cabinet ///

This is a small general purpose data base management system written in Business BASIC. The use of File Cabinet /// is simple and most of it is self documenting. File Cabinet provides a means of interactively defining data files, entering data, sorting, retrieving records containing specific data, deleting records, and printing reports. Because all of the data in File Cabinet is memory resident the size of the data base is limited to a relatively small amount but the handling of this data is very fast.

DOS to SOS text File converter.

This program enables you to move DOS 3.3 text files to SOS. It is useful in moving VisiCalc Models from the][to the ///. If you own Apple Writer the Apple Writer Utility diskette already will do this for you.

These diskettes are available to members for \$8.50 each. Non Members \$10.00. Canadian Residents add \$ 1.00 for postage, add \$2.00 for other foreign postage. Make your checks payable to the:

Original Apple ///rs
P. O. Box 813
San Francisco, CA
94101

- /// -

Back Issues

Volume 1 Number 1	\$ 3.00
Volume 1 Number 2	\$ 4.00
Volume 1 Number 3	\$ 4.00
Volume 1 Number 4	\$ 4.00

Mail Requests for Back Issues to:

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- /// -

LIST OF SOFTWARE AND HARDWARE AVAILABLE FOR THE APPLE ///

MAJOR REVISION

Consolidation of all known sources
Includes /// rd Wave Material

- Editors Note -
Since this list has been compiled from several voluntary sources, The Original Apple ///rs cannot be responsible for any claims by the manufacturers.

All of the software below has been reported to be compatible with all Apple /// peripherals including the Profile hard disk system (unless otherwise noted).

(1) Data Bases

FYI - General purpose data base that combines graphics, word processing and numerical information into one data set. Designed to run on Profile. Living Videotext, Inc., P.O. Box 3429, Saratoga, CA. 95070; (408) 741-1104; Cost (\$350.00).

Context/MBA - Professional data base that combines modelling, word processing, business graphics and communications in one package. Can be used to create business models, text and databases. All programs use a similar command structure. For further information contact Context Management Systems, 23864 Hawthorne Blvd., Torrance, CA. 90505; (213) 378-8277.

Quickfile - Ram based data base for keeping track of customers, phone numbers, et.al. Can handle up to 1200 records on a 256K Apple ///. Output is compatible with Apple Writer ///. From Apple (\$100.00).

RPS /// - RPS is a record processing service that allows Pascal programmers to set up multi-keyed ISAM files. Provides a solid base for application programs that manage large quantities of data. Available 4th Quarter from Apple Computer, Inc.

PFS:FILE - Personal filing system allows the user to set up a data base with variable field sizes. Widely used data base system. Software Publishing Corp., 1901 Landings Dr., Mountain View, CA. 94043; (415) 962-8910. (Price for PFS:FILE and REPORT

\$250.00).

PFS:REPORT - Sorts, calculates, formats and prints reports from the information in files created with PFS:FILE. Available from: Software Publishing Corp.

Merge /// - Utilities written in Apple Writer ///'s Word Processing language. Transports data files from PFS to Apple Writer and vice versa. (\$55.00).

DataFax - organizes information into folders, each of which contains as many individual pages of information as you'd like. Free-form, relational filing system that allows data to be entered, stored, and accessed any way the user wants. Link Systems; 1640 19th Street, Santa Monica, CA. 90404; (213) 453-1851 (\$199.00).

Data Base /// - has user-definable layouts, automatic page numbering, totaling, averaging, and counting of data. Creative Software, 6081 Barbados Ave., Cypress, CA. 90630; (714) 893-4695. List price is \$175.00.

Data Manager /// - Data base management system including report generator. 200 fields per record. 32,000 records per file. Allows 16M byte files. Available from Microlab; 2310 Skokie Valley Rd., Highland Park, Illinois 60035; (312) 433-7550.

TDM - The Data Machine. Pascal Data Base Mngement and Reporting System designed for sophisticated file maintenance and reporting from very large data bases especially file resident of hard disk systems. Up to 32767 records, 16 M bytes on hard disk. One index key for updating, but any number can be used for data retrieval, display, and reporting. Batch loading is supported to allow mass update from sequential input. From Pascal Systems, 830 Menlo Ave., Menlo Park, CA. 94025. (\$750.00)

Bibmod - A data base manager. From Blue Lakes Software. (\$250.00).

ROSE - A data base manager. From Denver Software, Suite 15, 14100 E. Jewell Ave., Aurora, CA. 80012. (\$350.00)

(2) Language and Programming Tools

Pascal /// - General Purpose High Level Language is the first to implement IEEE floating point standard of 64 digit precision for integer numbers and 80 digit precision floating point. From Apple

Computer Inc. (\$250.00)

Pascal Utility Library - The Apple /// Pascal Utility Library allows quick and efficient programming by eliminating the time a programmer would spend developing data entry and manipulation routines. Functions include: date comparison; left, right, and center justification; skip to new page routines; and many others. From Apple. (\$75.00)

PSORT - Pascal text sort/merge utility. Shattock and Associates through Apple Computer. (\$75.00)

VersaForm - from Applied Software Technology - Business form processing, Pascal based program. Features ease of use, unique capability of handling columnar data, works well with the profile or diskette, data entry checking and auto-filing fields, built-in calculator, calculated fields, and much more. Applied Software Technology, 14125 Capri Drive, Los Gatos, CA. 95030. (\$495.00)

Pascal Interface - From Applied Software Technology. (\$245.00)

TPG - Pascal source code generator. Menu driven, 16 files open simultaneously, 17 screens. P-system code is transportable. From Pascal Systems, 830 Menlo Ave., Menlo Park, CA. 94025. (\$895.00)

LinkIndex - B-tree indexer. Provides the Pascal programmer with a rapid key retrieval system for data files. Link Systems, 1640 19th St., Santa Monica, CA. 90404; (213) 453-1851. (\$195.00)

LinkSampler I - Tutorial with 21 teaching programs illustrating Pascal Techniques. Link Systems, 1640 19th St., Santa Monica, CA. 90404; (213) 453-1851. (\$60.00)

LinkVideo - screen generator. Link Systems, 1640 19th St., Santa Monica, CA. 90404; (213) 453-1851. (\$195.00)

QuestMod - screen generator. Blue Lakes Software, 3240 University Ave., Madison, WI. 53705; (608) 223-6502. (\$250.00)

COBOL /// - High intermediate level COBOL with built in screen generator and I/O hooks for graphics. Superior to all micro-based COBOL's and most mini-based COBOL's. Includes a forms generator and an interactive debusser. From Apple. (\$450.00)

Business BASIC - implementation of the popular Business Basic language found on many minicomputers. Includes easy to use graphics and program structures. Available from Apple Computer Inc. (\$100.00)

Basic Extension - Machine language routines (invokable moduals) that can be added to Business Basic to speed up user programs, save disk space, add new functions and decrease development time. Three types of routines are present: disk, array, and utility. From Foxware Products, 165 West Mead Avenue, Salt Lake City, Utah; (801) 364-0394. (\$95.00)

Easyform - Basic screen generator. Business Software Software Services, 17 Pease Street, Wilbraham, MA. 01095. (\$200.00)

MBASIC - Microsoft BASIC is available from Apple Computer Inc. as part of the Softcard /// package.

/// Edit - Business BASIC development tool for editing, testing and debugging. Expanding Space. (\$29.95)

/// Number - Renumber facility with many options available. Expanding Space. (\$29.95)

ALD System /// - An assembly language development system by Paul Lutus. Generates DOS 3.3 disk files (NOT SOS) but uses larger memory and speed to decrease development time for Apple][programs. From Insoft, 259 Barnett Road, #3, Medford, OR. 97501. (\$125.00)

Transforth /// - Another Paul Lutus effort, this one a version of FORTH. Includes six different text and graphic modes, turtle graphics commands, easily formatted text windows, four different character sets, and software control of the microprocessor speed. From Insoft. Price \$125.00.

Jeppson Disassembler - Translates Apple /// machine language into readable form. Available from Softtalk Magazine, Box 60, North Hollywood, CA. 91603. (\$11.00)

Modula 2 - program development system by the creator of Pascal, Niclus Wirth. Uses a p-System (Version 2) interpreter slightly modified to deal with a few additions in syntax. For instance, it allows compilation of "units" without all of their declarations. Declarations must be resolved at run time instead. Real time I/O is improved, and access to ROM routines is

added. Ticom Systems, 13470 Washington Blvd., Marina del Rey, CA. 90291; (213) 821-7919 or 827-7118. (\$550.00-1000.00)

Program Writer/Report - Program Generator. Vital Information, 7899 Mastin Drive, Overland Park, KS. 66204. (\$200.00)

(3) Word Processing

Apple Writer /// - Full feature word processor includes glossary files, integrated word processing language (WPL), foot noting and an interface to Mail List Manager (q.v.). Additionally, Applewriter can read Visical files to produce letter quality reports of numeric information. Available from Apple Computer Inc. Price \$225.00. A product training pack is available for \$20.00.

Ink Well - Easy to use, "beginner's" level word processing sytem. Includes such features as printing text as it appears on the screen, underlining, double striking, and a user oriented manual. Available from Foware Products Inc., 165 West Mead Ave., Salt Lake City, Utah 84101. (\$185.00)

WordStar /// - Popular word processing system for CP/M. Requires Softcard ///. Available 4th Quarter.

Powertext - From Beaman-Porter Inc.; David Guest, Pleasant Ridge Rd., Harrison, NY. 10528; (914) 967-3504.

