HIST 399: Material Engagement Assignment

For this assignment you will spend some quality time in the lab outside regular class hours, to give in-depth hands-on experience using one or more of the retro systems. You can supplement this with the other materials in the lab such as relevant books, magazines, instruction manuals, etc. and with online resources.

Each assignment should be negotiated individually with me as instructor. You should not leave this assignment to the last minute. There's no money to staff the lab, so it's only open limited hours when I can be there. Plus even if it can be open longer hours you will probably need some help from me to get the equipment you are using properly operational. If everyone tries to do the assignment at the last minute this will not be workable. So plan well ahead. I'm going to post an online signup sheet where you can reserve lab time to work on your projects.

The deliverable is going to be a paper where you discuss what you learned from this hands-on engagement, focusing on aspects of history that would have been harder to appreciate just from readings or printed sources. You should include pictures in the paper, taken with your phones to illustrate the hardware or software features you are discussing.

But you should also engage with the course readings and other printed sources to support your analysis. For example: when just reading in a book students seemed to find it hard to grasp the features of the original Apple II and of a CP/M computers hooked up to a terminal that made the former well-suited to Visi-Calc and the latter a better platform for Wordstar. But once you saw them side by side in the lab it became more obvious.

I'm thinking a length of around 1,400 words might be appropriate. But the exact length is less important than showing evidence of in-depth engagement with the technology and an ability to replate your hands-on experiences to the ideas and information we've been exploring in class readings and discussion.

Here are some examples of topics you might choose for the assignment. Many of these are encouraging you to compare examples of similar hardware or software over time, which will help you connect to the course themes of the computers' development toward universality. These topics could all be used as the basis for term papers too, but you'd go more in-depth for the term paper.

- Computer literacy and the BBC Micro. Spend time with the BBC Micro, its welcome tape, instruction manual, and Gazzard's book. Maybe also track down some of the BBC computer literacy videos. Try to put yourself in the place of someone in the 1980s to understand why they might purchase such as machine, and what they'd learn by using it as described. Other readings like Rankin and Evans would help you understand the background of BASIC, a belief in a "microcomputer revolution" and so on.

- Deep dives on other platforms. You could do something similar with the Atari ST, Sinclair Spectrum, Apple II, or Power Macintosh system. I can point you towards suitable resources, manuals, software, etc. for any of these computers.
- If you have programming skills with current systems, you might be interested in exploring older development systems. But as there was such a focus from the 1960s (Dartmouth BASIC) to the 1980s (home computers) on getting ordinary people programming with BASIC you might also like to try using one of the home computers or DOS or CP/M computers as intended even if you do not have previous programming experience.
- The evolution of Windows. Spend time with Windows 1 or 2 on the IBM Portable, Windows 3 on the 386 desktop and Windows 95 on the Pentium desktop. What do you learn by using the early versions on period-appropriate hardware? How does that support, deepen, or complicate what you read about them in the course readings? You might also look at contemporary magazines and reviews of Windows and Windows applications for more insight into how people understood these systems at the time.
- The desktop top publishing experience. The 386 PC running Windows 3.1 is a great time capsule for understanding the early-1990s period where people were excited about using computers to design documents on paper. It's hooked up to a laser printer, and has PageMaker (with manuals), Word, CorelDraw (what people used on Windows instead of Illustrator and Photoshop) and other period software. You could use this software to produce a small newsletter with fonts, graphics, etc. and reflect on the experience.
- The development of video games. You could look at one specific genre of game, such as 3D space combat, adventure games, computerized role-playing games, 2D space shooters, puzzle games, first-person shooters, Civilization-style games, real-time strategy games, etc. For each we have examples available on different platforms over time, so I could help you pick three milestone games. Your analysis wouldn't be reviews of the specific games, but discussion of how the developments in computer technology we discuss in the course shaped the choices of the game designers and the experiences of players.
- The development of productivity applications. You could choose word-processors or spreadsheets and look at how those developed from the 1970s to the late-1990s by focusing on several milestone systems. I'll help you pick them out and point you to resources and sources such as online magazine archives where you could find reviews.
- Pen computing systems. You could follow the development of pen-based computing systems by spending time with the Compaq Concerto, Apple Newton, Palm Pilot and Dell Axim to explore how touch-based mobile devices evolved prior to the introduction of the iPhone. The smaller devices were synchronized with desktop computers, which we also have set up in the lab.

Grading and expectations

This is a less conventional assignment than the two short papers, and because students are tackling a range of different projects I can't be as specific with a rubric. In general, though, I want to see that you have spent enough time hands on to get a feel for the systems you are writing about, that you can relate them intelligently to the material from the course readings, and that you have reflected on what you learned from actually using these technologies that you would not have been able to learn just from reading about them.

Reflections on what you learned: All of you are using hardware and software that you read about in our book, and in some cases in other readings too. So you had already read our descriptions of what they were like and why they mattered to history. What surprised you when you actually used them? You can include personal and even emotional reactions, but I also want you to think about how this functions as part of your learning experience within the course. How did the hands-on experience change what you thought you knew from the readings, or help you understand what you had read in a different way? Also the reverse: if you had used these technologies without having read the course materials how would you have reacted to them?

Connections to the readings: As well as reflecting on your experience, the other thing that your paper must do is situate the system you are using within the broader development of computer technology over time. For example, if you are focusing on one piece of software (e.g. Elite or PageMaker 4.0) then you would analyze its capabilities with respect to the development of the hardware and software platforms it ran on. Why was it now possible to play a "3D" space game at home, or publish a newsletter? What innovations did this depend on? How did the limitations of the available technology shape what the creators of the software could accomplish? If you are looking at several systems (e.g. VisiCalc, Lotus 1-2-3 and Excel) then you need to do the same thing, but because you have effectively several snapshots in the development of a particular kind of application the task will be easier. Look for little details in the way the programs are designed that reflect much bigger changes in the evolution of computer technology.

Time in the lab: You should spend enough time in the lab to get a reasonable feel for the experience of running whatever systems you are dealing with on original hardware. As I said in this class, for most projects that should be at least three hours and involve the use of two or three different pieces of software. Once you have completed the scheduled introductory session you can return to the lab during any regular opening time without an appointment. In general, getting a good sense of video games takes longer than for productivity apps, so students may need to supplement lab time with experience on emulators.

Exception: for two students with schedule constraints, both of whom decided to focus on the video game Elite, I agreed that they could spend less than three hours total in the lab and supplement this with practice on an emulated version of the game. It has a steep

learning curve. But those students must return to the lab and demonstrate the ability to dock with a space station and survive a space combat (use of missiles is allowable).

Additional sources: I encourage you to look for additional sources, such as reviews from the period when the systems you are experiencing originally appeared. That will help you to understand how they were perceived at the time, and may help your reflections. For example, maybe something that seems baffling to you was described as user friendly, graphics that seemed primitive to you were described as breathtaking by reviewers, etc. The price tags (particularly when adjusted for inflation) may also surprise you. If you have trouble finding sources let me know. As with the short papers this is optional, but will be one of the things that typically sets A papers aside from B papers.