TO:

COLOUR GENIE

AUCKLAND DISTRICT USER GROUP
NEWSHEET

ISSUE No.2

Much of what was to be written has already been nicely put together by our Secretary, Nola, as you will see from the attached 'minutes' of our last meeting.

So - just a few items worthy of re-mention, the first of which being finance.

A good response so far to get us on our feet, and to enable us to put some of your ideas into practice. At the time of writing our financial account stands at only $60.00 So if you have'nt already become a financial member, send in your subscription to NOLA. !!!.......NO PRIZES FOR BEING LAST.

You should also find attached other material of interest:-

a)   An up-dated list of the Auckland District User Group prospective members.

b)   A copy of the Christchurch user group newsletter with some very useful information and idea's worthy of thought. ___ Thanks ANDY.

c)   An extract from the British Mag. "Chewing Gum" which should clarify any problem area's encountered with ROMS.

d)   Two small programes you can try out (again out of Chewing Gum), one for 'INVERSE VIDEO', the other for POKEing cursor control address.

e)   BLACKJACK 84. -- For those who missed picking up a copy.   ----- Courtesy NOLA.

f)   Remember that 'ECHO MEMORY GAME'. Some explanatory notes. ----- Courtesy KEITH McGILL.

Dont forget that this is your newsletter. So use it. If you have any problems, comments, idea's to share or programs you would like to put forward for circulation, then send them in.   Obviously any "Original" material will be returned if requested.

Send to any Committee member or direct to me at:-

        512 GLENFIELD ROAD,
        GLENFIELD,
        AUCKLAND 10.

        Make a note of all future scheduled meeting --
Next one same place, Monday 2nd April.

        Remember also to bring a blank tape and one of
your own programs to exchange, copy, or whatever.   Should be
interesting.

                Happy computing.

AUCKLAND COLOUR GENIE USERS GROUP

MINUTES OF THE MEETING HELD ON 5TH FEBRUARY, 1984.

28 members present.

The following points were raised and discussed:-

Fees

It has been agreed that Subscription Fees will be set at $15.00 per family or member for Auckland members, and $10.00 per country family or member, or $10.00 per University Student.   Subscription Fees are now payable and, several members paid their fees at the meeting.

<div align="right">First   Ernie Roots
Seconded   Ken Hynds</div>

Disc Drives

Rakon Computers have found a compatible disc drive unit box called the 'Wizard'. This can support up to five drives and has a parallel printer interface built in. The cost of this unit is 145 pounds from England, and as Rakon have to purchase a minimum number, they will supply the contact names to any Group member who likes to get in touch with them.   Of course, the actual drives are not included in this cost and they would have to be purchased separately.

Rakon have a supply of Parallel printer interfaces and cables now in a small box, at a cost of $68.40 (Sales Tax $8.40). This is a reduced price and they have good stocks of them.

A Blackjack programme was handed out to all members present.   This was translated from another computer by Nola Huggins, committee member.   (Graphics and sound still have to be added as required.)

Future Meetings

All future meetings will be held on every fourth Monday from the 5th February, for the rest of the year.   This means that the next meeting will be on Monday, the 2nd of April.   Please mark your calendars for the rest of the year.

Christchurch User's Group

A newletter from this group was handed round by their ex-member and our new member, Andy Russell. (Their loss, our gain!)   It was agreed at the meeting, that we would send them a copy of our newsletters in exchange for theirs.

Andy also told us that a modem has been developed by Mr Chambers of the Christchurch group, and their Secretary is in the process of writing the software for it.

Moonshine Computers, of Wellington, are trying to attach a Spectrum joystick to the Genie for sale.   Moonshine would like an exchange of information as they are trying to start up a Colour Genie Users Group in Wellington.   They will be writing to Olwyn Williams.   They also have some Colour Genie software available for sale. Exactly what is available and at what price isn't known as yet, although one of the members mentioned that there was a 'Hangman' program available.

A constitution is to be drafted by the Committee and will be circulated at the next meeting for approval.

A motion was also carried for a Bank Account to be started with the ASB in the name of the Auckland Colour Genie Users Group.   There are to be the four committee members names on the account, with any two as signitories on the cheques.   Nola is to get the forms and open this account.

Comments from the group were made on what exactly we all expected from these meetings. The following points were raised:

information,
expansion of Colour Genie's capabilities over and above the manual,
finding out what was available both in England and Germany,
improving our basic programming and later on, machine code programming

From these comments the following emerged:

As we have the German address for the company writing both software and the technical manager, we (Olwyn Williams) will write to them.

There is, in England, Forth available. Perhaps we should look into the availability of this.

A technical manual is now available from Lowe Computers in England. This manual has been translated from the German manual and costs 20 pounds. Rakon Computers have been told that they will have to purchase a minimum of 100 copies, although this will drop the price of the manual down to about 5 pounds. Rakon are prepared to purchase 100 if there is a good chance of selling that many.

The idea was raised that perhaps one of our members could write to Lowe's and send them the 20 pounds to purchase one manual. Nola was to talk to Rakon about this and see if Rakon could fund the purchase, as they had offered to try and purchase one and photocopy it for the group.

It was also suggested by one of the members that we all put in say, $2.00, and someone could purchase one in their own name. Nola is to sound out Rakon first and if this doesn't work, then we will try the second method. (by hook or by crook!!)

It was suggested by a member that for the next meeting we all bring along a blank tape and we could swap or tape programmes that we didn't have. So please bring along both a blank tape and a tape that you are tired of.

It was also suggested that a class be started up in Basic e.g. programming style. Hopefully, this will start on the 2nd April, and will initially be run by Olwyn.

One of our members works for Rank Xerox and has offered to get photocopying done at very reasonable rates. (Now all we need is something to photocopy!)

Purchase of the Gumboot magazines is also being looked into. Nola is to write to the G.B. Colour Genie Users Group and sound them out re bulk purchases of their magazine.

Rakon have apparently got a source listing for the Genie. Nola is to see if she can wrest it out of their hands and into ours.

Rakon also have a couple of printers available, a Copal at $998 retail, is bi-directional, has both tractor and form feed and is a lovely machine. They also have the Seikosha GP100 available at approx. $685.00.

The meeting ended at about 9.45 p.m. with a cup of tea/coffee being available, then a play on the machines with the games that Rakon provided for the evening.

