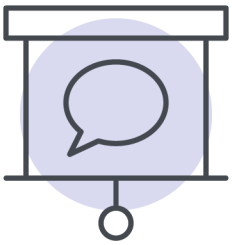
Concordia

BTM 200
FINAL EXAM
STUDY GUIDE



Lecture Notes

How was Internet created?

When? By United States in the midst of the Cold War with the Soviet Union.

Why? The Internet was created to:

- establish a secure form of military communications
- create a means by which all computers (+leading universities and research org) could communicate

It helped to coordinate and plan their activities.In being located in various parts of the country = Cannot be disrupted easily in the event of an attack.

Who? Funded by the U.S. government in the 1960s

Name of Project? Advanced Research Projects Agency Network (ARPANET).

What is the difference between the web and Internet?

Web: the means we use to access information over the Internet (Connecting people for instance)

Internet: It is linking your computer to other computers around the world, is a way of transporting content. (Connecting computers)

How can I communicate through the Internet?
How can I communicate and collaborate using Web 2.0 technologies?

Emails	Pros • reduced the costs of postage and long-distance calls. Cons • Not private • Not encrypted • Message can be misinterpreted	• Client-based e-mail (Only accessible from a computer) - Pros: All e-mails accounts regrouped into one. • Web-based e-mail (Gmail)
Instant Messaging	• Communicate in real time with others.	

Group Communication	Chat Room: Pros: • Focus on specific topic. • Real time • Allow anonymous interaction • Newsgroup: Group or forum. Example: Google Groups	Netiquette: • The behaviour and type of communication that is proper to Group Communication.
Web 2.0: New Interaction on the web with software, people, data. Social Networking	Cons: • Informations being misused • Identity theft	
Web logs and Video logs	• Express thoughts and opinions about a topic.	• Personal Journal on web Blog: • Single author usually • Primarily text-based Vlog: • Video is primary content
Wikis	• Express thoughts and opinions about a topic. • Content can be edited by the viewer. • Track Revision	E.g. Wikipedia and Google docs
Podcasts	• More efficient to you to gather favorite content. Cons: • Need an aggregator software to gather the podcast and download it automatically • Media player needed	• Compressed audio or video files • Possible thanks to RSS (Really Simple Syndication: Constant updates) What makes podcasting different from an audio on computer? Podcasts are brought to you , you don't have to search for them on the web.
Webcasts		Difference with a podcast? Podcast are prerecorded and made available to download while webcasts are live. One-time event.

What are the various kinds of multimedia files found on the Web ,and what software do I need to use them?

Multimedia: anything that involves one or more forms of media in addition to text.

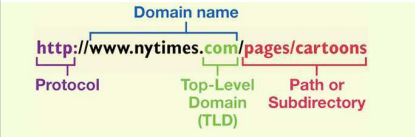
E.g. Graphics, audio, video.

Some multimedia (Spotify, online courses) requires plug-in (a player)

What is e-commerce, and what e-commerce safeguards protect me when I'm online?

E-Commerce	Business-to-Consumer (B2C): Traditional transactions Business-to-Business (B2B): Consumer-to-Consumer (C2C): E.g. Ebay	process of conducting business online, such as through advertising and selling products. How to shop safely online? • https: Secure socket layer • VeriSign: Company that certifies security • Shop on well-known sites • Don't use public computers • Check return policy

What is a Web browser, and what is a URL and what are its parts?
How can I use hyperlinks and others tools to get around the Web?

