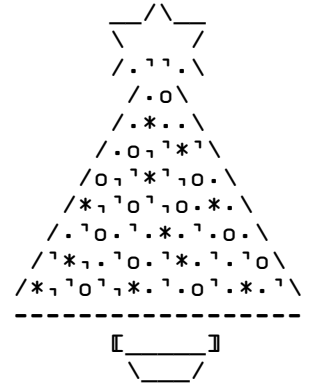


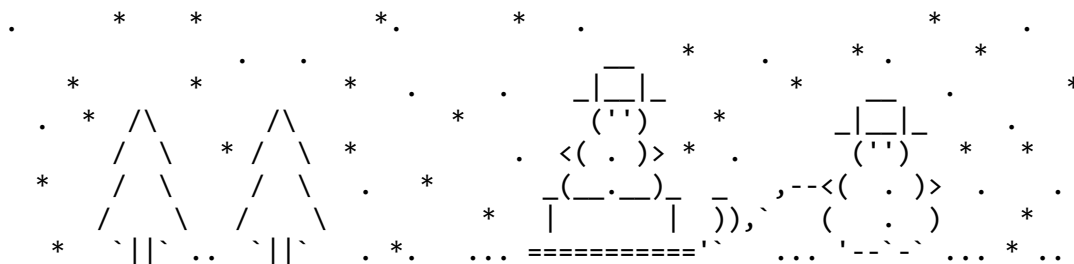
HAPPY HOLIDAYS FROM NEW ENGLAND DRIVES & CONTROLS, INC.,

Last month we discussed Big Iron and its recurrence in the form of server farms, the cloud, and the Internet of Things. We reminisced about the good ol' days when computers took up entire warehouses and had the same power as what is now utilized in controllers for microwave ovens. I referred to a picture of a dumb terminal, that used to connect to one of the large mainframes and had a monochrome display that was most likely blue or green. Large text and fancy fonts were truly creative, and often largely dependent on the printer. Today it is less than impressive, but in its day, it was the epitome of High Tech!

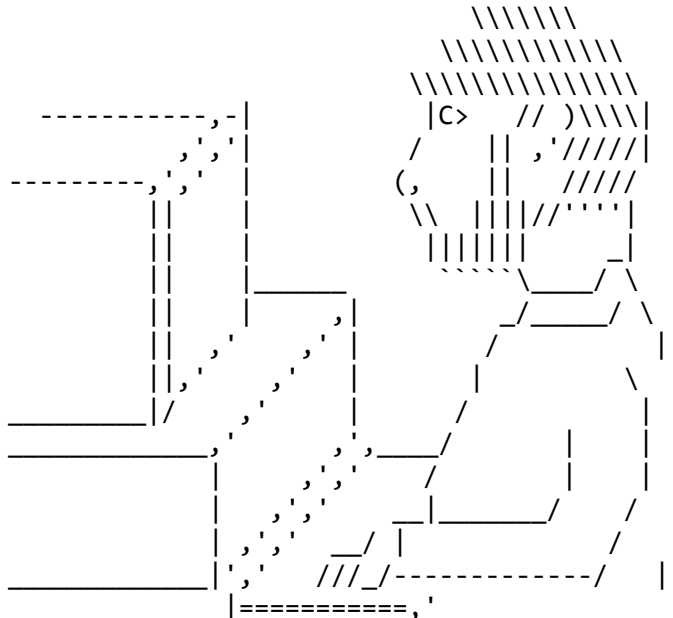


There was a distinctive look to items printed on a computer. Most letters were formed by a dot matrix of 5x8 pixels. Some printer companies would use square pixels to make the letters look more like a typewriter. Printers that used real type were quite expensive, and dedicated to formal documents that couldn't look like a series of dots on the paper. (In reality, the dots made the documents feel more "high tech.") The printer that I saw on the tour that I mentioned last month had each character attached to a chain that could move forward and backward. Each character had its own type plate and as the plates moved into the proper position, a solenoid hammer would imprint the pattern of the plate through an ink ribbon and onto the paper. The printer could print 1500 characters per second! The printer that I eventually got for my home computer had a real type cylinder that did the same thing, at a somewhat slower 8 characters per second. It was as fast as a relatively good typist. Comparable dot matrix printers printed at 180 characters per second. Not to mention it could print "real graphics" that looked like they were from the newspaper with the way they were dithered.

The screen was typically limited to one font, illuminated by excited phosphors controlled by an electron gun at the back of a cathode ray tube. When you wanted to run a program, you would use JCL or Job Control Language to set your program up. Then your program, whether written in Pascal, Fortran, or even BASIC would queue itself up and run in the order it was received.



In my first CS class in college I remember executing my program, and then walking over to the printer to see the results. Usually there were other people who also sent their programs to the mainframe and nobody truly knew where they were in the line. Each time the printer would spit out some paper, we would all look to see whose job had just run. Typically, it was not yours. I would spend upwards of 20 minutes at times to see my results. (Dang it! That's not what I wanted. Back to the terminal, and lets' try again!)



Peter, sitting at his terminal, working on this Whitepaper

It wasn't very long before Home Computers made it on the scene, and although I could connect to the mainframes via a modem (That's a story for another time!) I could also program it directly. This saved a lot of time waiting for a job to queue up!

I always was interested in computers, but this was not always common. I had friends who saw computing as a field unto itself. It was a great tool for engineering, data bases, word processing and to dabble with programming. Not everyone pursued it and some felt they would go through their careers without having to touch one.

As we all know, that turned out to be entirely wrong. But it does show how far we've come!

O.k., As much as I enjoy visiting memory lane. (Regular readers already know this.) I realize that not everybody will think back as fondly as I to these computing days gone by. Some may even equate some of this to the cave-man era. Fair enough.

There always has to be a point made that helps to pay the bills. Unlike days past, computers and the internet have made their way into everything we do. Both personally and in industry. Give us a call. Extra points given if on a rotary phone! We will assist you with whatever automation needs you have, whether it's the newest Apex Industrial computer with an Intel I9 processor or an old Allen Bradley PLC Controller, that has an instruction manual that looks like this whitepaper.

Wishing all of our friends a Joyous Holiday Season and a Happy New year! See you in January.

- Peter Lavoie