N8VEM_DEMO SOFTWARE DIRECTORY

VERSION 0.1, 20130928

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E1:
MICROSOFT LANGUAGES - BASIC, FORTRAN & M80 ASSEMBLER

History

Microsoft's Basic interpreter was the dominant programming language in the 70s. Almost everyone from Commodore, to Apple, to MITS used it as the core software for their machine. Soon after Basic's breakthrough, in 1977, Fortran-80 and Macro-80 came out. For years, these solid pieces of software were the default choice for Fortran and Assembler programmers.

Quick start

```
M80 =HELLO        ; assuming a hello.mac file
L80 HELLO, HELLO/N/E
```
Use MC.SUB with Submit to make a comfortable compile cycle

F3:
WORDSTAR & OTHER MICROPRO SOFTWARE

History

WordStar came out in 1979 and soon became the definitive word processor for CP/M systems. MicroPro was founded half a year earlier, by ex-IMSAI employee Seymour Rubinstein and genius programmer John Barnaby. MicroPro later added CalcStar, a spreadsheet, DataStar, a database, and a few other office applications.

Quick Start

WS.COM is set up for VT100 terminals with 25 lines. Use WINSTAL.COM to tailor it for other setups. The cursor keys are CTRL-E/S/D/X. Use CTRL-K to access the menu from the editor.

F4:
MICROSOFT MULTIPLAN

History

Introduced in 1982, this was Microsoft's spreadsheet, aimed at outcompeting Visicalc. Written in a proprietary p-code C language, Multiplan was ported to anything from the C-64 to Xenix. It quickly lost out to Lotus 123 on MS-DOS - but is the best spreadsheet for CP/M machines. Multiplan's main legacy is the R1C1 style of cell addressing, still visible in Visual Basic today.

Quick Start

Run MP.COM, or use the install program to install terminals other than VT-100.
The menu at the bottom of the screen shows the keys you can hit for special functions. It works just like any other spreadsheet, except that cells are called R1C1 instead of A1; R1 means 'entire Row 1'. '=SUM(R1C1:R2C2)' is how you enter formulas.

D1:
MuMATH/MuSIMP

History

MuMath/muSimp is a computer algebra system that came out in 1979. It is written on top of the muLISP language, and was the first CAS to run on a microcomputer. Written by Albert Rich and David Stoutemeyer of Honolulu-based Soft Warehouse, it was distributed by Microsoft. muMath later evolved to Derive, and finally into the CAS software found in top-end TI calculators of the late 90s. Development only came to a stop in 2006. Even the original muMath for CP/M, though, is amazingly capable and makes fun of math. Sort of.

Quick Start

Start with “MUSIMP ALL”. Then, enter “PAUSE:100;” and load the demo with “RDS(DEMO,ALL);”. Make sure everything is in capitals. An excellent manual is available.

F5:
DBASE II

History

DBase II was the first microcomputer database system to go mainstream, and was one of the top 3-or-so CP/M applications. Its roots go back to JPL, where programmer Jeb Long worked out ideas for database management. Wayne Ratliff worked for Martin Marietta and picked up the thread. For NASA's Viking lander, he wrote the data-management system (MFILE). Tinkering on, he created Vulcan, and soon Ashton-Tate was founded to distribute the program, rebranded to dBase II.

Quick Start

Use install first if you have anything else than a VT-100 terminal. Start DBASE.COM. Data is stored in tables. The command line provides an interpreter, with series of instructions saved as dBase programs (.PRG).
Type 'create', then 'names' as the filename. Enter field "name,c,20" and then "salary,n,10". Hit return on the third entry and now you can type in actual data. So, enter two names and salaries. Then hit return to get back to the prompt. Type 'list', enter 'names' and see your payroll. Now give them a 10% raise by entering 'REPLACE ALL salary WITH salary *1.1'.

E2:

AZTEC C 1.06D

History

Quite a few C compilers were written under CP/M. Aztec C is a very good choice, also because the N8VEM utilities were written in it. It was published by Manx software, and first appeared circa 1982. Versions are available for many systems of the early 80s, ranging from the Apple II to the Amiga and PC.

Quick Start

Keep in mind Aztec C is K&R, not ANSI C. See exmpl.c, compile by 'CC EXMPL', assemble through 'AS EXMPL', link through 'LN EXMPL.O C.LIB'. Obviously, you should use Submit to automate. Note that Aztec can also work with Digital Research or Microsoft M80 assemblers. See http://www.aztecmuseum.ca/az80106d.zip for cross-assembler under DOS and manuals.

E3:
TURBO PASCAL V3.01A

History

Philippe Kahn came up with the idea of an Integrated Developement Environment. You can switch between editor and compiler with the press of a button. Anders Hejlsberg's already existing Pascal compiler was licensed, and was launched in 1983. Bill Gates apparently screamed at staff for half an hour when he first saw Turbo Pascal - it was a true game-changer. Easy, fast, and producing high quality code, it established the IDE.

Quick Start

Run TURBO.COM. With 'E'dit->hello.pas you load this example into the editor mode, which behaves like WordStar. So CTRL-Kd gets you back to the compiler menu, Ctrl-Ks saves, and CTRL-ESDX are the cursor keys.

E4:

DX-FORTH 4.02

History

Forth is a rather spectacular language: small, but very powerful. Conceived by Charles Moore in 1958, it's a sort of Swiss Army knife for small systems. It has controlled telescopes and rockets, nuclear reactors and hobby computers. It also was the first language ever to run on the x86 architecture. DX-Forth has been in development since 1997, and release 4.02 carries the badge of newest software on the CP/M platform - it was released in 2013.

