

Albert's Bi-Monthly Review



March 1990.....Issue 01/01

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Monthly Note.

Well, well time is flying again as yet again I find myself in front of my Einstein. As you may have noticed, I tried to do last months newsletter on my Amiga, but I decided that the Einstein is still better with my favourite version of Tasword.

What's Happening ??

Well, actually I lied a little last month, I said there were NO computer shows. There were a few in Europe, unfortunately I missed them! However there was 1 in this country. It was held on Saturday 10th Febuary, and was called the All Format Computer Show, and was basically a rip off of the Alternative Micro Show (David Thompson reviews it and The 16 bit fair later in the magazine).

The Magazine.

Just to stop all the confusion, I am going to give you all the relevent facts now.

Joining and Rejoining the group.

This will now cost £7 per year and I will send you 6 News letters (Varing between 3 - 7 pages) and 6 magazines (Varing between 25 - 40 pages). For all those who didn't know, I WILL send out reminders when you are due.

News.

I'm just putting the finishing touches to the NEW Public Domain Catalogue, please DO NOT order any Public Domain from the old catalogue, as you will find that your disc(s) will be returned. Please note, if you have written any programs of good quality in any language, I'm willing to exchange them for one order of Public Domain Software! If you have written some VERY GOOD software (In any language), and you think that it is good enough to sell, then get in touch with me and I can give you details on marketing ideas.

Naughty, Naughty.

As with all groups, numbers get passed around of useful people, especially if they have done a good turn for you, however some people that were on the original "HELP - LINE" have sold their Einsteins.

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Monthly Note

Kevin Mortimer - Hampson sold his Einstein a couple of months ago, however the name still floated around, and it ended up on my list, so he is none to happy with me (He says that he has had more work than he had when he owned an Einstein.), so I have decided to stop my "List". I'm going to start a new one, however this time I'm going to make sure that only people that want to be on my list, are on my list.

Additional Information.

As you may have seen, you have a small Questionnaire with this magazine. I would be very gratefull if you could fill it it and return it, as I would like to know what you are planning to do with your Einstein.

Public Domain

As I have already mentioned, the new catalogue is nearly here, hopefully I can put it in this magazine, although I'm aproaching the printing deadline very quickly, so I will see what I can do. The general idea with the new catalogue, is to make your life easier, as well as introducing some new ideas. First of all I will be giving reviews on programs, I will also make up some manuals to make life easier. As you might see in this magazine I will also be reviewing ALL the Public Domain which is in the new catalogue. A hard task!

Thanks for listening, and I hope you enjoy this months magazine.

Roy Prime.

The New Public Domain Catalogue

The Public Domain Catalogue has always been shunned by any respectable computer user, because it is so disorganised and some of the programs are so bad, they are not worth the disc space.

The Beds Computer Group has changed this, I have spent considerable lengths of time throwing the junk out, and keeping the good stuff, as well as adding some new. The Public Domain Catalogue is now organised into the following catagories:-

The "G" Catagory is for games and music related programs.

The "U" Catagory is for utilities.

The "C" Catagory is for Computer Aided Design.

The "W" Catagory is for Wordprocessors.

The "L" Catagory is for Languages.

The "I" Catagory is for Information and Help files.

The "M" Catagory is for manuals. (Printed)

The Public Domain Catalogue is now arranged in that order, i.e. if you were looking for the MBASIC language, you would look under the "L" catagory and follow the page down until you found the order code. The order code for MBASIC is PD L001, so if you wanted to order this disc, all you would have to is ask for PD L001, the same goes for all the other catagories, if you wanted some games writted in MBASIC, all you would have to do is look up the games section, and follow the page down until you found the order code for that, which in this case is G003. Simple see!

This is very easy when you are at a Computer Show to find what you want quickly, and hand over your disc and your money, however, when you are ordering from home you have 2 options.

The first option is the most used. Simply send a disc and some money. I require one disc for every 2 orders, say you wanted PD L001 and G003, all I would require would be one disc, however if you wanted more, I would require more discs.

The second option is one of my "Brain waves", all you have to do is give me a ring and tell me what you want,

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The New Public Domain Catalogue

and sending me some money, when I receive the cheque, I will send you the disc, cutting out all the time and bother, and that way you WILL NOT have to worry about losing any of your discs in the post!

I'm also doing a manual service. Basically this means you can buy a good quality printed manual for each category. There will be 6 manuals in total, and each one will give reviews of the Public Domain in the category and give a list of the programs.

The other service that will be similar to this will be the Instruction service. I will print out all the .DOC files in a manual form, this should make it easier for you to use the software, without scanning .DOC files for instructions.

Prices:-

Public Domain now costs £1.00 per order number.

Public Domain on a disc costs £4.50 (2 order numbers and postage and packing).

Manuals will cost 25p. Each one will cover a category, each of these will be put in Albert's Bi - Monthly Review.

Instruction sets cost 50p each and will cover a set of programs or one particular program on one of my Public Domain discs.

Please Note: The price for the manuals, instruction sets and Public Domain on a disc INCLUDE postage and packing. If you order normal Public Domain, please inclose 1 * 20p stamp per disc.

