Presenting RISC OS

Impression
Table Generator

TextEase
RISC OZ

8 bits – Spectrum games conversion

RISC OS
South West Show

Arnos Manor Hotel, Bristol
Sat 25th Feb 2023
www.riscos-swshow.co.uk

Editorial

Welcome to a new volume of *Drag 'N Drop*. Thanks to all the contributors for making the magazine what it is. Please note the files for the TeShow are too big to include with the programs archive so you can download them for free at www.dragdrop.co.uk/free.htm.

The RISC OS South West show is booked for February 2023, only the second in-person show since the Pandemic so I hope you can attend.

RISC OS is amazingly powerful and easy to use. With Zoom video meetings there's never been a better opportunity to reach many new or lapsed RISC OS users. In this issue we have a couple of articles on this very subject – using your RISC OS machine to present in Zoom meetings, perhaps using TeShow, which is an alternative to Microsoft's Powerpoint.

Chris.

How do I get the BBC Basic prompt?

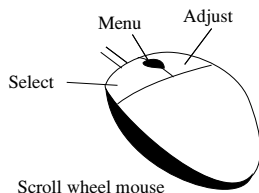Press F12 and type *BASIC and press Return. You can change the screen mode with MODE n where n is a number e.g. MODE 7 or MODE 0.

Type AUTO for automatic line numbering. Press Escape to stop and type SAVE "myprog" followed by Return to store *myprog* on hard disc. To return to the desktop type *QUIT.

Programs listed in *Drag 'N Drop* are assumed to work on all machines with RISC OS 5 e.g. Raspberry Pi, unless otherwise stated.
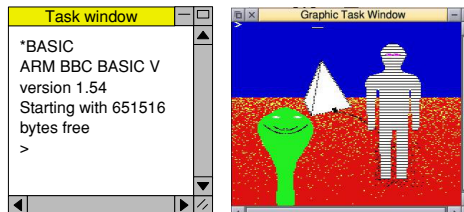
How do I open a Task window?

Menu click over the Raspberry icon on the right side of the iconbar and select click on Task window. Or press Ctrl+F12.

You may need to reserve more memory for the task. Adjust-click on the Raspberry icon and under *Application tasks* click and drag the *Next* slide bar out to the right.

You can also type programs in a *task window*, press Ctrl and F12. You can't use the cursor editing facility or change

```
Task window
*BASIC
ARM BBC BASIC V
version 1.54
Starting with 651516
bytes free
>
```

MODE so you might like GraphTask from armclub.org.uk/free/. It allows you to type in and run Basic programs that use simple graphics (not sprites) in a window on the desktop.

To run Basic programs from the desktop, double-clicking with select on the filer icon runs it. Holding down Shift and double clicking loads it into a text editor like !Edit.

What does 'currently selected directory' mean?

Articles may tell you to set the CSD (currently selected directory). Click menu over filer window and choose *Set directory ^W*. It's where the computer stores the file when you type SAVE "myprog".

How do I open an Applcation Directory?

Application directories begin with a ! called 'pling'. Hold down the shift key

and double click select to open the directory. The main !Boot file is an application directory.

Blank screen when running games listings

Check you have the Anymode module installed, download it from www.pi-star.co.uk/anymode. It goes in !Boot.Choices.Boot. Predesk.

Open the !Boot application directory, in the root directory of the SD Card, that is SDFS::RISCOSPi. $.!Boot. Locate the *Loader* file and with Shift held down double click it to open it. Create a text file in Edit with the following line (press Return at the end):

```
disable_mode_changes
```

Save it inside Loader as CMDLINE/TXT and restart your machine.

'Screen mode not available'

Check you have Anymode (see above). Aemulor can interfere, menu over iconbar > Quit > Emulator too.

Sounds are strange

Some listings need the free RDSP module installed. Download it from www.amcog-games.co.uk/rdsp.htm where you'll find instructions on how to install it.

WIMP library

Many programs in *Drag 'N Drop* are multi-tasking (running in a window on the desktop). They use a set of standard procedures to create and deal with windows, icons and menus.

