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CBTE 200

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CBTE 200 Final

Computer Business Technology Course 200 (Office Telecommunications) was a broad course covering the history and theories behind some of today's personal and business technology. In each section below, I have summarized the course content and answered questions according to the instructions provided for this final project.

Information Systems

The field of technology is a vast one, with new innovations on a daily basis. Computers have been around since the late 1940s, but we have not always known the electromechanical computation machines to be "computers". In today's world of technology, there are at least six types of distinguishable computers.

What most people call a "computer" or "personal computer" is technically a microcomputer. The microcomputer is a standalone system that can be connected to a network. Microcomputers are comprised of mobile internet devices, PDAs, and the more popular notebook, desktop and tower pc's. Microcomputers are the simple (yet complex) home, workplace or school computers running on microprocessors, allowing us to do things such as type this report using the latest word processing software, play games, listen to music, and keep in touch with world around us via e-mail and the world wide web. Microcomputers contain a Central Processing Unit, which is the core of the system. Microcomputers run anywhere between $500 and $5 thousand in cost. A supercomputer is a high capacity machine with hundreds to thousands of processors that can perform billions and trillions of operations and calculations per second. Supercomputers are in use with our Federal Government, most recently in processing the last U.S. Census data, and can also be found in large corporations, especially in laboratories that handle vast amounts of information. A supercomputer is the fastest and most expensive computer available, at upwards of $350 million.

Networking, which is the process of connecting and sharing data with two or more computers together, comes in a variety of types. A Local Area Network - also known as a LAN- connects computers, printers and other devices in an office or building usually by cable, such as an Ethernet cable, or by WiFi- a wireless signal that transmits data to and from computers on the network over the air without wires. The WiFi signal is generated by a WiFi enabled router that is connected to the internet source, such as a DSL modem or Cable modem.

Local Area Networks and Microprocessors are not all that make up our computing experience. It is both the hardware and software, working together that allow us do the things we do with computers today. Hardware is the physical side of the computer- such as this keyboard that I am punching away at. Everything we see is the hardware: the keyboard, mouse, monitor- everything

that can be touched, even the motherboard down to the smallest microchip. But without the software to run the hardware, our technology is quite simply a bunch of stuff. Software- which can be anything from BIOS, to an Operating System such as Windows 7, to a Client, Application, or Program (such as Microsoft Office Word 2007) - is the electronically encoded set of instructions that tell the computer's hardware how and when to perform a task.

Thanks to some of the newest development in technology, "living life in the clouds" or having your "head in the clouds" is now, theoretically, possible. A recent concept called Cloud Computing is the idea of storing your data and software on servers over the internet. Rather than keeping software and data on your personal computer, or on your workplace computer, Cloud Computing allows your data to be accessed from anywhere, which will most likely make computing cheaper and more reliable for the average person. A Cloud Computing concept that most of us already use is web-based email, such as Windows Live Hotmail. Over ten years ago, e-mail was accessed using a client, or special software, and the email messages were downloaded or transferred from the server containing the emails to our desktop computer. You couldn't hop to one computer or another and check email like we do today, since the servers no longer had the messages because they had been downloaded to your computer. With web-based email, all e-mail messages and address books stay on the servers, meaning, that from any computer, anywhere in the world, you can access your same email account.

The Internet

The Internet, known for its largest component called the World Wide Web, is the largest computer network in existence. There are many ways to connect your computer to the internet, may it be DSL, ISDN, WiFi, or Satellite, and you must have an Internet Access Provider that enables your connection to the Web. There are three types of Internet Access Providers. *Internet Service Providers*- also known as ISPs- link your computer through their communication channels to their servers, which in turn links them to the internet over another company's network access points. An example of an ISP would be AT&T High Speed Internet Services, or RoadRunner. Free ISPs like United Online's Juno, NetZero and Blue Light services allow you to connect through Narrowband access such as Dial Up (standard phone line), whereas AT&T offers Broadband service through digital signal lines (DSL), and like RoadRunner, offers internet service through cable TV lines. *Commercial Online Services*, such as the Microsoft Network (MSN) or America Online (AOL), offer internet access as well as other content to members only. Both of these companies provide financial data, games and news as some of their content offering. Mobile Phone Companies like Sprint and Verizon are also *Wireless Internet Service Providers*. They offer internet access to users with WiFi enabled laptops, PDAs, and SmartPhones using the 2G, 3G, or 4G data signal emitted from their cell towers.

The Internet is a vast network with millions of users and millions of computers and devices connected to it. While you may pay T-mobile a $24.99 data fee each month to have the ability to access data on your Android off of their cell towers, the Internet is not owned by them, or by any company for that matter. However, a non-profit organization called the Internet Society, or ISOC, made up of 80 organizational and 28,000 individuals in more than 180 countries, and their Board of Trustees help to oversee and regulate the Internet.