Word /// - Simple word processor written in BASIC to allow an experienced programmer to modify the source code to add special features. Displays text as it is printed, including underlining, boldface and inverse. Available from Westico, 25 Van Zant St., Norwalk, CT 06855; (203) 853-6880. (\$195.00)

DocuWriter - From Creative Discount Software, Suite 2156 , 256 S. Robertson, Beverly Hills, CA. 90211. (\$250.00)

Type Righter - From Imagineering, Inc., Suite #10, 405 S. Farwell, Eau Claire, WI. 54601. (\$195.00)

Word Juggler - Powerful word processing package combines general purpose word processing interfaces with spelling dictionary, mail list and type setting features. Available from Quark Engineering, 1433 Williams, Suite 1102, Denver, CO. 80218; (303) 399-1096. (\$250.00)

Lexicheck - High performance spelling checker designed especially for use with Word Juggler. Lexicheck scans long documents for misspellings at a rate of 9900 words/minute (14,000 wpm using a hard disk drive). (\$195.00 with a legal dictionary available for \$85.00.) Available from Quark Engineering above.

TypeFace - Word Juggler feature that allows it to communicate with computerized typesetting equipment. Available from Quark Engineering for \$175.00.

Mail List Manager Interface - Accessory for Word Juggler which allows it to access files created by Apple's Mail List Manager. Available from Quark Engineering for \$35.00.

Write-On /// - Apple /// version of an Apple][word processor fails to make use of Apple /// features or keyboard. Two pages were added to the Apple][manual to explain Write-On /// although certain Apple][features no longer apply. Its value lies in the data file routines that permit form-letter automation. Available from Rainbow Computing, Inc., Mail Order Dept, 19517 Business Center Drive, Northridge, CA. 91324. (\$249.00)

Script /// - a Pascal text editor post processor allows a programmer or anyone familiar with the Pascal editor to format text much as a word processor might. Available from Apple Computer Inc. Price \$125.00.

Report Writer - Suitable for both business and professional applications. Built-in mailing list element. Excellent for long documents. Monument Computer Service, P.O. Box 603, Joshua Tree, CA. 92284; (800) 854-0561. (\$249.00)

Word Weaver /// - Comprehensive word processor for the Apple III. Up to 253 characters per line allowed. Synergistic Software, 5221 120th Ave., S.E., Bellevue, WA. 98052; (206) 226-3216.

(4) Accounting Packages

Hard Disk Accounting System - Combines General Ledger, Accounts Payable, Accounts Receivable, Payroll and Inventory into an integrated accounting system. Inventory can handle up to 38,000 items. Supports either

Corvus or Profile. Available from Great Plains Computing, 113 Broadway, Fargo, ND. 58102; (701) 293-8483.

Peachtree Software - General purpose accounting system available from CP/M (requires Softcard ///). Peachtree Software, Inc., 8th Floor, 3445 Peachtree Rd., NE, Atlanta, GA. 30326; (404) 226-0673.

BPI - General purpose accounting package is the first to combine accounting information with general purpose data base features using RPS (available 2nd quarter, 1983). Supports ProFile. From BPI Inc., 3423 Guadalupe, Austin, TX. 78705; (512) 454-2801.

Business Accounting - Suburban Computer Systems. (Source Mail TCS915). (\$600.00)

Insurance Agent - From Suburban Computer Systems.

Legal Office - From Suburban Computer Systems.

MBSI - combines general purpose accounting with sales analysis and order processing (requires Softcard ///). Micro Business Software Inc.

Easy Ledger - (Executive Accounting System) Simple to use general purpose accounting system. As of 12/17/82, Easy Ledger consists of a fully integrated A/R, A/P, and G/L. Payroll and inventory modules have a projected availability of first quarter 1983. A/R, A/P, and G/L are available for a floppy based system at \$750.00 and for a Profile based system at \$1000.00. The Denver Software Co., P.O. Box 440140, Aurora, CA. 80044; (303) 750-9980.

State of the Art - Offers a comprehensive choice of stand alone or fully integrated accounting packages. The programs are easy to use and offer upward growth paths, (e.g. Apple][data may be transferred to the Apple /// version). Currently runs on Profile. Corvus projected first quarter. State of the Art Inc., 3183-A Airway Ave., Costa Mesa, CA. 92626; (714) 850-0111 and (800) 854-3415.

Micro GL /// (Micro Business Solutions, \$300.00) Double entry GL and budgeting package uses the Profile (or any disk device with a valid SOS driver) to store up to 9999 transactions, maintains up to 999 accounts, provides variance reporting for MTD and YTD bases, prints audit trails, and balance

sheets. Well documented and menu-driven. Runs on either Corvus or Profile. Micro Business Solutions, 622 Plymouth Ln., Foster City, CA. 94044; (415) 573-5556. (\$395.00 includes Business Basic source code and files layouts)

GL-Plus - Flexible GL package with the ability to handle multiple companies. Includes Accounts payable and accounts receivable. Can spool reports to allow operator to continue working while a report is being finished. Can run from either Profile or Corvus hard disk. Great Divide Software, Inc., 8060 West Woodard Drive, Lakewood, CO. 80227; (303) 337-0383

Business Bookkeeping System - A cash basis accounting system for small businesses featuring 3 ledgers: customer, vendor and employee, also general ledger and chart of accounts. Dakin 5 Corp., P.O. Box 21187, Denver, CO. 80221. (\$395.00)

Payroll Module - tracks employee payroll/personnel data; prints checks and check register; departmentalizes payroll costs; prints quarterly report; produces year end W-2's and features easily modifiable tax tables. Data Systems, Inc., 1810 Chester Ave., Bakersfield, CA. 93386. (\$620.00)

O.A.G.A. - Oil and gas accounting package. From High Technology Software Products, Inc., P.O. Box 14665, 2201 NE 63rd St., Oklahoma City, OK. 73113; (405) 478-2105. (\$995.00)

P.A.C.E. - Prompt Accurate Cost Estimator. Job costing and control. From High Technology. (\$795.00)

Gusher - Oil and Gas accounting and investments packages. High Technology.

(5) Financial Modelling Packages

Visicalc /// - a Visicorp product wirtten by Apple. Takes full advantage of the Apple /// 256K memory providing a model up to 195 K in size. Includes file compatibility with Word Processing and Graphics. From Apple Computer Inc. Price \$250.00. Product training pack also available for \$20.00.

Advanced Visicalc - Advanced version of Visicalc /// available with extended features such as keystroke programming, variable column widths and model consolidation. From VisiCorp, 2895 Zanker Rd., San Jose, CA. 95134; (408) 946-9000.

(\$400.00). VisiCalc /// trade in credit available.

Desktop Plan /// - combines financial analysis with model consolidation. Flexible report formats include graphics capability. Available from Visicorp. Price \$250.00.

DocuCalc - templates. Micro Decision Systems, P.O. Box 1392, Pittsburgh, PA. 15219; (412) 276-2387. (\$95.00)

ProCalc - The program allows comparative calculations for different assumptions to be presented side by side. All formulas and data entries are immediately available for review. A built-in checking mode ensures the integrity of calculation procedures. ProCalc enables the VisiCalc /// user to improve and simplify technical applications. Models for Engineering and Scientific Applications. Professional Calculations, Inc., 4895 Futura St., Eugene, OR. 97404. (\$130.00)

PRO/PAC - Series of VisiCalc Templates designed to help the service firm determine billing rates, forecast cash flow, monitor billable time, estimate fees, budget and control projects, and invoice clients. Demo diskette available. PRO/PAC, Inc. Mailing Address: P.O. Box 21900, Houston, Texas 77218. Offices 14925 Memorial Drive, Suite 105, Houston, Texas, 77079. (713) 496-1179 (\$295.00)

ProForma - Financial Planning Program. Management Control Concept, 124 St. Mary's St., Boston, MA. 02215; (617) 536-8840. (\$1200.00)

Senior Analyst /// - modelling package allows a financial model of virtually unlimited size due to its model consolidation capability. From Apple. (\$350.00)

Micro DSS/Finance - very powerful financial modeling program. Big "8" accounting firms are using this package to replace IFPS which runs only on mainframes. By unplugging timesharing IFPS some accounting firms are able to cost justify the Apple /// and Micro DSS/Finance in less than one month. Graphics is built-in. Excellent tool for either existing timesharing users or corporate planners. Ferox Micro Systems Inc., 1701 N. Ft. Myer Drive, Suite 611, Arlington, VA. 22209; (703) 841-0800, (800) 336-5496. (\$1500.00 Quantity discounts available.)

Consultant's Edge - Program to write user

customized menus to run Micro DSS/Finance models. Ferox Micro Systems Inc., 1701 N. Ft. Myer Drive, Suite 611, Arlington, Va. 22209; (703) 841-0800, (800) 336-5496. (\$250.00 Quantity discounts available.)

Micro DSS/Analysis - Business Statistics and Sorting Utility Package. Ferox Micro Systems Inc., 1701 N. Ft. Myer, Drive, Suite 611, Arlington, VA. 22209; (703) 841-0800, (800) 336-5496. (\$495.00 Quantity discounts available)

Micro-Foresight - A comprehensive financial planning and forecasting system which can interchange models between Foresight on a mainframe and the Apple using integral communications software. Micro-Foresight commands are identical to mainframe Foresight. Features backward modeling, determines how input variables must change to meet defined objectives, and sensitivity analysis. Comprehensive report generation with all or partial content. Supports consolidations and graphical output. Variable sized columns, numeric editing, comments and footnotes. Requires Softcard ///, United Information Services, 6626 Convoy Court, San Diego, CA. 92111; (714) 560-7070.

