zx mushroom club

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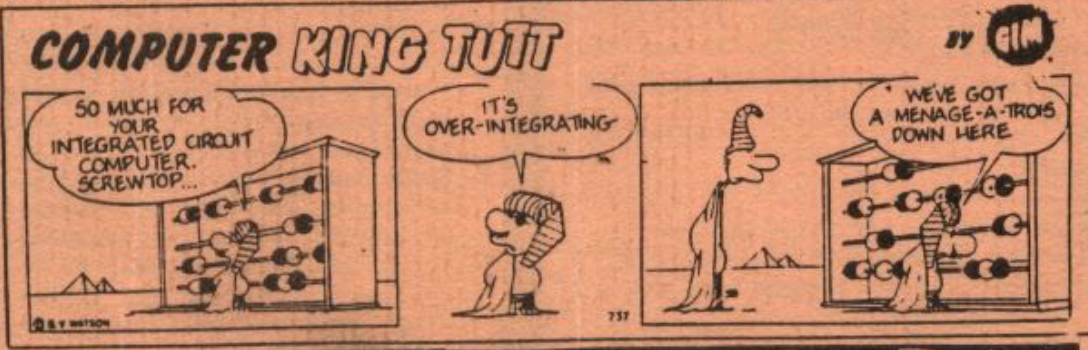
Its Wimbolden time again! Who is going to win this year? Martina is getting a bit haggard and old, so I suspect that Steffi is going to have a whale of a time in beating her!! So I guess thats where I have put my money. As far as the Durban July goes, well I guess my money is on Podometer. With all this talk of money one would think that I am an avid gambler! That is most certainly not the case I can assure you! Its just that July is that time of the year when the greatest sporting highlights feature and one can not help but chat about it! You might as what this has got to do with the newsletter - I don't know, do you?

During the month I received a very disturbing letter from one of our very loyal members, whose name I shall not disclose. The letter mentioned that she had received a copy of another newsletter for Spectrum Users - Spectrum User Club News, a 6 page booklet at a fee of R16.00 per year (compare the ZX Mushroom Club Newsletter at R10 per year & 20 pages). Our trusty & loyal informer was so shocked at the very poor imitation of the ZX Mushroom Clubs high standards (my trumpter died yesterday). Not only was the imitation appallingly low in quality, but the so-called offers were in her opinion, unquestionably pitiful and an insult to Spectrum users. One example quoted was Ace at R41.00, when I.E. sells it for only R14.50! The euphemism "newsletter" was even more surprising (you get 6 per year) comprising of 3 pages of catalogue and 1 page application for interested parties! Come on? is this guy trying to pull a gag?
The cold is really getting at us this year. If you want to ward off the cold then I suggest that you purchase yourself a knitted scarf and cap! These are available from the Club with the Club emolem on them for the extra low price of only R12.00!! The price quoted in last months newsletter was more than incorrect - it was inexcuseable! The scarves come in the following colours:- Grey, Red, Blue, Yellow. Please state which colour you would like when purchasing.

The Z88 has really caught on! I am very pleased to say this as it is a computer in a million and nothing can even come near to comparing with it! Soon, by the end of this month expectedly, 512K RAM and ROM cartriges will be available. Now you will have a whole lot more space to play around in! Seriously though, the memory capacity of the Z88 will make it more important than your PC soon! For more info on the Z88 please feel free to contact I.E.. They will only be too pleased to help you.
Don't forget your subscription fees, we would not like you to stop benefiting from the great things that are published in our truely great magazine!

Love

Please note that in the new releases section of the newsletter, these titles are not yet in stock, but will soon be comming into stock. So, don't miss out on a title you want - order it today!



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This colour printer is surely one of the best buys one can make! With all the outstanding features and the colour added as a bonus, this printer turns into a dream come true! You are probably wondering which printer I am talking about, well it is the one and only:-

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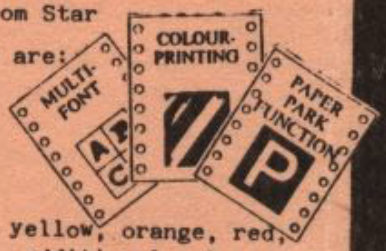

Features of the printer are:

* 144 cps elite
* 120 cps pica
* 30 cps pica - NLQ
* 36 cps elite - NLQ
* buffer of one line
* Colours available:- yellow, orange, red, blue, violet, black - additional colours can be mixed via control codes
* Built in push tractor and friction feed, paper park function, automatic single sheet insertion, paper tear off automatic for fanfold paper
* 4 built in NLQ fonts
* fitted with a parallel interface and two emulations, the LC 10 Colour can be connected with the majority of colour computers
* the LC 10 Colour printer can double as a monocrome printer by simply exchanging the colour ribbon for a black one.

Normal Price	R1099.00
Special introductory price	899.00
P&P	
Colour Ribbon	R20.00
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LC-10 Colour

star

Now is this value for money or what?

OCP

Simply The Best

Are you going into business and need some software help? OCP is the way to go!

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How many times have you scribbled down an important list or address only to lose it at a crucial moment! Address Manager ends all the panic!

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Simply The Best

FINANCE MANAGER

This is a menu driven program for ease of operation, yet its facilities are so extensive that whether you're keeping a ledger at home or work you'll soon wonder how you managed without it!

Features:-

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* Page Command, scroll back and forth through all your accounts
* Reconciliation, enables the user to check off items against statements
* Full Screen Presentation, see it as it happens when you enter, amend or delet
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If you own or run any small business you'll find this program indispensable. Now you can compute your entire stock balances all on one program - Stock Management has never been so easy!

Features:-

* Master File with details of product code, description unit price, minimum stock level, stock quantity
* Reports include, price list with/without tax, stock/sales status/movement during period
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* Stock levels can be adjusted independently to account for user selected options such as deliveries, returns or breakages
* Facilities for production of invoices, sales totals, price lists, and shows stock status, stock adjustment and re-order requirements.

Normal Price	R49.99
Special Price	39.99
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Simply The Best

A voyage of Discovery

This article deals with those people who want to customise their TASWORD TWO wordprocessor. Below is a listing of part of the listing from the Tasword Basic programme. I got the idea and most of the information from Sinclair User in May 1985, and the writer was John Lambert. However, no matter what I did, I just couldn't get his listing to work. So I had to go and re-hash the thing, so I dont think there's an infringement of anybody's copyright. Nevertheless, these few program lines will allow Tasword to do the following:-

Article submitted by Rev. Nicholas Jonsson of Heilbron

1. Allow you to choose how many lines per page your printer must print. this is handy for short stationry paper.
2. Allow you to choose the amount of line spaces left between each printed line.
3. Allow you to choose the left-hand column your printer must print from.
4. Allow you to choose if you want page numbers to be printed (these are at the top of each page).
5. Allow you to choose which line you want to start printing from. (This is part of the original program).
6. Allow you to choose at which line you want the printing to stop. (This is part of the original program).
7. Allow you to choose which page number must first be printed.
8. Allow you to choose any number of multiple copies you want to have printed.