AUCKLAND COLOUR GENIE USERS GROUP

List of member's names as at 6/2/84

Name	Address	Phone No.
AVIS, Steven	12 Ruru Crescent, Putaruru.	7750
ALVREZ, Fred	49 Astley Avenue, New Lynn	873 120
BISHOP, Chris	6 Jenanne Place, Glenfield	444 5301
EUSAK, Alex and Kevyn	14 Awakino Place, Manurewa	266 7423
FISHER, Peter	64 Old Wairoa Road, Papakura	298 4654
FROST, Paul	1/26A West End Road, Herne Bay	765 462
GOLDIE, Willie & Andrew	24 Douglas Avenue, Mt Albert	867 533
GREEN, Mike	49 Athely Road, New Lynn	873 120
HAMILL, family	26 Ashlynne Avenue, Papatoetoe	278 9585
HARRIS, Bert	15 Seakens Way, Glen Eden	818 4660
HART, Brian and family	400 Weymouth Road, Manurewa	266 5184 (Weymouth Girls Sch
HILL, Gerrard & family	86 Wallace Road, Papatoetoe	278 3446
HUGGINS, Nola	612 Mt Albert Road, Royal Oak.	655 718
HYNDS, Ken	13 Ngahue Crescent, Whenuapai	416 7404
IRVINE, Robyn	430 Massey Road, Mangere East	275 7007
KAY, Ross	2/9 Longreach Drive, Glen Eden	818 4818
LOCKERBIE, Claire & Roger	63 Grampian Road, St. Heliers	
LIDDELL, Darren	91 Taikata Road, Te Atatu North	834 7129
MAJOR, Daryl	90 Gloria Avenue, Te Atatu North	834 7654
McGILL, Keith	15 Manapouri Place, Pakuranga	565 643
MULLEN, Peter	54 Park Road, Glenfield	444 9155
MATEER, Dan	Wharamaru School, R.D., Mangakino	
MILLAR, Robert	17 Onewa Road, Northcote	486 504
RICHMOND, Bob	181 Browns Bay Road, Browns Bay	478 4745
ROOTS, Ernie	512 Glenfield Road, Glenfield	444 9669
RUSSELL, Andy	2 Takitimu Street, Whenuapai	3000 Ext 731 (work only)
SAVILLE, family	7A Southlynn Road, Titirangi	817 6491
SEYB, Bruce	127 Cannongate St, Birkdale	
SIETKIEWICZ, Michael	11 Budgen Street, Mt Roskill	692 194
STRANAGHAN, Vina& family	29 Haseler Crescent, Howick	535 7450
TUAVERA, Jeffery	732 Sandringham Road. Sandringham	693 986
WEBB, Mrs M.	75 Lantana Road, Green Bay	817 5166
WESSELING, Ralph	112 Pt View Drive, Howick	535 6134
WILLIAMS, Olwyn	3/26A West End Road, Herne Bay	761 954
WILSON, Mark	Green's Road, 2 R.D., Albany	4159 952

"CHRISTCHURCH COLOUR GENIE USERS GROUP"

Newsletter 1

8 February 1984

GREETINGS!!

Welcome to the group and the first of many newsletters for the group. A lot has happened since our inaugural meeting. The numbers of interested persons has grown considerably and no doubt the meeting on the 8th will pay testimony to this. Contacts are continuing, spread the word, the more the merrier and we can all benefit if the group has a sound footing. Well I enjoyed being Secretary for as long as it has lasted but as can be expected in the Armed Forces I have recently been told to move to Auckland by the 5th of March. I am going to another job that will give me extensive overseas travel and especially Singapore and sometimes Hong Kong and the UK. I am going to remain a member and gain as much good information as I possibly can which the group shall eventually get.

The aim of the newsletter is to pass on anything and everything of interest to the group, so with that endeavour in mind how about making the odd contribution to make the newsletter all the better.

Memory Map.

I obtained this from Rakon ages ago and hopefully will be of some use. Worthy of particular note is the room or capacity for the 12K ROM cartridge. There appears to be no reason why this can not be a 12K RAM pack which would be great use to those RAM gobbling computer programmers of us.

Anyway here it is:

/(DEC)

(DEC)	(HEX)		
(Ø)	ØØØØ	1st 8K ROM	:
(8191)	1FFF		
(8192)	2ØØØ	2nd 8K ROM	:
(16383)	3FFF		
(16384)	4ØØØ	COMMUNICATION AREA	:
(17407)	43FF		
(17408)	44ØØ	TEXT DISPLAY AREA	:
(18431)	47FF		
(18432)	48ØØ	HI RES. DISPLAY AREA	:
(22527)	57FF		
(22528)	58ØØ	USER RAM	:
(32767)	7FFF		
(32768)	8ØØØ	16K RAM (expansion)	:
(-16385)	BFFF		
(-16384)	CØØØ	12K cartridge (ROM or RAM?)	:
(-4097)	EFFF		
(-4096)	FØØØ	1K Colour RAM	:
(-3073)	F3FF		
(-3072)	F4ØØ	1K PROG. CHAR RAM	:
(-2049)	F7FF		
(-2048)	F8ØØ	KEYBOARD AREA	:
(-1025)	FBFF		
(-1024)	FCØØ	DISK 1PL	:
(-1)	FFFF	(INITIAL PROGRAMME LOADER)	

The COMMUNICATION AREA through USER RAM comprise the 1st 16K RAM.

Info Folder.

The secretary has a folder that hopefully will hold all published material to do with the

/Colour

Colour Genie whatever it might be. This is well
under way and if you have anything to add then ring
me or send it to me. The idea being that if you
want a particular article then it will be copied
for you and sent to you. Depending on the volume
of copying required will depend whether or not we
will need to charge for the service. (Maybe 10¢
a copy)

Mail.

        Several letters have been sent out to
various computer shops, magazines and people. Also
a letter has gone to the UK Users Group and hopefully
a wealth of information shall return.

EACA.

        I guess no news is good news but several
lines of enquiry have failed to discover what
exactly has happened or what is going on at present
and where we stand. Enquires have also been made
regarding the Technical Manual and the Disc drives.
I guess only time will tell.

IF-THEN-ELSE.

        Recently I entered a programme which used
several variations of the IF-THEN etc statements. I
have written out a list of them, I hope they are of
use. They all work as long as the grammar is,of
course,correct.

