VZ NEWSLETTER

DICK SMITH ELECTRONICS

VZ300

PERSONAL COLOUR COMPUTER

PAGANITZU

Blue

Bilby

By Jason Oakley

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Editorial

Welcome to the VZ Newsletter – featuring articles on Hardware, Software, etc regarding the VZ200 and VZ300 computers.

We hope you will find some interesting information and perhaps learn some more about this 8-bit computer which was mostly popular in Germany and Australia/New Zealand. Sadly, it didn't see much fame in other countries, but had been sold under other brands in the UK, Finland and other countries – including Hong Kong where it was manufactured by Video Technology, also known as VTech.

The VZ was made with a gimped Motorola 6847 graphics chip - only one text and one graphics mode - but was beloved by all, often being an affordable 'first computer'.

Dick Smith Electronics imported the VTech Laser 200 into Australia and rebadged it as the Dick Smith VZ200 and sold it under that banner in Australia and New Zealand.

Guy Thomason created the first emulator of the VZ200 which still runs well on Windows today. VZEm aka WinVZ has been very useful for game development. Being able to test in an emulator before releasing for a real computer has made it easier.

There is also an online Javascript VZ200 emulator at https://github.com/nippur72/
This was created by Leonardo Miliani and allows uploading and playing .VZ files in a browser. Very handy if you do not have a Windows computer.

Ben Venn Electronics (https://bennvenn.myshopify.com/) has sold an adaptor for VZ200 and VZ300 computers which expands the memory to a full 128Kb RAM (including banked memory) and adds the ability to plug in an SD Card containing .VZ files – a format created by Guy – and allows us to play all our old games on real hardware.

Dave "Bush" Maunder has been busy writing tech demos for VZ computers and emulators which are entertaining to see.

Richard Banks and Mark S have been porting Infocom adventure games to VZ .DSK disk file images.

Jason Oakley has been working hard to help port two game-programming systems to VZ200 including Turbo Rascal Syntax Error and the Multi-platform Arcade Game Designer.
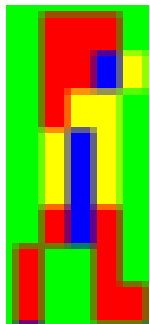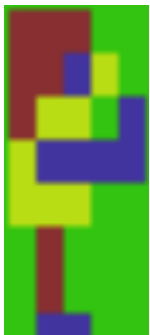They can be found at:

https://lemonspawn.com/
And
https://jonathan-cauldwell.itch.io/

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The history of Andre

Andre made his first appearance in "Pipes" by Blue Bilby.
Jason Oakley designed him as the main character for this game. He needed a distinct look for the character to appear in his games. The fiery-red hair and blue eyes became Andre's main features. It was also practical as it needed to fit in an 8x8 'tile' or 'sprite' design for VZ games, due to the restrictive 128x64 pixel hires graphics screen. He also wanted a short, memorable name.

Andre has changed slightly in future games – when required – such as for the game "Paganitzu" which is a game which features Andre pushing other tiles around. Here, his arm is always extended as in the original PC DOS game. He also got to wear shoes for the first time!
Jason aims to keep Andre in his mind for future games, much similar to how the Amstrad computer always had "Roland" in various roles in different games. Andre is the VZ's "Roland". Andre is also in the VZ game "Ghosts and Goblins".

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Assembly code

Convert an Integer to String

Here is a simple Assembly code routine which uses the VZ's built-in functions in ROM to convert an Integer number to a null-terminated string.

```
ld bc,#0000
ld de,#1234 ; DE contains the Integer to convert
call #09b4   ; Loads ACC with BCDE
call #0a9d   ; Set flag to Integer
ld a,#02
ld (#78af),a
call #0fbd   ; Convert ACC to ASCII string 0-delim HL points to string
inc hl       ; HL points to the string. 'Inc hl' skips the optional '-' sign for negatives
```