(See the enclosed screen dump of print options).

```
          Tasword Two
      Tasman Software 1983

         PRINT OPTIONS
     just press ENTER for default
       values given in brackets

  Text Lines per Page(0 )62

  Line Spacing?        (1)
```

```
Print from Margin  (4 )8

Page no's printed?  (n)

Start at Line?      (1)

Finish at Line?  (last)

First Page Number   (1)

Number of Copies    (1)
```

```
 200>CLS : GO SUB VAL "4000": PRINT AT VAL "3",VAL "8";"PRINT OPTIONS": PRINT "
 just press ENTER for default      values given in brackets": LET z=VAL "0": LET
 u=VAL "1": LET gs=VAL "6000": LET i=VAL "7": LET j=z: LET j0=VAL "23": LET x=VA
L "31940": LET a$="Text Lines per Page(": PRINT AT i,VAL "22";")": GO SUB VAL "9
50": LET i=VAL "9": PRINT AT i,z;"Line Spacing?        (1)": GO SUB gs: IF a$=""
THEN LET a$="1"
 205 POKE VAL "62235",VAL a$
 206 LET i=VAL "11": LET j=z: LET x=VAL "60927": LET a$="Print from Margin  (":
PRINT AT i,22;")": GO SUB VAL "850"
 207 LET i=VAL "13": PRINT AT i,z;"Page no's printed?  (n)": GO SUB gs: LET g$=a
$
 209 LET scroll=0
 210 LET i=VAL "15": PRINT AT i,z;"Start at Line?      (1)": GO SUB gs: IF a$=""
 THEN LET a$="1"
 220 LET c=VAL "64"*(INT VAL a$-u): LET st=c+FN p(VAL "62216"): LET i=VAL "17":
PRINT AT i,z;"Finish at Line?  (last)": GO SUB gs: IF a$="" THEN LET len=a-c: GO
 TO VAL "230"
 225 LET len=VAL "64"*INT VAL a$-c
 230 LET i=VAL "19": PRINT AT i,z;"First Page Number   (1)": GO SUB gs: IF a$=""
 THEN LET a$="1"
 240 LET pa=VAL a$-u: LET i=VAL "21": PRINT AT i,z;"Number of Copies    (1)": GO
 SUB gs: IF a$="" THEN LET a$="1"
 249 LET co=VAL a$: FOR n=1 TO co: LET end=st+len: LET pl=INT (PEEK VAL "31940"+
PEEK VAL "62235")*VAL "64": LET tp=INT ((len/pl)+u): LET fl=z: LET cp=pa: FOR f=
st TO end-u STEP pl: LET b=f: LET x=VAL "60045": GO SUB VAL "950"
 250 LET cp=cp+u: RANDOMIZE USR VAL "59806": RANDOMIZE USR (FN p(VAL "62472")):
CLS : PRINT AT VAL "10",z;"Press the q key to QUIT printing";AT VAL "12",z;"Tran
smitting Data for Copy ";n;AT VAL "14",z;"Page Number ";cp;" of ";tp;" Pages.":
IF end-f<pl THEN LET b=end-f: LET fl=u: GO TO 260
```

```
255 LET b=p1
260 LET x=VAL "60049": GO SUB VAL "950": IF scroll=0 THEN GO TO 270
265 LPRINT CHR$ 12
270 IF g$="" OR g$="n" THEN GO TO 278
271 FOR m=z TO ((64/2)-4+PEEK 60927): LPRINT " ";: NEXT m: LPRINT "Page ";cp;".
:: LPRINT CHR$ 10: REM set up for margin 56
272 LPRINT CHR$ 10
278 LET scroll=scroll+1
280 RANDOMIZE USR VAL "60038"
290 RANDOMIZE USR VAL "59806"
291 IF INKEY$="q" THEN RUN
297 NEXT f: NEXT n: RUN
```

The listing is fully compatible with any Tasword Two program, and works perfectly, as I have already sent in 2 assignments to UNISA using my customised version.

To enter the listing, go into Basic from the STOP Menu, delete all the lines from 200 to 299 inclusive. Next add the extended mode keyword 'VAL' to every number from line 20 through to the end. This is to save some memory to fit the routine in.

Example: GO SUB VAL "20": PRINT AT VAL "1", VAL "10"; etc.

Then enter the lines as they are in the listing, and when you have finished start the program again by using GO TO 1.
Then 'SAVE' Tasword, and you should have your own multiple, page number printing, line spacing, left-hand column on page printing customised version of Tasword Two.

For those who don't like the sickly White Border colour, it can be changed, by using to simple Pokes.

POKE 64516,colour for 64 character mode
POKE 60641,colour for 32 character mode

I just put them into the Basic listing, in line 15, after the LOAD "" CODE statement, and it worked beautifully.

Also for those who would like to know how much space they have left in their Text File, they can add the following line:

```
79 PRINT#0; PAPER VAL "7"; AT VAL "1", VAL "0"; a/64;" Lines
Used    ";(PEEK 64150+256*PEEK 64151+22)-a/64;" Lines Free".
```

There is one space before 'Lines Used' and four afterwards, and there is one space before 'Lines Free'.
May I say that this line is also changed from John Lambert's original listing.

Rev. Jonsson also made the following discovery quite by chance and has now got the program DUMPY working on his system with a Ramprint Interface. He chose the RAMPAGE INTERFACE on the interface list. To prove that this choice works, here is an example of a screen dump done with DUMPY. Rev. Jonsson would however, like to know how does he find out what codes are used there, and is it possible to use those codes to solve his other predicament, which will enable him to customise Tasprint to work with the Gemini 160 and Ramprint interface.

REV. NICHOLAS M. JONSSON.

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IBM

If you would like any more details about any of the above mentioned programs, please send a SAE and R1 to us and we will send you full details about the program. Or you can alternatively simply phone us!

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* allows you to record any sound digitally into memory
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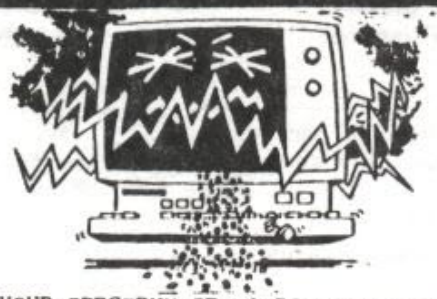
So now you can put the fun back into sound-alive games and utilities!

Computer Music at it's best...

Again, the manual is correct but the clarity leaves much to be desired. You must creat a Pipedream document with the names of your files, one on each line, not at the beginning or end. Type <> FS to save this file, as filenam.1, the extension meaning 1 for list. To use a multi-file document load the 'list file' but do not type the .1. The computer will find that a file called filename.1 exists and will load the first file on the list.