IF (RM 62 AND RM 30) AND F(0)=0 THEN

IF (RM=26 AND F(0)=0) AND (D=1 or D=4) THEN

IF C(15)=1 AND NOT (RM=53 OR RM=54 OR RM=55 OR
        RM=57) THEN

IF (OB=3 OR OB=4) AND (D=1 OR D=4) THEN GOSUB 714 :
        GOSUB 720 : RETURN ELSE END

IF OB=3 THEN D=4 ELSE IF OB=4 THEN D=3 ELSE IF etc.

        Note: If the ELSE is left off at the
        end then the programme continues onto
        the next line number.

Fortress of Evil.   (Paul Miller)

        For those with the game here is a list of
Verbs and Nouns that can be used:

        Verbs: GET, TAKE, PUT, DROP, OPEN, READ,
                CAST, THROW, STAB, SLAY, CUT, STR,
                DRINK, EAT, FIRE, SHOW, ATTACK,
                KILL, INVENTORY, ?

        Nouns: SWORD, BOTTLE, BOX, BOW, QUIVER,
                BOOK, DEMON, SPELL, WIZARD, POTION,
                FOOD, WINE, MESH, GRILL, BOTTLES,
                SNAKE

New Roms

It was reported that some users were having trouble with Zen with the new Roms, the problem being that the save/load/verify cassette commands were OK for the source file but when assembling to cassette the resultant System tapes were un-loadable.

To try and get to the bottom of the mystery I visited the headquarters of the intrepid GUMBOOT software establishment and this is the rather confusing result of many hours of testing.This first set of tests were carried out on the 32K new Rom Genie used at HQ for all cassette duplication, the machine is fitted with the new Lowe cure-all tape interface.

Zen loaded from cassette first time and the following little program written and saved to cassette:

```
1  ORG 7000H
2  EXEC 7000H
3  LD A,'£'
4  CALL 33H
5  JP 1A19H
6  END
```

The program was then assembled to cassette with the 'C' option three times and the recordings were verified with "VO".

In every instance Zen reported a Bad Tape indicating an identifying byte or checksum error.However by reducing the volume setting on the cassette satisfactory verifications were made on all three recordings, so after returning to Basic these tapes were then loaded with the System command. Again with the normal volume setting the tapes would not load but at the lower volume they loaded correctly and the program worked as expected after keying

```
/ <RETURN>.
```

Returning to Zen with the volume setting turned down the System tape copying commands were used and the copied program tested.

This loaded correctly at both high and low volume levels.An alternative approach if every attempt at assembling to cassette fails would be to include in the source file the following line:

```
LOAD 7000H
```

immediately after the

```
ORG 7000H.
```

This would instruct Zen to load the object code directly into memory as it was being assembled.

Q7000 would convince you that it had actually got there.   When using the LOAD pseudo-op it is important that only memory not occupied by Zen is used to store the code.   Usually this is between the END of the source file and HIMEM as Zen resides from the load address given in the manual up to the START of the source file.   Once the object code is in memory it can then be written to cassette as an object or System tape with the "WO" command as explained in the manual.

The only explanation we have is based on the fact that when assembling to cassette, there are inevitable pauses between writing the blocks of data to the cassette when Zen is evaluating the source code and building up the buffer of data for output. At all other times the writing to tape is done as one continuous operation even though the data is in separate blocks.   It is possible that the New Roms have more sensitive tape input routines and that in these pauses the Genie is picking up noise from the tape and interpreting this noise as data.

Now another program, one of Gumboot's most popular, had also been giving problems. This was written in Basic and used PRINT#-1, for saving data to tape and INPUT#-1, for retrieval.   This program loaded first time and the data saving and retrieval tested at all volume levels. In every case the Genie rejected the data on the tape and we could not get a successful read.

After crossing the border back to Derbyshire I repeated the tests on old 16K new Rom machine I normally use with slightly different results.   The cassette recorder was the same make Eaca EG2016 as at Gumboot but without the black box. This time all cassette I/O worked perfectly for m/c and Basic over a wide range of volume settings and I could not generate any faults.   Then I tried to copy some programs from the old faithful TRS80 using software in the Tandy to output at Colour Genie speed and format.   In both System format and in Basic, using identical procedures that have worked 100% in the past I was unable to get one transfer even partly correct.   The short m/c tapes were rejected out of hand with nothing being loaded into memory and the Basic ones (just two REM lines) came across as utter garbage. Now I know that nothing has changed at the TRS80 end so it must be the Rom change in the Genie that is causing the trouble.

(After writing that paragraph I realised that the output from the TRS80 should have gone to the Aux and not the Mic on the CTR80 recorder and after switching the leads everything worked perfectly.)

Now the Gumboot machine had also been used recently for downloading off their TRS80 so it appeared that two supposedly identical machines were performing similarly under a machine code environment albeit with the need to tune the volume levels and that could be due to differences in the way the tape recorders were set up, but one would input a datafile from cassette in Basic and the other wouldn't.

To check that both machines were identical I used the following Basic program to evaluate checksums for the ROMS in the machine:

```
10 DEFINTA
20 FOR A=0 TO &H4000        Colour Genie Users
30 IF (A AND &HFFF) =0 THEN ?C:C=0    insert a zero here
40 C=C+PEEK(A)
50 NEXT
```

Ignoring the first zero,the Gumboot machine and mine gave these values:

	Rom 1	Rom 2	Rom 3	Rom 4
Laurie's	449186	448375	475286	478815
Gumboot	449186	448375	475298	478815

Now we can identify the culprit and after checking with Keith Bedford at Lowes,the explanation is as follows: early Colour Genies had,at first,prototype ROMS which worked prety well.When the Standard 1982 ROM was brought out,most (but not all) of these prototypes were changed to standard ROMS.Now, when Lowes brought out their new ROMS,ROM No. 3 does not need changing if it is a standard 1982 issue but does if it is a prototype.The Gumboot machine has suffered form this by having incorrect changes made the ROM.

If your machine gives you Gumboot values get ROM 3 updated.If not then if you are experiencing problems then try cleaning your heads on the cassette.

Laurie Shields, Wingerworth,   (0246) 75568

THROUGHOUT THIS MONTH'S MAGAZINE, YOU WILL FIND LOTS OF PROGRAMS
TO TYPE IN. WE HOPE YOU ENJOY THEM ALL, AND WOULD LIKE TO TAKE
THIS OPPORTUNITY TO THANK ALL THE AUTHORS FOR THEIR TIME AND EFFORT.