Please make all cheques for Public Domain and Public Domain on a disc payable to Mrs C. Prime, if ordering manuals or instruction sets, make your cheques payable to Mr. R. Prime.

Public Domain Catalogue

Games / Music Section.

<u>Order No.:</u>	<u>Description</u>	<u>:Cols</u>	<u>:Size</u>
PD G001	:Games Written in Compiled Basic. These programs require System 5's XR.COM program to run.	:40	:164k
PD G002	:Want a senseless chat with your Einstein? This is the program to do it! Based on the original Eliza program from the '70's. Also includes a program to convert your ASCII or WP file into a load a waffle!	:40/80	:186k
PD G003	:Games written in Microsoft Basic (MBASIC), from the very primitive to nice graphical games, requires a fairly new version of MBASIC to run. (Will not run them all with the PD Version.)	:80	:122k
PD G004	:Into wargames? Then this is the disc for you! This is the wargames disc. Also included is a chess program. If you are good at remembering moves, you can win the game! (No Graphics!)	:40/80	:92 k
PD G005	:The famous BBC BASIC music and slides program, is there anyone that hasn't yet seen them? Requires BBC BASIC (Z80) to run.	:40	:140k
PD G006	:Lots of Basic Games (XBAS). Demos ,Adventures and some utilities, a see for yourself disc!	:40	:148k
PD G007	:The Colussus Cave adventure. Known better as the original adventure. Programmed by Level 9 (Part 1)	:40/80	:154k
PD G008	:The Colussus Cave adenture, both parts are needed to run the adventure. (Part 2)	:40/80	:40 k

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The Public Domain Catalogue

Games / Music section.

<u>Order No.:</u>	<u>Description</u>	<u>:Cols</u>	<u>:Size</u>
PD G009	:8 Games written in XBAS, the finest (and newest) edition to the Public Domain Catalogue.	:40	:76 k
PD G010	:Find Crosswords difficult, solve them with this puzzle solver. 3-8 Letter word solver. Written in XBAS.	:40	:176k
PD G011	:Same as PD G010, except is for 9-19 letter words. These can be used seperatly, ideal for people that can't spell!	:40	:158k

The Public Domain Catalogue

Utility Section.

<u>Order No.:</u>	<u>Description</u>	<u>:Cols</u>	<u>:Size</u>
PD U001	:Personal Database System written in XBAS. Includes a full 22k .DOC file manual.	:80	:76 k
PD U002	:Disc catalogue utility. Will let you catalogue all your discs, and keep a record of all your software titles.	:40/80:	36 k
PD U003	:Bradford Fonts. Will allow you to make very good prints from WORDSTAR, WP40, WP80 or VDO 25 on very cheap printers.	:40/80:	62 k
PD U004	:dTune. Will allow you to convert .TXT files from dBase II to ready to run .COM files. Includes a 10k document file.	:80	:92 k
PD U005	:Information management system. An easy to use Database. Requires MBASIC to run.	:80	:188k
PD U006	:General Disc Utilities, ranging from a disc verifier to a Directory file sorter.	:40/80:	154k
PD U007	:Assemblers! Make .COM files out of .HEX files. Help files are included on the disc.	:80	:128k
PD U008	:Lots more disc utilities, including Xtrax and Eindisk (Disc Modifiers), and ZDIS a Z80 dissassembler.	:40/80:	72 k
PD U009	:RBBS (Modem Communications program). With help files and installation programs.	:80	:146k
PD U010	:EINSTRAD and AMSREAD. Will allow you to copy files from Amstrad CPC's, C464's and C128's. WARNING although it will copy games, unless you have Amstrad BASIC, you cannot run them!	:40/80:	128k

The Public Domain Catalogue

Computer Aided Design section.

<u>Order No.:</u>	<u>Description</u>	<u>:Cols</u>	<u>:Size</u>
PD C001	:The "GRAF" program. Is Basically a plotter program, however you can get stunning results. Works on all EPSON compatible printers. Comes complete with a 20k help file and a printer demo to help you.		:40/80:188k
PD C002	:Eplox Program, and no I don't know why it is called Eplox! Should be run on a double head 3" or 5.25" or 3.5" drive as this program needs a lot of files (It covers 2 discs). Not a good idea to buy this unless you like swopping discs! (Part 1).		:40/80:180k
PD C003	:Eplox Program files, yes more files for the Eplox program, still a nice package, this disc has some of the files that you will need to run Eplox. (Part 2).		:40/80:134k

Public Domain Catalogue

Wordprocessing Section

<u>Order No.:</u>	<u>Description</u>	<u>:Cols</u>	<u>:Size</u>
PD W001	:VDO 25. An advanced text editor. I would say it is one of the best Wordprocessing Packages I have ever seen! It's better than Kuma's Wordpro and as good as Wordstar. Why was it put on the Pd list?? Includes a 24k .DOC Manual.	:80	:110k
PD W002	:Wordpro Program written in Pascal I do not own Pascal, but have been informed by a fellow user that does, that it is fast, but not very user friendly!	:80	:96 k

Public Domain Catalogue

Language Section.