Quick Start

DX.COM is the version with integrated screen editor, so start that one. Type:
: HELLO-WORLD ." Hello world"
and you've added this is a 'word' (ie, instruction, or program). Type HELLO-WORLD to run it and marvel at its output. Better yet, read DX-FORTH.TXT to start learning more. 'BYE' gets you back to CP/M.

E5:
PL/I DIGITAL RESEARCH v1.4

History

Pronounce as Pee-El-One. Not Pee-El-Aye. PL/I has its roots in the 50 and 60s, but properly starts at IBM in 1965. It is directly relevant to CP/M as Gary Kildall wrote CP/M in PL/M, a subset of PL/I he wrote for Intel in 1972. In fact, PL/I 1.4 is written in PL/M too. PL/I sits somewhere between assembler and C, thus it is very well suited for systems development.

Quick Start

PLI OPTIMIST, then LINK OPTIMIST. Now you have optimist.com, which can take care of your sorrows, as long as you do not forget to end your sentences with a period.

E6:
ALGOL M

History

ALGOL is a very early language, and a direct predecessor of both C and Pascal. Creditable quote: "Here is a language so far ahead of its time that it was not only an improvement on its predecessors but also on nearly all its successors".
Algol-M was was written by John Flynn and Mark Moranville as their thesis project at the Naval Postgraduate School - under Gary Kildall. The released version dates from 1977 and is one of the earliest languages to run on a microprocessor.

Quick Start

Type LUNAR.ALG to get an idea of the language. Run ALGOLM LUNAR to compile, then RUNALG LUNAR to execute. Full documentation is on the drive.

F2:
Z-SYSTEM - NZCOM

History

The Z-System is a replacement for CP/M's CCP and BDOS. It offers quite a lot more functionality and is supported by a series of support programs. The main benefits are smarter use of user numbers on drives, superior batch files, time/date stamps on files, and the amount of utility programs making life easier on many respects.

Quick Start

See the NZCOM manual. Also, of course, one of the N8VEM ROM options is an installed Z-System - see stdxz.com in the ROMs directory for an immediate booting version.

F0:
DEVELOPMENT UTILITIES

Contents:

A wide range of popular development tools.

Descriptions:

ZDE - standard editor.
      CTRL-ESDX for cursor, ESC for menu, ESC-S for save.
ED - original editor for CP/M. Only use if you are a masochist.

DDT - original debugger that came with CP/M
DDTZ - standard debugger version using intel mnemonics
DDTZ80 - standard debugger using Zilog mnemonics
SID - original symbolic debugger using Intel mnemonics
ZSID - symbolic debugger using Zilog mnemonics
DEBUGZ - Full-Screen debugger from MicroCode - probably the best
LINK - Linker
LZ - LinkZ from MicroCode, a faster L80 alternative

ASM - standard assembler that came with CP/M. Intel mnemonics.
RMAC - macro assembler (v1) from Digital Research. Intel mnemonics.
MAC - later (v2) version of RMAC.
ZTRAN4 - translate Intel to Zilog
MC.SUB - Submit file for Macro-80 compile cycle

SUBMIT - the simple batch processor that comes with CP/M
XSUB - allows keypresses *within* programs when using submit
SUPERSUB - a better version of Submit

DUMP - dumps a binary file into HEX format
LOAD - converts .HEX into .COM file. Last step for many compilers

PIP - standard CP/M file copier and more. Ex: PIP a:=b:*.TXT
STAT - get basic disk usage statistics
LS - better dir

ZAP - file manager
WASH15, NSWP207, VFILER - file management tools

NULU - one of the standard library tools
LBREXT - Extract from.lbr archives
CR - crunch files into *.*z*
UNCR - deal with *.?z? files that are conpressed with crunch
USQ - unsQueeze *.?q? files
UNARC - deals with arc and ark files
UNZIP - Extract from (early) ZIP archives

SPEED - test your Z80's clock speed
SURVEY - inventorise your system & test memory

D5:
SUPERSOFT UTILITY PACK

History

An early pioneer in CP/M software, SuperSoft Associates published their Utility packs around 1981, which give CP/M a lot of the small tools known from Unix. You'll thus find here things like AR, the archiver, GREP, WC, SORT, UNIQ etc.

Quick Start

Please refer to manual.prn on the drive.

F8:
MICROSHELL

History

New Generation Systems published Microshell and Microtools in 1982 - they were well done, but unfortunately not very widespread. Microshell 2.0, from 1983, was a major breakthrough for CP/M power users, even complicated batch files and menu shells could be written. Redirection of console output to a file or to a printer were available too. Note that this directory also contains the microtools.

Quick Start
----
run SH.COM. This will give you something not that far from unix shells or at least MS-DOS quality batch processing. Try "fullprmp;dir >>files;type files". See sh.txt for full info. A good manual for the microtools is on www.hartetechnologies.com.

D0:
GAMES

Contents

An assortment of classic CP/M games. Many require a VT-100 terminal.

Descriptions

ADV - the classic Colossal Cave adventure
ZORK1 - the Infocom adventure. Sequels Zork2 & 3 are there too
PLANET - Infocom's Planetfall

WORM - Centipede. Kinda.

WANDERER - go around the screens picking up & avoiding stuff
STAR - Star Trek, obviously

SARGON - Chess
OTHELLO - Othello

LADDER – Donkey Kong – but only for 2-4 Mhz machines
CATCHUM – Pacman – also, for slower machines