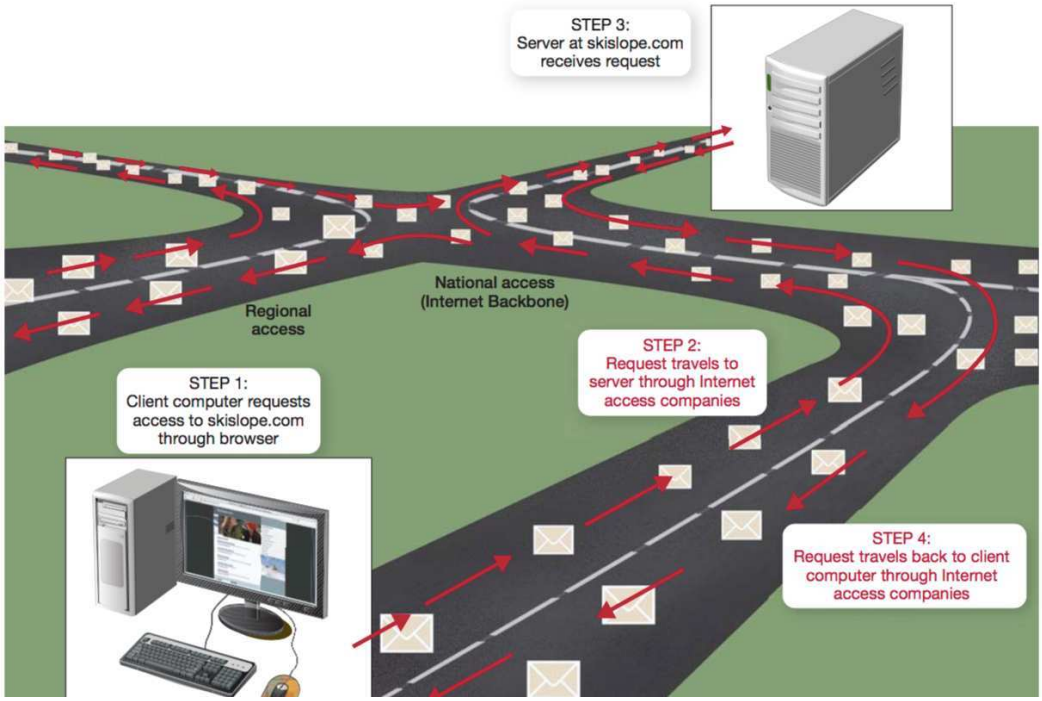
Web Browser	• Search Engines: Web Crawler scans web pages, results are then sent to client, can filter. • URLs: An address  • Hyperlinks: Jumping from a page to another within the website.	Features: • Open tabs, thumbnails • Search box • Favorites • Bookmark: also known as tagging. Allow to store, organize tags of Web pages. • Graphical browser: Display pictures, videos, etc. in addition to text How to Improve Search results? Quotation marks, search within specific website, advanced search form.

What Can I borrow from the Web?

Factors to consider:
- Who is the author of the article?
- Is the site biased?
- Are links available?

The same information should be available on at least three web sites.

How does data travel on the Internet?



1.asking for data

2. Your browser's request for this data travels along several pathways. The largest and fastest pathways are the main arteries of the Internet, called Internet backbones.

3. Your data flows along the backbone and then on to smaller pathways until it reaches its destination, which is the server computer.

4. returns the requested data to your computer.

IP addresses: Means by which all computers connected to the Internet identify each other.

What are my options for connecting to the Internet?

Dial-Up connections: Originally we connected through standard telephone line (Lowest Cost, Slowest Connection)

Broadband connections: Faster way to connect on the Internet (Dsl, Cable, Fiber Optic)

DSL

- **Smallest** average download speed
- **Smallest** maximum download in the broadband connections.
- Speed drops as you get farther from the phone company's central office

Cable

- Average download speed of 5 Mbps
- Maximum download speed of 30 Mbps
- Line is shared with others in the neighbourhood

Fibre optic

- **Largest** download speed
- **Largest** maximum download speed
- High cost

Module 3

What is a software?

It is a program that tells the computer what to do, and enable us to interact with it.

There is two types of software:

System Software, which coordinates the instructions between the software and the computer.
It includes the Operation system and Utility programs.

Application Software, which are used to run tasks.
There is various types of application software.

- Productivity: Tasks generally performed in home, school and businesses.

E.g.: Spreadsheet programs, Personal Information Manager (PIM), Database program, Word program.

Word-Processing Software
Function:
Features
-Quick editing
-Can edit format
-Different templates and graphs.

Note-Taking Software
Function:
Feature:
- Pieces of informations noted can be moved around the page easily.
- Co-authoring and version tracking capabilities

Spreadsheet Software:
Function:
Features
-Worksheet with cells
-Values, formulats, functions.
-Automatic recalculation (Primary benefit of Spreadsheet software)

Types of data you can enter in a cell:
- Labels: Descriptive text to identify components
- Values: Numerical data
- Formulas
- Formulas (Equations that you build yourself) vs Functions (formulas that are preprogrammed)

Database Software
Function: Electronic filing system
Features:
- Ability to group, sort, and retrieve data.
- Organized into fiels, records, and tables.

- E.g.: Microsoft Access, MySQL

Personal Information Manager (PIM) Software
Function: Used to replace management tools on a desk such as calendar, address book, and notepad.
Features:
- Calendar, address book, email management features.

E.g. Microsoft Outlook

Educational Software:
It provides an instruction or a training (MyMathLab, Pearson etc). You can find test preparation, simulations, skill development, online courses.

Drawing Software: Used to create and edit two-dimensional drawings.
What productivity software tools can be used to increase efficiency when working with an application software?

