RetroChallenge 2022/10
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Episode 4: Last Full Week of the Retrochallenge

We're nearing the end of our last full week of the RetroChallenge, and I can't say enough about the other participants' projects this time around. It's really great to see so many retro-computing enthusiasts working so hard on various projects - without all the fuss and fury of some of the "professionals" in the retro community. I'd enumerate the participants, but (according to Google Documents), the list is presently unavailable. Twitter is full of interesting projects and some really great progress. This year's competition is just as fun to watch as it is to participate in!

As usual, I'm running out of the time needed to accomplish all my goals. I've had some success at reading a few thousand punch cards and a dozen or so paper tapes and moving those programs and data onto slightly more modern machines. The files are available on this website and there are several YouTube videos of exactly how these files were transferred. There's also some software, some of it written by me, that helped accomplish some of these tasks.

At the moment, I'm trying to get the paper-tape reader interfaced to my pdp-11. The serial board on the 11 is currently not speaking to the serial interface on the tape reader and this is complicating matters. The problem seems to stem from unexpected "break" conditions on the serial line and how the pdp-11 handles a break condition. It appears to be jumping off willy-nilly into some non-existent interrupt code that (sadly) does not exist in the RT-11 operating system. The final push over the next several days might see me moving from the pdp-11 to a newer, but still fairly retro, Linux machine. This is a machine I've used in the past to copy paper tapes and to control my 9-track magnetic tape machinery.

The Documation Card Reader really wants to work. I've sorted out the signaling problem - an 80C52 microcontroller has been programmed to grab the 12-bit datastream whenever the "strobe" output indicates valid data. The interface was wired with the bits in a rather strange order that doesn't correspond to the pinout in the manual. The microcontroller is able to grab the data at slower rates, convert it to ASCII, and send it down the serial line but I'm having timing issues and buffer overflows since it spits out 80 Hollerith characters in just over 200 msec and my

conversion software isn't quick enough to stream it down the serial line, even at 9600 baud.

I'm still having card-pick and feed issues. The rubber and plastic parts of the reader are simply dissolving in place and my usual tricks with random O-Rings and rubber-bands aren't very effective.

Finally, I'm trying to document the software and hardware development process as best I can. I've got some fairly silly C++, C, and Python programs posted on the website, but I still haven't documented all the code used to process the card images and paper-tape files on the modern platform. Since most of my retro hardware is effectively "air gapped" from the Internet, I'm actually using the Telephone switch from last years RetroChallenge to support dialup services between older hardware and the desktop I'm using to create these updates and maintain the website. The last three days will probably be pretty busy!

My current plan is to post a final report on or about November 1st, once I finish a few more things.

Many thanks to all participants in this year's competition!

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