Z88 users, now that you are a fully fleged user group, you will be receiving a help and tips corner and as we become more familiar with the computer, so to will you!



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ARE YOU IN NEED OF CASH?

Remember that the Club does pay its members for any articles that are published in the magazine! Depending on the quality of the article, presentation and of course content, we pay up to R30.00 per full page!

Think about it!

HARDWARE RESPONSE

During the last month I received this letter. I am going to quote a paragraph from it and then give you my virdict.
"I was thinking of buying one of the new 128K Spectrum +3. We have the money but I would like to know whether it is worth buying. Sinblair User rated it as the biggest rip off of '88."

In our opinion the +3 is the best value for money home computer on the market. It offers a really high quality all in one package. Features of the +3 are:-

* Full travel keys
* Serial and Parallel printer ports built in for your convience
* Extra disc drive port for if you want to expand to a second drive in the future
* Two joystick ports for the kids
* A port where a tape recorder can be linked up and programs on tape can be loaded
* RGB monitor port for a colour monitor
* And of course its biggest highlight - the +3 has a built in disc drive

In addition to all these features the computer is a very reliable piece of hardware and there have been no comebacks on the computers which are still under guarantee, nor those which have now expired.
A large range of programs is now available on disc for the +3, and for those which are not, the MULTIFACE +3 will transfer all your software from tape to disc guranteed!

The +3 is available at I.E. for only:-
R799.00
P&P 14.50

The Multiface is also available at only:-
R195.00
P&P 2.00

Newsline

SHON KEYBOARDS

The mystical Shon keyboards for the QL are once again in the news, this time the news is positive and confirmed! I.E.'s agent in England has managed to secure 2, yes only 2, for I.E.. according to sources on that side, it would appear that Shon is having difficulty in keeping up with the demand for the keyboard. The 2 keyboards are due to arrive on the next shipment from England. As yet we do not have a fixed price on the keyboards, however we suspect that they will be sold at the price quoted many moons ago!

GAMES & EDUCATION

Education is very important in anyones language. At the same time as being very important, education can also be fun - depending on how you approach the subject. Science has always been classed in the boring subject catagory - well it is not!

Science Horizons brings fun into the classroom and lays the groundwork for great things. This series is aimed at primary school level, but can be fun for the whole family!

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Spectrum lessons
At last MACHINE CODE!

A BEGINNER'S COURSE IN Z80 MACHINE CODE - part 4

By D. Roux

I believe that those brave souls who have been following this series from the first suppliment will now start querying my approach - I have not explained how to write to the screen yet! There is a reason. It is probably one of the most cumbersome things to do in machine code. Let me explain:

*The screen memory

When we want to PRINT on the screen in Basic, we simply use PRINT "whatever". Now, what actually happens is that the letters of the word is read into an area called the screen memory. The screen memory resides right at the start of RAM - address 16384 to address 22527. Try POKE 16384,255. You have read the number 255 into address 16384. You should see a character size black dash in the top left hand corner of the screen. Now try POKE 16385,255. A black dash is included next to the previous one. This is what happens to your Basic word which is printed on the screen. A subroutine in ROM is called and each letter is converted to a series of dashes and other shapes which is LDed (POKEd in machine code) to the appropriate address in the screen memory. This means - are you ready for this - you have to do this by yourself in machine code! No more easy PRINTing! There are some short-cuts (e.g. we can use the ROM routine from our machine code program), but this will be discussed later.

You will note that I poked 255 into address 16384. Try poking some other numbers into the address. Do you see how to obtain different shapes?

255 is the decimal equivalent of the binary number 11111111. Look at the second part of this series for more information on binary numbers.

Imagine that 0 stands for "no pixel" and 1 stands for "pixel". It now becomes clear why 255 decimal (11111111 binary) makes a dash - all 8 the pixels are on. If we used 85 (01010101 binary), however, we would have seen a broken dash with gaps where the 0's are, e.g. something like this:

.:.:.

(very enlarged!) Try POKE 16384,85 if you want to see for yourself.

Unfortunately, the screen memory layout is very complex. I'll give you a conversion table in the near future so that you can move your own graphics all over the screen at superfast machine code speed. For the moment, try the following little assembl program:

```
ORG 50000
LD A,24
LD (16384),A
LD A,60
LD (16640),A
LD A,126
```

```
LD (16896),A
LD A,255
LD (17152),A
LD A,24
LD (17408),A
LD (17664),A
LD (17920),A
LD (18176),A
RET
```

Compile and then RUN it with RANDOMIZE USR 50000.

It should draw a tiny tree in the uppermost corner of the screen.

*The attribute memory

As you know, the Spectrum has colour. Like one has a screen memory buffer between address 16384 and address 22527, there is also a colour buffer between address 22528 and address 23295. It is also referred to as the attribute buffer. This works nearly like the screen buffer, except that you cannot colour anything by the pixel - it works by the character.

Try POKE 22528,16. It should colour the uppermost character square on the display red. How is this colour calculated? Look at this formula:

Attribute = (8 x paper colour) + ink colour.

In the example case, I wanted RED paper with BLACK ink. RED is value 2 and BLACK is value 0. The formula applies:

```
Attribute = (8 x 2) + 0
          = 16.
```

Look at the program which draws a tree on the screen in the previous section. What if we wanted to colour it green on a yellow background?

Firstly, green has the value 4. Yellow has the value 6. Our INK colour is going to be green (=4). Our PAPER colour is going to be yellow (=6).

```
Attribute = (8 x paper colour) + ink colour
          = (8 x 6) + 4
          = 52
```

Add these lines to the tree program just before the RET instruction:

```
LD A,52
LD (22528),A
```

The tree will be coloured when you RANDOMIZE USR 50000.

*PUSHing and POPping

When programming in machine code, you have access to a device called the STACK. PUSH and POP are STACK OPERANDS. It is reasonably simple to use. Consider an actual peg or stick in the ground. You have a few numbered cards in your hand. You PUSH one of these on the stack - say a card with the number 50 on. Now you push another card on the stack - maybe one with the number 20 on. The peg has a stack of 2 cards. The 500 card is at the bottom of the stack, and the 20 card directly above it. Now we want to take or POP a number from the stack. The only number we can take is the 20 card, since it is at the top. The next number we can POP from the stack is 50 , since it was exposed when you

took the 20.

This arrangement is called a LIFO - Last In, First Out, stack. The last number you PUSHed on the stack is the first you will be able to POP off the stack.

In machine code, you can ONLY PUSH and POP the numbers in register pairs. To PUSH the number in the BC register pair on the stack, use PUSH BC. To POP it back, use POP BC. You can even PUSH BC and POP it back to another register pair, e.g. PUSH BC and then POP DE. This is the same as saying:

```
LD B,D
LD C,E
```

POP and PUSH are useful, since you can save the number in a register or register pair, and POP it back much later in your program. It will still have the value it had when it was PUSHed.