- Wizards: A wizard is a step-by-step guides to accompany you and help you through the steps of a complicated tasks in asking you questions.
- Templates: Predesigned forms or shapes.
- Macros: Small programs that group a series of command to run a single command. It is best used to run a complex tasks that has to be run frequently.

Integrated Software Application vs.
- Single program that incorporate many software programs.
- Basic features, less expensive.

Software Suite
- Collection of standalone programs.

Personal Financial Software
- Tax-Preparation software: Each program offers a complete set of tax forms and instructions on how to complete the form. (Intuit's TurboTax e.g.)
- Financial Planning Software: To manage daily finances. You can pay your regular monthly payments with automatically scheduled online payments (Intuit's Quicken, Microsoft money e.g. or Web based programs such as mint.com)

Business Software for Home and Office Examples:
Accounting: Help the small businesses to manage their finances (Intuit QuickBooks e.g.)
Desktop Publishing (DTP) Software: Arrange text and graphs for publications (Adobe Indesign)
Webpage Authoring Software: Used to Create a Web page. However, knowledge of HTML is not necessary. The features includes wizards, reference material (Adobe Dreamweaver).

Large-Business Software:
Business and Marketing Plan Software:
Project Management Software:
Customer Relationship Management (CRM) Software:
Enterprise resource planning (ERP) Systems:

Ecommerce Solutions:

Mapping Software: Provides street maps and directions + geographic data.
Specialized Business Software: Vertical market software that is tailored to the needs of a particular industry (Eg.: Estimating software, Property management software, Scheduling). It can be customed developed for an enterprise.
Computer-Aided Design (CAD) Software: Creation of three dimensional designs, technical drawings. Mostly for Architecture, automotive, aerospace and engineers.
Media Management Software: It is a software that organizes media files (Itunes).
Online Photo Management: Management and sharing of digital photos. You can also create photo albums, or access to printing services.

Media Software (6 Various types)
1. Digital Image- Editing
2. Digital Audio Software: Used to edit audio files, compress audio file size, record etc.
3. Digital Video-Editing Software: Used to create and edit Windows Media Player, Apple Quicktime videos (Adobe Premiere pro, Movie Maker, Apple Imovie etc.)

Software Fun for Home Requirements (Gaming):
- Processing power. Why?
- Memory (RAM). Why?
- Hard disk Capacity. Why?
- Speakers

For whom the game is addressed:
Entertainment Software Rating Board symbols:
- Everyone (E)
- Teens (T)
- Mature (M)
- Adult Only (AO)

Getting Help with Software
- Types of help:

Frequently Asked Questions (FAQs) on Websites - Answer to common questions.
Online help and Support -Chatting sometimes available.
Screentips -Help with Cursor
Integrated help menu, where the documentation is built directly into the program
Online sites, such as malektips.com that provides a vast array of tutorials.

Software Licenses:

Freeware: Any copyrighted software you can use for free.
Beta versions: Under development version of the software. Free of charge.
Shareware: Run for a limited time free of charge. When the initial trial period is over, the license agreement is broken.
Open Source Software: Free to use of condition that any changes you make.

Software Versions

Major Upgrade are represented this way: 2.0
Mino Upgrade: 2.1

System Requirements, and why?
- Minimum standards for the operating systems, processor, ram, hard drive. Specifications for video card, cd drive. Sufficient Storage and memory capacity.

How to install and uninstall a software?
There is usually an installation wizard and you can either choose full or custom installation. If you download it from the web, you may have to unzip files and launch setup program.

Summary Questions

- What's the difference between application software and system software?
- What kinds of applications are included in productivity software I might use at home?
- What are the different types of multimedia software?
- What are the different types of entertainment software?
- What are the different types of drawing software?
- What kinds of software do small and large businesses use?
- What kind of software is available online?
- Where can I go for help when I have a problem with software?
- How can I purchase software or get it for free?
- How do I install, uninstall, and open software?

BTM MODULE 5

Using System Software: The Operating System, Utility Programs, and File Management

System Software:

is the set of programs that helps run the computer and coordinate instructions between application software and the computer's hardware devices.

1. What software is included in system software?

Operating System (OS) and Utility Program

Functions of the Operating System:

- Controls the computer's hardware devices such as the processor, memory, and peripheral devices.
- Enables the software applications to work with the processor.
- Provides a user interface
    - Command-driven Interface: Type in specific command so that the computer load the program. Very complicated interface for the average user. Hence they created a menu-driven interface.
    - Menu driven interface: Choose command from a menu. No need to know codes. But, still difficult to understand …
    - Graphical-User interface: Point and click technology with a cursor.

Functions of the Utility Program:

- Responds housekeeping tasks (Backup, security, diagnostic).