Multiplan - Interactive electronic worksheet. Automatic passing of information from sheet to sheet. English prompts with extensive help features. Named cells and formulas. Ability to "open" windows in multiple worksheets. Requires Softcard ///. Microsoft, 10700 Northrup Way, Bellevue, WA. 98004. (\$275.00)

PMM - Personal Money Manager - A fully featured interactive budget manager. Educational Computing Systems, Oak Ridge, TN. 37830. (\$60.00)

Multi-Year Planning Model - User develops long term strategies for profitability. Model produces financial ratios, and features user defineable asset, liability, equity, revenue and expense accounts. Data Systems, Inc., 1810 Chester Ave., Bakersfield, CA. 93386. (\$1000.00)

Budget Model - Used in conjunction with Multi-Year Planning Model to formulate short term strategy in line with long term plans. Actual figures can be updated each month. Produces full range of financial ratios for actual and budgeted months. Data Systems, Inc. (\$1000.00)

Allows managers of financial institutions to determine profit or loss on specific commercial accounts. DDA activity, time deposits, and loan balances and rates are used as a basis of comparison to expenses incurred for handling specific accounts. Data Systems, Inc. (\$1000.00)

Service Charge Analysis and Pricing Model - Allows managers of financial institutions to fine tune their service charge structure in order to increase profitability without a significant reduction in customers. Data Systems, Inc. (\$1000.00)

(6) Graphics

Business Graphics /// - powerful plotting program accepts data from any SOS compatible application (Visicalc, Desktop Plan, Senior Analyst). Creates a variety of graphs including bar charts, pie charts and scatter diagrams. Includes statistical analysis. Displays graphs on a variety of printers and plotters. From Apple (\$250.00). Product Training Pack Available (\$20.00). (Written by Business and Professional Solutions)

Screen Director - allows user to combine business graphics screens into a set of "slides" for presentations and seminars. Slides may be displayed on the screen and controlled using a remote control switch. Available from Business and Professional Solutions, 143 Binney Street, Cambridge, MA. 02142; (617) 491-3377. (\$150.00)

PFS:GRAPH - can work either alone or with data from PFS:FILE or Visicalc to produce presentation-quality bar, line or pie charts. Line and bar graphs can be mixed and matched, and up to four graphs can be displayed on a single set of axis. Bar graphs can be stacked or comparative. PFS:GRAPH supports Epson printer series (GRAFTRAX only). Okidata 82A, IDS prism (black and white only), NEC 8023, and C-Itoh Prowriter. It also supports the HP 7470A plotter. Available from Software Publishing Corp., 1901 Landings Dr., Mountain View, CA. 94943; (415) 962-8910.

SuperPlot - Menu driven plotting program that allows the use of DIF files to draw pie, line and scatter charts; project trends and print or store charts for slide show style presentations. Available from Microware Associates, Inc., 220 East 50th Street, New York, NY 10022; (212) 308-9593. (\$150.00)

Graph Power - Menu driven business graphics

package. Can work with Micro DSS/Finance or stand alone. Drives HP7470A plotter but no printers. Line plots, bar charts, pie charts and reports on paper or transparencies. Ferox Micro Systems Inc., 1701 N. Ft. Myer Drive, Suite 611, Arlington, VA. 22209; (703) 841-0800, (800) 336-5496. (\$295.00 Quantity discounts available)

GraphEdit - Powerful graphics editor allows user to set up presentation quality graphic displays including charts, graphs and user defined images. Ferox Micro Systems. Available 4th Quarter 1982.

FontEdit - Allows user to create specialized type fonts including foreign languages, engineering symbols, etc. Ferox Micro Systems. Available 4th Quarter 1982.

PlotMod - Blue Lakes Software, 3240 University Ave., Madison, WI. 53705; (608) 223-6502. (\$250.00).

Grafpak /// - Zoom hi-res graphic printing via printer for use with Business Basic or Pascal. Prints any black and white screen, and some color with aliasing. Supports more than fifty dot matrix and letter quality printers. No extra hardware needed. Smartware, 2281 Cobble Stone Court, Dayton, Ohio 45431; (513) 426-3579. (\$35.00)

Chart-Master - Produces bar charts, line charts, scatter diagrams and pie charts, as well as text pages and signs on the screen, paper or transparencies. Data can be entered manually or automatically from VisiCalc or other programs. Charts can be edited, stored and retrieved. Options include producing up to nine charts per page, footnote and framing capabilities, left and right y-axis, a variety of hatching and line types, exploded pie segments, linear regression and curve-fitting. Chart-Master is interactive, menu-driven and requires very little training. Decision Resources, P.O. Box 309, Westport, CT. 06880; (203) 222-1974. (\$375.00) Available first quarter 1983.

Fig Factory - Graphics utility. Sun Software, P.O. Box 189, Tustin, CA. 92680; (714) 559-1390. (\$75.00)

(7) Special Purpose Applications

Restanal (Restaurant Analysis) - forecasts the expense of real property and calculates the benefit of ownership, including cash flow, appreciation, reduction of mortgage

principal and tax effect. Particularly applicable for purchase decisions. Management Control Concept, 124 St. Mary's St., Boston, MA. 02215. Available January 1983. (\$800.00)

Electronic Bulletin Board - uses a telephone modem with Apple /// to enable customers to have dealer access in a mail function. Alpine Computing, 851 N. Main, Logan, UT. 84321; (801) 753-8410.

Universal Life Analysis - allows insurance brokers to analyze needs of client based on a variety of parameters (requires Softcard ///). Liberty Life, Atlanta, GA.

Servicemanager - computer software for the service business. One standard form handles receipts, estimates, invoices, and statements. Handles overdue parts orders, form letters, equipment details, status reports, work-in-process reports, payment reports, monthly technician reports, subcontractor reports and other features. The Denver Software Company, 14100 East Jewell Ave., Aurora, CO. 80012; (303) 750-9982. (Approximately \$1500.00)

Surveyor's Aide - Surveying software that does all major coordinate geometry calculations and transverse closure. Harrisonburg Computer Services, 444 Meyers Ave., Harrisonburg, VA. 22801; (703) 434-5062. (\$500.00)

The Agricultural Software Package - Pascal written software with numerous programs and features. AG*PAC, One South Park St., Madison, WI. 53715; (608) 255-9020.

Sales Order Entry /// - Provides a complete, easy, and accurate method to enter and maintain sales order records. Manufacturers can keep track of who ordered products, when it was ordered, if it was shipped, if the item was billed, how much it cost, and much more. Wholesalers can use it to help improve delivery, see which products are selling better, and help to calculate commission payments for sales people. Sales representatives can keep tab on who ordered what from where. Determination can be made as to what has been shipped, what commissions have been paid and what commissions are due. Written in plain English, without any assumptions of the user's knowledge of computers. Program is unprotected and help is available. Plain and Simple Software, 9003 Lexington NE., Albuquerque, NM. 87112; (505) 293-2448. (\$500.00)

Stat Pro - High level statistical analysis for the Apple /// includes graphics and general purpose analysis routines. Features include Mail List Maintenance with questionnaire analysis, cross tabulations, histograms, scatter plots, Q-Q plots, variance plots, et.al. Regression analysis also included. From Blue Lakes Software, 3240 University Ave., Madison, WI. 53705; (608) 233-6502. (\$250.00)

Personal ledger - individualized bookkeeping with tax preparation as a goal. Datamost, 9748 Cozy Croft Ave., Chatsworth, CA. 91311. (\$130.00)

The Market Technician - analyze and track the stock market with access to the Dow Jones index. Datamost. (\$130.00)

SMART (Securities Market Analysis, Reporting, and Transactions) - Allows the serious investor to have computerized charts automatically updated each day. This system has numerous features. Software Resources, Inc., 186 Alewife Brook Parkway, Cambridge, MA. 02138; (617) 497-5900.

InvenMod - More statistics. From Blue Lakes Software. (\$395.00)

VisiSchedule - Critical Path Method project management system. Produces summaries, time charts and milestone reports. Easy to evaluate the impact of changes. Compatible with VisiCalc ///. VisiCorp, 2895 Zanker Rd., San Jose, CA. 95134; (408) 946-9000. (\$300.00)

Critical Path Scheduling System - System which aids in the scheduling of complex projects such as those in construction, aerospace, and many other industries. It is a powerful tool for analyzing and scheduling all the tasks required to complete any multi-level project on time and at the lowest cost. Its features include: simple operation, large project capacity (over 2000 tasks), easy update of project status, large variety of reports, graphical project presentation, provision for manpower planning, can be used with one or two disk drive system or with ProFile. Many desired features such as automatic start and finish dates option, display of "float" time, flexible reports generation, sort and test option, etc. Great Divide Software, 8060 Woodard Drive, Lakewood, CO. 80227; (303) 337-0383. (\$495.00)

Job Control System - Written in Pascal, JCS

maintains files for 1000 open jobs on the Profile. Includes reports for work orders, jobs by due date, job cost summaries, employee hour reports, and post-audit trails. Includes tutorial disk. From High Technology Software Products, Inc., P.O. Box 14665, 2201 NE 63rd St., Oklahoma City, OK 73113; (405) 478-2105. (Version 3-100 is \$450.00 and version 3-400 is \$750.00). Comes with tutorial disks.