*DJNZ

DJNZ will be the first loop structure I introduce you to in machine code. You are already familiar with the structure

```
LABEL NOP
      JR LABEL
```

This cannot, however, be regarded as a true structured loop. It never stops!

DJNZ is short for Decrement and Jump if Not Zero. It always involves the B register, and does exactly what its name says. It decreases the value in B. If it is not zero, it jumps back to a specific point. If it is 0, however, it continues with the program. In Basic, it would look like this:

```
10 LET B=255
20 LET B=B-1
30 IF B 0 THEN GOTO 20
40 STOP
```

In machine code, the same program would look like this:

```
      ORG 50000
      LD B,255
LABEL DJNZ LABEL
      RET
```

The DJNZ instruction automatically includes B=B-1.

A drawback is that the loops cannot be larger than 255. We can get around this by NESTing loops. Consider this program:

```
      ORG 50000
      LD B,255
LOOP1 PUSH BC
      LD B,255
LOOP2 DJNZ LOOP2
      POP BC
      DJNZ LOOP1
      RET
```

Quite involved, you must agree. Follow what it does carefully. It is actually a delay loop of 1 TO 65025 (255 x 255). The equivalent in Basic is:

```
FOR i = 65025 TO 0 STEP -1:NEXT i
```

This will take ages to execute. Now try the machine code - a bit faster!

Look at this program:

```
        ORG 50000
        LD HL,16384
        LD B,255
LOOP    LD (HL),255
        INC HL
        DJNZ LOOP
        RET
```

You should be able to follow what it does. It fills the first 255 bytes of the screen memory with dashes - when you run it with RANDOMIZE USR 50000, some horizontal stripes will appear on the screen. In Basic, the program would look like this:

```
10 FOR i=16384 TO (16384 + 255)
20 POKE i,255
30 NEXT i
```

*Exercise

Now try the following. Fill the first 500 bytes of the attribute file starting at 22528 with GREEN paper and BLACK ink. Note - you will have to use NESTed DJNZ loops.

If you can do this, you know basically all that is necessary up to this stage. Congratulations!

Next month, I shall examine flags in machine code, the IF ... THEN structure and other loop structures. The answer to this exercise will also be given.

A number of members of the club asked for feedback from other members about the club. last week I received a very hart warming letter from Derek Hully of the Willows in Pretoria.
The letter was as follows:-
Thank you very much for the excellent newsletter. I look forward to the next one each month. I would just like to add my opinion of the Machine Code articles that Mark Berkowitz. They're very good! In fact they're excellent! the presentation was abouth the clearest that I've seen of that sort. I know all the commands that the Z80 uses, but the articles showed me how to print too. There is nothing better for the newsletter than long articles!
My R10.00 I give gladly, and I would like to give more, but I'm only 15 and broke!

What is your opinion about the Club and the articles published in the magazine? Let us know so that we can share your opinion with other members of the club and make the club a better one!

YOUR LETTERS !!

See note on copycat on the editorial page!

ATTENTION

Do not forgett to send us your subscription for the Club, after all, its only R10.00 per year, and as Derek Hully says "84c per newsletter is great! Even greater considering how much he saves on I.E.'s greats!" Apart from the greats that you will be able to take part in from I.E. many more great things are being organized for paid up Club members!

Remember when sending us your subs to give full details of your:-

NEWS

* NAME!!!!
* Postal address & telephone number
* Present referance number
* Hardware you presently have

The more members the merrier! so, invite your friends and colleagues to also become members!

Snippets : Snippets : Snippets

GUESS WHAT? NO WHAT?

I am in the closing stages of negotiations with various organizations and shops at CENTRAL CITY in Mabopane for shopping vouchers - which will make shopping just that little more enjoyable! Some of the shops that I am presently negotiating with are:- O.K., Pick 'n Pay, Jet Stores, Arther Kaplans, University Bookshop, Truworths, Woolworths and many more!

So remember that when you go out to the factory, there's a whole new world waiting to be discovered!

Remember that these vouchers will only be available if you are a member of the Club - so get your subscription fees in today and take advantage of these super deals with pride!!!

SUPPORT LOCAL HARDWARE SUPPORT LOCAL HARDWARE SUPPO

QL MEMORY UPGRADES!

M & G Electronics will be supplying exclusively these upgrades for the QL from 128K to a massive 512K or even bigger 896K! Prices are not yet availalbe as the necessary chips are in short supply. We will however keep you informed.

SUPPORT LOCAL HARDWARE SUPPORT LOCAL HARDWARE SUPPO

REPAIRS??!!

Yes, I.E. can help you with the pesky things! They are now doing these in-house - BUT are working according to a waiting list. As one repair goes out, so another can be received for surgery! This had to be introduced as the technician is otherwise swamped by repairs and then you have to wait an inordinate time to get your computer back again. Help us to help you, if you have a repair,get your name and details on the waiting list. All you have to do is phone:-

(0146) 30 774

Thank you

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Now you can upgrade your system and get speed at the same time at a low low price!

Or alternatively you can add your second or third microdrive to your existing system. (You can of course add up to 8 extra microdrives!)

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Special Price	99.00
P&P	2.00

Software Update

NEW RELEASES

The following titles are on order and will be comming into stock by the time that you receive your newsletter. For soccer freeks, look out because this shipment is just for you!!! if you want any of these titles, get your order in as soon as possible to avoid disappointment when the stocks arrive. Secure your order NOW.

TITLE	PRICE	P&P
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Skatecrazy	33.55	1.80
Ultimate - the collected works (11 titles in all!)	54.55	2.00
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Xecutor	12.99	1.50
19	41.99	1.80
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Football manager 2	41,99	1.80
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QL TITLES	PRICE	P&P
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DTP Special Edition	tba	tba
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IS THIS VALUE OR WHAT?

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The ideal way to keep track of those pesky but very valuable little things!
Each box can hold 20 microdrive cartridges, and additional boxes can be added with a neat connecting plate.

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HiSoft Pascal

Integrated Compiler / Editor

48k Spectrum, Spectrum 128 & Plus 2

HISOFT PASCAL

A standard Pascal compiler for the Spectrum! This package is a complete implementation of the Standard Pascal Programming Language for your spectrum. Hisoft Pascal enables you to build highly structured and easy to understand programs that run very quickly.
To name a few features of the program:-

* Also provided is a set of logo-type turtle graphics routines which alow you to build up graphics displays quickly and easily
* The compiler comes with an extensive 80 page manual and many example programs are given, together with details of using the Spectrums sound and graphics facilities within Pascal.

These are only 2 examples of what this package offers the serious programmer. To see what else you can do with HISOFT PASCAL - you have just got to get a copy!