Rather than publish them with every listing they are collected here. They're taken from *The Application Tutorial and Listings Book* available from Drag 'N Drop Publications. If you're interested in writing desktop applications then you should consider buying this book.

```
DEF PROCREDRAW
SYS "Wimp_RedrawWindow",,B TO I
XO=B!4 - B!20 : YO=B!16 - B!24
WHILE I
PROCPLOT
SYS "Wimp_GetRectangle",,B TO I
ENDWHILE
ENDPROC
```

Redraws window for user graphics (bit 4 of window flags set), PROCPLOT is a procedure custom to the app.

```
DEF PROCMKMENU(A)
READ $T
FOR I=0 TO 24 STEP 4
READ A$ : I!A=EVAL A$
NEXT : T+= LEN $T+1
ENDPROC
```

DATA line before this is called with menu header details. Sets up menu header at memory address A.

```
DEF PROCMKENTRY(W,X,Y,H,F,A$,V)
```

```
$U=A$
RESTORE+1
DATA Y,H,F,U,V,LEN $U
FOR I=0 TO 20 STEP 4
READ B$
I!(W+X) = EVAL B$
NEXT : U+= LEN $U + 1
ENDPROC
```

Basic DATA line before this is called giving menu item details. W=header address, X=offset (multiple of 24), Y=work flags, H=submenu pointer (–1 if none). F, A$ and V as for PROCMKICON. Add entry for menu already set up.

```
DEF FNMKWINDOW
READ $T,X,Y,W,H
FOR I=0 TO 84 STEP 4
READ A$
I!B=EVALA$
NEXT
T+= LEN $T+1
SYS "Wimp_CreateWindow",,B TO X
=X
```

DATA line with window title, position, size, colours, flags comes before this is called. Make a window returning handle in X. Memory blocks T and B must have been set up.

```
DEF PROCMKICON(H,X,Y,W,D,F,A$,V)
$U=A$ : RESTORE +1
DATA H,X,Y,X+W,Y+D,F, U,V,LEN A$+1
FOR I=0 TO 32 STEP 4
READ B$ : I!B = EVAL B$
NEXT : U+= LEN A$+1
SYS "Wimp_CreateIcon",,B TO I
ENDPROC
```

Make an icon, handle is returned in I. H=window handle, X,Y=bottom left, W,D=dimensions, F=flags, A$=text and V validation string (1 if none)

```
DEF PROCRDICON(W,H)
!B=W : B!4=H
SYS "Wimp_GetIconState",,B
A$=$(B!28) : X = B!24
ENDPROC
```

Read icon W in window H text in A$ and flags in X.

```
DEF PROCWRICONT(W,H,B$)
PROCRDICON(W,H)
B!8=0 : B!12=0
$(B!28)=B$
SYS "Wimp_SetIconState",,B
ENDPROC
```

Updates text B$ in icon H in window W.

```
DEF PROCWRICONF(W,H,X,Y)
!B=W : B!4=H : B!8=X : B!12=Y
SYS "Wimp_SetIconState",,B
ENDPROC
```

Updates icon W's flag in Window H, X is the EOR word and Y the clear word, ie flag = (flag AND NOT X) EOR Y.
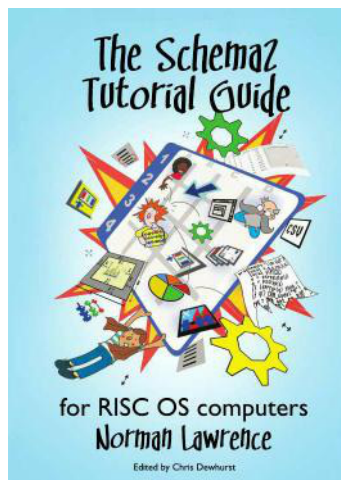
```
DEF PROCREPORT(A$)
$(B+4)=A$+CHR$0
SYS "Wimp_ReportError",B,,"Application"
ENDPROC
```

Reports message A$ and continues executing application.