<u>Order No.:</u>	<u>Description</u>	<u>:Cols</u>	<u>:Size</u>
PD L001	:The MBASIC disc. Includes Version 5.2 of Microsoft Basic. (1981 Version). Will run some of the PD MBASIC programs, such as the typing tutor.	:80	:120k
PD L002	:A Cobol compiler with Demos.	:80	:150k
PD L003	: "C" Libraries. Disc also contains Extended SUBMIT support for small "C" Compiler.	:80	:170k
PD L004	: Maths and Financial programs written in MBASIC. Will work with the PD version of MBASIC.	:80	:112k

The Public Domain Catalogue

Information Section

<u>Order No.:</u>	<u>Description</u>	<u>:Cols</u>	<u>:Size</u>
PD I001	:Lots of Info! A disc full of help for DOS & C/PM utilities.	:40/80:	166k
PD I002	:Help files for MBASIC, SUPERCALC and WORDSTAR.	:40/80:	88k
PD I003	:Help files for C/PM, Pascal, C, MBASIC and a help file for a help program!	:40/80:	182k

Double Trouble By David Thompson

By popular demand (well at least by the chairman Royston) I'm back again to give another boring report, not on one show but two shows you lucky people. The first show is the 16 Bit show which was held at, you guessed it the Royal Horticultural Halls at Victoria. Yes that is correct, Halls, in fact two halls, on the 12 - 14 Jan.

We of course went on the last day (Sunday) 14th Jan at a cost of £2.00 per head with pre-paid tickets giving a 50% reduction.

After having our tickets marked with a coloured pen at the entrance to prevent us using them on any other day i.e. 12th or 13th (yes the mind boggles considering that was yesterday and the day before, you work it out).

Once inside the first hall and quick walk around, we discovered the organizers were correct it was a 16 Bit show, well you never know. The hall was only 75% full of exhibitors selling mostly software at reasonable prices.

On entering the second hall after having our tickets scrutinised to make sure that they were not yesterdays or the day before tickets, you got the feeling that the organizers tried to see how many stands they could squeeze in. The goods were pretty much the same as the 1st hall selling mostly software.

P.C. prices ranged from £4.00 upwards on 3.5 or 5.25 Amiga & S.T. software the prices were a little cheaper. At the end of the day there were a lot of good bargains with Amiga & S.T. as little as £1.00, Books and manuals were only a £1.00 for as many as you can get in a provided plastic carrier, I've been to so many shows that this one appears to have nothing of special interest except value for money.

Now for the second show. This was the ALL FORMAT SHOW again at Victoria, this time a one day event on the 10/2/90 Cost of entrance was £3.00 with as far as I know, no reductions, that includes no discount for children. On going into the hall I met a friend by pre-arrangement who informed me he had spent nearly 20 minutes already at the show and seen everything twice, I said it can't be that bad (his reply wait and see). Well the hall was not used to 50% of it's capacity but what was used varied a lot from ZX81 software to Amiga 500 computers.

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Double Trouble by David Thompson

The show was not supported at all well by the public and I would think the traders had a poor day when you consider the cost of the tables was £100.00 per 6ft.

The SAM was at last on show after about 2 years of being put together M.G.T. the maker of SAM had the largest stand there with plenty of demos on it's new? baby. The basic SAM outfit would set you back £169.95 and is without a drive. If you wanted a SAM with twin 3.5 drives and an extra 256k of memory this would cost you £389.85. Well uncle Sam you'll have to wait a bit longer before I buy you.

I was a bit surprised that M.G.T. did not have on show their famous disciple interface or their plus D. interface. For people who do not know, the disciple is the best disk drive interface ever made for the spectrum giving 780k on a 5.25 drive. The disciple is capable of taking snapshots of whats in it's memory and dumping it to a printer or disk, in short that means about 15 spectrum games per disk with very fast access. The plus D. is similar but without so many advantages. I did notice that the price of microdrive cartridges had gone up from under £2.00 each new to £4.00 each with second hand ones selling for £3.00 each Software was available for M.S.X. VIC20 ATARI 8BIT SPECTRUM COM64 ORIC APPLE B.B.C. CPC. and DRAGON, and probably more which I did not see.

There were lots of little nick-nacks that did bring memories of the shows in the mid 80's. Well after about two and half hours we had to leave, we must have gone around about 10 to 15 times the show was scheduled to close at 6.o/c but a lot of traders had started to pack up at 4.o/c. Maybe if the show had been advertised better it would have enjoyed the success other shows have.

The next show as far as I know is the EINSTEIN SHOW. At the Motor Cycle museum BIRMINGHAM. This is on 28th of April (SAT) see you at the show, bye for now.