Simple way to get a random number

```
ld bc,#0000
ld de,#1234
call #09b4   ; Loads ACC with BCDE
call #0a9d   ; Set flag to Integer
call #14c9   ; RND routine. Using ACC, not A
call #0a7f   ; CINT. Puts ACC into HL
```
HL contains the random number 0-1234.
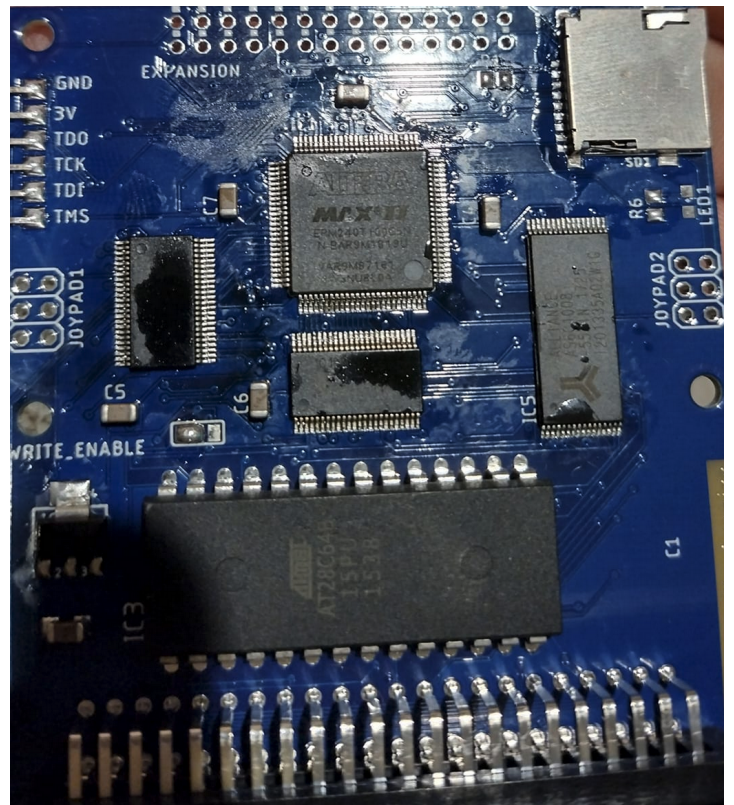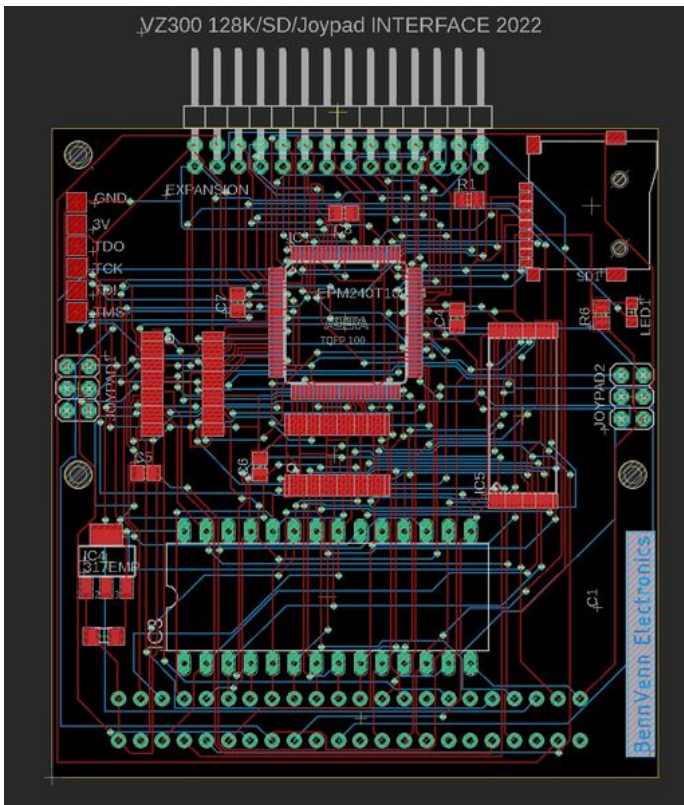
Ben Venn adaptor

Ben Grimmett – who owns the Ben Venn Shopify site – created an adaptor for the VZ200 and VZ300 computers.

This adaptor delivers a full 128Kb of RAM including banks which can be switched in, along with an SD Card reader. Owners can load up .VZ files onto an SD Card, plug it into their VZ computer and instantly load a wide range of games and other software.

In 2022, he also added support for NES joypads.

The adaptor has a built-in EEPROM which contains code to allow users to use commands such as DIR, LOAD, SAVE.

Some images of the adaptors and schematic follows.