News and Application Updates

The Schema2 Tutorial Guide

Schema2 is a spreadsheet package for RISC OS, the first part of this book familiarises the reader with workaday functions seen on just about every other platform's answer to Excel but before you groan 'not another how-to book' the macro features which make Schema2 so powerful are discussed in depth.

If you're familiar with BBC Basic you'll have no trouble using and extending the built-in routines to automate anything from drawing flags to parabolic curves on the fly – extremely useful in lots of fields like business, commerce and teaching.

The Schema2 Tutorial Guide, ISBN 978-1-80352-284-5, is an A5 wire bound printed publication and costs £15.00 plus postage and can be purchased from www.dragdrop.co.uk.

RISC OS 5.30?

The RISC OS London show traditionally marks a siginificant release of the operating system. There wasn't London show this year and it seems RISC OS Open were anticipating enquiries – an article appeared on www.riscosopen.org mentioning there have been 600 changes since RISC OS 5.29, an appeal for users and programmers alike to help. So we think 5.30 is not far away!

RISC OS Show

Put 25th February 2023 in your diary! Arnos Manor in Bristol is the venue of the first RISC OS show in the region since pre-Pandemic times. More details at www.riscos-swhow.co.uk. The national cost of living increase is reflected in the entry price which is advertised as £6.00 on the door.

Report that Pothole

StreetFix is an application from KevSoft for reporting problems like broken street lights and potholes to the relevant authority, including non-UK countries. Version 1.05 of StreetFix which can handle GPX files can be downloaded from kevsoft.co.uk/#StreetFix.
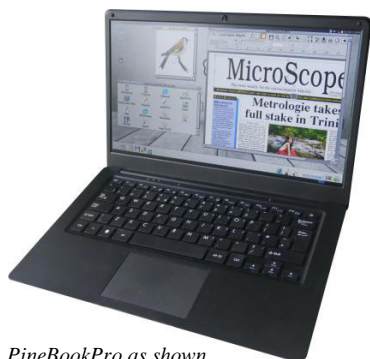

Browser Update

The developers of Netsurf have announced over a year's worth of updates including 3rd party libraries touted to make the browser run faster. However the version remains at 3.10. www.netsurf-browser.org/.

PineBookPro on test

We featured the PineBook laptop back in the Winter 2020 edition of *Drag 'N Drop*, PineBookPro is a superior version of the machine originally announced by CloverLeaf. The final work of porting RISC OS to the laptop is being undertaken by R-Comp, prices and specifications are expected to be released soon. www.rcomp.co.uk.

PineBookPro as shown on riscoscloverleaf.com

Fireworkz

In time for bonfire night an updated release of Fireworkz was released, version 2.32.01 has some bug fixes and 2023 bank holidays amended so it knows about the new king's coronation. Version 2.32.01 can be downloaded from croftnuisk.co.uk/coltsoft/fireworkz/downloads/.

Say 'Aah'

The guide to programming with the PD package Dr Wimp can be downloaded free at drwimp.archivemag.co.uk. The late Ray Favre's *Dr Wimp's Surgery* PDF book takes a specialist approach preferring to look at several ways of writing the same app (rather than a few ways of writing lots of apps as in the *Application Tutorial and Listings Book*). The current version of Dr Wimp from 2012 is at drwimp .riscos.org with a new version appearing soon according to the Archive magazine for RIS OS website.