In addition to gathering information on practically any topic imaginable, the Internet is also a great way to communicate with co-workers, family, and friends both locally and abroad. One of the most commonly used online communication tool is e-mail. E-mail, or electronic mail, is messages sent from user to user over an email program or client or via the internet. These messages may include attachments of photos or documents. Web-based email is the most commonly used today. This process of sending and receiving messages requires the user to log onto the companies' website (such as Yahoo!) from any computer in the world, entering a user name and password, and the users inbox and other features are visible and can be accessed again and again from the same or a different computer. The other way of sending and receiving messages is using an E-mail program or client such as Microsoft Office Outlook, where messages are downloaded from the server to the one computer that is setup to receive messages for that particular email account. This is a similar process with Smartphone's such as the Apple iPhone, which has a built in e-mail client, which receives forwarded copies of your email to your phone. Another online communication tool is Instant Messaging. Instant messaging is using a program or client, such as AOL Instant Messenger (AIM) where members of AOL (or of other companies like Yahoo! members with Yahoo! Instant Messenger) can exchange messages instantly with users on their "buddy lists" in a chat room style interface. While email remains one of the most widely used online communication tools, Instant Messaging has been on a steady decline with the advent of Social Media web communities such as MySpace and Friendster.

While surfing the net and communicating online is not only handy, but more and more of a necessity (and obsession) for most people, it does come with its consequences. For Personal Computer users who use systems operated on the Windows Operating System (and sometimes Linux, and UNIX systems) there are numerous security risks when being online. For every good computer user, there is a bad one. Hackers, or advance computer programmers, have released "viruses" in the past, which intend to destroy the data contained on a user's computer. Two online threats that can damage your computer are Trojan Horses and Worms, which are a form of online threats known as Malware. Worms are programs that repeatedly copy themselves in a computer's memory or hard drive in an attempt to fill up the memory or storage medium and cause it to crash. A worm can infect your computer be simply opening an email that contains it. A Trojan Horse is a malicious program that masquerades as a legitimate program- such as a free game- but once accessed, unleashes code that destroys data on your computer. One way to prevent both of these types of Malware on your computer is to never open email you are unsure of, and be careful with what sites you download free programs from. Having an active Internet Security and Antivirus software with an active subscription such as Norton, will allow you to surf and communicate online safely by detecting such threats and removing them from your system. Apple Computer systems, which run on the Mac Operating System, claim they are "free from viruses".

Software

As stated earlier, software is the electronic set of instructions that tells your computer's hardware how to perform a task. There are essentially two types of software, and that is System Software and Application Software. System Software is what allows your computer to run programs and manage the computer's internal and external resources. Two examples of System Software are BIOS and Operating Systems. The BIOS is the preloaded set of instructions in the motherboard

that boots up your system and loads the Operating System. The Operating System is the platform on which all of our interactions with our computer take place. Operating systems in use today for personal computers are Linux and Windows (XP, Vista, and 7). Apple Computers use the Macintosh or Mac Operating System. Application software is the programs you use on your computer, which can be anything from a Web Browser such as Google Chrome, to a database program such as Microsoft Office Access 2007. Application software allows you to create, edit, and publish data, or play games, too!

A type of application software that may help enhance the use of, or simply maintain performance of your computer is a Utility Program. Utility Programs manage the control and usage of computer resources. Built in utility programs in the Windows Operating System such as Disk Defragmenter help to reallocate free space and file structure on your computer's hard drive to make accessing data easier and more efficient. With most built in utility programs, you have to manually run them. However, with utility programs like Norton 360, disk defragmentation, cookie removal, and other similar tasks are done automatically while you are using the computer, or during system idle times.

As technology continues to advance such as hardware becoming smaller and smaller, advancements in software authoring have also become a part of our computer experience. Open-Source Software is unlike software from corporations such as Microsoft, where you pay for the program and use the program just as it is out of the box. Instead, open source software is free programs you can download, and any user can edit the coding of the software. Essentially, Open-Source Software cannot be copyrighted and is considered public domain. Two of the most popular Open-Source Software downloads are Mozilla's Firefox web browser, and the Linux Operating System.

No matter what type of computer we may be using, or what operating system or programs we may have installed, our basic computing experience is about communication. One of the basic forms of electronic communication and the most widely used on any computer is that of word and document processing. From a middle school student to the CEO of a corporation, everyone has used word processing software. Microsoft Office Word is one of the leading word processing programs. Another leading piece of home and business software for document processing is Microsoft Office Excel, a program that deals with workbooks or spreadsheets. The difference between the two is that Word is used for typing letters, memos, reports, and so on. Any type of message or publication you can think of can be created and edited using Word. Excel workbook files are made up if dozens of "cells" or input boxes which can be coded using formulas to perform mathematical calculations. Excel can also be used to make simple table lists such as name, address and phone numbers and help you to present them in a graphical way. In short, Word is your all around letter/memo/message wizard and Excel is a tool for organizing, displaying, and reporting data in an attractive and easy to read graphical style.