The Firmware:
Upon power up the SD card will be initialised, FAT32 will be initialised. If VZDOS.VZ is found on the root directory, it will be copied to $4000 and executed. This allows the latest firmwares to be launched without reflashing the EPROM. BASIC is loaded by default.

If holding Space on power up, you will enter my Command Line Interface. Type HELP for a list of commands.

The firmware was designed around a SDHC class card being present. This means 2gb or greater.

Available commands

HELP
DIR   - directory Listing.
CD   - change directory.
LOAD - loading Files.
SAVE - saving Files.
JOY   - enables the loaders joysticks I/O port.
NOJOY - disables the loaders joysticks I/O port.

Port use on hardware

Port 55 decimal: RAMmap. Set this to 0 for VZ200 compatibility (Expanded RAM is mapped from $9000-$FFFF or set to 1 for VZ300 compatibility (Mapped from $B800-$FFFF.
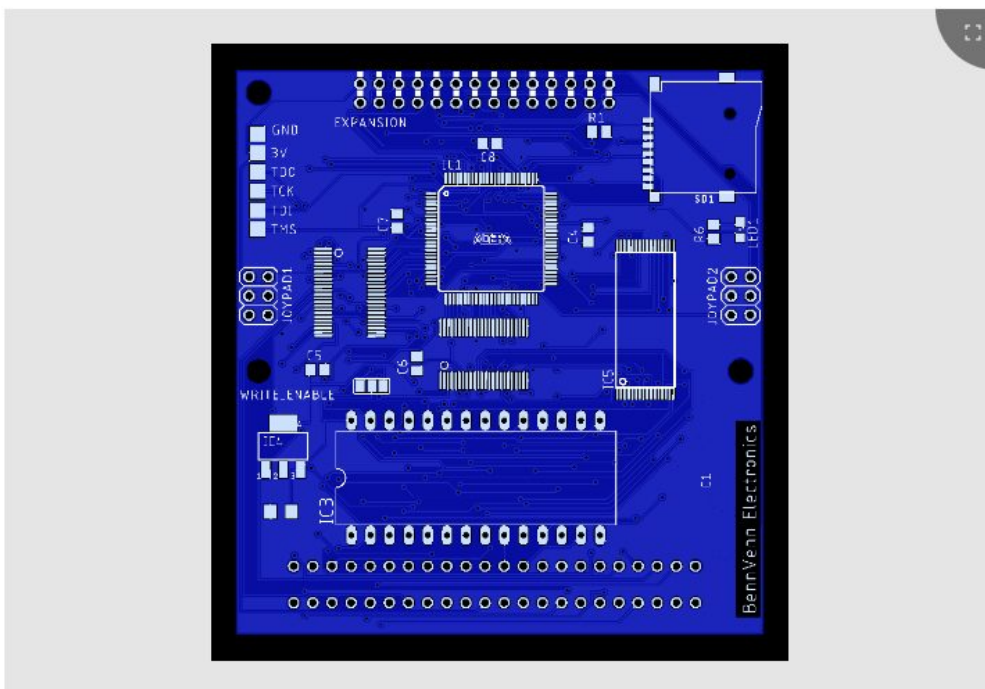**Port 56 decimal**: SPI port CFG for SD interface.
Port 57 decimal: SPI port Data for SD interface.
Port 58 decimal:
Bit0 = EPROM(0) or SRAM(1) mapped to DOS ROM AREA (Note, SRAM write is enabled even when EPROM is selected. This means you can code a loop to read and write from the DOS ROM area to copy itself into ram before switching to SRAM)
Bit 1 = SRAM BankLow - DOS ROM SRAM bank 0 or 1 ($4000-$67FF)
Bit 2 = SRAM BankHigh - SRAM Bank 0 or 1 (Expanded RAM up to $FFFF)

Layer: 2 Layers, Size: 150 x 150 mm, Solder Mask: Blue, Silkscreen: White

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Adventure gaming

Richard Banks and Mark S have been busy beavering away to bring old-school text adventuring to the VZ computers. This is something which has been sorely lacking in the past.

They began by porting Zork to the VZ computers. You can try the game out on the WinVZ/VZEm emulators. Mount the .DSK file and load the main file.

The Hitchhiker's Guide to the Galaxy soon followed, along with: Hollywood Hijinks, Planetfall, Moonmist, Leather Goddesses of Phobos, Ballyhoo, Cutthroats, Zork II, Deadline, Adventure by Scott Adams and Enchanter. They even created a port of Jason Oakley's "Arthur's Day Out" text adventure.

