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HOWGOZIT

Wow! This winter has really kept me busy. To begin, we had a great 11" snow storm that took me several days to shovel us out. Then the county did not plow our neighborhood streets for four days. I know most of you hate this white stuff, and we do feel sorry for anyone having to work in this weather, but for Myra and I, it brings us back to our childhood. Of course, we don't have to enjoy being home from school any more, but there is just something about snow that we enjoy.

While sleeping in one of those days, I had a thought. We have not had a puzzle in a very long time, but I needed an excuse. Bingo! No, not the game, but a revelation, next...

Z-100 LifeLine Trivia

While most of the Z-100 series computers that I have found were from the mid-80's, I believe that I have seen at least one dating back to 1982, surely one of the earliest. Do you know what that means?

The Z-100 series computer is celebrating 40 years young! Did you ever imagine that it would still be operational, in some form, 40 years later? I doubt that Heathkit or even Zenith ever even contemplated the thought...

So, as a form of celebration, are you up for a new challenge?

It has been many years since we have last had a contest. In fact, the last word find game was in December 1995, issue #42! So, I wish to begin a three-phase contest open to anyone for a chance to win $20.00 off their next Z-100 LifeLine purchase.

The first phase is probably the most time con-suming as it will require you to research the Z-100 LifeLine website to answer several trivia questions. It is meant to remind you of many, probably long forgotten, aspects of Zenith and Heathkit computing and will provide you a ready reference to assist in the other two phases of the challenge. Whether you wish to complete this trivia challenge is totally up to you, as no further action is required on your part.

Phase two, also in this issue, will be to complete a word search challenge. Unlike most word search puzzles, there is **no** list of words provided to search for, and alphanumeric characters will be permitted, but the words to be found will be from the trivia that you compiled in the first phase.

I'm sure extra words crept in while I placed the random characters, so don't be concerned about finding or listing the extra words - they will not count for or against you.

However, please do NOT send me the completed puzzle. All I want is an email containing the list of the words that you found, which Myra and I can quickly compare with our list. The puzzle will quickly get too cluttered for us to accur-ately determine if all the words were found.

The owner of the word list that most closely matches ours, will receive a discount of $10.00 towards their next purchase at "*Z-100 LifeLine*".

In the event of a tie, I'll throw the names in a hat and my wife, Myra, will pull the winner. The winner and the list of words will be published after phase three is complete in a future LifeLine.

The next LifeLine will contain the phase three challenge, which will ask you to complete a crossword puzzle. This puzzle will also include important numbers and names associated with Heathkit Computers and Z-100 LifeLine Trivia.

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Obviously, since it is created by me, it will not be like the usual crossword. It will again contain alphanumeric characters, and some of the answers will need to be answered **reversed** (I have not seen that before). The clues will be simple, but for those who failed to complete phase one, could be a bit more challenging.

You must mail or email a copy of this back to me before the end of the contest - date yet to be determined.

Again, the puzzle that most closely matches mine will receive a discount of $10.00 towards their next purchase at "*Z-100 LifeLine*". So, even if you cannot complete the puzzle, it may still be the winner. As earlier, in the event of a tie, Myra will pull the winner.

So, on to **Phase One**... Here is a series of questions that will review important facts and events that have happened over the years in the Heathkit and Zenith community, but more speci- fically, to the users of the Z-100 computer community.

1. The Z-100 was first introduced in the early to mid 1980s.
   - When was the Z-100 LifeLine first published?

   - And by whom?

   - Who assumed publishing duties with issue #31 in 1994?

2. In addition to several newsletters that were being published in the 80s, there were two fine magazines specifically for Zenith/Heathkit computers.
   - What were they?

   - What H/Z newsletter was published by Henry Fale?

   - What H/Z newsletter was published by Charles Floto?

   - Who were the two publishers of *"The Staunch8/89'er"*?

3. "ADVENTURE" was an early game developed around 1979. Do you recall the special magic word used to help move through one or more of the chambers?
(Hint: Look in LifeLine issue #64.)

4. There were several PC Emulators developed for the Z-100 to run PC-DOS:
   - One consisted of a set of several boards, including a new floppy controller board. What was the name of this set of boards from UCI?

   - The other consisted of one board that mounted to the top of the Z-100 mother- board. What was the name of this PC Emulator board?

   - There was another PC-emulator board that started as just a software utility. What was the name of that utility?

   - What REMark Engineer was responsible for the ZHS hardware circuit to support the this first PC-emulation software?

     He also ran a column for years patching applications and describing the continuing developments in PC-emulation.

   - What was the name of the S-100 board that was developed by Mike Zinkow (Parts-is- Parts) to enhance that PC-emulation software by providing hardware resolution to some remaining glitches?