Normal Price	R110.00
Special Price	94.50
P&P	2.00

Send an SAE & R1 to get more details

HiSoft Devpac

The Assembler/Debugger

for all ZX Spectrums

HISOFT DEVPAC 4

This program combines a full LZ80 macro assembler, GEN, with a powerful disassembler and debugger, MON. DEVPAC is a professional piece of software designed to give you maximum power and flexibility while remaining easy to use.
GEN is a powerful Z80 macro assembler which will assemble source code at the rate of + 4000 lines per minute! Source code (assembly language) is entered using an extensive editor which allows auto intert, renumber, block delete, search and replace and much much more.

MON is both a full Z80 disassembler and a powerful debugger which allows, inter alia, the single stepping of your machine code programs, even in ROM!

Normal Price	R65.99
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Z88 COMPUTER

The Z88 is a new kind of computer!

A computer that's the size of an A4 pad, weighs just a kilo, and drops into hyour briefcase with plenty of room to spare!

A computer which can provide up to 3 Mbytes of memory...which works on four A4 batteries... which comes with a complete suite of powerful, user-friendly software built in.

A computer which pust your files, your calc. your diary, and the contents of your desktop at your fingertips....

A computer that gives you all the capability of a desktop unit, in a package that dramatically increases its convenience!

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At this price you can make time spent travelling WORK for you...

Everything you need for 20 hours live computing is packed within the body of the Z88!

Less than an 5cm slim, less than the size of an A4 pad, it simply slips into your briefcase, AND leaves you room for a collapsible umbrella - after all, you won't need files, calculator, note-pad, address book, pens, diary....

Think about it - which other portable on the market today can offer you so much for so little?

Z 8 8

HINTS & TIPS

EXTRA COLUMNS ON THE Z88?

It is surprising how vague the manual is with ragard to extra columns beyond F in Pipedream. The information is there if you know where to look. To add another column, the command is <> EAC. You can do this to a maximum of 64. Similarly, if you want to insert a column, the command is <> EIC.
There is a short cut if you know you will need many more columns, First start a blank Pipe-dream. then put one space at the beginning of slot A1. Finally, use the replicate command, <> BRE, to create the number of columns you require. If you wanted A to Z you would replicate from A1 to A1Z1. Remember that case does not matter in Pipedream, it will accept a1z1 or A1z1 equally well.
List files are another stumbling block.

QL MASTERMIND QL

I WONDER IF QL OWNERS ARE AWARE THAT SUPERBASIC ALLOWS THEM TO WRITE STRUCTURED PROGRAMMES THAT FEW, IF ANY, PROFESSIONAL PROGRAMMERS CAN EQUAL. THE FACT THAT I HAVE SEEN PROGRAMMES WRITTEN IN SPANISH, GERMAN AND AFRIKAANS IS YET ANOTHER DEMONSTRATION OF THE FLEXIBILITY OF THIS WONDERFULL VERSION OF BASIC.

THE ABOVE PARAGRAPH WAS PROMPTED BY THE DISCOVERY OF YET ANOTHER COLLECTION OF UNDECYPHERIBILITY, LEFT BEHIND BY A DEPARTING PROFESSIONAL PROGRAMMER, WRITTEN AS USUAL IN THE LANGUAGE OF HIS CHOICE AND INCOMPREHENSIBLE TO EVERYBODY ELSE. I ASKED A FRIEND OF MINE HOW HE THOUGHT ALL OTHER PROGRAMMING LANGUAGES COMPARED WITH QL SUPERBASIC.

HE REPLIED. "THEY DON'T"

AND I MUST ADMIT I'M RATHER INCLINED TO AGREE WITH HIM.

NOW, AFTER THE SALES TALK, A BIT OF STRUCTURED PROGRAMMING. THE MOTIVE FOR WRITING IT WAS VANITY; A VERY POWERFUL MOTIVE I MAY ADD. THE EDITOR OF THIS MAGAZINE ACTUALLLY CONTACTED ME AND ASKED FOR A CONTRIBUTION. SINCE THEN I'VE DONE NOTHING BUT TALK ABOUT "MY PUBLISHER IN PRETORIA." ANNE, -(CHARMING AND DELIGHTFUL GIRL THAT SHE IS)- SAID THAT YOU QL OWNERS WERE NOT SENDING CONTRIBUTIONS FOR PUBLICATION. NOW WHAT'S THE USE OF HAVING THE WORLD'S BEST COMPUTER IF YOU DON'T TELL EVERYBODY? SO LET ME GIVE YOU A TASK. THE MASTERMIND PROGRAMME THAT WE ARE COMING TO, SOON, WAS WRITTEN IN SO MUCH OF A HURRY THAT I FORGOT TO INCLUDE NOISES, SO WHY DON'T YOU OUT THERE SEND IN SOME SOUND EFFECT PROCEDURES, AND INDICATE WHERE THEY SHOULD BE INSERTED?

PROGRAMME DESCRIPTION

THE "PROGRAMME CONTROLLER", AS I CALL IT, IS BETWEEN LINES 200 AND 420. THIS IS THE SECTION THAT CALLS THE PROCEDURES IN THE CORRECT SEQUENCE. BY THE WAY, THE IDEA IF USING THREE COLONS TO IMPROVE THE LAYOUT OF THE PROGRAMME IS SO BEAUTIFULLLY SIMPLE AND WONDERFULLY EFFECTIVE THAT I WISH IT HAD BEEN MY IDEA. UNFORTUNATELY IT WASN'T; I MERELY COPIED IT FROM A GERMAN MAGAZINE.

IF YOU ARE MYSTIFIED BY THE % SYMBOL, YOU MAY LEAVE IT OUT. THAT'S SOMETHING ELSE I COPIED. -(FUNDAMENTAL INVESTIGATIVE RESEARCH I LIKE TO CALL IT.)- USING % MAKES THE VARIABLE AN INTEGER INSTEAD OF A FLOATING POINT NUMBER, WITH, SO IT IS CLAIMED, AN INCREASE IN OPERATING SPEED. NOTE THAT INTEGERS CANNOT EXCEED 32767.

I CONSTRUCTED THE WINDOWS -(LINES 2150 TO 2210)- USING A ROUTINE I MAY HAVE PUBLISHED IN THIS MAGAZINE. DOING THEM TRIAL AND ERROR IS VERY TIME CONSUMING.

THE PROBLEM OF TRYING TO PRINT A BLACK CIRCLE ON BLACK PAPER WAS SOLVED BY EDGING THE CIRCLE IN WHITE -(LINE 2820)-

ONE OF THE COMMONEST PROBLEMS ENCOUNTERED WITH GAMES IS TRYING TO EXPRESS THE MOST PATENTLY OBVIOUS IDEAS AS A SET OF PRECISE RULES. THIS GAME WAS NO EXCEPTION. HAVE YOU EVER TRIED TO ANALYSE HOW YOUR BRAIN DECIDES ON THE CORRECT ARRANGEMENT OF BLACK AND WHITE PINS? THE SOLUTION I CHOSE, WHICH IN ALL PROBABILITY IS NOT THE BEST, OR MOST ELEGANT, IS AS FOLLLOWS.