They created their own in-house software to take the Infocom adventure files and output a .DSK file containing all the data which loads as needed.

You can download the game files from the **VZ200 VZ300 Laser210 Laser310 fans** Facebook group page or from **BlueBilby.com**

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Bushy's tech demos

Dave "Bushy" Maunder is well known in the VZ200 fans Facebook group. He likes pushing the limits of the VZ computers and produces some amazing tech demos.
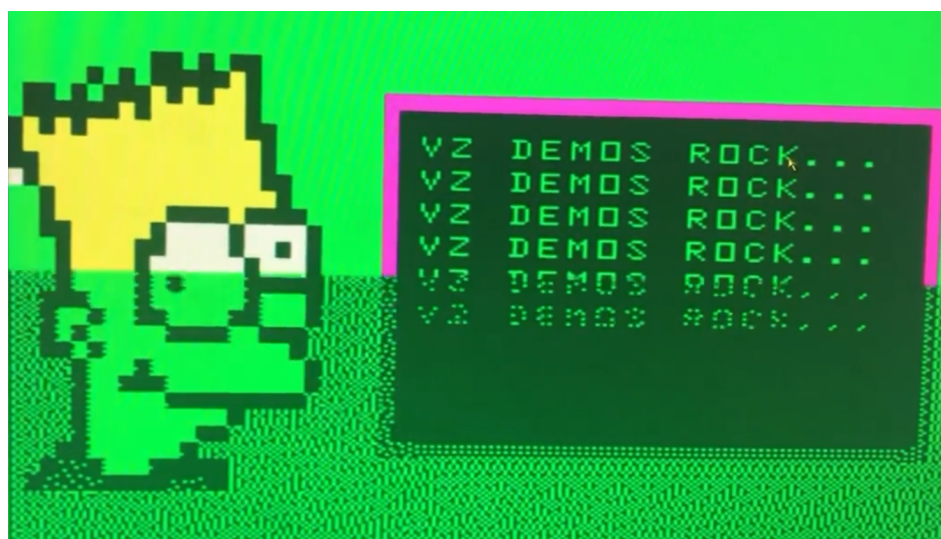
He's created mini-movies using Ben Venn's adaptor – which allows instant-loading of many images and has a tool to convert a movie file to a format which can display in real-time on a VZ computer.

He's made demos in 100% Assembly code – pretty hardcore!

He's also begun porting a game from another 8bit computer which has the same Motorola 6847 graphics chip:
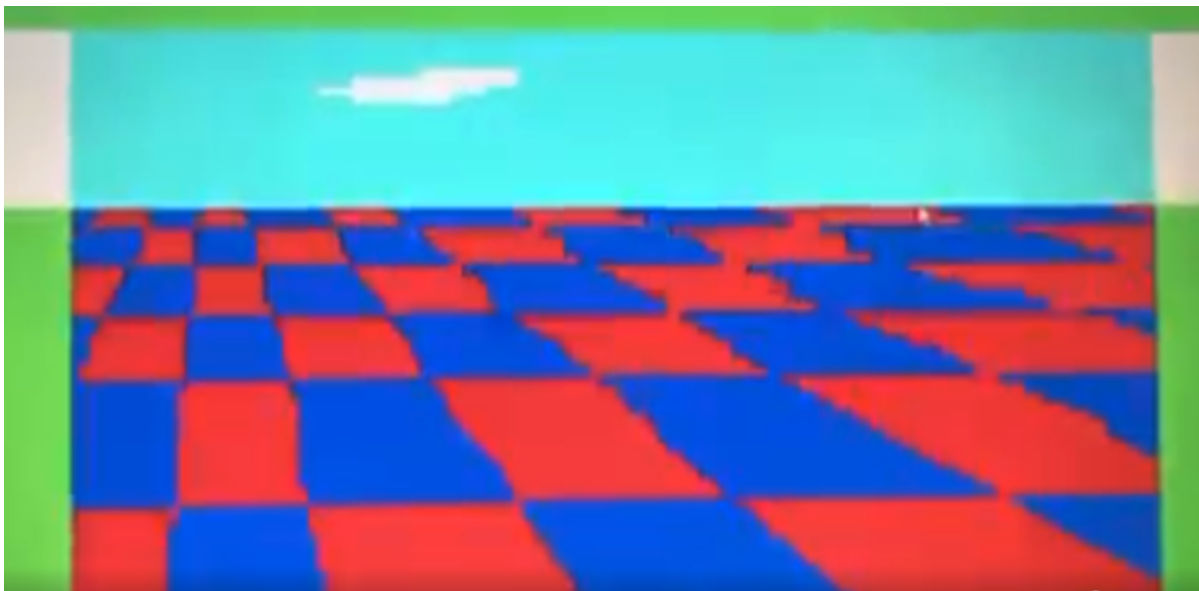