Hardware

Hardware, as I stated previously, is the physical aspect of your computing experience. There is both internal and external hardware. Internal hardware is the components on the inside of your computer's casing, the components you don't see on a day to day basis. External hardware would be the components you would see on a day to day basis, such as input hardware like a keyboard or mouse, to output hardware such as a printer and monitor.

Internal hardware can come in a variety of forms, but most of it has to do with the motherboard or system board. Every device connected to your computer is connected to the motherboard, one way, or another. Concerning internal hardware, there is different measurement methods used to describe the capacity or efficiency of that component. Take for example the Random Access Memory, or RAM, portion of your motherboard. RAM can be in the form of slot cards containing microchips that fits into a card slot on the motherboard. The RAM is the temporary storage medium when your computer is processing data and other operations and calculations. The more RAM you have, the greater the ability to handle more operations at the same time. RAM is measured in bytes, which is a grouping of bits, or binary digits. Most computers today run on anywhere from 2 GM to 8 GM (or 2 billion to 8 billion bytes). Speed and efficiency of an internal hardware component such as the Central Processing Unit (CPU), is measured in hertz. Just like with RAM, the higher number of hertz a processor is clocked at, the fast and more efficiently it can process data. Most computers today feature either an Intel or AMD processor, clocked anywhere from 2 GHz to 4 GHz (or 2 thousand to 4 thousand hertz).

In addition to RAM, there is another memory portion of your Motherboard. Read Only Memory or ROM contains the pre-loaded set of instructions such as the BIOS. Any information contained on the ROM cannot be erased, and information cannot be added without special equipment. In essence, what it contained in the ROM will always be there, and it is not a volatile memory space such as RAM, which loses the information stored there when power is turned off.

With some off the greatest advancements of technology, and some of the most complex programs available today, it is hard to believe that is all starts with two numbers: 0 and 1. The binary system, or binary code, is the two state system used for data representation. All data on your computer is represented by this system. Essentially, the number 0 represents that an electrical signal is off, and 1 represents that signal being on.

Input & Output

As I stated previously, computer hardware comes in two types: input and output hardware. Input hardware allows the user to enter and edit, or manipulate data into the computer. Keyboard, mice, joysticks, microphones, and scanners are all examples of input hardware. Output hardware is hardware that creates the visual or physical display of data created on the computer. Printers, speakers, and monitors are examples of output hardware. Devices such as CD Rewritable drives are examples of input/output combination hardware, because data can be retrieved from a disc, and data can be written or stored on a disc.

While most technology tends to be thought of as smart, most of us have been around or used Dumb Terminals. Dumb Terminals are small computer terminals that are connected to a mainframe or network, and allow simple operations, but cannot process data or be used as a standalone system. Dumb terminals usually have a keyboard and monitor or display screen. Examples of Dumb Terminals are airline reservation computers used at the airport, and job application kiosks at retail stores.

Getting specific with monitors, the building blocks of these very graphical displays are pixels. Pixels are the smallest unit on the screen, and can be turned on and make different shades of color. The term pixel means "picture element". The more pixels a monitor or television has, the sharper the images are displayed.

During the late 1990s, Optical Character Recognition (OCR) software become available on the consumer market, ushering in a boom in input hardware called Scanners. Today, scanners come in combination with most printers, or come as portable devices like the Magic Wand. OCR software enables a user to convert scanned text images into an editable text format which can be imported into word processing software.

Networks

There are many different types of networks, and many different ways to connect computers to one another and many ways to be connected to a network. As I mentioned previously, a Local Area Network- or LAN- is a network of computers and other devices within an office or building. Another type of network out there is a Wide Area Network, or WAN. This type of network covers more than just a building but instead a geographic area such as a county, state, country, or even the world. A great example of a WAN would be your local telephone company, be it AT&T or Frontier Communications. These types of networks can use all types of connections from copper wire, to fiber optic and satellite dishes to like computers together.

 No matter how you might be connected to the internet or to a network, the ability to efficiently access data depends on bandwidth. Bandwidth is the range of frequencies that a transmission medium can carry in a given period of time. The wider the frequency (or higher the number), the faster the rate of transmission of data will be. A cordless telephone rated at 5.8 GHz will have crystal clear phone calls with less interference, and can be carried farther away from the phone base unlike its predecessor 900 MHz cordless phone, which can at best, only be 15 feet from the phone base, and now has interference from most wireless devices such as routers and mobile phones.