I FIRST CHECK FOR COMPLETE AGREEMENT BETWEEN THE QL CHOICE OF COLOURS AND YOURS -(LINES 2900 TO 2930)- IF THERE IS COMPLETE AGREEMENT I CALL THE PROCEDURE "WINNER", AND THE GAME ENDS

I NEXT COUNT THE WHITE PINS. THIS COUNT ALSO INCLUDES SOME PINS WHICH SHOULD BE BLACK. -(LINES 2940 TO 3000)- REMEMBER BLACK INDICATES A PERFECT MATCH WHILE WHITE INDICATES THAT THE COLOUR IS CORRECT, BUT IN THE WRONG POSITION.

I NOW COUNT THE PERFECT MATCHES, OR BLACK PINS. -(LINES 3010 TO 3030)- FOR EACH BLACK PIN I REDUCE THE WHITE PIN COUNT BY ONE. AS I STATED ABOVE, THE WHITE PIN COUNT INCLUDED SOME WHICH SHOULD HAVE BEEN BLACK. IF YOU THINK THIS IS ALL MESSY AND CONFUSING, I CAN BUT AGREE WITH YOU AND HOPE THAT SOME READER SOLVES THE WHOLE THING IN THREE LINES.

FINALLY TO ALL QL OWNERS MAY I, THROUGH THE GOOD OFFICES OF THIS MAGAZINE, INVITE YOU TO JOIN A VERY ACTIVE CLUB IN JOHANNESBURG. IF YOU ARE INTERESTED CONTACT BRIAN POGOCK, 7 LURGAN ROAD, PARKVIEW, JOHANNESBURG 2193. TELEPHONE 011 646-8072.

DAN FITZGIBBONS.

```
100 REMARK 88 0400 ********************
110 REMARK ******* MASTERMIND *******
120 REMARK ****************************
130 REMARK *       A VERY SIMPLE      *
140 REMARK *    MASTERMIND ROUTINE    *
150 REMARK *                          *
160 REMARK ****************************
170 :
180 :
190 :
200 CLS#0:CLS:CLS#2
210 INITIALISE
220 RESET
230 SET_WINDOWS
240 MENU
250 REPEAT GAME_LOOP
260 QL_SELECTION
270 CLS#0:CLS#4:CLS#5:CLS#6
280 WIN_FLAG%=0:POS%=0
290 FOR YOUR_MOVE=0 TO 11
300 MAKE_SELECTION
310 CLS#4:PLACE_PINS 5
320 SCORE
330 MARK_SCORE
340 POS%=POS%+1
350 IF WIN_FLAG%:EXIT YOUR_MOVE
360 END FOR YOUR_MOVE
370 IF NOT WIN_FLAG%:LOOSER
380 IF END_FLAG%:EXIT GAME_LOOP
390 END REPEAT GAME_LOOP
400 CLOSE#3:CLOSE#4:CLOSE#5:CLOSE#6
410 MODE 8
420 STOP
430 :
440 :
450 :
2000 :
2010 :
2020 :
2030 DEFINE PROCEDURE MAKE_SELECTION
2040 RESTART%=0
2050 FOR NM=0 TO 3
2060 IF RESTART%:EXIT NM
2070 CHOICE
2080 END FOR NM
2090 REMINDER
2100 IF RESTART%:CLS#4:MAKE_SELECTION
2110 END DEFINE
2120 :
2130 :
2140 :
2150 DEFINE PROCEDURE SET_WINDOWS
2160 OPEN#3,SCR:WINDOW#3,444,60,32,0:PAPER#3,0:INK#3,7:BORDER#3,2,7
2170 OPEN#4,SCR:WINDOW#4,44,120,32,94:PAPER#4,0:INK#4,7:BORDER#4,2,7
2180 OPEN#5,SCR:WINDOW#5,400,120,76,94:PAPER#5,0:INK#5,7:BORDER#5,2,7
2190 OPEN#6,SCR:WINDOW#6,400,34,76,60:PAPER#6,5:INK#6,7:BORDER#6,2,7
2200 CLS#3:CLS#4:CLS#5:CLS#6
2210 END DEFINE
```


Say cheese!

ARE YOU A MOUSE ENTHUSIAST OR SOMEONE WHO SIMPLY LIKES TO DIDDLE AROUND WITH MICE?

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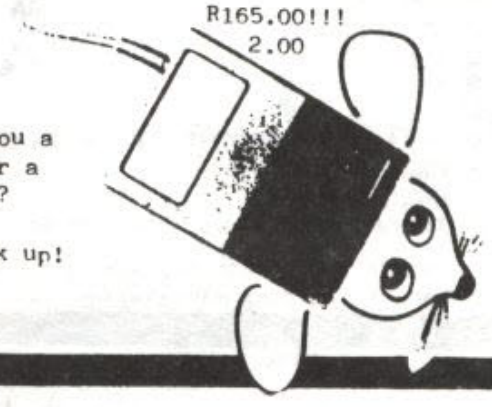
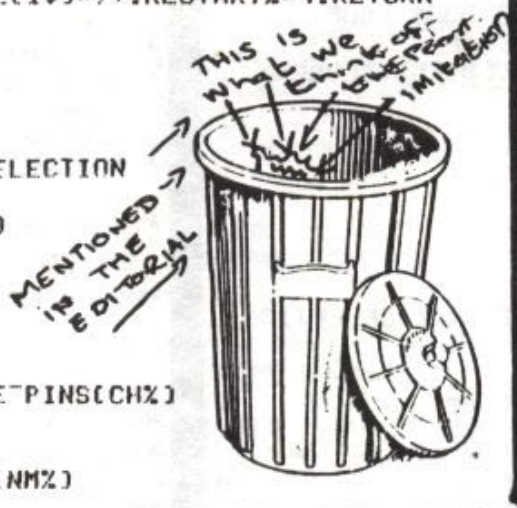
Are you a MAN or a MOUSE?