TOP 10

The list of top 10 programs this month are as follows:-

Position:	Name of Program	:Rating
1. .1 .	Suspended	*****
2. .2 .	Zork III	****
3. .3 .	Theatre Europe	*****
4. .4 .	Starcross	*****
5. .N .	Hyperball	*****
6. .N .	Starbase	*****
7. .N .	Jump Mania	££££
8. .N .	Sprog	££
9. .9 .	Soho	*
10. .10.	Oh Mummy!	**

Top 10 Business software

1. .1 .	Tasword	*****
2. .2 .	Tatung Invoicing	***
3. .3 .	Popup	***
4. .4 .	Genesis Word Processor	****
5. .5 .	Mouse Art	**
6. .6 .	The Cracker	***
7. .7 .	Super Writer	***
8. .8 .	Tubes Version 4 + Side B software.	*****
9. .9 .	Mouse Tools	****
10. .10.	Tubes Version 4	****

Who needs to smoke?

Many of you might have seen Q.E.D in January, when they were talking on the subject of computer addiction, I originally watched this because I thought it might be of some vague interest, however as I was watching I began to realise with horror that it was describing me and quite a few of my friends and a couple of my work colleagues, and when I was around my friends house, we calculated that between us we spend about 60 hours a week on a computer, I have an excuse of course! Writing articles was mine, however my friend was a true computer gamer!

The problem I think will only get worse. In the early 80's computers weren't such a problem, there were the ZX 81's and Commodore Vic 20's, however I wouldn't think of spending 30 hours a week playing games on them! The problem now is computers have got TOO good. When you had a ZX81, you could program, that was all I used to do with my ZX81, however now computers like the Atari St and the Commodore Amiga have come about the graphics are so good and with stereo sound, this makes the computer better than the TV, and it is so easy just to chuck a disc in the drive and turn on, I didn't even think of programming the Amiga until recently, so how long do you or your family use on a computer? I think you will find that the people sensible enough to use Einsteins will use them to do more serious work, and not quite so often as those with a Commodore Amiga or an Atari St, and these people will use thier computer more for games.

Conclusion.

A computer can be a great help with education, this has been proved. However so many computers are devoted now to games, and games only, which means you end up wasting time and money. I added up the total amount of money my Commodore Amiga would cost if I was to go out and buy everything again.

Commodore Amiga 500 + Tenstar Pack	:£ 399.99
Commodore A500 Meg Expansion (Memory)	:£ 104.99
Senator 3.5" External 1 Megabyte drive	:£ 75.00
41 games @ £18.95 ea Approx	:£ 776.95
Scribble Wordprocessor	:£ 49.95

Total :£1406.88

An average smoker smoking about 2 packs a week would spend about £2500 every year, so you can see that my Amiga was not much cheaper than the average smoker!

Bargain Basement

Key *Shand* = Second hand software / Hardware. (Tried and tested o.k)

NEW = New pieces of software / Hardware.

Einstein Hardware and Software

<u>Description</u>	<u>:Normal Price:</u>	<u>Offer Price.</u>
Zork II	:£27.95	:£10.00 **NEW**
Zork III	:£27.95	:£10.00 **NEW**
Starcross	:£27.95	:£15.00 **NEW**
Suspended	:£27.95	:£15.00 **NEW**
Starbase	:£10.00	:£ 9.50 **NEW**
Sprog	:£10.00	:£ 9.50 **NEW**
Hyperball	:£10.00	:£ 9.50 **NEW**
Jump Mania	:£10.00	:£ 9.00 **NEW**
Tubes Mouse software. + Side B utils.	:£11.99	:£ 8.99 **NEW**
Tubes Ver 4 update	:£ 2.00	:£ 2.00 **NEW**
Public Domain	:£ 2.00 (No.)	:£ 1.00 **NEW**
Public Domain on a disc.	:Unknown	:£ 4.50 **NEW**

Hardware, Media and Books.

<u>Description</u>	<u>:Normal Price:</u>	<u>Offer Price.</u>
3" Disc head cleaner	:£ 4.50	:£ 3.50 **NEW**
DOS, Basic Reference and Introduction Manuals.	:£24.95	:£ 6.00 **NEW**

Please Note. All prices include postage and packing and a three month money back guarantee. (This does not cover the NORMAL Public Domain service, only the Public Domain on a disc service).

For software, hardware and Media etc, make all cheques payable to R.Prime.

For Public Domain or Public Domain on a disc, make all cheques payable to Mrs. C. Prime.

The Computer Auction

For Sale!

1 Keyboard. Is a very good quality. Has a long "D" plug connector to connect to either a micro computer or a dumb terminal. No offers refused (Above £1!). Phone 0525 210868 after 6.30 pm.

ZX81 Computer with all manuals, leads etc including a Sinclair 16k Rampack + 11 games and a ZX Magic book, bring back the good old days! Offers Wanted. Phone 0525 210868 after 6.30 pm.

Commodore Amiga 500 with a 3.5" external 1 megabyte drive, Megabyte ram expansion, 41 games, a wordprocessor. All boxed, all as new, originally worth about £1406.88 new, will take £1000, or will part exchange with money and computer hardware. Phone 0525 210868 after 6.30 pm.

Texas Instruments TI 99/4a Computer. Is one of the first 16 bit computers. Package includes 5 manuals 13 games on tape and 4 cartridges and a speech device, all for only £35. Call 0525 210868 after 6.30pm

4 colour printer plotter with centronics interface, offers wanted. Call 0525 210868 after 6.30pm

Prism 1000 modem offers wanted. Call 0525 210868 after 6.30 pm.