5. There have also been several real time clocks developed for the Z-100. The most popular one was installed under the ROM chip on the Z-100 motherboard.
   - What was the name of this clock module, sold by Zenith?

   - Another clock was available at the time, developed by FBE Research Company, Inc, and was mounted on a board that replaced the 68A21 Peripheral Interface Adapter (PIA) at the U114 socket. What was this clock's name?

An updated version of this last real time clock board is still available from *Z-100 LifeLine*. **Note:** The Z-100 LifeLine IDE Controller Board had its own RTC.

6. The Z-100 was unique in that it could run 8-bit software using an 8085 CPU and 16-bit software using the 8088 CPU. This enabled the Z-100 to run the earlier Heathkit H/Z-89/90 software.
   - Which Operating System used the 8085 CPU?

   - Which Operating System used the 8088 CPU?

Actually, the Z-100 could run numerous versions of CP/M (Control Program/ Monitor and later Control Program for Microcomputers) from Digital Research. However, CP/M version 3, aka CP/M Plus, for the Z-100 was attributed to Barry A. Watzman.

7. There were several popular Z-100 Spreadsheet Software in the 1980's:
   - The most popular spreadsheet program, aka 1-2-3, was from what company?

   - Another popular Microsoft spreadsheet, marketed by Zenith was?

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- And yet another from PeachTree Software was?

8. There were several choices for Z-100 word processing applications. Two lesser known packages were Galahad from Golden Knight Software and WatchWord from S & K Technology. Can you name these?

   - One from Microsoft?

   - One from PeachTree?

   - One had a celestial body in the name?

9. What were the set of Zenith Disk-based diagnostics utilities called?

10. Paul Herman developed a Floppy Disk software driver that could allow the Z-100 to use several additional disk formats and more drive sizes than the Z-207 Floppy Controller could normally use. Do you remember the name of this popular package?

Paul Herman developed several other software enhancements for the Z-100, including a set of diagnostics utilities, The Herman Utilities (similar to The Norton Utilities for the PC of the period).

11. Barry Watzman also developed a background Desktop Utility Program for the Z-100, similar to Borland International's "Sidekick" program (for the PC) that combined a Calculator, Calender, Notepad, Rolodex, and Typewriter functions.
   - What was the name of this Desktop Utility?

12. The last official Zenith Monitor ROM (MTR-ROM or ZROM) chip (U149 on the motherboard) was v2.9.
   - Can you name the developer that was chiefly responsible for version 3.x?

   - ZROM version 4 provided a much greater capability. In addition to the normal ROM diagnostics, it provided a means of changing nearly every conceivable Z-100 function setting imaginable. For example: The normal keyboard type was QWERTY. What was the name of an alternative keyboard?

   - Three character sets were also placed in the ROM.
     O - The OLD or normal, single-dot character set.
     S - The SINGLE-DOT (but included the graphics characters).
     D - The DOUBLE-DOT to represent the IBM character set.
   - Where can you set the character set?

- This latest ROM was primarily the work of one person. Who was this chief developer?

13. The first DOS operating system that ran on the Z-100 series computer was called Z-DOS (versions 1.0 or 1.1). The last official version of MS-DOS developed by Zenith for the Z-100 series computer was version 3.10. And the last version of PC-DOS developed by Zenith for the Z-100 using a PC-Emulator (it was actually marketed for the Zenith PC clones) was version 3.21. ZDOS v4 was a complete deviation from the normal "look" of previous DOS versions, and with ZROM v4, gave us many new built-in capabilities:
   - The normal display on the Z-100, including the 25th line for comments, showed 25 lines. What new command could provide up to double that number?

   - ZDOS version 4 was developed from Microsoft DOS versions 4 through 6, then completely modified to operate on the Z-100. What two individuals were most responsible for this ZDOS v4 development?

14. Who was the famous comic character that Zenith once used in an advertising campaign?

15. CDR Systems developed the first SCSI hard drive controller for the Z-100 to replace the aging Z-100 "Winchester" MFM hard drives. But when these boards also became scarce, the Z-100 LifeLine SCSI Controller Board was the first board developed by a team of LifeLine volunteers.
   - However, who were the three volunteers that developed the Z-100 LifeLine IDE Controller Board?

   - While the SCSI board used an EEPROM to provide programming and boot capability, what provides that capability on the IDE Controller?

No, it is not the Altera chip, which is a programmable chip that is the brains that controls all the IDE control functions.

16. There were several modifications developed over the years to enable the Z-207 Floppy Controller to use dual-density (3.5" 1.44Mb/720Kb or 5.25" 1.2Mb/360Kb) drives. The first was suggested by Jim Hughes in 1991 and was described in LifeLine issue #13. The development of ZDOS v4, permitted a better modification. Who proposed and developed this better modification?