Squeek up!



```
2220 :
2230 :
2240 :
2250 DEFINE PROCEDURE MENU
2260 INK#3,7:PRINT#3\\   'BLACK    0';
2270 INK#3,1:PRINT#3!!!!'BLUE     1';
2280 INK#3,2:PRINT#3!!!!'RED      2'
2290 INK#3,3:PRINT#3\    'MAGENTA  3';
2300 INK#3,4:PRINT#3!!!!'GREEN    4';
2310 INK#3,5:PRINT#3!!!!'CYAN     5'
2320 INK#3,6:PRINT#3\    'YELLOW   6';
2330 INK#3,7:PRINT#3!!!!'WHITE    7'
2340 INK#3,7:PRINT#3,'HIT C(LEAR)  OR ENTER'
2350 END DEFINE
2360 :
2370 :
2380 :
2390 DEFINE PROCEDURE CHOICE
2400 NM%=NM:BASE%=40
2410 GET^KEY
2420 TRY%(NM%)=COLOUR%
2430 INK#4,COLOUR%
2440 FILL#4,1:CIRCLE#4,40,BASE%+(26*NM%),5:FILL#4,0
2450 IF NOT COLOUR%:INK#4,7:CIRCLE#4,40,BASE%+(26*NM%),5
2460 END DEFINE
2470 :
2480 :
2490 :
2500 DEFINE PROCEDURE GET^KEY
2510 I$=INKEY$(-1)
2520 IF I$='C':RESTART%=1:RETURN
2530 IF I$<'0' OR I$>'7':GET^KEY
2540 COLOUR%=CODE(I$)-48
2550 END DEFINE
2560 :
2570 :
2580 :
2590 DEFINE PROCEDURE REMINDER
2600 CLS#0:PRINT#0\\,'HIT C(LEAR) OR ENTER'
2610 I$=INKEY$(-1):CLS#0
2620 IF CODE(I$)=10:RETURN
2630 IF CODE(I$)=67 OR CODE(I$)=99:RESTART%=1:RETURN
2640 REMINDER
2650 END DEFINE
2660 :
2670 :
2680 :
2690 DEFINE PROCEDURE OL^SELECTION
2700 FOR NM=0 TO 3
2710 OLCOL%(NM)=RND(0 TO 7)
2720 END FOR NM
2730 END DEFINE
2740 :
2750 :
2760 :
2770 DEFINE PROCEDURE PLACE^PINS(CH%)
2780 FOR NM=0 TO 3
2790 NM%=NM
2800 TOKEN%(POS%,NM%)=TRY%(NM%)
```



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Next month i will include the last part of the program listing and then you can see just how good you are at playing MASTERMIND

PLEASE NOTE:-

The onus is on you, the purchaser, to ask for our Conditions of Sale!
Send a SAE and we will send you the conditions with pleasure.

LET ASSEBLIEF OP:-

U, die kooper, moet vra vir ons Verkoops Voorwaardes!
Stuur 'n gefrankeerde koefert aan ons, en ons sal met alle graagte dit aanstuur.

TURBO SPECTRUM

From COERT SCHMIDTT

The short machine code program below will interest both advanced machine code programmers and basic beginners. It speeds the Spectrum up quite a bit, both basic and in machine code. Type in the program as is, then type RUN, load the program to be TURBOed and RUN. I've tested it on the 128K and ordinary 48K Spectrum. Machine Code programmers should type this in and RUN before altering, or critisizing my style!

```
10 FOR F=1 TO 205
11 REM: RANDOMIZE USR "A"-3321
20 READ A
22 REM : for g=1 to 212:POKE 32454+F,A: NE
XT G
25 IF A=0 THEN LET A=32
30 PRINT CHR$(A);
35 REM: PRINT USR 32343
40 NEXT F
50 DATA 84,72,73,83,32,78,69,87,83,76,69,8
4,84,69,82,32,73,83,32,78,79,84,72,73,
78,71,32,13,66,85,84,32
55 DATA 65,78,32,65,68,86,69,82,84,73,83,7
7,69,78,84,32,70,79,82
60 DATA 13,73,78,70,79,82,77,65,84,73,79,7
8,32,69,78,84,69,82,80,82,73,83,69,83
65 DATA 46,13,84,72,69,32,70,65,67,84,32,8
4,72,65,84,32,84,72,73,83,32,80,82,79,
71,65,77,32,13,65,80,80,69,65,82,83,32
70 DATA 73,78,32,84,72,69,32,78,69,87,83,7
6,69,84,84,69,82,32,83,72,79,87,83,13
75 DATA 74,85,83,84,32,72,79,87,32,76,73,8
4,84,76,69,32,84,72,69,32,83,79,45,67,
65,76,76,69,68,13
80 DATA 69,88,80,69,82,84,83,32,75,78,79,8
7,46,13,13,68,79,78,39,84,32,80,65,89,
32,70,79,82,32,74,85,78,75,32,77,65,73,76,
33
```

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LERM TAPE UTILITY B

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* have jerky tone leaders (Speedlock)
* number counters when loading (Alkatraz)
* use over 48K (it can even copy 55000 bytes 100 % accurately)
* programs with short tone leaders
* (resaved with normal or short tones)
* fast loading programs (contains software to measure the speed)
* have no sound gaps between blocks
* have unusual tone leaders

Infact with Speedlock and Alkatraz programs it will resave them with normal tone leaders at normal speed to give more reliable loading! The only way to really appreciate this unrivalled product is to try it out!

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Logo Logo

LOGO

What is Logo all about? Well this should be able to tell you what its all about!
LOGO uses a "turtle" to create pictures on the TV screen. The turtle is a cursor which moves around the screen in response to the instructions you give it. As it moves the turtle draws a line to show shere it has been. these lines are the basic building blocks from which increasingly complex shapes, images and designs can be created.
LOGO is capable of generating and manimplaing manipulating numbers, letters, words and sentences. This powerful "list processing" facility can be combined with LOGO's graphical and mathematical capabilities to develop complex and sophisticated games, education programs and other applications.
This program is no longer available, however permission has been obtained to copy the program. So if you would like a copy of this program, send R23.00 to I.E..
This is used to cover costs for the reproduction of the manual. PLEASE NOTE THAT IF YOU WANT A COPY OF LOGO, YOU MUST INCLUDE YOUR OWN TAPE!

Send your tape and cheque or Postal Order to:-

AMABOP Industries
Private Bag 1104
Ga-Rankuwa
BOPHUTHATSWANA

Due to popular demand, here is a full list or catlogue of the TASMAN range of software for all makes of Sinclair computers.