StrongEd

StrongEd is an advanced text editor aimed at programmers but provides comprehensive facilities for general document editing. The latest update makes it run on machines with more than 2GB of memory. Version 4.69f12 can be downloaded from www.stronged.iconbar.com/.
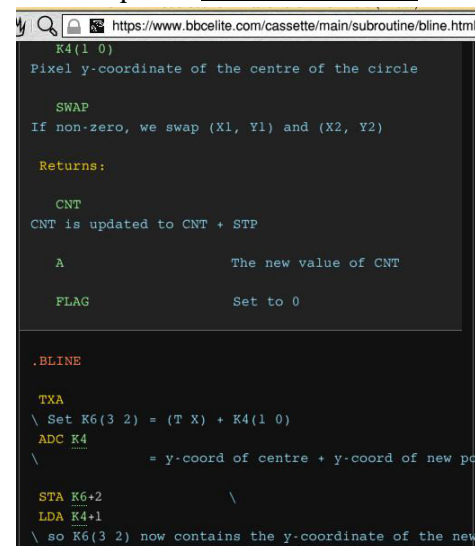
RISC OS Fireside Chat

Gather round fellow RISC coders and warm yourself by the fire. An informal session (possibly the first of many) on Zoom is being proposed for Saturday 26th November at 7.30pm. If you're interested in taking part you should reply to the post "Initial fireside chat - RISC OS Community" in the Announcements column over at www.riscosopen.org.

Trading Source Code

Many will remember (and some still play) the 3D space trading game Elite for the BBC Micro series and Electron computers. Mark Moxon, one time editor of Acorn User, has set up a website with the source code including disassembly of everything from drawing planets to the copy protection code. Learner programmers can find an array of techniques at www.bbcelite.com.

Talks and

lectures and all manner of demonstrations often take place online nowadays through platforms like Zoom.
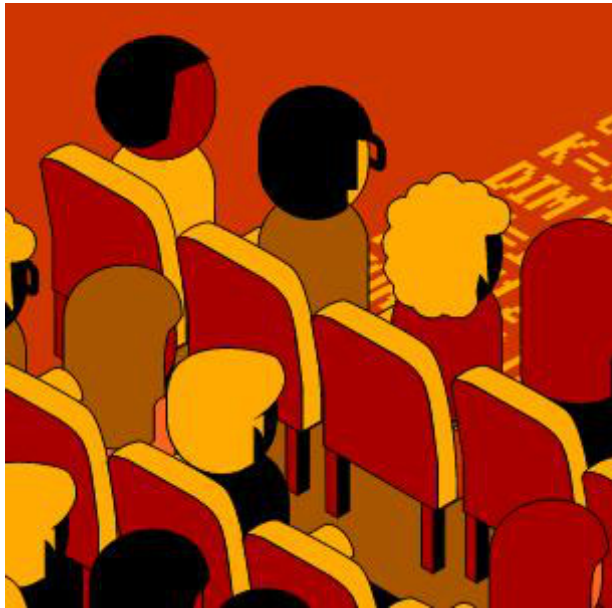
Unfortunately there isn't yet a RISC OS client for Zoom. This shortcoming can be made up for by using a virtual network client (VNC) and sharing the RISC OS desktop with the tablet, mobile phone or PC running Zoom.

The techniques described here were used to present a talk to the Wakefield RISC group and the RISC OS Midlands User Group summer show. My machines were a Raspberry Pi, an iPad with VNC by RealVNC and VNCServ on the Pi.

VNCServ allows you to broadcast your RISC OS desktop to the audience through Zoom installed on the iPad (or devices running Windows, Android etc) plus control your RISC OS desktop from the the other device. Note that this is visual only, no sound can be shared as far as I am aware.

I also used a couple of home-brewed programs which I'll discuss later. See the end of the article for a tutorial on setting up VNCServ.

When Zoom presentations are

happening the host can pass control to a member of the audience and you use Zoom's "Share" option to share your screen and the audience can see the RISC OS desktop or screen in single tasking mode (see figures 1 and 2).

You can sign up for a free Zoom account at www.zoom.us. You're allocated a personal meeting code and can set up a meeting (maximum 40 minutes with the free account). For practice purposes you don't actually have to have anyone at attending. Just schedule a meeting for yourself and dial in ahead of time, useful just see how it works.

For some reason if you move the

mouse pointer on the Pi, the pointer on the shared screen doesn't move, although the reverse is true (move the RISC OS pointer on th iPad and the Pi's pointer moves).