Here is a little program from Vergison Yvan of West Germany. Just imagine, Inverse Video!!

```
10 '(c) 1983 Vergison Yvan Dortmund WEG 12 1R 4770 Lcest West Germany
20 CLS
30 FOR X=&HBF00 TO &HBFFF    Line 30 should read FOR X=&HBF000TO &HBFFF
40 READ Y : IF Y = 999 THEN 60 ELSE POKE X,Y : NEXT
50 DATA 126,238,255,119,35,201,217,33,0,68,6,255,205,0,191,16,251,6,255,205,0,
1,191,16,251,6,255,205,0,1,191,16,251,6,255,205,0,191,16,251,6,234,205,0,191,16,251,217,201,999
60 PRINT STRING$(41,202);STRING$(38,32);STRING$(2,202);" Demo Inverse Video";STRING$(28,32);STRING$(2,202);"
";STRING$(17,195);STRING$(19,32);STRING$(2,202);
70 PRINT STRING$(38,32);STRING$(41,202)
80 FOR X = 1 TO 100 : CALL BF07 : FOR Y = 1 TO 10 : NEXT Y : NEXT X
90 PRINT "
1 = CHAR1      2 = CHAR2
3 = CHAR3      4 = CHAR4
5 = CLS        6 = Print Characters
<Space Bar> = Invert Video"
100 FOR N = 32 TO 255 : PRINT CHR$(N);: NEXT
110 A$=INKEY$ : IF A$ = "" THEN 110
120 IF A$ = " " THEN 130 ELSE A = VAL(A$) : IF A < 1 OR A > 6 THEN 110 ELSE ON A GOTO 140,150,160,170,180,190
130 CALL BF07 : GOTO 110
140 CHAR1 : GOTO 110
150 CHAR2 : GOTO 110
160 CHAR3 : GOTO 110
170 CHAR4 : GOTO 110
180 CLS : GOTO 110
190 GOTO 100
```

POKEing the CURSOR.

The following is a small program which illustrates the effects of pokeing address 16410. Address 16410 is the cursor control address.

```
10 GOSUB 140
20 FOR K = 1 TO 255
30 LET C = RND(12)
40 COLOUR C
50 POKE 16410, K
60 PRINT "This is the cursor with POKE No. ";K;
70 INPUT G$
80 IF K/20 = INT(K/20) THEN GOSUB 140
90 NEXT K
100 PRINT
110 COLOUR 3
120 PRINT"That's All There Is!!!"
130 END
140 CLS
150 COLOUR10
160 PRINT "      Cursor Investigation"
170 COLOUR 3
180 PRINT"            "
190 RETURN
```

From this program you can see

POKE No.	TYPE OF CURSOR
1 - 7	Static
64 - 71	Flashing Fast
96 - 103	Flashing Slow
129 - 135	Static
192 - 199	Flashing Fast
224 - 231	Flashing Slow

BACK ISSUES OF "CHEWING GUM"

We still have a few back issues available at 40p plus postage, but we now have only
June, October and November, as the others were not printed in sufficient numbers to
meet the demand we now have for back issues. Sorry about this, but re-prints are rather
expensive, especially when only a few are needed.

Blackjack '84

Learn to win in the privacy of your own home

by George Stewart

Blackjack, or twenty-one, is one of the most popular card games in casinos in the U.S. The rules are simple and the strategy for winning is not too difficult. In this article, we present a program that turns your computer into a blackjack dealer so you can sharpen your skills without risking a thing—except, perhaps, a little pride.

To keep the program from getting too long, we have abbreviated the rules of blackjack without changing the essentials. This shortened version should be acceptable even to veteran blackjack players because there are dozens of variations of the game anyway. We call our version Blackjack '84 in hopes that it will continue to entertain you during the coming year.

Object and Rules of the Game

In Blackjack '84 you play against the computer, henceforth referred to as the dealer. The object of the game is to acquire a hand that totals 21 or comes as close as possible to 21 without going over or "busting." The hand with the highest total not exceeding 21 wins. The values of each card are

Aces—11 or 1 at your option
Jacks, queens, kings—10
Others—same as the card's index: 2, 3, 4, and so forth.

Note that a card's suit (hearts, diamonds, clubs, or spades) has no effect on its value.

You place bets using imaginary chips. At the beginning of a game, you have 100 chips. To start each hand, you must put five chips, called the ante, on the table;

this amount serves as the winner's pool. As play progresses, you may increase the size of the pool.

The dealer and player both receive two cards to start. Only one of the dealer's cards is visible to you, however, so you can't tell precisely how good or bad the dealer's hand is. In a real game of blackjack, each player's cards are dealt facedown so the players cannot see each other's hands. In our version, because the dealer doesn't care what cards you have, your cards are dealt faceup.

After receiving your first two cards, you have four options: increase your bet; receive another card ("hit"); keep your present hand ("stand"); or review the current state of the game.

You continue hitting and betting until you bust or are satisfied with your total. If you bust, the round ends immediately and the dealer automatically takes the winnings without having to show his hand or draw

George Stewart is a contributing editor of Popular Computing.

additional cards. That's one of the advantages of being the dealer.

If you stand, the dealer then takes a turn at improving his hand. However, his procedure for doing so is predetermined. If his total is less than 17, he must draw a card; if the total is 17 or more, he must stand. A lack of flexibility is one of the disadvantages of being the dealer—and the key to your winning opportunities.

After the dealer stands, the two hands are totaled and compared. In our version of the game, if you win with a total of 21 (called a blackjack), you receive triple the amount in the pool. If you win with a total less than 21, you receive double the amount in the pool. If you lose to the dealer or bust (draw a total more than .21), the winnings pool goes to the dealer. If both hands have the same total, the hand containing the fewest cards (lowest card count) wins. If the card counts are also the same, the round is judged a tie; the bet remains on the table and a new hand is dealt.

The Deck

The dealer uses a standard 52-card deck, ordinary in every way except that it exists in digital form in the computer's memory.