Tasword (48K)	R29.99	1.80
Taswide (48K)	19.99	1.50
Tascopy (48K)	29.99	1.80
Tasmerge (48K)	29.99	1.80
Tasword (128K +2)	54.00	1.80
Tasword (128K +3)	64.00	1.80
Tas-sign (128K +3)	79.00	1.80
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Tascalc (128K +3)	79.00	1.80
Tasprint (128K +3)	79.00	1.80
Taswide (128K +3)	79.00	1.80
Tasword P C	89.00	1.80
Tas-sign P C	89.00	1.80
Tas-spell P C	89.00	1.80
Tascopy P C	89.00	1.80
Tasprint P C	89.00	1.80

Tasman SOFTWARE

Things have been moving at a fast lick in the stock take, so remember, if you order an item from this list, please add a second option in-case someone else got your title before you! And now the countdown continues to zero:-

Title	Price	P&P
Transform (Sales & Purchase leger & invoicing)	R29.99	1.80
3D space War	11.99	1.50
3D Starstrike	16.99	1.50
Squash	22.95	1.50
Spellbound	17.99	1.50
Snowman	22.95	1.50
Stagecoach	22.95	1.50
Stainless steel	32.99	1.80
Super Cycle	27.99	1.80
Tablesums (educational)	16.99	1.80
Tasmath I (educational)	19.99	1.50
Tribble Trouble	18.95	1.50
Travel with trashman	19.99	1.50
Timebomb	16.99	1.50
Tyrant of Athens	15.95	1.50
Trap	29.99	1.50
Tiler	15.50	1.50
Thantos	32,99	1.80
Tales of Arabian Nights	16.99	1.50
Theorm of Pythagoras (educational)	19.99	1.80
Tower of dispare	25.95	1.50
Urban upstart	12.99	1.50
Virgin Atlantic challenge	29.99	1.50
W.A.R.	29.99	1.80
Word Wizard (educational)	17.99	1.50
Winged Warlords	16.99	1.50
Xevious	29.99	1.80
Xeno	32.99	1.80
Zythum	29.99	1.50
Zul	19.99	1.50
180	12.99	1.50
1984	16.99	1.50
Dizzy	7.99	1.50
PSI Chess	22.95	1.80
Shadows of Mordor	29.99	1.80

Remember that there is only one title available of each of these programs, its first come first serve!

For the best price on any printer - try I.E. last and then compare your quotes! I.E. is sure to beat any price on any printer, PC business software, Spectrum software, paper, printer consumables and a whole host of other items. Remember, I.E. has your interests at heart!

QUESTIONS

This last month I received some rather desperate requests for help from some of our club members. I unfortunately was not able to help them - can you?

Here are the questions:-

Joubert/du Toit from Johannesburg wants to know how to use the CASTLE TELEPORTERS in STORM BRINGER. He also wants to know what the seven main levers are supposed to do.

Mr Ansell from East London has the following problem:- He has the following system, OPUS disk drive fitted with 2.1 EPROM, 6116 RAM chip, 3.5" 135 track DSDD disk drive. As you know it is only possible to use 80 tracks as the set-up stands. What can he do to use all 270 tracks or at least 160 of them? Also can you help Mr Ansell with the article that was published in one of the overseas magazines that made it possible to use double sided discs by formatting them as side a and side b. Do you by any chance have this circuit? We look forward to hearing from you.

Mr Steyn from Sasolburg has the following question:- He wants to know how to work a serial port, especialy the one on the 128K Spectrum. He asks this because he does not know how to get the control codes through to the printer in BASIC. He has written a M/C program which copies the screen, which has been tested and works, but he cannot get the graphic codes through to the printer. Do you have a solution? Mr Steyn would appreciate your help.

And now for something not quite so gloomy as the above problems! If anyone is requiring the disc version of the GEMINI OFFICE MASTER to run on the OPUS - feel free to contact Me, Anne, at Private Bag 1104, Ga-Rankuwa, Bophuthatswana. PS you have to prove that you have an origional!

Rev. N.M. Jonsson of Heilbron has the following questions:- Do you know of a way to get the Star Gemini 160, Ramprint Interface and Master-file's MFPrint to work? Have you worked out a listing to customise MFPrint to work with this hardware setup?. Do you know the control codes of the Ramprint interface? Rev. Jonsson needs these codes to customise Tasprint as well. He also needs the codes of the 160 for :-

* the code for graphics line printing...
* the code for bit image printing...
* the no. of characters per line in graphics mod
* the least significant bit....
* a 7 or 8 bit head?

We would appreciate your help with these matters.

CLASSIFIED

FOR SALE: Spectrum 48K, Timex Printer, Data-recorder, c/w accessories, 3 spare printer rolls, tapes and book "Programming your ZX" and a number of ZX magazines, R450.00 or nro. Phone George (021) 713813

FOR SALE: Brand new VTX 5000 Modem with instructions and software. R220.00. Contact Mr Engelbrecht at (0541) 3555

FOR SALE: ZX Spectrum+. R240.00. Still in very good condition. Phone Pierre at (012) 435815

BARGAIN: Spectrum computer, monitor, cumana drive, sanyo recorder, games, books. Price neg. Phone Mrs Davel at (012) 733408

SUPPORT LOCAL SOFTWARE at unbelievable prices! Six quilled adventures - all unbelievalbe value only R22.00! Hint sheets available. Better than most overseas products. Laurence Creighton, 306 Mount Curtis, Main Road, Seapoint 8001.

WANTED: Beta Disk Interface. Contact Wynand Bezuidenhout at (051) 226388

FOR SALE: AMSTRAD 464 microcomputer, colour monitor, built-in tape recorder, games, joystick, handbook. R750.00. Tel (012) 791382 X 316 (W). Seller - D. de Villiers.

FOR SALE: Zenith monochrome monitor, Sinclair QL, Double Disc Drive, Interface, Star Printer 120 C.P.S., Printer Interface, Complete package for only R1700.00. Phone (012) 835289 (W)

Are you puzzled about all the addresses of I.E., AMABOP and the Club? Well don't be! You can use any of the following address and your letter or order will reach its destination!
All Postal Orders can be sent to one of the following addresses:-
P.O. Box 35644, Menlo Park, 0102

OR

Private Bag 1104, Ga-Rankuwa, BOPHUTHATSWANA

ALL returned parcels must Please be sent to the following street address, as this makes the administrative side of things more effective.

417 Milner Street, Waterkloof, Pretoria, 0181

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TECHNICAL ENQUIRIES PO BOX 35644 Menlo Park 0102	BY TELEX 321945	PAYMENT BY POST Send cheques/ POs made payable to I.E. PO BOX 35644 Menlo Park 0102

POSTAGE AND PACKAGING

All items are registered for your protection. Remember to take your ID to the Post Office when collecting a parcel.

	Surface Mail	Air Mail
SOFTWARE		
1 Tape	1.15	1.50
2 Tapes	1.50	1.85
3 or more tapes	2.30	2.80
Packs	1.85	2.30
HARDWARE		
Interfaces (all)	1.85	2.30
Disc Drive (single)	5.90	9.00
Disc Drive (double)	7.00	11.50
Expansion pack	3.45	5.75
A4 Printer	10.00	13.80
Timex Printer	4.45	5.90
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QL computer	8.00	14.50
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Spectrum + 2	10.00	13.80
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PARTS		
Membrane	2.30	2.80
All other parts	1.85	2.00
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Box of paper (2000)	3.00	5.00
Alphacom paper (1)	1.00	1.50
Alphacom paper (2)	1.50	2.00
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All keyboards	1.85	3.45
Z88 computer	5.00	7.50