To solve this anomaly I wrote a fairlt simple application JUMBO, listing 1. It makes a copy of the pointer sprite at an exploded size so it's easy to see.

As you move the pointer around the desktop the sprite goes with it, a copy of the screen area under is stored and then restored, checking for dragging windows etc.

To stop JUMBO simply press the Escape key.

Presenting RISC OS

Some time ago

Elesar announced that they were the new distributors for TextEase and that it was available at various price points and options, Home edition (£60), Educational edition (£78) and Professional edition (£96).

As I have been on the look out for a RISC OS alternative to Powerpoint, I purchased the TextEase studio Professional edition because it included TeShow.

After parting with my money I receive an installation app to run and download the latest version of TextEase Studio, this installation app is also used for updating the software when new releases are announced.

Figure 1 illustrates the complete TextEase family, comprising ClipArt, TeBranch, TePaint, TeShow, TeTable, TeTurtle and TextEase.

A welcome bonus is the printed manual supplied with the application. and selected words or complete documents can be spoken through the eSpeak, maintained by Martin Avison and can be downloaded from the

Figure 1 TextEase family.

PlingStore.

Not only is TextEase easy to get up and running but there are a number of very useful examples (see Figure 2) that can be accessed through the main menu > files > examples.

When creating presentations, I need to be able to load photos (JPEGs), create text, apply bullet points, and write on slides during the presentation. I also need to link slides so that I can move easily between them in the presentation, create tables, graph results and ideally run a short video.

Figure 2 TextEase examples..

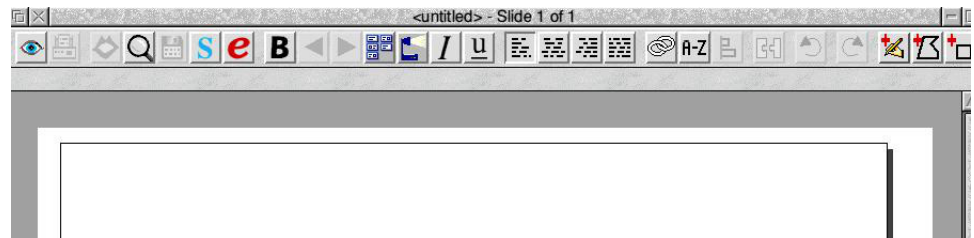Now, coming from a Windows background I like the tool bar buttons at the top of the window.

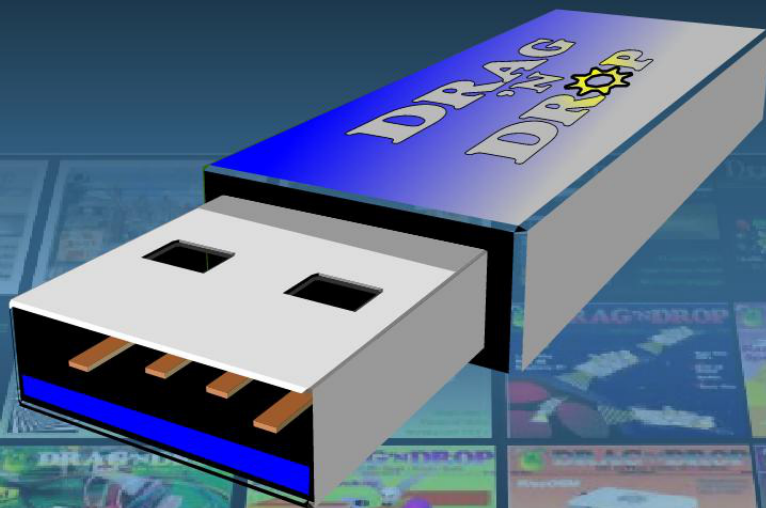*Figure 3. Opening a new !TeShow Presentation*

What follows is a nine slide presentation to showcase the features of TeShow, it could also, with some extra material, be adapted for a schools or University of the 3rd Age (U3A) presentation.