17. What is the connector, J4, on the Z-100 back panel used for?

It resembles a phone jack, but it is NOT used for a modem connection.

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18. The Z-100 is capable of several RAM capacities:
- Before the upgrade to 256K chips, each bank of RAM (3 total) on the motherboard contained?

- After the upgrade to 256K chips, each bank of RAM (3 total) on the motherboard contained?

- Each S-100 Bus Z-205 RAM Card could add how much RAM?

19. What is the Z-100's standard CPU speed; 4MHz, 5MHz, or 8MHz?

- After the Zenith HA-8 upgrade, it could run at what speed?

There were a few 3rd party speed/RAM upgrades: Z-MAX from Graymatter Application Software and from FBE Research Company that worked quite well. FBE also had one, the "ZMF100" that upgraded the RAM on our "old" motherboard. CDR Systems created a speed module for the Z-100 that allowed switching speeds. Steven Vagts created and still sells a similar, but not switchable, speed module.

20. The Z-100 uses ASCII (American Standard Code for Information Interchange) characters and codes. But it may also use standard American National Standard Institute code, if the appropriate driver is installed. What is the name of this code?

Now, complete the Word Find Puzzle on the last page and send me your list of words found!!

Last Z-100 LifeLine IDE Controller!

As reported last time, I am out of spare Z-100 LifeLine IDE Controller boards! If you were one of those sitting on the fence, I am indeed sorry, but I had put out many reminders that I was running low.

So, the time has come to decide if we want more. I have not checked yet about buying more boards from Sunstone Circuits – we last ordered them in August 2007, and I am sure that they have changed their facilities by now – if they are even still in business.

There are two critical parts that we would need. I have 13 of the NVsRAMs, when I bought the last of the stock last year at a reasonable price. So it would be nice to use about half of them and leave the rest as spares.

However, the $17.00 Altera EPM7064SLC84-10 chips that we used are now obsolete – though still available when I checked it out last. There were 3 available from Arrow Electronics for $67.20 each! They also sold the newer 10N chips for

$58.65 each with 10,000 available. Ebay also still has them for much less; some new, some used.

We ended last time with several questions; do we want to pursue additional boards, and is there still a need, given recent developments of the Gotek Floppy Drive Emulator?

I have received zero comments or thoughts so far, so I have left the situation in limbo. If there is anyone who still desires obtaining an IDE Controller, please let me know.

I do not have a whole lot of information yet, but I have been in contact with someone who believes that it may be possible to add a USB port to the Z-100, with the thought being to use USB flash drives for high capacity storage. So, with technology beginning to show alternatives for storage, perhaps an IDE capability is no longer necessary. Time will tell.

Closing

Covid restrictions have finally been lifted, but I feel that this is a bit premature. Please stay safe and take no unnecessary chances. Keep your families safe and get vaccinated as soon as you can. We hope you find the puzzle challenging and fun, and look forward to your Word List.

'Til next time,
happy computing!

Cheers!!!

Z-100 Word Find Puzzle for 2022

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G   O   P   A   U   L       H   E   R   M   A   N   1   2

P   E   Y   G   G   I   Z   T   0   0   1   F   M   Z   T

P   O   M   6   4   K   I   I   S   3   1   9   2   K   K

H   J   O   I   L   L   I   N   K   E   -   K   8   6   7

C   4   5   C   N   I   C   E   R   A   2       5   9   K

T       Z   7   S   I   S   Z   E   S   -   2   M   O   R

A   L   F   C   C   H   A   P   P   Y   3   /   H   M   T

W   I   S   S   O   T   N   I   A   P   P   4   Z   S   I

T   G   8   S   T   4   0   T   H   C   S   O   H   P   K

R   H   K   U   T   N   O   F   L   O   T   Z   M   L   H

A   T   C   B   I   R   T   H   D   A   Y       8   T   T

M       O   E   E   S   1   Z   I   N   K   O   W   E   A

S   P   L   Y       L   N   T   N   A   T   X   E   S   E

P   E   C   E   B   Z   B   A   S   I   C   T   T   E   H

7   N   Z   R   O   M   A   R   Y   T   R   E   W   Q   -

0   X   P   S   A   Y   Z   Z   Y   X   G   A   I   D   1

2   A   C   S   R   S   U   P   E   R   C   A   L   C   0

-   M   M   W   D   A   C   G   K   A   R   O   V   D   0

Z   -   D   O   M       D   L   E   I   F   R   A   B   A

F   Z   -   1   0   0       L   I   F   E   L   I   N   E
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