A mixed-mode hires demo:

Dave Maunder has also been tirelessly working to convert ZX Spectrum 1-bit audio players to VZ200 & VZ300. It works if you output the data to the cassette port and plug in an external speaker to the audio-out on the VZ. He's converted many tunes to work on VZ and it's quite a feat!
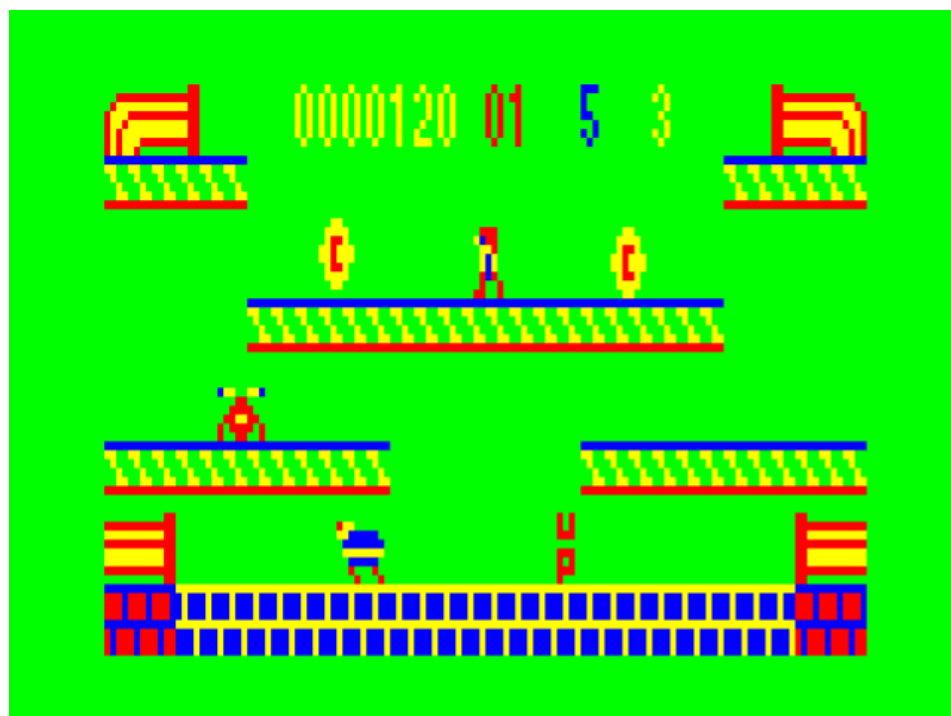

Split-screen mode(1) graphics mode demo:

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Blue Bilby games

Jason Oakley has been hard at work creating and porting various games to the VZ computers.