Credits

I would like to thank for this publication, David Thompson for yet another wonderful show review, and Micro Illusions for another of their great pictures.

Please Note. All articles in this magazine are copyright (c) 1990 Beds Computer Group. If any other groups would like to use an article, all you have to do is ask!

Cover Picture by Louis Markoya. Reproduced by the kind permission of Micro Illusions and Photon Paint 2.0 (c) 1989 Micro Illusions.

Help - Line

If you have any queries on the magazine, or software or the Einstein in general, here is a list of people that you can now contact.

Adventure Games, Pascal, Musical Applications.
Josef Karthauser, 17 Manor Close, Abbots Ann, Andover
Hants, SP1 7BJ.

General Computer knowledge.
Roy Prime (See Backpage).

If you think you could help, give me a call and I will add your name to my help list.

Backpage Info

Alberts Bi - Monthly Review

Back issues are available from June 1988 (Issue 01/01) till June 1989 (Issue 02/01). These cost 50p each or 77p including Postage and packing.

Please note. The source code is now available from the PD library.

Correspondence regarding the group except Public Domain software should be sent to:-

Mr. R. Prime
The Beds Computer Group,
17 Bury Rise,
Tilsworth,
Leighton Buzzard
Beds. LU7 9PR

All cheques for software, manuals, books etc from the bargain software page and auction page (Unless stated otherwise) should be made payable to R.Prime.

Correspondence regarding Public Domain software to:-

Mrs. C. Prime (Same address)

Please note. You can now send off for Public Domain software on the following format of discs.

3.5" Double Sided 80 track.
3 " Single Sided 40 track

Make all cheques for Public Domain software payable to Mrs. C. Prime.

Pd. Prices. £1.00 per order no.

How to submit Articles.

You may submit articles on 3" disc using the following Wordprocessor formats:-

Wordstar
Tasword.

If you have any queries regarding any of the above you may telephone 6pm and 9pm Monday to Friday and 5pm and 10pm weekends.

Roy Prime. 0525 210868.
Chris Prime. 0525 210868.

Introduction to the Microsoft BASIC Interpreter
 Special Characters
 Variable Type Declaration Chars
 Commands
 Edit Mode Subcommands
 Program Statements (except I/O)
 PRINT USING Format Field Specifiers
 Input/Output Statements
 Operators
 Arithmetic Functions
 String Functions
 I/O and Special Functions
 Interpreter Error Codes
 Introduction to the Microsoft BASIC Compiler
 Compiler Commands and Switches
 Compiler Error Messages
 :Introduction to the Microsoft BASIC Interpreter

This HELP File is derived from the "Microsoft BASIC Reference Book", and it is divided into two parts -- one covering the Interpreter and the other covering the Compiler. These programs process programs written in almost exactly the same language -- Microsoft BASIC; there are minor differences between the two, however, and these are discussed in the file under the Compiler Introduction.

The MBASIC (Microsoft BASIC) Interpreter is invoked as follows --

MBASIC [(<filename>)[/F:<# files>][/M:<memory loc>]

If <filename> is present, MBASIC proceeds as if a RUN <filename> command were typed after initialization is complete. A default extension of .BAS is assumed. If /F:<# files> is present, it sets the number of disk data files that may be open at any one time during the execution of a program. The default here is 3. The /M:<memory loc> sets the highest memory locations that will be used by MBASIC. All memory to the start of FDOS is used by default.

:Special Characters

^A	Enters Edit Mode on line being typed or last line typed
^C	Interrupts program execution and returns to MBASIC
^G	Rings <BELL> at terminal
^H	Deletes last char typed
^I	Tab (every 8)
^O	Halts/resumes program output
^R	Retypes the line currently being typed
^S	Suspends program execution
^Q	Resumes execution after ^S
^U, ^X	Deletes line being typed
<CR>	Ends every line being typed in
<LF>	Breaks a logical line into physical lines
	Deletes last char typed
<ESC>	Escapes Edit Mode Subcommands
.	Current line for EDIT, RENUM, DELETE, LIST, LLIST commands
%O, %	Prefix for Octal Constant
%H	Prefix for Hex Constant
:	Separates statements typed on the same line
?	Equivalent to PRINT statement

:Variable Type Declaration Characters

\$	String	0 to 255 chars
%	Integer	-32768 to 32767
!	Single Precision	7.1 digit floating point
f	Double Precision	17.8 digit floating point

:Commands

Command	Syntax	Function
AUTO	AUTO [line][,inc]	Generate line numbers
CLEAR	CLEAR [,exp1][,exp2]	Clear program variables; Exp1 sets end of memory and Exp2 sets amount of stack space
CONT	CONT	Continue program execution
DELETE	DELETE [[start][-[end]]]	Delete program lines
EDIT	EDIT line	Edit a program line
FILES	FILES [filename]	Directory
LIST	LIST [line[-[line]]]	List program line(s)
LLIST	LLIST [line[-[line]]]	List program line(s) on printer
LOAD	LOAD filename[,R]	Load program; ,R means RUN
MERGE	MERGE filename	Merge prog on disk with that in mem
NAME	NAME old AS new	Change the name of a disk file
NEW	NEW	Delete current prog and vars
NULL	NULL exp	Set num of <NULL>s after each line
RENUM	RENUM [[new][,[old][,inc]]]	Renumber program lines
RESET	RESET	Init CP/M; use after disk change