Construction Loan Reporter - For the Bank who loans money for the construction of residential or small commercial projects. Schedule cost on any project with budgets, actuals, and comparisons. This will help stop prepayment, double payment and overpayment for work on construction projects. Computerized Construction Management Systems, 27 S. Fort Lane, Layton, Utah 93065; (801) 526-0151. (\$450.00)

ConJob - Job cost accounting program designed by a contractor for contractors. Computerized Construction Management Systems. (\$195.00)

Construction Material List Generator - This program asks for linear feet and square foot dimensions from a set of blueprints and calculates the required material needed to build the project. Computerized Construction Management Systems. (\$450.00)

Job Scheduling - Program creates bar chart with user specified line items. Set up for residential or small commercial projects. Computerized Construction Management Systems. (\$175.00)

Construction Bookkeeper - Designed for the General Contractor or larger sub-contractor. Complete with general ledger elements, a job cost and project management system, a full feature sub-contractor control system, and an extensive payroll system that posts all costs to the jobs and the general ledger accounts. Monument Computer Service, P.O. Box 603, Joshua Tree, CA. 92284; (800) 854-0561. (\$795.00 for software and \$50.00 for manual.)

Cost Accountant - Manages 200 active jobs at a time. The program is designed to aid professionals such as engineers, architects, consultants, custom manufacturers, and building subcontractors. The program's payroll system contains all reporting elements to meet most state and federal regulations. Monument Computer Service.

(\$459.95 for software and \$50.00 for manual.)

Individual U.S. Income Tax Package - The tax table and tax rates schedule are automatically used for the tax calculations. Form 1040 can be directly printed. Pansophics, LTD., Whistle Stop Mall, Rockport, MA. 01966. (\$75.00)

Data Manager for Weather Observations - Program will store and analyze weather observations from your home, farm, school, or local airport station. Current weather can be compared with that of any year since 1951. Climate Assessment Technology, Inc., 11550 Fuqua, Suite 355, Houston, TX. 77034; (713) 484-3603. (\$59.95)

Hurricane Tracking Program - Tracks hurricanes and tropical storms in the Caribbean Sea and the Gulf of Mexico. Climate Assessment Technology, Inc. (\$29.95)

PMS (Prospect Management System) - Comprehensive lead and prospect management system to allow customer to automate and manage seminar attendance, direct mail list management, and telephone prospecting details. Interfaces with commercially available names and address thru National Business Lists. Ideal for any business that does extensive telephone prospecting, direct mail and seminar selling (i.e. insurance agencies, brokers, and computer retail stores). Requires ProFile, and Hayes Modem (if telephone prospecting auto-dial feature is used). Available January 1983. First Byte, Inc., 3711 Long Beach Blvd., Suite 100, Long Beach, CA. 90807; (213) 595-7006.

(8) Telecommunications

Access /// - Emulates a VT-100 or a VT-52. Can also be used to send and record ASCII files. From Apple (\$150.00).

AppelTel Disk - allows access to Prestel World Videotex Service, which includes information of world currency and commodities, import and export information, hotel reservations and airline schedules. Logica/BVT, 666 Third Ave., New York, NY. 10017; (212) 599-0828. (\$85.00)

DataLink - Comprehensive communications system. Features multiple terminal emulation, up and down loading of files, auto dial, auto logon, keystroke memory and more. Link Systems, 1640 19th Street, Santa Monica, CA. 90404; (213) 453-1851. (\$100.00 available 4th quarter 1982.)

SWI Apple /// Communication System - allows the Apple /// to act like a Burroughs TD-830 terminal. Core Technology Corp, 134 W. University, Suite 203, Rochester, Michigan 48063; (313) 651-6421.

Micro-Terminal - turns the Apple /// into an intelligent terminal, includes macros, file transfer, protocol selection, etc. Microcom, 1400A Providence Highway, Norwood, MA. 02062; (617) 769-9310.

Micro-Courier /// - 1st quarter 1983. From Microcom (above).

Log On - Asynchronous communications software to link with remote microcomputers or mainframes. Can communicate from Apple][to Apple /// to IBM PC. Can download from mainframe or commercial database. TTY protocol dumb terminal. Ferox Micro Systems Inc., 1701 N. Ft. Myer Drive, Suite 611, Arlington, VA. 22209; (703) 841-0800, (800) 336-5496. (\$150.00 Quantity discounts available.)

Bysync Emulation - IBM Bysync capable of 3271/3277, 3274/3278, 3275 and 3276 displays; 3284 and 3286 printers; 2780, 3780, 2770, 3741 and 3781 batch remote job entry. Supports leased line and dial-up up to 9600 bps. Requires Softcard /// and synchronous modem. Viking Associated, 2726 S. Moline Court, Aurora, CA. 80014; (303) 337-2608. (\$1195.00 for interface board and software. \$990.00 for software only.)

Bisync Emulation - IE Systems lets a CP/M based Apple /// communicate with remote computer using bisync protocols. When combined with the bisync software products from Micro-Integration Inc., an Apple /// can emulate a RJE (Remote Job Entry) terminal using either 3780, 3741, 2780 or 2770 protocols or a 3271/3277, 3274/3278, 3275 and 3276 bisync device. Serial I/O board with bisync software product \$1195.00. Dealer discounts available. IE Systems, Inc., 98 Main Street, P.O. Box 359, Newmarket, NH. 03857; (603) 659-5891.

Note: Protocol Computers, Inc. can supply necessary hardware to provide Bisync 3270, SNA/SDLC 3270, and X.25 attachment. PCI, 6430 Variel Avenue #107, Woodland Hills, CA. 91367; (800) 423-5904 and (213) 716-5500.

Apple /// communications are covered in detail in a separate document. Communications with Prime, Hewlett Packard, Burroughs, IBM, Data General, Honeywell and

others are covered.

(9) Utilities

Sophisticated Operating System (SOS) - Advanced operating system that all Apple /// software (except CP/M) runs under. UNIX-like file structures supported. File compatibility between applications is outstanding. From Apple (included with Apple /// purchase). Product Training Pack available (\$40.00).

Apple II Emulation mode - Causes the Apple /// to emulate a 48 K byte Apple II.

Turnkey Emulator - Automatically boots any DOS 3.3 compatible program. Eliminates the need for a two stage emulation boot by combining SOS and DOS boot information on the same disk. Available in Integer and Applesoft versions.

Apple Softcard /// System - Microsoft developed CP/M allows both SOS and CP/M files to coexist on the Profile Hard Disk System. The Softcard /// system brings dual-processor capability to the Apple /// and adds CP/M-based application programs to the library of programs available for the Apple ///. From Apple (\$400.00 including a plug-in Z80 card and CP/M software).

Epson Screen Dump - allows printing of the Apple /// text and graphics screen with various options. Alpine Computing, 851 N. Main, Logan, UT. 84321; (801) 753-8410. (\$60.00)

Character Set Editor - a character set editor which creates characters for a 14x 14 pixel. Alpine Computing.

Sostran - utilizes Visicalc to make Apple][files interchangeable with Apple /// files. Alpine Computing.

Discourse - a spooler designed for use with the Apple /// and a hard disk. Printer output is sent to the spooler, and you can then use the computer for another task while it's printing. Quark Engineering, 1433 Williams, Suite 1102, Denver, CO. 80218; (303) 399-1096. (\$125.00)

Catalyst - eliminates the need to swap disks when changing applications by permitting the user to boot from Profile. Switching from one application to another requires one keystroke. When combined with the Discourse spooler, Catalyst provides a performance improvement in printing and booting disks.

Quark Engineering. (\$149.00)

Data Saver - PFS Data Saver allows the saving of files from ProFile which are too large to file on one diskette. Files can also be transferred from the multiple diskettes to ProFile. Software Publishing, 2021 Landings Dr., Mountain View, CA. 94043. (\$30.00)

Backup - Hard Disk utility. Marks backed up files with a dirty bit, only copying unbacked files. Originally available only with ProFile. From Apple. Available 1st Quarter 1983.

Blockaccess - Reads, writes, edits data directly on disk one block at a time. Requires Pascal. Documentation on disk. Available from PowerTools, 1206 Futural St., Eugene, OR. 97404. (\$40.00 includes source.)

Character Set Editor - Uses keyboard with joystick to create new character sets. Requires Pascal. Documentation on disk. Available from PowerTools, 1206 Futural St., Eugene, OR. 97404. (\$40.00 includes source.)

Transfer /// - Transfers individual disk files either way between Apple DOS 3.3 disks and an Apple ///. Can transfer VisiCalc files, sequential text files, and Basic programs converted to text files. Menu driven. Mind Systems, Northampton, MA. (\$60.00)

Scatt /// - Utility to provide catalog and file reports written in Business Basic. Expanding Space. (\$29.95)

(10) Real Estate

Property Management System - Realty Software Co., 1116 F 8th Street, Manhattan Beach, CA. 90266. (\$375.00)

Property Manager - track cost, taxes, collections, etc. for large commercial properties such as apartment buildings or shopping centers. Datamost, 9748 Cozy Croft Ave., Chatsworth, CA. 91311; (213) 709-1202. (\$295.00)

Real Estate Investment Program - analyze and project property values and investments. Datamost. (\$130.00)

(11) Education

Guidance Information System - Makes

available a large body of occupational, schooling and financial information to help people make life decisions. By typing a simple set of instructions, people can immediately zero-in on information that fits their particular needs and interest. Users can compare the results of choices and decisions they have made with the results of other choices they have made. Over 4000 installations nationwide. Requires Apple /// with Profile. TSC/Houghton-Mifflin, Box 683, Hanover, NH. 03755; (603) 448-3838. Annual License. Quantity discounts available for multiple installations.

Class Records - a comprehensive classroom management system. Educational Systems, Software, El Toro, CA. 92630. (\$90.00)

Supermath II - an enhanced version of a popular elementary math program. Educational Systems. (\$40.00)

(12) Appointment/Calendar

Vigil - Automated appointment calendar program that no matter what your Apple /// is doing, Vigil will alert the user to the next event on the user's schedule. From Quark Engineering, 1433 Williams, Suite 1102, Denver, CO. 80218; (303) 399-1096. (\$95.00)

Memominder - Manages Memos and reminders. Can print memos for today, tomorrow, next week, etc. Software Resources Computer Works, Inc., 186 E. Market, Harrisonburg, VA. 22801. (\$55.00)

(13) Mail List Processing

Mail List Manager - Mail list maintenance utility that provides for the creation, modification and printing of mail labels. MLM can be used with Apple Writer /// to customize boilerplate letters. Available from Apple Computer Inc. Price is \$150.00. A Product Training pack is also available for \$20.00.