Getting back to communicating online the risks that exists for some personal computer users, use of and the ability to view someone's information has been an ongoing problem. Thanks to encryption software, personal information as well as classified documents to remain safe. Encryption allows readable data to be made unreadable to prevent it from unauthorized access. Encrypted documents can be decoded using private key or public key software that converts the data back to its original, readable state.

Continuing to elaborate on communication, certain broadcast signals such as FM Radio are made possible due to magnetic and microwave technology, which are a part of the electromagnetic spectrum. The Electromagnetic Spectrum is the term applied to all of the fields and waves of electrical and magnetic energy. Other forms of electromagnetic energy that we are familiar with are x-rays and radioactivity such as nuclear energy.

Personal Technology

With each new day brings new advancements in technology. Some of the biggest advancements to hit our modern times are in personal technology. Digital convergence is one of the best examples of how technology has been able to help simplify our lives. Convergence means the combinations of several industries- such as television, computers, entertainment, and communications- into one device. One of the greatest examples of convergence is the Smartphone, which I will talk about in a moment. Over ten years ago, you had to own many devices to do things like watch a Converge has created competition for companies offering the latest and greatest technology, and the consumer comes out the winner. As I stated earlier, most printers now come with built scanners, and some even come with built in fax features and memory card readers, thus eliminating the cost and space required for all of these machines, and packaging them into one easy and efficient piece of equipment. Another example is digital cameras that not only take pictures but video as well.

Another great advancement in personal technology is personalization, which refers to the process of computer software creating information that is tailored to ones interests. This can be anything from web browsers that bring up the latest news according to the things you like, to an internet radio station like Pandora that only play music you like. Personalization benefits users in many ways, such as the ability to bookmark websites, up to the ability to create fundamental artwork and financial projects.

One of the biggest examples of convergence is the Smartphone, which combines the standard mobile phone with a PDA. A Smartphone contains computer hardware such as a microprocessor, memory and a modem, which allow the device to send and receive email, quickly surf the web, and stay up to date on Facebook. Most Smartphones come with built in GPS technology and a camera, and are able to double as an mp3 player. The benefits of using a Smartphone such as the BlackBerry allows business professionals to college students to be on the go but still have access to email and the ability to read and edit documents, and be logged into Google Talk to keep up with your buddies. Oh, and make phone calls, too!

Smartphone's that double as mp3 players are handy at times. But when sharing audio files with friends, the sampling rate off the audio file can make a difference. The sampling rate is the number of times a song is measured and converted into a digital value or format. The higher the sampling rate, the better the quality- but this also means the higher the file size as well. While the mp3 file format is pretty standard, the sampling rates are lower and can often compress the sound of the song, and cause it to lose quality. The AIFF format preserves sound quality the original medium.

Reflection

The Computer Business Technology Course 200 was a course that I found interesting because of the "Understanding Information Technology" textbook, and the depth the text went into concerning the history behind some of today's technology. But the way this course was structured and the textbook that was used, it was nothing like I had expected a course entitled "Office Telecommunications" would be like.

During this semester I also took the Computer Business Technology 210 Course entitled "Computers in Business". Although they are taught at different campuses by different instructors, and use different textbooks, these courses are identical. I did find the textbook for this course to be more useful, and I recommended it to the instructor of the CBTE 210 class. Perhaps the CBTE department at City College and you the instructor may need to re-review the course content and title so that students in the various CBTE degree paths will not be taking classes they may not need, or take duplicate classes. The reason why I took this course is because it is listed on the two degrees that I am currently in pursuit of.

In my opinion, a course entitled "Office Telecommunications" should focus more on technology that is used in an office setting- such as CISCO system phones, various microcomputer applications, time management of tasks, and proper communication techniques while using the various channels for relaying information. Or is that what CBTE 211- Office Administration is about? Either way, I will be earning units towards my degree path, so this course was not a complete waste of my time.

As far as feedback for you the instructor, I believe you have done a decent job with the course. But I will reiterate the need for the college to re-consider the listing of this course. I would suggest in future online classes that assignments, projects and quizzes be unlocked for a four to eight week time period. This allows students to work at their own pace, but you would still be able to keep the class together with the four to eight week time period. Students like me who had seven classes were at some weeks swamped with homework. However, personal responsibility is something that each individual is in charge of and not a course instructor. And the only thing I did not like about your class was the mandatory commenting on other student's discussion posts. As I stated to you in an email before, I could really care less about what other students learn unless, for example in my Business Communications class, I was a part of a group that was working on several projects. I see college as my opportunity to learn, and I am in this for myself and in cases of an online class, I am in this by myself. Other instructors have made commenting on other student's discussions posts optional or as an extra credit opportunity. I do not expect every instructor to teach a course the same way, but this is merely a suggestion. Thank you for the opportunity to take your course.