Command	Syntax	Function
RUN	RUN [line number] RUN filename[,R]	Run a prog (from a particular line) Run a prog on disk
SAVE	SAVE filename[,A or ,P]	Save prog onto disk; ,A saves prog in ASCII and ,P protects file
SYSTEM	SYSTEM	Return to CP/M
TROFF	TROFF	Turn trace off
TRON	TRON	Turn trace on
WIDTH	WIDTH [LPRINT] exp	Set term or printer carriage width; default is 80 (term) and 132 (prin)

:Edit Mode Subcommands

A	Abort -- restore original line and restart Edit
nCc	Change n characters
nD	Delete n characters
E	End edit and save changes; don't type rest of line
Hstr<ESC>	Delete rest of line and insert string
Istr<ESC>	Insert string at current pos
nKc	Kill all chars up to the nth occurrence of c
L	Print the rest of the line and go to the start of the line
Q	Quit edit and restore original line
nSc	Search for nth occurrence of c
Xstr<ESC>	Goto the end of the line and insert string
	Backspace over chars; in insert mode, delete chars
<CR>	End edit and save changes

:Program Statements (except I/O)

Statement	Syntax	Function
CALL	CALL variable [(arg list)]	Call assembly or FORTRAN routine
CHAIN	CHAIN [MERGE] filename [, [line exp] [, ALL] [, DELETE range]]	Call a program and pass variables to it; MERGE with ASCII files allows overlays; start at line exp if given; ALL means all variables will be passed (otherwise COMMON only); DELETE allows deletion of an overlay before CHAIN is executed
COMMON	COMMON list of vars	Pass vars to a CHAINED prog
DEF	DEF FNx[(arg list)]=exp DEF USRn=address DEFINT range(s) of letters	Arith or String Function Define adr for nth assembly routine Define default var type INTEger
	DEFSNG " " " "	" " " " Single
	DEFDBL " " " "	" " " " Double
	DEFSTR " " " "	" " " " String
DIM	DIM list of subscripted vars	Allocate arrays
END	END	Stop prog and close files
ERASE	ERASE var [,var ...]	Release space and var names
ERROR	ERROR code	Generate error code/message
FOR	FOR var=exp TO exp [STEP exp] FOR loop	

Statement	Syntax	Function
GOSUB	GOSUB line number	Call BASIC subroutine
GOTO	GOTO line number	Branch to specified line
IF/GOTO	IF exp GOTO line [ELSE stmt ...]	IF exp <> 0 then GOTO
IF/THEN	IF exp THEN stmt[:stmt] [ELSE stmt ...]	IF exp <> 0 then ... else ...
LET	[LET] var=exp	Assignment
MID\$	MID\$(string,n[,m])=string2	Replace a portion of string with string2; start at pos n for m chars
NEXT	NEXT var[,var ...]	End FOR
ON ERROR GOTO	ON ERROR GOTO line	Error trap subroutine
ON/GOSUB	ON exp GOSUB line[,line]	Computed GOSUB
ON/GOTO	ON exp GOTO line[,line]	Computed GOTO

Statement	Syntax	Function
OPTION BASE	OPTION BASE n	Min val for subscripts (n=0,1)
OUT	OUT port,byte	Output byte to port
POKE	POKE address,byte	Memory put
RANDOMIZE	RANDOMIZE [exp]	Reseed random number generator
REM	REM any text	Remark — comment
RESTORE	RESTORE [line]	Reset DATA pointer
RESUME	RESUME or RESUME 0	Return from ON ERROR GOTO
	RESUME NEXT	Return to stmt after error line
	RESUME line	Return to specified line
RETURN	RETURN	Return from subroutine
STOP	STOP	Stop prog and print BREAK msg
WAIT	WAIT prot,mask[,select]	Pause until input port [XOR select] AND mask <> 0

WHILE/ WHILE exp stmts ... WEND Execute stmts as long as exp is T
WEND

:PRINT USING Format Field Specifiers
Numeric Specifiers

Specifier	Digits	Chars	Definition
E	1	1	Numeric field
.	0	1	Decimal point
+	0	1	Print leading or trailing sign
-	0	1	Trailing sign (- if neg, <sp> otherwise)
**	2	2	Leading asterisk
\$\$	1	2	Floating dollar sign; placed in front of leading digit
***	2	3	Asterisk fill and floating dollar sign
,	1	1	Use comma every three digits
^^^	0	4	Exponential format
_	0	1	Next character is literal

String Specifiers

Specifier	Definition
!	Single character
/<spaces>/	Character field; width=2+number of <spaces>
&	Variable length field