The first step is to click on the TeShow icon to open a new, blank slide (see Figure 3) and a separate Backdrops browser which provides a range of backdrop themes (see Figure 4). It is always possible to return to the backdrops browser using menu > Presenter > Choose backdrop.

The tool bar is common to all the TextEase applications with only the relevant buttons active. It can sometimes extend beyond the window area.

When this happens, it is necessary to move the cursor to the right (or left) hand end of the tool bar to access the remaining buttons.
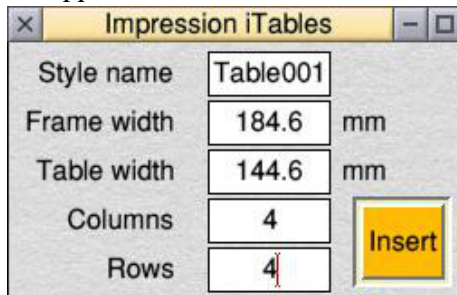
TextEase displays interactive help

There isn't a

table creation tool in the free PlingStore version of Impression Style desktop publishing software RISC OS, leaving you with a tricky business of manually creating new styles and lots of fiddling around with tabs and rules.
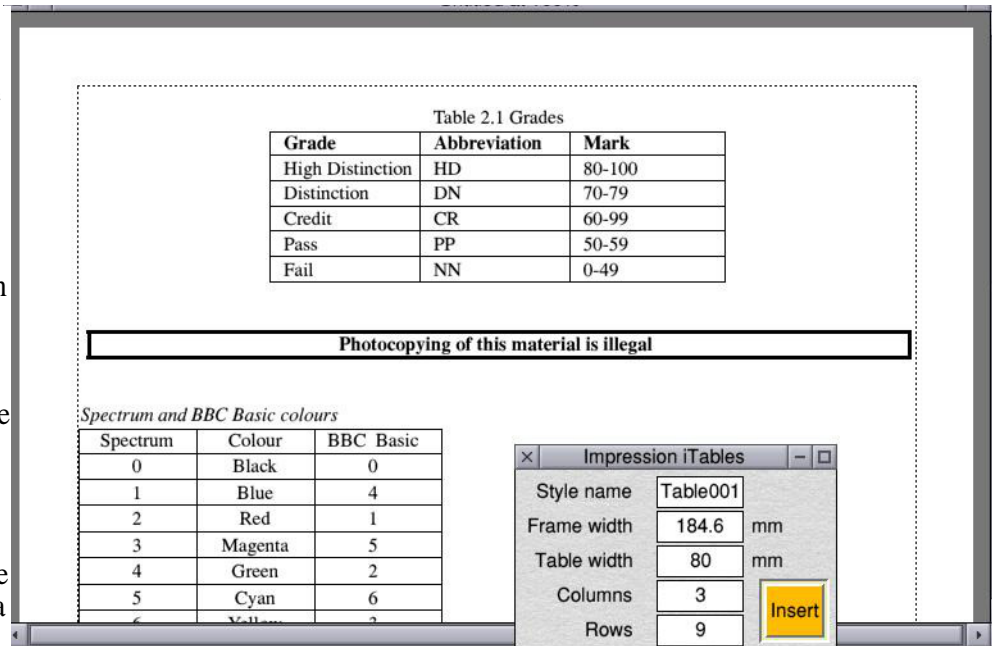
Until now, that is. iTables, the type-in application presented here is a bolt-on addition to Impression for RISC OS which allows easy creation of tables.

You can choose various aspects of the table design such as the number of columns, border thickness before inserting it into your Style document at the click of a button.

Type in the listing and, ensuring there are no errors, save it. Double click and a small window titled Impression iTables will appear as shown below.

The application automatically numbers the tables as Table001, Table002 etc. – click into the box next to Style name and edit if required.

Frame width is normally the same as the width of the frame in your Impression document which you can find by Ctrl+F10 or Menu > Frame > Alter frame. Look at the box next to Width (greyed out if it's a Master frame). See below for using differing frame widths for indented tables.