MailMod - A mail list manager. From Blue Lakes Software, 3240 University Ave., Madison, WI. 53705; (608) 233-6502. (250.00)

1st Class Mail - Keeps track of mailing lists or other general databases. Allows data to be merged with Applewriter /// or Wordstar. Available 4th Quarter, 1982 from Continental Software, 11223 South Hindry Ave., Los Angeles, CA. 90045; (213) 417-8031. (\$150.00)

(14) Medical

Physicians Accounts Receivable and Insurance System - PARIS is capable of performing all aspects of a physician's billing as well as accounts receivable. It provides summary reports of a patient's diagnosis and history. It utilizes standard approved "CPT" Medical Codes or the physician's own unique codes for diagnosis as well as billing information for services rendered. PARIS includes: patient information setup, patient charges, payments and adjustments, end of day processing, patient history reports, monthly statements, insurance claim form, ad hoc reporting, aging analysis, month end summary report, fiscal year-end processing, patient listings, end balance due report. Designed for ProFile, Parker Computer Systems, 4701 Fletcher, Fort Worth, TX. 76107; (817) 429-6482. (\$2,495.00. Manuals \$20.00)

Medical Clinic - Designed for the clinic or physician's office that requires managing a substantial patient base. System allows clerical staff to schedule appointments, record daily transactions, and prepare billings. Monument Computer Service. (\$1,600.00 for software and \$50.00 for manual.)

P.M.S. Medical Billing System - Handles up to five physicians at a fraction of the cost of other systems. Simple to operate, includes comprehensive documentation. Up to ten thousand active patients and six thousand transactions per billing cycle. Generates all insurance forms plus fourteen other reports. P.M.S., La Crescenta, CA. (\$2,495.00 requires Corvus hard disk.)

MiniMax - utilizes Apple /// and VisiCalc which enables health care financial managers with no prior computer experience to immediately analyze potential dollar impact of Medicare regulations that maximizes Medicare reimbursements. HealthWest, 1 HealthWest Center, 20500 Nordhoff, Chatsworth, CA. 91311; (213) 700-2000.

(15) Games

Snake - Provides real time simulation of non real world events involving the pursuit of reptilian facsimiles. Includes automatic scoring and outcome determination. Contact Jim "Desperado" Desposito at the New York Office of Apple & Apple (figures the only Apple /// software to come out of New York is a game.

Cytron Masters - Science Fiction battle game with two-player and computer-as-opponent game modes. Strategic Simulations, Inc., 465 Fairchild Dr., Suite 1, Mountain View, CA. 92806; (714) 632-9950. (\$39.95)

Galactic Gladiators - Creature battle game. Strategic Simulations, Inc.

Guadalcanal Campaign - Complex battle game with two-player and computer-as-Japanese modes. Strategic Simulations, Inc. (\$59.95)

S.E.U.I.S. (acronym for Shoot 'EM Up In Space) - Two-player or computer-as-opponent modes. (\$39.95)

The Cosmic Balance - Space game similar to Star Trek. Strategic Simulations, Inc. (\$39.95)

The Gameport III - The new game controller adapter lets you use game paddles, joysticks and all your favorite Apple][amusement packages with your Apple /// computer. Micro-Sci, 2158 South Hathaway St., Santa Ana, CA. 92705; (714) 662-2801.
** Editor's Note ** The Gameport III can be purchased through the Original Apple ///rs at a substantial savings.

(16) Information Services

Dow Jones News/Retrieval - Dow Jones provides extensive news and business information. The data bases include: News, Current Quotes, Historical Quotes, Corporate Earnings Estimator, complete company reports including company profiles, detailed corporate financial information on over 3,200 companies, weekly economic survey, weekly economic update, Wall Street Journal highlights, Wall Street Week, sports, weather and movie reviews. Dow Jones Information Services, P.O. Box 300, Princeton, NJ. 08540; (800) 257-5114.

The Source - Offers electronic mail, mailgrams, travel agency, airline schedules, on-line shopping, wire service news, stock information, financial newsletters, consumer information, employment agency, an information searchservice for locating documents, as well as computing services. Source Telecomputing, McLean, VA

DIALOG Information Services - The DIALOG Service provides access to more than 55 million references to journal and newspaper articles, conference papers and reports in

over 130 data bases covering all areas of science, technology, business, medicine, social science, current affairs and humanities. DIALOG Information Services, 3460 Hillview Avenue, Palo Alto, CA. 94304; (800) 227-1927. (A typical search cost ranges from \$5.00 to \$15.00.)

Prestel - Services similar to The Source. Developed by the British Post Office. Logica, New York.

General Videotex - Offers electronic mail, a totally electronic bill-paying service and retrieval of encyclopedia information. Cambridge, MA.

CompuServe - Offers electronic mail, on-line shopping, wire service news, stock information, stock tracking, financial newsletters, consumer information, as well as computing services. CompuServe Information Services, Columbus, Ohio.

(17) Reference Sources

Vanloves Business Handbook and Software Directory for Microcomputers - The "Business" book of software and peripherals. (\$20.00)

Vanloves 1983 Apple][- /// Software Directory - Covers 36 user categories from agriculture to word processing, handling more than 3000 programs. (\$25.00)
The Addison-Wesley Book of Apple Computer Software '83 - Guidebook to more than 500 programs for the Apple, including education, business, utilities, games and entertainment. Offers critical program analysis. (\$20.00)

Sofsearch - Software location service. Sofsearch will tailor each search of their 17,000 files according to function, computer type and industry. The cost of one search is \$45.00, or \$145.00 for a one year subscription. The subscription covers the cost of five searches during a year plus a quarterly updating of each search. Sofsearch, P.O. Box 5276, San Antonio, TX. 78201; (512) 340-8735.

(18) Peripheral Cards

Burtronix Protocard /// - Uses proven circuitry to interface a parallel interface chip (6522) to the Apple /// hardware bus, allowing the user to put custom circuits right on the board and connect them to the 6522. No knowledge of the Apple /// hardware bus is necessary. Room is provided

on the board for either a 26-pin ribbon connector (supplied) or a 25-pin D-type connector (also supplied) for external connections. A software driver on disk is provided to link the Protocard /// to Business BASIC, Pascal, or any other software that uses the SOS Drivers. Elcom Systems Peripherals, 429 Harrison Street, Suite A, Corona, CA. 91729; (714) 734-8220. (\$195.00)

Time Card /// - Multi-function time utility for the Apple /// computer. Contains the year, month, hour, minute and second. A countdown timer with a range of one millisecond to 999 hours, 59 minutes, 59 seconds, 999 milliseconds. Selectable 12 or 24 hour time formats. Diagnostic error reporting. Fully compatible with the Apple SOS operating system. Vista Computer Company, 1317 E. Edinger, Santa Ana, CA. 92705; (714) 953-0523. (\$195.00).

PKASO ID12-Color Interface - offers versatile ways to add intelligent text and graphics printing capabilities to the Apple ///. This includes full screen dump of any text or graphics screen image, 16 level gray scale printing, user created or software defined printing characters, and Super-Res graphics using the full dot resolution of the printer. Other features are included for use with color printers. Compatible with most popular languages such as BASIC, Pascal, and CP/M. An Apple /// package is available making full use of the Apple ///'s expanded graphics and changeable character fonts. Complete with cable, instructional diskette, and comprehensive manual. Interactive Structures, Inc., 146 Montgomery Avenue, Bala Cynwyd, PA. 19004; (215) 667-1713. (\$165.00)

The Grappler and Grappler Plus - Parallel printer and graphics interface. Orange Micro Inc., 3150 East La Palma, Suite G, Anaheim, CA. 92806; (714) 630-3620.

Apple /// UPIC - Lets users attach a variety of parallel-mode printers to Apple /// Computer. Included with the card is a diskette containing an operating system driver, which lets you custom-configure the card to work with the printer you are using. Can also be used with equipment other than printers, functioning as a general purpose parallel input/output interface. Apple Computer. (\$225.00)

Apple Softcard /// - Allows your Apple /// to take advantage of the wide variety of CP/M Z-80 based application software.

Consisting of a plug-in Z-80 microprocessor circuit board, four manuals, two diskettes (including the CP/M operating system, MicroSoft BASIC and utilities) the SoftCard /// system dramatically increases the amount of software available for the Apple ///. Apple Computer. (\$450.00)

Apple /// OEM Prototyping Card - Modular-printed circuit cards on which you can build custom interfaces for the Apple ///, accommodating most integrated circuits and components. Has built-in facilities for attaching a variety of edge connectors and switches to circuits. Apple Computer. (45.00)

Thunderclock Card - Clock/Calendar card for the Apple ///. From Apple. (\$149.00)

(19) Hard Disk and Floppy Disk Systems

Hobbyist - Hard disk systems designed to work with Apple ///. Santa Clara Systems, Inc., 560 Division Street, Campbell, CA. 95008.

Corvus Hard Disk and Networking Systems for the Apple /// - Also available in conjunction with other computer systems. Corvus.

Davons Systems, 1061 Terra Bella Avenue, Mountain View, CA. 94043; (415) 965-7130. 5Mb \$1995.00 10Mb \$2495.00 15Mb \$2995.00.