:Input/Output Statements

Statement Syntax/Function

CLOSE	CLOSE [[E]f[, [E]f ...]] Close disk files; if no arg, close all
DATA	DATA constant list List data for READ statement
FIELD	FIELD [[E]f, n AS string var [, n AS string var ...] Define fields in random file buffer
GET	GET [[E]f[, record number] Read a record from a random disk file
INPUT	INPUT [;] [prompt string;] var [, var ...] INPUT [;] [prompt string;] var [, var ...] Read data from the terminal; leading semicolon suppresses echo of <CR>/<LF> and semicolon after prompt string causes question mark after prompt while comma after prompt suppresses question mark

Statement Syntax/Function

KILL filename
 Delete a disk file

LINE INPUT [;] [prompt string;] string var
 INPUT Read an entire line from terminal; leading semicolon suppresses echo of <CR>/<LF>
 LINE INPUT f,f,string var
 Read an entire line from a disk file

LSET LSET field var=string exp
 Store data in random file buffer left-justified or left-justify a non-disk string in a given field

OPEN OPEN mode,[f] f,filename
 Open a disk file; mode must be one of --
 I = sequential input file
 O = sequential output file
 R = random input/output file

Statement Syntax/Function

PRINT PRINT [USING format string;] exp [,exp ...]
 Print data at the terminal using the format specified
 PRINT £f, [USING format string;] exp [,exp ...]
 Write data to a disk file
 LPRINT [USING format string;] var [,var ...]
 Write data to a line printer
 PUT PUT [£] f [,record number]
 Write data from a random buffer to a data file
 READ READ var [,var ...]
 Read data from a DATA statement into the specified vars
 RSET RSET field var = string exp
 Store data in a random file buffer right justified or right
 justify a non-disk string in a given field
 WRITE WRITE [list of exps]
 Output data to the terminal
 WRITE £f, list of exps
 Output data to a sequential file or a random field buffer

:Operators

Symbol	Function
=	Assignment or equality test
-	Negation or subtraction
+	Addition or string concatenation
*	Multiplication
/	Division (floating point result)
^	Exponentiation
\	Integer division (integer result)
MOD	Integer modulus (integer result)
NOT	One's complement (integer)
AND	Bitwise AND (integer)
OR	Bitwise OR (integer)
XOR	Bitwise exclusive OR (integer)
EQV	Bitwise equivalence (integer)
IMP	Bitwise implication (integer)
=,>,<, <=,<=,<, >=,>=,>, <>	Relational tests (TRUE=-1, FALSE=0)

The precedence of operators is --

- | | |
|-------------------------------|-------------------------|
| 1. Expressions in parentheses | 8. Relational Operators |
| 2. Exponentiation | 9. NOT |
| 3. Negation (Unary -) | 10. AND |
| 4. *, / | 11. OR |
| 5. \ | 12. XOR |
| 6. MOD | 13. IMP |
| 7. +, - | 14. EQV |

:Arithmetic Functions

Function	Action
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ABS(exp)	Absolute value of expression						
ATN(exp)	Arctangent of expression (in radians)						
CDBL(exp)	Convert the expression to a double precision number						
CINT(exp)	Convert the expression to an integer						
COS(exp)	Cosine of the expression (in radians)						
CSNG(exp)	Convert the expression to a single precision number						
EXP(exp)	Raises the constant E to the power of the expression						
FIX(exp)	Returns truncated integer of expression						
FRE(exp)	Gives memory free space not used by MBASIC						
INT(exp)	Evaluates the expression for the largest integer						
LOG(exp)	Gives the natural log of the expression						
RND[(exp)]	Generates a random number <table border="0"> <tbody> <tr> <td>exp < 0</td> <td>seeds new sequence</td> </tr> <tr> <td>exp = 0</td> <td>returns previous number</td> </tr> <tr> <td>exp > 0 or omitted</td> <td>returns new random number</td> </tr> </tbody> </table>	exp < 0	seeds new sequence	exp = 0	returns previous number	exp > 0 or omitted	returns new random number
exp < 0	seeds new sequence						
exp = 0	returns previous number						
exp > 0 or omitted	returns new random number						

Function	Action
SGN(exp)	1 if exp >0 0 if exp =0 -1 if exp <0
SIN(exp)	Sine of the expression (in radians)
SQR(exp)	Square root of expression
TAN(exp)	Tangent of the expression (in radians)
:String Functions	
Function	Action
ASC(str)	Returns ASCII value of first char in string
CHR\$(exp)	Returns a 1-char string whose char has ASCII code of exp
FRE(str)	Returns remaining memory free space
HEX\$(exp)	Converts a number to a hexadecimal string
INPUT\$(length [, [f]f])	Returns a string of length chars read from console or from a disk file; characters are not echoed
INSTR([exp,]str1,str2)	Returns the first position of the first occurrence of str2 in str1 starting at position exp
LEFT\$(str,len)	Returns leftmost length chars of the string expression
LEN(str)	Returns the length of a string
MID\$(string,start[,length])	Returns chars from the middle of the string starting at the position specified to the end of the string or for length characters