Table width is the width of the whole table. Columns is the number of columnsacross you want and Rows is the number of rows down. Normally iTables will position the table in the centre of the page, taking the frame width, table width and number of columns into

account to calculate the margin and width of an individual column.

To see how this works, leave the default values (184.6 for the frame width, 144.6 for the table width, 4 columns and 4 rows).

Open a new Style document, click in the Style window then click the Insert button in the Impression Table Generator window.

Click into the cells on the Style document to start typing. Click on the Styles drop down to see the new style in the list.

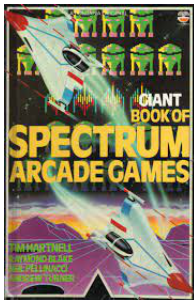Note that there's a bug in the current

Last time we

looked at Sinclair ZX Basic used on the Spectrum computer and the BBC Basic equivalent of the main keywords with writing conversions of arcade games in mind.

This article is a walk-through tutorial in converting a Spectrum game written in Sinclair Basic to BBC Basic so that it runs on the BBC Micro, Electron and on RISC OS. If you are using RISC OS on a Pi then you are advised to run programs in GraphTask.

The game we'll convert is Dogfight from *The Giant Book of Spectrum Arcade Games* by Tim Hartnell (Fontana, 1984).

You can download Dogfight and some other games in this book from spectrumcomputing.co.uk in TAP format ready to run in Fuse. See the article in the Summer 2022 edition of *Drag 'N Drop* for more details.

Listing 1 is reproduced from the book with kind permission.

```
20 REM        Dogfight
           © Raymond Blake
50 PLOT 8,8: DRAW 166,83
60 PLOT 8,167: DRAW 166,-75
70 PLOT 247,8: DRAW -124,83
80 PLOT 247,167: DRAW -124,-75
90 RETURN
200 LET a1=(( INT ( RND *3)-1)
    AND RND >sk)+( INKEY$ ="a")
    -( INKEY$ ="z")
210 IF a+a1<1 THEN LET a1=0
220 IF a+a1>20 THEN LET a1=0
250 LET b1=(( INT ( RND *3)-1)
    AND RND >sk)+( INKEY$ ="x")
    -( INKEY$ ="c"): LET b1=b1*
    3
260 IF b+b1<2 THEN LET b1=0
270 IF b+b1>26 THEN LET b1=0
300 LET a,b;"                "
310 LET a=a+a1: LET b=b+b1
320 PRINT AT a,b;"▓▓▓"
400 LET ti=ti-1: PRINT #0; AT 1
    ,7;ti;" "
450 IF ti=0 THEN GO TO 6000
500 IF INKEY$ <> "v" THEN GO TO
    200
550 GO SUB 50
560 IF a=10 AND b=14 THEN GO SU
    B 2000
565 OVER 1
570 BEEP .01,20
580 GO SUB 50
600 OVER 0
650 PRINT AT 10,14;"    "
750 GO TO 200
2000 LET sc=sc+10
2020 PRINT #0; AT 1,24;sc
2040 FOR i=10 TO 30: BEEP .002,i
     +3: NEXT i
2100 LET a= INT ( RND *20)+1
2150 LET b= INT ( RND *9+1)*3-1
2500 RETURN
6000 BEEP .8,5: BEEP 1.2,20
6100 PRINT PAPER 4; INVERSE 1; A
     T 9,11;"GAME OVER"; AT 12,5
     ;"Press any key to play aga
     in"
6180 IF INKEY$ <> "" THEN GO TO
     6180
6200 IF INKEY$ ="" THEN GO TO 62
     00
9000 BORDER 0: PAPER 5: INK 0: O
     VER 0: CLS
9010 INPUT "Enter skill level 1(
     hard) to 5(easy)"'sk
9015 LET sk= INT (sk)
9020 IF sk<1 OR sk>5 THEN GO TO
     9010
9030 LET sk=(sk+4)/10
9040 PRINT #0; AT 1,0;"TIME "; A
     T 1,16;"SCORE "
9050 RANDOMIZE : RESTORE
9100 FOR i= USR "a" TO USR "g"+7
9120 : READ a: POKE i,a: NEXT i
9130 DATA 255,a,a,a,252,248,240,
     a
9130 DATA 255,a,a,a,63,31,15,a
9140 DATA 240,a,a,248,252,255,a,a
     ,a
9150 DATA 15,a,31,63,255,a,a,a
9160 DATA 0,127,33,39,57,33,127,
     2
9170 DATA 0,219,36,66,a,36,219,0
9180 DATA 0,254,132,228,156,132,
     254,64
9200 PRINT "          "; PAPER
     6; INVERSE 1;" DOGFIGHT ";
     PAPER 5; INVERSE 0;"
     "
9210 FOR i=1 TO 20: PRINT "█"; T
     AB 31;"█": NEXT i
9220 PRINT "          "; PAPER 6; I
     NVERSE 1;" © Raymond Blake
     "; PAPER 5; INVERSE 0;"
9400 LET a=4: LET b=8
9410 LET ti=500: LET sc=0
9450 PRINT AT a,b;"▓▓▓"
9500 GO TO 200
```

