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# THE LAST ONE

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# THE LAST ONE™

## IS IT MAGIC?

In the past there have been a number of claims for "self programming computers", "intelligent computers" and even "ultimate computers".

Few of them have ever amounted to more than laboratory curiosities while the bulk of them have sunk without trace. No such claims are made for THE LAST ONE.

THE LAST ONE is a tool, an amazing tool perhaps; some might even say an impossible tool! (they said that to the Wright brothers, didn't they?) but a tool nevertheless.

It is a tool that has been more than seven years in the forging and polishing, with the result that it works.

But like all tools, it only does what the operator wants it to do.

To put it simply, it is a programmer's design aid and code generator and to expect it to create original material would be unrealistic.

However, the time saved in coding leaves you free to try out ideas which, before now, would have been simply too time-consuming to put into practice.

## HOW FAST IS IT?

Take, for example, a domestic accounting system using a couple of files; one for transaction records and one for storing bank balances.

Provide the facility to input details of daily spending (cash, cheque and credit card), deal with regular payments and give it a really smart screen input and output.

An efficient program designer might spend half a day writing a fully detailed specification, he would typically then spend a couple of days or

more coding and de-bugging.

If at the end of it, he finds he has forgotten to allow for, say, a second bank account, the specification can be re-written in minutes, but the re-coding and fresh de-bugging could easily keep him up all night!

With THE LAST ONE, he may still take half a day to design his program, although the interactive design aids built into the system could reasonably be expected to reduce this work to a couple of hours or less.

But the coding, instead of using up a complete weekend, will be performed in the time it takes the user to make and enjoy a cup of coffee.

## WHO IS IT FOR?

If you've been put off buying a micro because you "can't understand this programming business", then THE LAST ONE is the torch that lights your path.

While THE LAST ONE will find its most immediate use in the hands of businessmen, scientists, engineers, teachers, logical thinkers and professional programmers. Anyone with a serious interest in computers will be able to use it with a minimum of practice.

THE LAST ONE is available for use on Disk-based Pet, Apple, Tandy, Ohio Scientific, Sharp and CP/M-MBASIC systems. Versions for other machines are currently under development.

If the above describes your system, then THE LAST ONE is for you.

## BUG FREE CODE - EVERY TIME.

The appearance of the micro-computer in business, in industry and even in the home has shown the competent programmer to be one of the scarcest - and hence the most valuable - of commodities. Yet a large proportion of his time is spent on little more than highly skilled drudgery.



THE LAST ONE, relying heavily on techniques evolved from DJ 'AI' Systems' own original work in the field of artificial intelligence, uses highly interactive techniques to determine the exact requirements of the user before taking over the tedious chore of turning a detailed 'flowchart' into lines of accurate, coded BASIC.

The end product is that almost mythical beast – the efficient program with bug-free code.

First time and every time.

THE LAST ONE is a program writer producing programs in BASIC on a range of popular microcomputers, using your own rough program design, which we call a 'flowchart', as its starting point.

And it can do the job in so short a time that alterations to specifications, changes in file structure or the addition of new hardware make complete program rewrites a simple job that can be performed by almost anyone – on the spot.

THE LAST ONE is used in conjunction with your usual resident BASIC.

Yet no knowledge of BASIC programming is required since your input is performed using question and answer routines in plain English.

The only BASIC listing you will ever see will be the finished up-and-running program, and you don't really even need to look at that.

Naturally the programs, once created, are independent of THE LAST ONE, just as your own current programs should be independent of you.

### **HOW DO I USE IT?**

As with most serious programming, the first step is to select and define the information or 'files' that are going to be needed.

THE LAST ONE guides the user

through the steps required to fully describe all files with their names and details of contents.

(This principle of the program "guiding" the user is used throughout to ensure that adequate information is available for the coding routines.)

Once the files have been defined, the program description proper may be input.

This takes the form of a 'flowchart' (and this, incidentally, is the form in which programs may be most economically stored and transferred from system to system when using THE LAST ONE).

The 'flowchart', like any flowchart, may be painted with a broad brush or filled in with meticulous detail.

Whenever the coding routines have insufficient information a menu-driven question and answer routine is used to derive the precise structure wanted by the programmer, whether in terms of screen layout, prompts to be used, branch destinations or details of keyboard and file input and output.

As the user responds to requests for ever-finer detail, THE LAST ONE builds a correspondingly more detailed model until, at the end, a complete description of the finished program exists in the form of a precise and complete 'flowchart'.

That's when the user goes off to lunch; while THE LAST ONE gets on with the tedious business of structuring and coding the individual lines of BASIC which – by the end of lunchtime, in the case of a very large program – are presented to the user as a finished program. If the program doesn't work first time then it is up to the user to check his own logic!



Once a fault has been found and corrected, or an alteration made, THE LAST ONE will rewrite the program from scratch – as quickly as before.

### FLEXIBILITY IN PROGRAMMING.

For the first time ever, a programmer need not shudder when a client asks for “a few minor modifications”.

Provided that the changes can be presented to the machine in a logical way, the problem of re-coding is nothing more than waiting while your computer – at last – really does do the donkey work!

And when a client or a programmer decides to change from one machine to another, the only thing that has to be fed into the new system is the ‘flowchart’

From this, a resident version of THE LAST ONE can always re-create a suitable, error free program ready to use on the new system.