The "deck" is actually a 52-element array called D( ). D(52) is the top position in the deck, D(51) is the position of the next card down, and so forth. D(1) is the bottom position in the deck. The 52 distinct cards are represented by the numbers 0 through 51. It's as if you took 52 blank cards and numbered them 0 through 51: 0 is the ace of hearts, 1 is the 2 of hearts, and so forth. Number 51 is the king of spades. The computer shuffles the cards by storing the numbers 0 through 51 at random positions in the array D( ).

The computer keeps three additional lists. F$( ) stores the 13 card names or "indexes": ace, 2, 3, ..., jack, queen, king. S$( ) stores the four suits: hearts, diamonds, clubs, spades. V( ) stores the numerical value assigned to each of the 13 indexes. These numerical values correspond to the values for ace through king that we listed above. So, for example, V(1) is 11, V(2) is 2, and V(13) is 10.

How does the computer translate the card numbers 0 to 51 into card indexes and suits?

Let's look at indexes first. Card indexes repeat in four periods of 13, corresponding to the four suits. For example, 0, 13, 26, and 39 all correspond to aces; 1, 14, 27, and 40 all correspond to 2s; and so forth.

The modulo function (MOD), used in algebra and number theory, expresses this correspondence nicely. For a given modulus m, x MOD m is the remainder after "short" or integer division of x by m. For example, 30 MOD 13 = 4 because 30 divided by 13 equals 2 with a remainder of 4.

For any card number, we express it in modulo 13, which produces a number from 0 to 12. Now we add 1, getting a number from 1 to 13, which corresponds to the 13 possible index names. To summarize:

Index number = Card number modulo 13 + 1
Index name = F$ (Index number)

To determine a card's suit, we observe that card values 0 to 12 are hearts, 13 to 25 are diamonds, 26 to 38 are clubs, and 39 to 51 are spades. Dividing a card number by 13 and discarding the fractional part of the quotient gives us a number from 0 to 3. Adding 1 gives us a number from 1 to 4, corresponding to the four suits. The formulas to do all this are

Suit number = Integer part of (card number ÷ 13) + 1
Suit name = S$ (Suit number)

```
1  '_____
3  '          B L A C K J A C K
4  '_____
7  '-----------------------------------
8  'INITIALISING AND SETTING UP VALUES
9  '-----------------------------------
10 RANDOM
20 SS=100:AN=5:DS=17
30 DIM D(52),F$(13),S$(4),H(2,11),A(2),V(13),T(2),C(2),PN$(2)
40 PN$(1)="DEALER":PN$(2)="PLAYER"
50 FOR J=1 TO 13:READ F$(J):NEXT J
60 DATA ACE,2,3,4,5,6,7,8,9,10,JACK,QUEEN,KING
70 FOR J=1 TO 4:READ S$(J):NEXT J
80 DATA HEARTS,DIAMONDS,CLUBS,SPADES
90 FOR J=1 TO 13:READ V(J):NEXT J
100 DATA 11,2,3,4,5,6,7,8,9,10,10,10,10
107 '-----------------------------------
108 'START THE GAME
109 '-----------------------------------
110 CLS
120 SC=SS
123 T$="*** BLACKJACK '84 ***"
130 COLOUR2:PRINT TAB(20-LEN(T$)/2);T$:PRINT:PRINT
140 COLOUR4:PRINT "YOU HAVE" SC "CHIPS TO START WITH."
150 COLOUR3:PRINT:PRINT "THE ANTE IS" AN
160 COLOUR5:PRINT:PRINT "HERE'S THE FIRST ROUND...":PRINT:FOR I=1 TO 3000:NEXT
170 GOSUB 690
180 IF SC>=AN THEN 190
182 COLOUR3:PRINT "YOU CAN'T MAKE THE ANTE."
184 COLOUR3:PRINT "GAME OVER.":PRINT:PRINT:END
190 SC=SC-AN:PB=AN
200 COLOUR1:PRINT "AFTER PUTTING UP THE ANTE, YOU HAVE"
210 COLOUR1:PRINT SC" CHIPS REMAINING"
220 COLOUR4:PRINT:PRINT "NEW HAND"
230 SF=0
240 FOR WH= 1 TO 2
250 T(WH)=0:C(WH)=0
260 GOSUB 780
270 GOSUB 780
280 GOSUB 830:GOSUB 940
290 NEXT WH
297 '-----------------------------------
298 'PLAYER'S MOVE
299 '-----------------------------------
300 IF T(2)>21 THEN 480
310 WH=2
320 COLOUR2:INPUT "BET,HIT,STAND,OR REVIEW CARDS
<B / H / S / R> ";YN$
330 IF YN$="B" THEN GOSUB 630:GOTO 320
340 IF YN$="H" THEN GOSUB 780:J=C(2):GOSUB 1010:COLOUR5:PRINT "CARD IS "CN$::GOSUB 1070:GOSUB 330:GOTO 300
350 IF YN$="R" THEN CLS:COLOUR3:PRINT "YOU HAVE" SC "CHIPS.":COLOUR4:PRINT "THE BET IS" PB:FOR WH=1 TO 2:GOSUB 830:GOSUB 940:NEXT WH
:GOTO 310
360 IF YN$="S" THEN 380
370 GOTO 310
```

```
377 '------------------------------------
378 'DEALER'S TURN
379 '------------------------------------
380 WH=1:CLS:COLOUR4:PRINT "DEALER'S TURN:";
390 IF T(1)>=DS THEN PRINT "DEALER STANDS.":GOTO 440
400 PRINT "DEALER TAKES A CARD:"
410 GOSUB 780:J=C(1):GOSUB 1010
420 PRINT "CARD IS "CN$::GOSUB 1070:GOSUB 830
430 IF T(1)>21 THEN 440 ELSE 390
437 '------------------------------------
438 'REST OF GAME
439 '------------------------------------
440 SF=1:WH=2:GOSUB 830:GOSUB 940
450 COLOUR5:PRINT "PLAYER'S SCORE IS" T(2)
460 WH=1:GOSUB 830:GOSUB 940
470 COLOUR4:PRINT "DEALER'S SCORE IS" T(1)
480 COLOUR5:PRINT:IF T(2)>21 THEN PRINT "PLAYER BUSTS. DEALER WINS" PB:GOTO 590
490 COLOUR3:IF T(1)=T(2) THEN PRINT "SCORES ARE THE SAME.":GOTO 540
500 IF T(2)=21 THEN COLOUR5:PRINT "BLACKJACK!! PLAYER WINS" PB*3:SC=SC+PB*3:GOTO 590
510 IF T(2)>T(1) THEN COLOUR5:PRINT "PLAYER WINS"PB*2:SC=SC+PB*2:GOTO 590
520 IF T(1) >21 THEN PRINT "DEALER BUSTS. PLAYER WINS" PB*2:SC=SC+PB*2:GOTO 590
530 COLOUR4:PRINT "DEALER WINS"PB:GOTO 590
540 IF C(2) <C(1) THEN T(1)=0:GOTO 570
550 IF C(1) < C(2) THEN T(2)=0:GOTO 570
560 COLOUR3:PRINT "STANDOFF.":GOTO 220
570 PRINT "LOWEST CARD COUNT WINS"
580 GOTO 500
590 COLOUR2:INPUT "PLAY ANOTHER HAND <Y/N>";YN$
600 IF YN$="Y" THEN CLS:GOTO 180
610 IF YN$<>"N" THEN 590
620 PRINT:PRINT:END
627 '------------------------------------
628 'INCREASE-YOUR-BET ROUTINE
629 '------------------------------------
630 COLOUR6:PRINT "YOU HAVE"SC"CHIPS REMAINING.
HOW MUCH DO YOU WANT TO ADD"
640 INPUT B:IF B>SC THEN 630
650 SC=SC-B:PB=PB+B
660 RETURN
687 '------------------------------------
688 'SHUFFLING-CARDS ROUTINE
689 '------------------------------------
690 COLOUR9:PRINT:CLS:PRINT "JUST A MOMENT...SHUFFLING THE CARDS...":PRINT
700 FOR J=1 TO 52:D(J)= -1:NEXT J
710 FOR J=1 TO 52
720 CD=RND(52)
730 IF D(CD) <> -1 THEN 720
740 D(CD) =J-1
750 NEXT J
760 CR=52
770 RETURN
777 '------------------------------------
778 'DRAW-CARD-FROM DECK
779 '------------------------------------
780 IF CR=0 THEN GOSUB 690
790 CV=D(CR):CR=CR-1
800 C(WH)=C(WH)+1
810 H(WH,C(WH))=CV
820 RETURN
```

```
827 '-------------------------------
828 'TOTAL PLAYER'S HAND
829 '-------------------------------
830 TT=0:A(WH)=0
840 FOR J=1 TO C(WH)
850 CV=H(WH,J)
860 VL=CV-INT(CV/13)*13+1
870 IF VL=1 THEN A(WH)=A(WH)+1
880 TT=TT+V(VL)
890 NEXT J
900 PRINT
910 IF TT >21 AND A(WH) >0 THEN TT=TT-10:A(WH)=A(WH)-1:GOTO 910
920 T(WH)=TT
930 RETURN
937 '-------------------------------
938 'DISPLAY-HAND ROUTINE
939 '-------------------------------
940 PRINT PN$(WH)"'S HAND:"
950 FOR J=1 TO C(WH)
960 GOSUB 1010
970 PRINT CN$ " / ";
980 NEXT J
990 PRINT
1000 RETURN
1010 CV=H(WH,J)
1020 VL=CV-INT(CV/13)*13+1
1030 SU=INT(CV/13)+1
1040 IF WH=1 AND J=1 AND SF=0 THEN CN$="?? OF ?????":GOTO 1060
1050 CN$=F$(VL)+" OF "+S$(SU)
1060 RETURN
1067 '-------------------------------
1068 'DELAY ROUTINE
1069 '-------------------------------
1070 FOR T=1 TO 500:NEXT:RETURN
```