Function	Action
OCT\$(exp)	Converts an expression to an Octal string
RIGHT\$(str,len)	Returns rightmost length chars of the string expression
SPACE\$(exp)	Returns a string of exp spaces
STR\$(exp)	Converts a numeric expression to a string
STRING\$(length,str)	Returns a string length long containing the first char of the str
STRING\$(length,exp)	Returns a string length long containing chars with numeric value exp
VAL(str)	Converts the string representation of a number to its numeric value

:I/O and Special Functions

Function	Action
CVI(str)	Converts a 2-char string to an integer
CVS(str)	Converts a 4-char string to a single precision number
CVD(str)	Converts an 8-char string to a double precision number
EOF(f)	Returns TRUE (-1) if file is positioned at its end
ERL	Error Line Number
ERR	Error Code Number
INP(port)	Inputs a byte from an input port
LOC(f)	Returns next record number to read or write (random file) or number of sectors read or written (sequential file)
LPDS(n)	Returns carriage position of line printer (n is dummy)
MKI\$(value)	Converts an integer to a 2-char string
MKS\$(value)	Converts a single precision values to a 4-char string
MKD\$(value)	Converts a double precision value to an 8-char string

Function	Action
PEEK(exp)	Reads a byte from memory location specified by exp
PDS(n)	Returns carriage position of terminal (n is dummy)
SPC(exp)	Used in PRINT statements to print spaces
TAB(exp)	Used in PRINT statements to tab to specified position
USR[n](arg)	Calls the user's machine language subroutine with the arg
VARPTR(var)	Returns address of var in memory or zero if var has not been assigned a value
VARPTR(Lf)	Returns the address of the disk I/O buffer assigned to file number

:Interpreter Error Codes

Code Error	Code Error
1 NEXT without FOR	14 Out of string space
2 Syntax error	15 String too long
3 RETURN without GOSUB	16 String formula too complex
4 Out of data	17 Can't continue
5 Illegal function call	18 Undefined user function
6 Overflow	19 No RESUME
7 Out of memory	20 RESUME without error
8 Undefined line	21 Unprintable error
9 Subscript out of range	22 Missing operand
10 Redimensioned array	23 Line buffer overflow
11 Division by zero	26 FOR without NEXT
12 Illegal direct	29 WHILE without WEND
13 Type mismatch	30 WEND without WHILE

Disk Errors --

Code Error

50 Field overflow
 51 Internal error
 52 Bad file number
 53 File not found
 54 Bad file mode
 55 File already open
 57 Disk I/O error

Code Error

58 File already exists
 61 Disk full
 62 Input past end
 63 Bad record number
 64 Bad file name
 66 Direct statement in file
 67 Too many files

:Introduction to the Microsoft BASIC Compiler

The following direct mode commands are NOT implemented on the compiler and will generate an error message --

AUTO	CLEAR	CLOAD
CSAVE	CONT	DELETE
EDIT	LIST	LLIST
RENUM	COMMON	SAVE
LOAD	MERGE	NEW
ERASE		

The following statements are used differently with the compiler than with the interpreter (refer to the manual for details) --

CALL	DEFINT	DEFSNG
DEFDBL	DEFSTR	DIM
ERASE	END	ON ERROR GOTO
RESUME	STOP	TRON
TROFF	USRn	

:BASIC Compiler Commands and Switches

The compiler is invoked by the BASCOM command; it may be called by --

BASCOM

or

BASCOM command line

where "command line" is --

[dev:][obj file][,[dev:][lst file]]=[dev:]source file[/switch ...]

If just BASCOM is used, the user will be prompted with an asterisk, after which he should enter the command line.

Switches --

/E Use this switch if ON ERROR GOTO with RESUME <line number> is used
 /X Use this switch if ON ERROR GOTO with RESUME, RESUME 0, or RESUME NEXT is used
 /N Do not list generated object code
 /D Generate debug/checking code at runtime
 /S Write quoted strings of more than 4 chars as they are encountered
 /4 Recognize Microsoft 4.51 BASIC Interpreter conventions
 /C Relax line numbering constraints; lines need not be numbered sequentially; /4 and /C may not be used together
 /Z Use Z80 opcodes
 :BASIC Compiler Error Messages
 Compile-Time Fatal Errors

SN	Syntax error	DM	Out of memory
SQ	Sequence error	TM	Type mismatch
TC	Too complex	BS	Bad subscript
LL	Line too long	UC	Unrecognizable command
OV	Math overflow	/O	Division by zero
DD	Array already dim'ed	FN	FOR/NEXT error
FD	Function already def	UF	Function not defined
WE	WHILE/WEND error	/E	Missing /E switch
		/X	Missing /X switch

Compile-Time Warning Errors

ND	Array not dimensioned	SI	Statement ignored
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Run-Time Error Messages

2	Syntax error	52	Bad file number
3	RETURN without GOSUB	53	File not found
4	Out of data	54	Bad file mode
5	Illegal function call	55	File already open
6	Floating/Integer ovfl	57	Disk I/O error
9	Subscript out of range	58	File already exists
11	Division by zero	61	Disk full
14	Out of string space	62	Input past end
20	RESUME without error	63	Bad record number
21	Unprintable error	64	Bad filename
50	Field overflow	67	Too many files
51	Internal error		