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Lab 1

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Executive Summary

In this lab I will discuss some of the basics of computer history and information systems, including which component is the most important and some examples of existing or upcoming technology. I will also discuss some career options, and why I believe they will be a good fit for my background and interests. Finally, I will discuss some ethical issues surrounding information systems.

Who Invented the Computer?

Based on what I learned in the video, and following up on Wikipedia, I am inclined to say that Konrad Zuse invented the first computer.

First of all, even though other people created designs or ideas for computers, his was the first fully-functioning programmable machine (the Z3); it was not merely an idea. Charles Babbage conceived of an Analytical Engine, but it was never built (at least not while he was alive). Similarly, Alan Turing imagined a machine (the Universal Turing Machine) that could compute any problem if given the correct instructions, but again, he never managed to build one. So I give credit to Zuse because he actually made a working instrument.

Second, I believe that Konrad Zusee would be more widely recognized for having invented the first computer had be not been a German inventing during 1930s and 1940s Germany. As creative and brilliant as his contributions to computing were, Germany lost World War II, and much of what came out of Germany during those years was scorned (fairly or not) by the winners. Had Zuse been, say, American or British or maybe Russian, and invented the exact same devices, he would be a household name and the undisputed inventor of the computer. In other words, history is written by the winners. And in the case of Zuse and World War II, the winners chose to pretty much ignore him.

What is an Information System?
A)   Of the five components of an information system (hardware, software, data, process and people), the most important is, by far, the people. Information systems, like all tools, serve to make tasks easier. But anyone who works in a trade will tell you that good tools won't make up for bad skills. In the case of an information system, the four non-human parts can be designed as perfectly as possible, but if the people operating the system or using the data (or, as the case may be, *not* using the system or data), then the system might as well not be there. Here is an example from real life:

About a year ago, I needed a document from a previous employer, the federal government. Every person who ever worked for the federal government has this document, which contains data such as the name of our agency, dates worked, salary earned, etc. – it is the proof that we were employed there. I needed a copy to supply to a new employer, so I contacted the office that houses the electronic copies of this document. But I was surprised to learn that office did *not* have it, and I would have to contact my old agency directly. Fortunately, my old agency had a copy they were able to send to me via email. Apparently, I was not the only former employee who had this problem because my old agency told me "we've been a little slow at getting these filed." In other words, the people hadn't input the data into the system in the first place. In addition to creating an extra hassle for me, if the federal government's personnel office ever has to find out more about any/all employees at my old agency, it may be unable to do so, because people did not use the system. The weak link here was the people, who failed to take a necessary step.

B)   At stores each day, I use my credit card and often use an in-store tracking card that records my purchases, gives me discounts, etc. At work I use email, the internet, word processing documents, spreadsheets, and at least two different databases. On the bus, some bus passes are for a fixed number of trips, so each swipe of the pass records one ride. At home I rent DVDs from Netflix. At the library I check out books. I'll discuss the information system components of the library:

Hardware: The computers at the library that hold the card catalog and allow staff to check out books, and computers with the internet where patrons can check their accounts.

Software: The applications that catalog information about the books (author, date, catalog number, number of copies, etc.); allow people to check books in and out; allow users to view their own list of books; track location of books between branches; track overdue fines; and order new books from booksellers.

Data: Contains things like: bar codes for each individual book; information about the book like author, synopsis, location in the library, publication date, whether it is checked out or on the shelf, etc.

Process: Acquiring the book, entering its information into the software applications, ensuring it is barcoded, properly checking it out, properly checking it in, properly shelving it.

People: Create the contents of the book/movie/music, make sure the item conforms to the library's processes like barcoding and checking out, reads/watches/listens the item.

C)   Walmart: According to a 2016 article in Business Insider (http://www.businessinsider.com/walmart-could-ditch-workers-for-patented-tech-

), Walmart recently patented the self-driving grocery cart. It is designed to steer itself in a number of ways/places (such as back to the store from the parking lot) and will be able to do a number of inventory-related tasks, like stock shelves, count remaining inventory, deliver products around the store, and pick up trash. Supposedly, it will even be able to "connect with customers," although in my opinion, this last claim is too vague to rely upon. The cart will operate via a combination of sensors, video cameras, a wireless network, and a central computer.

This new technology is likely to have mixed results for Walmart's business. With carts that both manage themselves and manage the goods, Walmart will probably be able to reduce the number of employees per store, saving costs. The carts and their related technology will cost money, but probably not in the same ongoing way that employees do. Not to mention, the carts won't need breaks or time off each day to sleep.