"ECHO MEMORY GAME" -- some explanations

Programme notes

100 DIM A dimensions the array for printing the digits 1-9 on screen
   DIM C dimensions the array for the number of lights which may be
       asked for. If you are clever enough to remember more than
       30, change accordingly.

115 Sets score counter to zero
120-140 Instructions
150-160 Fills array A(K) with the digits 1-19. The data are the
       PRINT@ positions on screen
170-180 Inputs the number of rounds you wish to play into the variable
       R, and prints the round no. on screen
185 sets the difficulty level by adjusting the delay loop between
       the lights
190-200 Sets the number of lights you have chosen into variable NU
       Line 200 is a mugtrap
210 Adjusts score
220 Prints the numbers at the correct position on the screen
230-270, Loop to print the chosen total of lights immediately below
       the corresponding number on the screen, each in a different
       colour
245 Gosub routine selects the colour - one octave of sound contains
       7 different colours; the eighth and ninth notes, being exactly
       an octave above notes 1 and 2, have the same colours as notes 1
       and 2
280-320 Loop to enable the player to echo the sequence given by the
       computer, by typing in the appropriate digits
320-410 If you make a mistake, the programme proceeds to line 330, and
       in lines 340-380 repeats the correct sequence. If you are
       correct, the programme branches to 420-440, and when you press
       a key, sends you back to 390-408, which print the score and
       offer you another game.
450-520 Subroutine to give the sound and colour for each digit as the
       computer gives the sequence for you to echo.
530-600 Subroutine to give the sound and colour for each number as
       you try to follow the sequence.
610-680 Subroutine to give a repeat of the correct sequence after you
       have made a mistake.
700-800 Subroutine to select the different colours

Further Notes and acknowledgements

This programme was published in a TAB book, "55 Advanced Programmes in
Basic", which is worth buying. Most of the programmes can be adapted
without too much trouble for Colour Genie. I have translated eight of
the games and three of the utility/business programmes, and I am not
"advanced".
   The original parts of the programme are the sound and colour, (lines
450-800), which are specific to the Colour Genie, and in my opinion
make the game a lot more interesting. I am sure anyone with more expert-
-ise than me can improve the game still further.

ALADDIN

Greetings !

we are not alone ! Auckland now have a functioning Users' Group and they have made contact with Robert and Maree. The Auckland Group are interested in a newsletter exchange, also information. Copies of the newsletter from up north will be available at club meetings for you to browse over. We have also received the latest copy of 'Chewing Gum' from the U.K. Although we use material from this source in our newsletter (with their blessing), you are welcome to a copy of anything else you find of interest. Unfortunately, this will cost 15cents per page (including postage), and we are providing order forms at club meetings for you to complete. This copying service also applies to any articles held on file. The requested pages will be forwarded to you within a week. This is the fairest way we can ensure that everyone gets the information or listings he/she wants, as it is too difficult to chase up original copies.