It goes almost without saying (but we’ll say it anyway) that programs can be merged, linked or otherwise related simply by referring, by name, to their stored ‘flowcharts.’

Using this facility, complex suites of programs may be interrelated, redefined and modified to suit any needs. For example, if you change a file detail, THE LAST ONE will automatically regenerate all programs that are affected by this change, after first having asked you the relevant questions.

### FINALLY.

This leaflet describes the system capabilities and technical specification of THE LAST ONE.

If you are new to micro-computers, don’t be put off by unfamiliar terms and expressions.

THE LAST ONE is designed to be readily accessible to users with little or no background knowledge and

experience.

Included in the price of THE LAST ONE is a comprehensive operating manual which will enable THE LAST ONE to be used as easily by the novice as by the expert.

In addition, technical back-up is available.

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## **TECHNICAL SPECIFICATIONS**

### DISKS.

THE LAST ONE requires two disk drives, either 5¼” or 8”, standard to the computer in use.

### PRINTER.

While a printer is not essential since programs, once created, are written direct to disk, it is very useful for system documentation.

### INPUT AND OUTPUT.

THE LAST ONE is a programming aid enabling both the design and coding of programs in error-free BASIC.

Input is in the form of a flowcharted program design. Output is in BASIC suitable for the system on which THE LAST ONE was used to create the code. The end product runs independently of THE LAST ONE which need not be resident for operation.

### TRANSFER TO OTHER MACHINES.

Provided the language dialect in use is compatible between machines, code may be transferred from one machine to another in any of the normal ways: keyboard entry, direct interfacing or modem transfer may all be used.

In the case of incompatible dialects, it is only necessary to enter the previously constructed ‘flowchart’ on the new machine and allow a resident version of THE LAST ONE to create a coded program suitable for that machine.



### SYSTEM CAPABILITIES.

The program written by THE LAST ONE is constrained by exactly the same limitations to size and versatility as any other BASIC program written on the machine in use.

Files and databases already in existence can usually be accessed without having to re-enter or re-format the data simply by using the EXTERNAL FILES option.

The following list shows some of the main 'flowchart' commands available for program design. Where necessary, THE LAST ONE obtains file names, messages and other details from the user during program construction. Naturally, programs may also be written using no files at all.

#### FILE POINTER.

Allows an index (pointer) to be set to any field of any file or any record at any time.

#### INPUT FROM KEYBOARD.

Allows data to be entered from the keyboard for use or storage in files.

#### INPUT FROM FILE.

Obtains the contents of any selected file or file field for further processing.

#### WRITE TO FILE.

Writes data to any part of any file.

#### OUTPUT DATA.

Displays or prints any selected data wherever it is stored.

#### SEARCH FILES.

Allows files or text to be searched for any type of data either manually or automatically.

#### MERGE FILE FIELDS.

Enables the contents of a file field to be written to any other file field(s).

#### CALL.

Calls up previously constructed 'flowcharts' for inclusion in the 'flowchart' currently being created.

#### BRANCHES.

Allows unconditional branching, conditional branching on Yes/No, branching on selection of a menu option or on the result of testing any data.

#### SPECIAL FUNCTIONS.

This command allows programmers to build in all those "bells" and "whistles" that they know all about but most people never bother with.

#### CLEAR VARIABLES.

Allows selected variables to be CLEARED.

#### CALCULATIONS.

Allows calculations to be performed between any variables or file fields within the limitations of the resident BASIC.

#### DRAW.

Allows the screen layout or printout to be specified to various levels of sophistication.

#### COMMAND FUNCTIONS.

Enables a 'flowchart' to be listed, modified or deleted at any time, while other 'flowcharts' (whether of partial or complete programs) may be CALLED up for inclusion in the current work.

Once a 'flowchart' has been satisfactorily completed, the PROGRAM CREATION ROUTINE takes over

This routine examines the 'flowchart' line by line for ambiguity and re-questions the user as to his exact requirements.

Once sufficient information has been obtained, THE LAST ONE produces a program in error-free BASIC ready to run on any compatible hardware system.



## What the papers are saying

### **Personal Computer World**

'For the first time ordinary people can implement their ideas on a computer without having to worry about... learning to program.'

### **Computer Weekly**

'...the definitive software generator package.'

### **New Scientist**

'Useful to people with no computing background.'

### **Daily Telegraph**

'The computing community is astounded by it.'

### **Computer Talk**

'The Last One is really what its makers claimed it would be - a program that writes programs.'

### **Datalink**

'IBM wants one.'

### **Personal Computer World**

'The philosopher's stone.'

### **Daily Express**

'...a programmer can spend weeks writing a program. The Last One can do the job in just 20 minutes.'

### **Practical Computing**

'...you could write a complete mailing list program in about an hour.'

### **Datalink**

'Think of yourself as either an author, or a clerk.'

### **Daily Telegraph**

'The significance of this development is that it will completely remove from human hands the tedious task of writing long programs and sifting them for errors.'

### **Which Computer?**

'At around £300 (\$600), it is well packaged and good value.'

### **Info World**

'...a very special product'

### **Computer Management**

'There is no doubt, however, that The Last One will be one of the top selling packages of the next few years, partly because it fills a desperate need and partly because it appears to be good value for money.'

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While the details given above are accurate at the time of printing, the manufacturer reserves the right to amend any specifications at any time.

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