The first game was "Pipes". This was created as a part of the "Retro Platform Jam" in 2021.
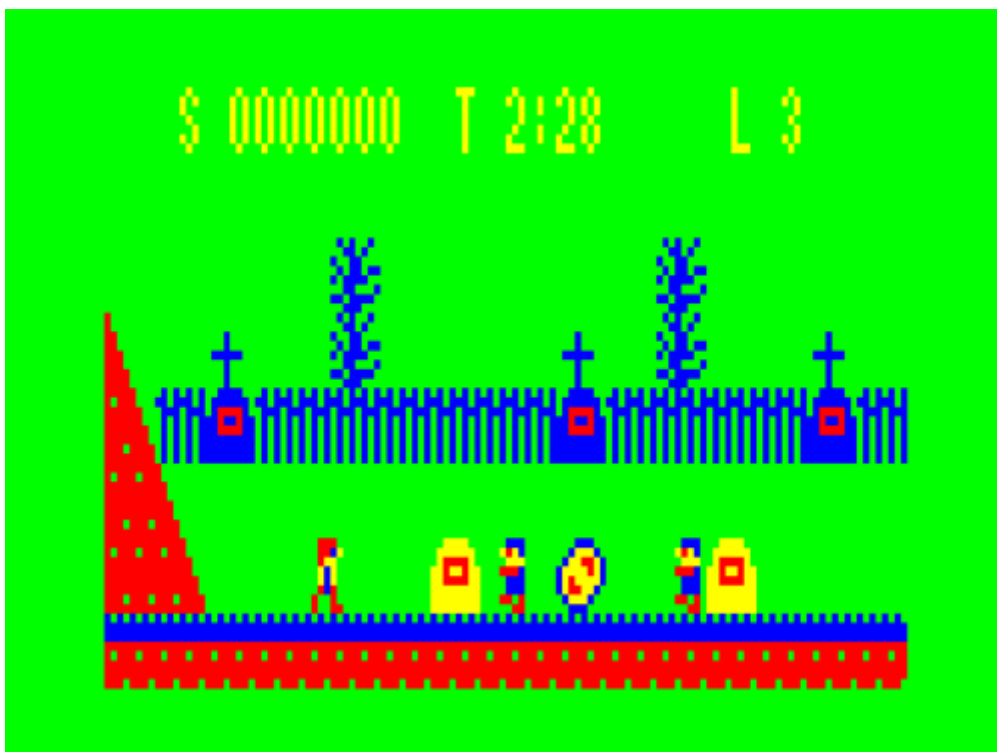https://itch.io/jam/retro-hardware-jam

This game was created using the Multi-Platform Arcade Game Designer (MPAGD - more on that another time!).

Next up was a port of the classic game "Ghosts 'n Goblins"!

This was also created using the MPAGD. It is a flip-screen version of the game due to the nature of MPAGD, but features all levels from the Commodore 64 version.

You can download these games from BlueBilby.com or Jason's itch.io page at:

https://waulok.itch.io/

Next was a port of the arcade game "Centipede". This time, Jason used Turbo Rascal: Syntax Error (TRSE - more on that coming up!). This was coded by hand in a Pascal-type language.

Graphics for most of these games were designed using Paint.Net. When using TRSE, you can just load a .PNG file of your screen into TRSE and it will compress the file.

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Turbo Rascal: Syntax Error

Nicolaas "Leuat" Groeneboom created a programming system called "Turbo Rascal Syntax error, ";" expected but "BEGIN" – here shortened to TRSE – to help himself code demos and games for the Commodore 64. Soon, it became apparent this platform could be used to help people program for other retro computer platforms, including (but not limited to): Vic 20, Amstrad, Amiga, NES, Ataris, ZX Spectrum, TRS-80 and more!

TRSE is a fully-integrated IDE with compilers to turn Pascal-style code into 100% Assembly code which runs incredibly fast and is optimized for the retro computer platforms.

It has support for Z80, 6502, 68000 CPUs, among others.

A lot of the heavy lifting is done by the IDE where you can code at a higher level than Assembly before it's converted to run on the various machines. It's very handy to test on an emulator for your platform while developing games and other software.

Jason Oakley got in contact with Leuat in order to see if it would be possible to support the VZ200 set of computers. Leuat was very keen to help support, but was busy with coding other parts of TRSE. So, Jason stepped up and, using existing work he had developed while working on his own FOXGLOVZ gaming and graphics library, ported the code to work as a "Unit" within TRSE.

Support for text mode output was first coded. This allowed outputting strings, bytes and integers to the screen at specific x,y locations. Next graphics mode toggling was added along with a font to draw text to the hires screen.

After that, support for sound output was added along with sprite-plotting to the screen and other various functions. Finally, support for joystick and keyboard input was added which pretty much completed the VZ platform.

Jason created the game **Millipede** – a port of the arcade game Centipede – using TRSE as a proof-of-concept and the code was added to the TRSE software for reference so that others may learn from it. Jason is always working on new games and has a port of the PC DOS game "Paganitzu" coming soon! (The Title Screen is on the cover of this newsletter!).

Leuat is always working on TRSE, adding support for new and niche retro computer platforms. There is an active Slack group for discussion and support. New games and demos are constantly being written on the TRSE platform.

You can find more information about TRSE on the main website:
https://lemonspawn.com/turbo-rascal-syntax-error-expected-but-begin/

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