Disk /// - Floppy disk drive for the Apple ///. Up to three external Disk ///'s may be attached. Apple Computer. (\$435.00)

Micro-Sci Apple /// Disk Drives - A3 Disk - 143K \$379.00: A73 Disk Drive - 286K \$529.00: A143 Disk Drive - Double Sided 572K \$659.00 Micro-Sci. Daisy-chains from built-in controller which means that it does NOT require a card slot. Using the A143 572K disk drive you can back up Profile on 9 Diskettes. The A73 and A143 disk drives, in addition to supplying more storage on a 5 1/4" double density, double sided diskette, will read a standard Apple /// 143K diskette. Santa Ana, CA. 92705; (714) 662-2801.

** Editor's Note ** These disk drives can be purchased through the Original Apple ///rs at a substantial savings.

Nestar Networking Systems - Network available for Apple II and Apple /// Computers. Local Networks extend the benefits of low-cost, stand-alone compute power by permitting additional access to files and information through

interconnecting cables. Nestar Systems, Inc., 2585 East Bayshore Road, Palo Alto, CA. 94303; (415) 493-2223.

AMS 5000 - Hard Disk System. 5, 10, or 20 megabyte. Proguard - 8" Floppy Disk controller 2.2 megabytes. Sorrento Valley Associates, 11722 Sorrento Valley Road, San Diego, CA. 92121; (714) 452-0101.

Profile - 5 1/4", Winchester technology hard disk for the Apple /// styled to be placed between the Apple /// and Monitor. It increases the Apple ///'s on-line storage capacity to 5 million bytes, allowing you to safely store in one location information that would fill 35 floppy diskettes. Apple Computer. (\$2195.00)

(20) Special Notes

CP/M is text File compatible with SOS files. SOS text files may be read and converted to CP/M files (using SOSXFER on the CP/M System Disk). CP/M does not run under SOS but uses SOS driver files for interfacing. The two operating systems are not in anyway compatible. If one is using the profile, a special file is created under SOS which contains all CP/M Files. This SOS file can be moved around by SOS Utilities (Block Read/Write). But to date there is not a program which will read CP/M files within the /Profile/CPM volume.

- /// -

Subdirectories (cont.)

Volume "ARTICLES" is located in .dl
ARTICLES contains 3 subdirectories,
each with 3 files - Utilities disk catalog
looks like this:

```
/ARTICLES
  Scientific
    Big.K
    Rigg
    Costa
  Computer
    AW.subdirectory
    MX.interface
    Bug.list
  Stories
    Clancey
    Cosmo
    Jelly
```

(More on Subdirectories next issue)

- /// -

Exploring Business BASIC - Part Four

By Taylor Pohlman

Reprinted from Softalk Magazine

Those of you who have Apple ///s have probably received some very good news in the last few weeks. Yes, Virginia, there is a new version of Business BASIC with some fantastic new features! But first, a word from our sponsor... Seriously, let's conclude presenting the information promised last time before getting into the new goodies. As you may remember (and are otherwise encouraged to discover), the last article concluded with some points about the use of data files in Business BASIC and modified our simple database program to use the data file format. For at least one more time, we'll list the program as it currently stands and then plunge into this month's enhancements, which cover the breathlessly exciting topics of list management, indexing, and sorting. That will about finish us in the data management area, leaving future issues to explore formatting, business arithmetic, and matrix arithmetic.

Once more, dear friends, into the breach...

The Program as it Currently Stands.

Remember that this program was designed to allow the entry and retrieval of information about parts such as might be maintained by a distributor or retail store. So far the program allows creation of parts files, and adding, deleting, and finding records of specific parts by part number. The program:

```
5 HOME
7 PRINT
10 PRINT"Parts File Create and
  Modify Program"
20 PRINT:"Type:"
30 PRINT" 1 to Create a parts
  file":PRINT
40 PRINT" 2 to Use an existing
  parts file":PRINT
49 PRINT" 9 to Quit":PRINT
50 PRINT:INPUT"Your selection:
  ";a$
60 IF a$="" THEN 1000
70 a=ABS(VAL(a$))
80 ON a GOSUB 100,400
90 IF a=9 THEN 1000:ELSE 5
100 PRINT:INPUT"Name of new parts
  file: ";a$
110 IF a$="" THEN RETURN
120 CREATE a$, DATA,64
130 PRINT"Parts file ";a$;"
  created."
```


140	RETURN	710	Delete: ";a\$
400	HOME	715	IF a\$="" THEN RETURN
405	PRINT:INPUT"Name of existing	720	a=VAL(a\$)
	parts file: ";a\$	725	IF a<1 OR a>32767 THEN 700
410	IF a\$="" THEN RETURN	730	rec=a
420	OPEN#1,a\$	735	GOSUB 1800
425	file\$=a\$		IF errorcode=1 THEN PRINT
430	HOME		:PRINT CHR\$(7);"No such part
435	PRINT:PRINT"Modify Parts File	740	number": GOSUB 995:GOTO 700
	";CHR\$(34);file\$;CHR\$(34):PRINT		PRINT"Delete ";partnum\$;"/";
437	PRINT"Type:"		desc\$;
440	PRINT" 1 to add to your parts		"/";location\$;"/";quantity\$;
	file":PRINT		"?";
445	PRINT" 2 to delete a part from	745	INPUT"";a\$:a\$>MID\$(a\$,1,1)
	your parts file":PRINT	750	IF a\$<>"y" AND a\$<>"Y" THEN
450	PRINT" 3 to find a part in your		PRINT"Not deleted":GOSUB
	parts file":PRINT		995:GOTO 700
460	PRINT" 9 to quit the modify	755	GOSUB 1900
	mode":PRINT	760	PRINT:PRINT CHR\$(7);CHR\$(7);
465	PRINT:INPUT"Your selection:		"Record deleted":GOSUB 995:GOTO
	";a\$		700
467	a=ABS(VAL(a\$))	800	HOME:PRINT
470	IF a=9 OR a\$="" THEN RETURN	805	INPUT"Part number to find: ";a\$
475	ON a GOSUB 500,700,800	810	IF a\$="" THEN RETURN
480	GOTO 430	815	a=VAL(a\$)
500	HOME	820	IF a<1 OR a>32767 OR INT(a)<>a
505	PRINT:INPUT"Part number to add:		THEN 800
	";a\$	825	rec=a
510	IF a\$="" THEN RETURN	830	GOSUB 1800
520	a=VAL(a\$)	840	IF errorcode=1 THEN PRINT:
530	IF a<1 OR a>32767 OR INT(a)<>a		PRINT"No such part
	THEN 500		number":GOSUB 995:GOTO 800
535	rec=a	850	PRINT:PRINT"Part number:
540	partnum\$=a\$		";partnum\$
545	PRINT:INPUT"Description: ";a\$	855	PRINT:PRINT"Description:
550	IF LEN(a\$)>35 THEN a\$=MID\$		";desc\$
	(a\$,1,35)	860	PRINT:PRINT"Location:
560	desc\$=a\$		";location\$
570	PRINT:INPUT"Location: ";a\$	865	PRINT:PRINT"Quantity on hand :
580	IF LEN(a\$)>15 THEN a\$=MID\$		";quantity\$
	(a\$,1,15)	870	PRINT
590	location\$=a\$	890	PRINT:INPUT"Press RETURN to
600	PRINT:INPUT"Quantity on hand:		continue: ";a\$:GOTO 800
	";a\$	899	REM
610	a=0:a=VAL(a\$):IF INT(a)<>a OR	900	REM delay subroutine
	a>99999 THEN 600	901	REM
620	quantity\$=a\$	995	FOR i=1 TO 1000:NEXT i:RETURN
630	PRINT:PRINT"Record is:	996	REM
	";partnum\$;"/";desc\$;"/";locatio	1000	PRINT:PRINT"End of parts file
	n\$;"/";quantity\$;		program."
640	INPUT" OK? ";a\$	1010	CLOSE
650	a\$=MID\$(a\$,1,1):IF a\$<>"y" AND	1020	END
	a\$<>"Y" THEN 505	1799	REM
660	GOSUB 2000	1800	REM retrieve a record with
665	If errorcode=0 THEN PRINT:		record number = "rec"
	PRINT"Record added.":GOSUB	1801	REM
	995:GOTO 500	1805	errorcode=1
670	PRINT:INVERSE:PRINT"Record not	1810	ON EOF#1 RETURN
	added, ERROR= ";:NORMAL:PRINT	1815	READ#1,rec:IF TYP(1)=5 THEN
	errorcode: GOSUB 995:GOTO 505		RETURN
700	HOME	1820	READ#1,rec;partnum%,desc\$,
705	PRINT:INPUT"Part number to		location\$,quantity

```

1825 IF partnum%<0 THEN RETURN
1830 partnum$=STR$(partnum%):
    quantity$= STR$(quantity)
1890 errorcode=0:RETURN
1899 REM
1900 REM delete a record with record
    number = "rec"
1901 REM
1905 partnum%=-partnum%
1907 WRITE#1,rec;partnum%,desc$,
    location$,quantity
1910 RETURN
1999 REM
2000 REM add a record with record
    number = "rec"
2001 REM
2005 errorcode=0
2010 partnum%=VAL(partnum$):
    quantity= VAL(quantity$)
2015 ON ERR GOTO 2040
2020 WRITE#1,rec;partnum%,desc$,
    location$,quantity
2030 OFF ERR:RETURN
2040 errorcode= ERR:OFF ERR:RETURN

```

Impressive, right? In playing around with this program, you may have discovered something very interesting. Retrieving individual records on parts is simple and quick, as long as you remember the part number you want. Try coming back to the program after a few days or weeks and attempt to remember the part numbers that were previously entered. It'll immediately be obvious that a list of all the active (not deleted) part numbers is needed. The program below will accomplish this task.

```

10 PRINT"Name of Parts file: ";
20 INPUT a$
30 OPEN#1,a$
40 PRINT"Name of list file: ";
50 INPUT a$
60 OPEN#2,a$
70 ON EOF#1 GOTO 1000
75 PRINT"Part number",
    "Description",
    "Location","Quantity":PRINT
80 FOR rec=1 TO 9999
90 READ#1,rec:IF TYP(1)=5 THEN
    200
100 READ#1;partnum%,desc$,
    location$, quantity
110 IF partnum%<0 THEN 200
120 PRINT#2;partnum%,desc$,
    location$, quantity
200 NEXT rec
1000 PRINT#2:PRINT#2"End of file"
1010 CLOSE
1020 END

```

Notice that this program has been set up to read from any parts file and to output to any file as well. This is similar to some programs from previous articles and allows output to go to the screen (by replying".console") or to a printer, and so on. Additionally, since we have no idea which part number records are actually in the file, a for-next loop is used to scan all the valid record numbers. Line 90 reads the particular record into memory and checks to see if it contains valid data. Recall that TYP(1)=5 means that there is no data in the record. If data is present, it is read into the variables and the part number is checked. A negative value means that the part number has been deleted. If the data passes all tests, it is printed out.