The downside of this new technology will be, shoppers will have an even harder time finding an employee to answer questions. A cart might be "smart enough" to find the dog food aisle, but a cart cannot opine on questions like "which dog food is better for a dog that barfs a lot." In turn, customers will be angry or disappointed, and may be less likely to shop at Walmart. (I personally would much rather have a person who can answer my questions than a cart that returns itself.) In addition, in towns where Walmart is the only major employer, laying off a large number of staff (who will no longer have money to shop at Walmart) will be bad for individual stores, and will increase the perception that Walmart is company that doesn't care about anything but making money.

Careers in IT and Developing a Toolkit

After watching these videos and scanning the information on the BLS website, I concluded that a reasonable job for me would be a Computer Systems Analyst. I practiced law for more than ten years, and I currently work in a non-legal field, monitoring the performance (and working to improve the performance) of government contractors. When I was an attorney, I *really* appreciated it when someone who understood my work was able to discuss technology and my needs without delving into stereotypical "tech jargon" that no one else understood. In other words, I used technology systems and could see room for improvement, and enjoyed working with someone who understood what I was asking for. This is the kind of IT work I would enjoy doing the in the future – understanding the needs of the business, identifying weaknesses in the existing processes, software and hardware, and working to make things more efficient.
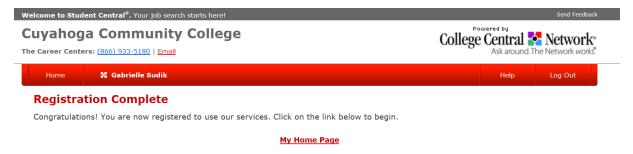
The job entails elements I already have in my background, although in a non-IT context: Communication with different audiences; identifying weaknesses in a program or

system; imagining creative ways to improve it; and creating and adhering to long-term plans to implement parts of a project improvement plan.

Alternatively, I could see myself working up to a Computer and Information Systems Manager. I frequently managed large projects that lasted more than a year, involved multiple staff with different areas of expertise, and had firm deadlines. In that role, I was less of the problem-identifier and problem-solver, and more of the team coordinator and task-master, making sure someone (me) paid attention to the big picture, while everyone else focused on their detailed tasks.

This class will clearly be part of my "IT toolkit" as it is the first IT class I've taken, and will obviously be highlighted on my resume. Assuming that I continue taking more IT classes, this class will become one of several that will contribute towards a formal degree (which most employers expect these days) and obviously, to the substantive knowledge I'll need to do the job. It's also possible that what I learn in this class will expand my horizons and I'll discover fields I did know previously know, and might change my career path entirely.

[Note that, as an older student, I'm not yet committed to changing my career path. While I know it can be done, the cost/benefit of doing so later in one's career sometimes makes the effort less fruitful than it might have been if the change had happened earlier. I'm content with this, because I also enjoy learning new things for their own sake.]

Here is my first foray into the Tri-C College Central:

I tinkered with the site only a little bit, in part because I've used similar sites and know how they operate. I did a search for "information system" jobs within 10 miles of Cleveland, and was surprised to see a number of completely unrelated jobs – like commercial truck driver – pop up. So I'm a little skeptical of the usefulness of this tool.

Information Systems and Intellectual Property

According to the text, ethics is "a set of moral principles" or "the principles of conduct governing an individual or a group." Personally, I prefer the latter definition, because some ethical situations involving two competing "right" courses of behavior or two competing "wrong" courses of behavior. Ethics determines, in a given situation, which

course of conduct is best at a given time, when the underlying behavior isn't a question of good vs. bad.

In the context of information systems, ethics governs things such as honesty and trustworthiness; not using systems without permission; and not using them to deliberate harm others. In the context of intellectual property, ethics deals with treating other people's ideas and non-tangible artistic creations with the same care one would take for tangible objects. For example, just as one would not steal a CD from a store, ethics demands that people not download free music (without the artist's permission).

If were operating a website for my business, the DMCA would require that I be aware of two primary concepts: First, that I can't intentionally try to avoid copyright protections *or* publish instructions for how to do it. And second, that if I do post something that might be subject to copyright laws, that I be responsive to any "take down notices" sent to me. Balancing these two requirements, however, will be my desire for my company to fully *legally* use copyrighted material. That might mean we post copyrighted information under a "fair use" clause, such as by reposting AP news articles, or allowing spoofs or critiques or educational analyses of copyrighted works. It would also mean that if I removed content in response to a take-down notice, that I did so only after confirming the request was not bogus, or that I was not otherwise allowed to post under more general copyright uses.

Conclusion

Through the writing of this lab, I learned and mentally processed the basics of what an information system does, and its primary parts. I explored some possible IT career options, and took my first small steps towards creating my IT toolkit by writing this lab and starting on Tri-C's career search page. Finally, I gave thought to ethical considerations inherent in the field.