Out-of-towners - please note. We are happy to copy the whole magazine for you at a cost of $2.50, or, if you send your preferences for listings, information, or whatever, we will copy and send these to you. You can of course purchase your own copy of 'Chewing Gum' and individually join the U.K. Group, but we feel that this could be less costly to you.

Our response from Rakon was a newsletter sent to everyone on their mailing list. (Not a very satisfactory reply in the Chairperson's eyes). This is available for perusal. Please note the new price of Centronic Printer Interfaces - $68.40, also the information on Disk Drives. We may have more information on Disk Drives and the new ROM at our May meeting.

This newsletter is for you - BUT - it is not only to read!!!! It is for youto share your ideas, tips, comments, programmes, swap and sell - whatever you want. This means that you need to get your fingers tapping. Any material for this will be gratefully received by Liz T.

We close with a big HI! to our new members this month, and all those Colour Genie buffs up north - it's good to know you're there.

Remember - the programmers that play together, stay together.

Your Committee.

BOOK CORNER

Have you seen ....
Learning to Use the Colour Genie, pub. Gower (available in U.K.)
    (one of a series of Learning to Use.....)
Games for your TRS80   - The Virgin Computer Games Series $8.95
Explore Computing with the TRS-80 (& Common Sense), with programming
in Basic - Andree & Andree, pub. Prentice Hall,Inc., N.J., U.S.A

How about sharing your 'book list' with us ?

INDEX

This Index for the Colour Genie Manual has been supplied by Ray Cox (U.K.) ex Chewing Gum magazine. Cut it out and paste it in the back of your manual - it makes it much easier to find things you need to know. It also has more list-ings than are supplied in the manual index.

BASIC LESSON

For those eager to peek ahead , The Basic Programme for May will be to create a calendar which runs from January 1st 1900 up to December 31st 1999 - being able to call up any month of any year at will. So maybe you can come up with the programme before the May meeting ????

PLEASE REMEMBER - WE NEED YOUR IDEAS, INFORMATION, PROGRAMMES, SUGGESTIONS, FOR THIS NEWSLETTER TO WORK.

DOES ANYONE HAVE ANYTHING TO SWAP, SELL OR EXCHANGE ?????

ALL MATERIAL - PLEASE FORWARD TO - 32A TAUPATA STREET, CHCH 8

```
10 REM SNIPER
15 P9$=CHR$(185)+CHR$(195)+CHR$(185)
20 POKE(16409),7
30 POKE(16410),39
40 COLOUR3
50 REM ADAPTED TO COLOUR GENIE BY C.DEANFROM A TRS80 PROG PUBLISHED IN MARCH 83 ED OF PERSONAL COMP TODAY.
60 CLS
70 PRINT@15,"S N I P E R"
80 COLOUR4
90 PRINT@55,STRING$(11,211)
100 COLOUR2
110 PRINT:PRINT@440,"Do you need instructions? enter Y or N."
120 INPUT A$
130 IF A$="Y"THEN GOSUB 1960
140 GOTO650
150 REM ** ROLL THE BOMBS **
160 C=C+1AND BMAX-1
170 IFPEEK(17408+B(C)-3)<>153THEN 260
180 IFRND(2)<1 OR INT(E/40/2)=(INT(E/40))/2THEN RETURN
190 B(C)=E-3
200 IF Q=B(C) THEN 620
```