Running the program reveals several interesting things. Notice the sample print-out in figure 1.

Part No.	Description	Location	Quantity
35	shovel	bin 3	2
200	hammer	bin 1	10
300	wrench	bin 5	6
2000	anvil	top shelf	1

End of file.

Figure 1.

Try entering these part numbers yourself and run the sample program. You'll notice that the first records print out fairly quickly, but the last one appears only after much whirring of the poor, overworked disk. This is easy to understand, since 1,700 records must be searched before the final one is found. Just imagine if we had used 9000 as the last record instead! Clearly there must be a better way to find out what's in the file than searching every record. However, we still want the fast lookup of an individual record that the random record access technique provides.

Here's where all those comments earlier in the series about how neat it is to have lots of user memory in Business BASIC become important. With the extra memory, we can keep extra data structures around to simplify the task of finding out what data is on the disk and where it is. The term "data structure" is a much revered one in computer science circles, and simply refers to organized ways to maintain data and the information about the data. In this case,

we need a structure called a list. Sounds obvious, right? Lots of things in computer science are needlessly obfuscated. (Lots of things in English can be, too!)

In this case, the list will consist of the part numbers stored in the file. Since the part number is also the record number, our task of retrieving the part number information is simply one of looking up all the record numbers stored in the list. One other note. The file can contain up to 9,999 parts, so it will be convenient to keep track of how many records there are in our list. To do that, the following kind of list will be used:

```

element 1:  number of items in the list
element 2:  first item record number
element 3:  second item record number
.
.
.
.
element    (number of items+1):last
           item record number

```

Since all the record numbers are less than 10000, we can easily use an integer array to store them and the count. Also convenient is the fact that all arrays in Business BASIC begin with element 0, a handy place to store the number of items. The next thing required is a place to store the information permanently so that it can be used by the main program and others (such as the little list program above). This could be done with a separate file on the disk, but it is much safer and more convenient to store the information in the main data file itself. Among other things, it is much easier to keep track of where the information is if it is all physically together. With that in mind, let's pick record 20000 to park the list. This is clearly out of the way of our regular data, and, because very little extra space is taken up, it doesn't hurt anything. So much for the philosophy. The following additional program lines will accomplish the task. First set up the array for the list:

```
4      DIM flist%(1000):maxrecord%=1000
```

The variable "maxrecord%" will serve as a check not to exceed 1,000 part numbers. Since Business BASIC permits very large arrays, this could just as easily be 9,999 as long as the "dim" statement and the "maxrecord%" variable agree.

Next, we need to retrieve the list when the file is initially referenced by the program. To allow us to change this easily, a

subroutine will be used:

```

427      GOSUB 2500
2500     ON EOF#1 GOTO 2570
2505     READ#1,20000
2510     IF TYP(1)<>2 THEN flist%(0)=0
           :WRITE#1;flist%(0):RETURN
2515     READ#1;flist%(0)
2520     IF flist%(0)=0 THEN RETURN
2530     FOR i=1 TO flist%(0)
2540         READ#1;flist(i)
2550         NEXT i
2560     RETURN
2570     flist(0)=0:WRITE#1,20000;
           flist%(0):RETURN

```

First an "on eof" statement is used in connection with the "read" statement in line 2505 to take care of the case where the file is newly created. In that circumstance record 20000 will be past the end of file and statement 2570 will set up the list count in "flist%(0)" and write that into the file. If record 20000 exists, a check is made to be sure the data is of the correct type (and initialized if not). If everything is okay, the list count is read in and then a for-next loop loads the remaining data. Note that this is much more efficient than reading or writing all 1,000 values each time.

Next we need to add the list option to our menu of things we can do with existing files. Fortunately, the way the program is set up makes that simple to accomplish. The following changes add the new option:

```

452     PRINT" 4 to list the parts in
           your parts file":PRINT
475     ON a GOSUB 500,700,800,1100

```

The list option requires a new subroutine to read the list array and print the list to the screen:

```

1100     HOME
1110     PRINT:PRINT"List of current
           parts for parts file: ";file$
1120     PRINT
1130     IF flist%(0)=0 THEN PRINT"No
           parts on file":GOSUB
           995:RETURN
1135     PRINT"Partnumber",
           "Description","Location",
           "Quantity",:PRINT
1140     FOR i=1 TO flist%(0)
1150         rec=flist%(i)
1160         GOSUB 1800
1170         If errorcode = 0 THEN PRINT
           partnum$,desc$,location$,
           quantity$

```

```

1180     NEXT i
1190     PRINT:INPUT"End of list, press
        RETURN to continue: ";a$
1200     RETURN

```

After checking to see if the list was empty, the program prints the heading and scans the list array. We can use the subroutine at 1800 to retrieve the record and set up the variables. That subroutine also checks for deleted records and line 1170 uses the errorcode variable to check for that. Note that we could have opened a secondary file here to redirect the list to another device if desired.

The next changes just clean up some sloppy programming from before. See that? There is no such thing as a perfect program (or a perfect programmer). These changes just recognize the fact that our part numbers were supposed to be four-digit numbers, yet we allowed any part number up to 32767. That was fine before we decided to put the part number list at record 20000. The changes are as follows:

```

530     IF a<1 OR a>9999 OR INT(a)<>a
        THEN 500
720     IF a<1 OR a>9999 THEN 700
820     IF a<1 OR a>9999 OR INT(a)<>a
        THEN 800

```

The next change is to add to the list each time a record is added to the file. This involves updating the list count and storing the new part number in the next available list position. Since adds are done in the subroutine at line 2000, the changes are simple:

```

2006     If flist%(0)=maxrecord% THEN
        errorcode=-1:PRINT"Parts file
        full":RETURN
2025     flist%(0)=flist%(0)+1:flist%
        (flist%(0))=rec

```

First, line 2006 checks to be sure that the list count will not be exceeded by adding this record. If everything is okay, line 2025 updates the list count and uses it as the index to store the new part number (record number).

The last task is to write out the updated list as a part of ending the program. This must also be done when switching to a new file. The changes are as follows:

```

470     IF a=9 or a$="" THEN GOSUB
        2600: RETURN
1005     GOSUB 2600

```

The subroutine at 2600 does just the reverse of the one at 2500; that is, it writes the list back into the file starting at record 20000:

```

2600     IF file$="" THEN RETURN:
        ELSE:WRITE#1,20000;flist%(0)
2610     IF flist%(0)=0 THEN RETURN
2615     FOR i=1 TO flist%(0)
2620         WRITE#1;flist%(i)
2625     NEXT i
2630     RETURN

```

Notice that we use the fact that "file\$" is assigned the name of the file after opening to determine if the modify section of the program was used. If the string is empty (null), then there is no open file to which to write.

All that seems like a tremendous number of program changes, but the results are well worth it. You can now find out what's in the file at any time, and the listing speed is essentially independent of the way the data is arranged in the file. Furthermore, this permits us to do some really interesting things later.

The type of data structure used here is commonly referred to as a "variable length list." Here "variable" is used in the sense of "changeable." This is an extremely useful and widely used structure. One example in front of you at the moment is the Business BASIC string variable. See your BASIC manual for details of how the length of a string is stored.

Indexing and Sorting. Now that we've made all these fun changes, try running the program on a new file. Try adding the following part numbers in this order: 5, 35, 200, 100, 50. Now when you use the list option, you'll notice that the part numbers appear in the order in which they were entered. The previous example of a separate list program always listed the parts in part number order, since it scanned the file sequentially from the beginning. Ordering of lists according to the sequence in which they were entered into the file is called "chronological" order. Ordering the list in any other way is generally referred to as "sorted" order.

Clearly, if the array "flist%" was arranged in numeric order, we could use the subroutine at 1100 to list the contents of the file out in that order. That's because the values in "flist%" are used as indexes

into the larger file itself. It is the value assigned to the variable "rec" in line 1150 that determines which record is read and listed. Unfortunately, sorting the information in "flist%" would destroy the chronological order, and that might be a useful way to list the data as well. This implies that we should create some additional arrays to hold sorted versions of the "flist%" array. These arrays are sometimes called sorted indexes. In fact, it may occur to you that several of these sorted indexes could be stored simultaneously in the file. Similar kinds of multikey indexing are used in sophisticated database management systems.