Listing 1, Spectrum Dogfight

The first attempt at conversion will be a literal line-by-line translation, using GOTO and GOSUB and none of the BBC Basic niceties like consistent line numbering and procedures.

As we saw last time the Spectrum's screen is 32 × 22 text characters, 256 × 176 pixels which is a graphics window 1024 × 704 units in BBC Basic in Mode 1. If the screen is to be centralised a text window can be set up with VDU28 and the graphics origin set with VDU29.

In Sinclair Basic the command SAVE "PROG" 9000 stores PROG on tape or disc like on the BBC micro but 9000

G'day mates

and welcome to another column from down under with me, Pesky of the Antipodes.

Mates, I was going round thinking hats were an essential bit of kit out here but I didn't know what a HAT was in the context of a Raspberry Pi until I read this: tomshardware.com/best-picks/best-raspberry-pi-hats

But on with the column. I cooked up a few things going through *TATALB* [*The Applications and Tutorial Listings Book*, still available to buy from www.dragdrop.co.uk – Ed].

Pling !

! (Pling) allows you to put (to poke) a word into the computer's memory as well as to read it back (peek).

You need first to reserve a block of memory using DIM. The high-water mark (also called the tilde) tells the computer to print in hexadecimal. Take a squiz at the following and note the order of output:

```
REM Wordz1
CLS
DIM B 100, C 100
!B = &4B534154
!C = &4F484D5A
PRINT ~!B,~!C
REM Use a question mark operator to do a
     peek or poke
PRINT '~B?3, ~B?2, ~B?1, ~B?0
PRINT '~?C, ~C?1, ~C?2, ~C?3
$B = "Risc OS"
PRINT '$B
L% = LEN($B)
FOR I% = 0 TO L%
   PRINT I%?B, CHR$32, CHR$(I%?B)
   PRINT CHR$&A
NEXT
```

```
Risc OS
      82        R
     105        i
     115        s
      99        c
      32
      79        O
      83        S
      13
```

In the following code sample, line 40 adds a carriage return to the bytes in memory. So, the following code fragment needs to use ! and ? and also $.

```
REM Wordz2
DIM B 100
!B = &4B534154
B?5 = 13
PRINT $B
```

TASK

Binary numbers and 32 bit numbers

Here are another few things I made notes on while going through Chapter 3 of *TATALB*. The 32 bits in a binary number are numbered from right to left. For example, bit 2 has value 2^2 (=4). The ^ means "to the power of".

This works until we have 2^{30} but 2^{31} won't work: you get a "number too big" message.

```
REM Binary integers and words
DIM B 100
!B = &4B534154
V = 1 << 31
REPEAT
   PRINT ;-((!B AND V) = V);
   V = V >>> 1
UNTIL V = 0
```

01001011010100110100000101010100>

OR and EOR

Here's an example to illustrate how you can set bit 21 (of a 32 bit integer) without disturbing other bits, you need to use OR.