PART 2 - FOLLOWING PAGE

PART 3.

```
1930 COLOUR2
1940 PRINT@734,SC;
1950 RETURN
1960 REM INSTRUCTIONS
1970 PRINT@440,STRING$(40,32)
1980 PRINT@480,STRING$(40,32)
1990 COLOUR2
2000 PRINT@128,"You '@=-' are trying to steal secrets"
2010 PRINT"from a computer room guarded by a robot '";CHR$(192);"' which will try to take your 3 lives by rolling bombs '*' towards you"
2020 PRINT:PRINT"You can score points by moving around  the room using the arrow keys shooting  the robot with your laser rifle,your"
2030 PRINT"courage will be rewarded by getting as  close to the robot as possible before   firing with the spacer bar.
2040 PRINT:PRINT"Points can be scored by'bugging'the    robot from the side,bonus points can be earned by a brave frontal asault"
2050 PRINT"Watch out for fire-balls"
2060 PRINT:PRINT"              GET READY"
2070 PRINT"          Press P to start"
2080 IF INKEY$<>"P"THENGOTO2080
2090 RETURN
2100 IFP-(INT(P/40))*40<>E-(INT(E/40))*40 THEN RETURN
2110 LV=LV-1
2120 PRINT@752,LV;
2130 LP=323
2140 IF E>P THEN GOTO2220
2150 GOSUB2480
2160 FOR A=E+41TOPSTEP 40
2170 POKE(17408+A),230
2180 FORT=1TO5:NEXTT
2190 POKE(17408+A),32
2200 NEXTA
2210 GOTO2280
2220 GOSUB2480
2230 FOR A=E-39TO P STEP-40
2240 POKE(17408+A),230
2250 FORT=1TO5:NEXTT
2260 POKE(17408+A),32
2270 NEXTA
2280 REM EXPLOSION
2290 PRINT@P,BLANK$
2300 FORY=0TO12
2310 S=(7ANDY)+1
2320 COLOURS
2330 PRINT@P,P9$
2340 SOUND6,8
2350 SOUND7,7
2360 SOUND8,16
2370 SOUND9,16
2380 SOUND10,16
2390 SOUND12,56
2400 SOUND13,0
2410 PRINT@P,"O+8"
2420 NEXTY
2430 PRINT@P,BLANK$
2440 P=LP
2450 PRINT@P,PLA$
2460 IFLV=0THEN GOTO380
2470 RETURN
2480 FORX=7TO1STEP-1
2490 FORY=7TO1STEP-1
2500 PLAY(1,X,Y,15)
2510 NEXTY:NEXTX
2520 PLAY(1,1,Y,0)
2530 RETURN
ERRATA LINE 760 SHOULD READ
760 ENE$=" "+CHR$(192)+" "
```

```
210 Q=B(C)
220 COLOUR7
230 PRINT@B(C),BOMB$;
240 IFQ=PTHEN320
250 RETURN
260 PRINT@B(C),BLANK$;
270 B(C)=B(C)-3
280 COLOUR7
290 IFPEEK(17408+B(C)-2)<>153THENPRINT@B(C),BOMB$;
300 IF RND(12)>1THEN IF B(C)<>PTHENRETURN
310 IFB(C)<>PTHEN470
320 LV=LV-1
330 COLOUR6
340 PRINT@752,LV
350 LP=323
360 IFLV>0THEN 420
370 GOSUB2200
380 PRINT@800,"G A M E   O V E R"
390 PRINT@880,"PRESS P TO PLAY again!"
400 IF INKEY$<>"P" THEN GOTO 400
410 RUN 640
420 IFKB<900 THEN 450
430 KB=KB+B(C)
440 B(C)=P
450 LP=323
460 REM ** BOMB EXPLOSION **
470 FOR Y=0TO1
480 COLOURY+3
490 SOUND6,0
500 SOUND7,7
510 PRINT@B(C),P9$;
520 SOUND8,16
530 SOUND9,16
540 SOUND10,16
550 PRINT@B(C),"   "
560 SOUND12,56
570 SOUND13,0
580 NEXT Y
590 IF KB<900THEN 620
600 B(C)=KB-1100
610 RETURN
620 B(C)=323
630 RETURN
640 REM ** PROGRAM STARTS **
650 CLEAR 500
660 CHAR4
670 DEFINT A-Z
680 BMAX=8
690 DIM B(BMAX-1)
700 CLS
710 REM *** SET UP GRAPHICS ***
720 LUMP$=CHR$(162)+CHR$(183)+CHR$(172)
730 WALL$=STRING$(3,153)
740 BLANK$=STRING$(3,32)
750 PLA$="@=-"
760 ENE$=" ";CHR$(192);" "
770 BOM$=CHR$(32)+CHR$(42)+CHR$(32)
780 REM*** DRAW THE ROOM ***
790 COLOUR7
800 PRINT@0,STRING$(40,153)
810 PRINT@640,STRING$(40,153)
820 COLOUR7
830 FORY=40 TO 600 STEP 40
840 PRINT@Y,WALL$;
850 PRINT@Y+37,WALL$;
860 NEXTY
870 COLOUR8
880 FORY=86TO680STEP80
890 FORX=8TO30STEP12
900 PRINT@X+Y,LUMP$;
910 NEXTX
920 NEXTY
930 REM ***  SET UP VARIABLES  **
940 P=323
950 E=313
960 SC=0
970 LV=3
980 FORY=0TOBMAX-1
990 B(Y)=233
1000 NEXTY
1010 COLOUR5
1020 PRINT@745,"Lives:";LV;
1030 PRINT@P,PLA$;
1040 PRINT@720,"SNIPER! Score:";SC
1050 REM ** MAIN LOOP OF GAME **
1060 GOSUB 1140 'Players cove

1070 GOSUB 150 'Roll bomb 1
1080 GOSUB 1620 'Fire rifle
1090 GOSUB 150 'Roll bomb 2
1100 GOSUB 1450 'Target's cove
1110 GOSUB 150 'Roll bomb 3
1120 GOTO 1060
1130 REM ** MOVE PLAYER **
1140 KB=PEEK(-1984)
1150 IF(KBAND32)THEN IF P-(INT(P/40)*40)>5THENLP=P-3
1160 IF(KBAND64)THENIF P-(INT(P/40)*40)<32THENLP=P+3
1170 IF(KBAND8)THENIFP>80THENLP=P-40
1180 IF (KB AND 16)THEN IF P<720 THEN LP=P+40
1190 IFP=LP OR PEEK(LP+17408)>128THENRETURN
1200 IFPEEK(LP+17409)<>42THEN1230
1210 KB=1100
1220 GOTO320
1230 PRINT@P,BLANK$;
1240 COLOUR5
1250 PRINT@LP,PLA$;
1260 P1=P
1270 P=LP
1280 IFP<>ETHENRETURN
1290 REM**MUG THE ROBOT**
1300 IF P1-(INT(P1/40))*40>32THENSC=SC+3ELSE SC=SC+10
1310 P1=0
1320 SOUND7,254
1330 SOUND8,15
1340 FORY=0TO12
1350 COLOUR6
1360 PRINT@E,")-(";
1370 SOUND1,Y
1380 COLOUR3
1390 PRINT@E,ENE$;
1400 NEXTY
1410 SOUND7,255
1420 LP=323
1430 GOTO1760
1440 REM**MOVE THE ENEMY**
1450 L=L-1
1460 IFL<6ANDL>0THENRETURN
1470 IFL>5THEN1520
1480 IFE<PTHEND=40ELSED=-40
1490 IFE+D<400R E+D>640THEND=-D
1500 IFL<1THEN L=RND(4)+7
1510 RETURN
1520 NE=E+D
1530 IFNE<80 OR NE>680THEND=-D
1540 COLOUR3
1550 PRINT@E,BLANK$;
1560 PRINT@NE,ENE$;
1570 E=NE
1580 IF E=PTHEN1320
1590 IF RND(2)<2THEN GOSUB 2100
1600 RETURN
1610 REM ** CHECK FOR RIFLE FIRE **
1620 IFPEEK(-1984)<>128 THEN RETURN
1630 IFINT(P/40/2)=(INT(P/40))/2THEN RETURN
1640 L=33-(P-(INT(P/40)*40))
1650 COLOUR6
1660 PRINT@P+3,STRING$(L,45);
1670 FORX=7TO6STEP-1
1680 FORY=7TO1STEP-1
1690 PLAY(1,X,Y,15)
1700 NEXTY:NEXTX
1710 PLAY(1,1,0,0)
1720 PRINT@P+3,STRING$(L,32)
1730 IF SC>0THEN SC=SC-1
1740 IF (INT(E/40))<>(INT(P/40))THEN 1940
1750 SC=SC+(36-L)/3
1760 FOR Y=0TO12
1770 S=(YAND7)+1
1780 COLOUR5
1790 PRINT@E,P9$
1800 SOUND6,0
1810 SOUND7,7
1820 SOUND8,16
1830 SOUND9,16
1840 SOUND10,16
1850 SOUND12,56
1860 SOUND13,0
1870 PRINT@E,"0+0"
1880 NEXT Y
1890 PRINT@E,BLANK$;
1900 E=313
1910 COLOUR3
1920 PRINT@E,ENE$;
```