Wow! That's a lot of definitions of esoteric computer topics. In fact, there is enough implied in the preceding paragraph to be the meat for several articles. We'll look at a simple example and then I suggest you slide over to your local library for a book on database techniques for the real details.

First, let's change the list routine to provide some sort options:

```

1102 PRINT"Type:"
1103 PRINT" 1 for chronological
      order"
1104 PRINT" 2 for part number order"
      :PRINT
1105 INPUT"Your selection: ";a$
1106 sortorder=VAL(a$):IF sortorder
      <>1 AND sortorder<>2 THEN GOTO
      1100
1107 GOSUB 1300
1140 FOR i=1 TO slist%(0)
1150   rec=slist%(i)

```

The changes from 1102 to 1107 set up the choice and gosub to 1300 to perform the actual sort. Lines 1140 and 1150 change the list index to a new array, "slist%", which has the same structure as "flist%." This allows changing the order without changing the actual contents of "flist%." This also means a change to line 4:

```

4      DIM flist%(1000),slist%
      (1000):maxrecord%=1000

```

Isn't having all that memory nice? Next, let's cook up a subroutine which will sort the "flist%" array and create an "slist%" array with the contents in ascending order:

```

1300 IF flist%(0)=0 THEN RETURN
1305 slist%(0)=flist%(0)
1310 FOR i=1 TO flist%(0)

```

```

1315   slist%(i)=flist%(i)
1320   NEXT i
1325   IF sortorder=1 THEN RETURN
1330   length%=slist%(0)
1332   IF length%=1 THEN RETURN
1335   FOR pass=1 TO length%:
      madeaswap%=0
1340     FOR position=1 TO length%
      -pass
1345       IF slist%(position)>slist%
      (position+1) THEN SWAP slist%
      (position),slist%(position+1):
      madeaswap%=1
1350     NEXT position
1355     IF madeaswap%=0 THEN RETURN
1360     NEXT pass
1365     RETURN

```

Several things are of note here. First, if there is anything in the "flist%" array, it is copied to "slist%." If chronological order is desired, we're finished. If not, the contents of "slist%," but not the list count, "slist%(0), must be sorted in order. For simplicity, we use a version of the classic bubble sort, with a new wrinkle. Business BASIC has a new statement named "swap" that comes in very handy in sorting situations, among others. It will exchange the values of any two variables of the same type. This includes, as this example points out, elements of arrays. Normally this exchange is handled by assigning one variable to a temporary variable, as in the following example:

```

1345 IF slist%(position)>slist%
      (position+1) THEN temp%=slist%
      (position):
      slist%(position)=slist
      %(position+1):
      slist%(position+1) =temp%:
      madeaswap%=1

```

In addition to being ugly, this version performs significantly slower than the version using "swap," since "swap" is done internally by BASIC in assembly language.

Try putting this routine into your program. For small lists it will perform very well. For larger lists, there are far better sort techniques. Later in this series I will try to do an article on different sort techniques. Most microcomputer references on sorting tend to try to minimize memory utilization, which usually hurts performance. Since you lucky Apple /// owners have fewer problems in that area, the classic techniques have to be looked at differently. It might also occur to you that it is possible to sort on items other than

the part number. A good experiment for you might be to change the sort subroutine so that the "slist%" array was used to read in records to build a string array from the values of "description\$." When you sort the string array, you could swap the "slist%" elements in correspondence to the way you swap the string array elements. Then listing from "slist%" would produce a list in description order. This is referred to as a "pointer" sort.

Another interesting change would be to use record 0 of the data file as a place to store the record number where "flist%" begins. Right now, that is hardcoded at record 20,000, but for a lot of reasons, it might need to be changed later. Writing it into the file and reading it back at open time would make the program much more flexible. Also, if you decided later to keep multiple indexes for different elements, you could store all their addresses there (or maybe just the address to the addresses!). Another thing hardcoded into this program is the record format, including not only the number of elements, but their names, types, and ranges of values allowed. Real database programs maintain this information in the file as well, permitting the user to define many different data bases with the same program. You might think about how our program would be modified to do that as well.

The preceding paragraph contains enough challenges to last you as long as you want. Just remember that Business BASIC has the power and capability to allow you to be as sophisticated as you wish in managing the file data. Good luck!

The New Goodies. Version 1.1 of Business BASIC is now available and it's neat! Obviously, it clears up some nasty little problems from the first version, and the manual is now a completely revised (and two-volume) reference guide that you'll really enjoy. But that's only the beginning. Several new capabilities have been added in response to user requests and some pretty good thinking on the part of the Apple engineering staff. They are summarized below, but drop in on your local dealer to get the real scoop. The postscript is pretty good, too. It's free to all current purchasers of BASIC, no matter how long ago you bought your old version!

"New language additions." There are two new reserved words, "indent" and "outrec."

"Indent" sets the level of indentation for the for-next loops (default is three) and "outrec" sets the record length BASIC uses to format listings. Ever have a long line in a BASIC program that got overprinted on your eighty-column printer? "Outrec" is initially set to 80 but can have any value to 255. Zero causes listings to work as in the old version. The neat feature is that when the printed output reaches the "outrec" value, BASIC automatically inserts a carriage return and spaces over to line the next part up with the indentation level of the previous line. No more screwing up those pretty indented listings with long lines! This works with any output file you specify.

An enhancement has been made to the "get" statement as well. You are now allowed to use "get#" to get a single character from any file. This includes disk data files, text files, and character devices. I can't begin to tell you all the possibilities this presents, but it should keep you busy for a while.

New Invokable Modules. The design of the BASIC invoke mechanism allows the language to be extended almost infinitely. Since the invokable routines are accessed by name and are available from immediate execution mode as well as deferred, it's really like adding commands to the language. With all the memory available in the Apple ///, you can keep lots of these routines around, or, if you need the space for data, you can invoke just the ones you need at a particular time. The new release of Business BASIC contains some really powerful invokables. Hang on to ".console," here they come!

For the development programmer, the most significant module is probably "Renummer/merge." There's too much available in this one to go into detail but for those of you who have been frustrated by wanting to add that one extra line into a program and having no place to put it, take heart. "Renummer" will renumber your program in memory and save it on disk automatically or renumber a program stored on the disk and place it in memory for you. In addition, it enables the merging of programs on disk with programs in memory. This means you can save important subroutines and have them automatically added to the program you are currently working on. Because it is an invokable module, it won't take up any memory unless you want it (obviously there is little need,

and less desire, to renumber a program while it is running).

SUBDIRECTORIES WITH APPLE WRITER ///

The next biggie is the "request" module. Remember all those wonderful things we keep saying about SOS? "Request" allows a BASIC program to make calls to the operating system directly. You can read or write up to 64K bytes in one statement to any file on the system (including text and data files, ".console," and so on). Numeric arrays can be stored about twenty times faster than with regular for-next loops! In addition, "request" allows the BASIC programmer to get device status directly and to use the SOS "setcontrol" mechanism. More details on this superpowerful module are in the documentation.

The last goodie is an invokable which allows you to "download" character sets directly to the RAM-based character generator. After setting up the character definition in an array, one "perform" statement passes it to the operating system as the new character set. The Business BASIC disk contains several sample character sets, and you can have fun inventing your own. This also allows you to create animation, by properly defining special characters, ala the DOS "Tool Kit Animatrix" program. I'm sure some clever programmers will design a really nice program to use this invokable for character set design.

Closing Thoughts. Whew! Glancing up at the prompt line of my Appewriter /// display, I see that I'm up to 26,590 characters in this article! Your tired eyes and my tired fingers both need a rest. Next time, we'll have a mixed bag of things to enjoy, including some comments on the powerful formatting capabilities of Business BASIC; and I'll reveal a secret that I hope you all get in on. That secret is the answer to the question, "How many bytes of memory are available for programs in a 256K Apple ///?"

P.S. As you probably noticed in the paragraph above, there's more than BASIC that's changed about the new Apple ///!

- /// -

By: James A. Milligan, D.V.M.

After accumulating 30 or 40 text files with Apple Writer /// (AW///), I sat down one night and carefully organized them all by topics using the System Utilities diskette to create several subdirectories, then renaming all the files into their appropriate subdirectories. It took a while, but when I finished up, put a nice new label on the diskettes complete with subdirectory names, I felt much more organized, and looked forward to using those files with more efficiency. Several days later, I needed to work on one of the renamed files, and found that once in AW///, cataloging the disk gave me only the subdirectory names. I couldn't remember the precise names of the specific files, and I was stuck. I tried several things to get at them, but to no avail. I finally left AW/// and made a hardcopy catalog via the System Utilities disk to refer to while using AW///. I puzzled over this for several days, knowing there must be some way to use subdirectories easily from AW///.

At a meeting of the Original Apple ///rs, I threw the problem out to the group, and got the answer from a fellow user. While it seems quite simple to me now, it takes some thinking through the first few times. I describe it here in hopes that it will make your file work quicker and easier, and as a thanks to those Apple ///rs who continue to help me solve the problems I come up against.

First view the subdirectory catalog if desired through the "[0]" command. To move into one of the subdirectories, just reset the prefix to the subdirectory desired. Next enter "[L]? Return". The "?" requests a catalog listing, and the "Return" reply (to the prompt for "Enter drive number:") enters the prefix previously set, and the files within the subdirectory are seen. If several levels of subdirectories are used, the same procedure is used until you get to the file level. When you're done working in that subdirectory, and want to move to another, call up the catalog of the subdirectories by giving just the volume name, or drive number, then reset the prefix to get to the desired file level. An example follows (using only 3 subdirectories with 3 files each for simplicity):

(cont. pg. 16)

**open apple
gazette**



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