2. What are the different kinds of operating systems? (4)

- Real-Time Operating System (RTOS): Machines that are doing repetitive tasks in an exact same amount of time (**embedded system**). Example: Measurement Instruments, Cars, printers. *Minimal user interaction.*

- Multiuser: **Network** Operating System. For Network (groups of computers connected to each others) require a multiuser system because many users access the server. Example: A network where many people wants to print, the printer prints one document at a time. Used by public infrastructures, large corporations, etc.

Unix is a multiuser operating system. No one owns Unix. Codes.

Type of computers using multiuser: Mainframe (Multiple users) and Supercomputer (e.g. Scientists)

Advantages (like Microsoft): User-friendly, improved internet capabilities, more security.

- Single-user (Multitask): Example: Apple Mac Os

Advantages: Processing capabilities, system is very reliable, and the file backup utilities.
Disadvantage: Fewer software applications for Mac than Windows.

- Single-user (Single-task): MC-DOS

What is a computer's platform? Combination of Operating System and Processor.
E.g. Apple OS works with Intel Processor.

3. What are the most common operating systems?

4. How does the operating system provide a means for users to interact with the computer?

5. How does the operating system help manage resources such as the processor, memory, storage, hardware, and peripheral devices?

- Processor: Previous versions of Windows used to work with 32-bit systems. So now, if you buy a new 64-bit system, you need to be sure your hardware are updated to work well with it.
- If you want to run different programs at the same time, you need to have a bigger Random Access Memory (RAM). Most editions of Windows requires a RAM of 1 GB, only for itself. What happens when the Random Access Memory is full? The informations and the data are stored on the hard drive.
- *Slide 19
- Device Drivers: Program of the device attached to your computer. It's function is to facilitate the communication between the device and the operating system.
- Plug and Play (PnP): The device of the 'device driver' included in Window. It is the software and hardware that allow the user to plug it's new device.

6. How does the operating system interact with application software?

The Operating System includes blocks of code called Application Programming Interfaces (APIs) to enable the software to work with the CPU.

Software programmers only refer to the APIs code specific block, in the individual application program rather than the entire code.

Pros:
- Easier for programmers to make change.
- Avoid redundancies in software code.

E.g. Microsoft has a specific block of code for the sound and the graphics.

7. How does the operating system help the computer start up?

Starting up computer is called Boot Process.

The boot process consists of four basic steps:
1 The basic input/output system (BIOS) is activated by powering on the CPU.

2 The BIOS checks that all attached devices are in place (power-on self test - POST).
3 The operating system is loaded into RAM.
4 Configuration and customization settings are checked.

Handling errors when starting up?

Safe Mode appear on the corner of the screen + no desktop wallpaper, Icons not at usual spot:
- Only essential devices such as the keyboard, mouse and monitor are functioning.
- What to do? Reboot.
- If it is a new software. Try to uninstall it. And then boot.

8. What are the main desktop and window features?

THE DESKTOP IS THE FIRST INTERVENTION YOU'LL HAVE WITH THE OS.

The desktop tools are similar (Recycle Bin, Calculator, Documents etc.)

Window:
- The standard window in Windows has consistent features. Once a user is familiar with the setup of these features, he or she will be immediately familiar with the windows in any Windows-based software.
- The Viewing of Windows

9. How does the operating system help me keep my computer organized?

- File Management: The OS allows you to organize the contents in a hierarchical structure. (Libraries created Windows 7)
    - Drives
        - Folders
            - Subfolders
                - Files
- Filename.Extensions (Filename length: Maximum of 255 Characters)

Extension	Type of Document	Application
.doc	Word-processing document	Microsoft Word 2003
.docx	Word-processing document	Microsoft Word 2007 and 2010
.wpd	Word-processing document	Corel WordPerfect
.xlsx	Spreadsheet	Microsoft Excel 2007 and 2010
.accdb	Database	Microsoft Access 2007 and 2010
.pptx	PowerPoint presentation	Microsoft PowerPoint 2007 presentation
.pdf	Portable Document Format	Adobe Acrobat or Adobe Reader
.rtf	Text (Rich Text Format)	Any program that can read text documents
.txt	Text	Any program that can read text documents
.htm or .html	Hyper Text Markup Language for a Web page	Any program that can read HTML
.jpg	Joint Photographic Experts Group (JPEG) image	Most programs capable of displaying images
.gif	Graphic Interchange Format (GIF) image	Most programs capable of displaying images
.bmp	Bitmap image	Windows
.zip	Compressed file	WinZip

- Characters not allowed in Window for the Filename: " / \ * ? < > | :
- Mac Characters not allowed : (* NO EXTENSIONS)
- PathFile:

10. What utility programs are included in system software, and what do they do?

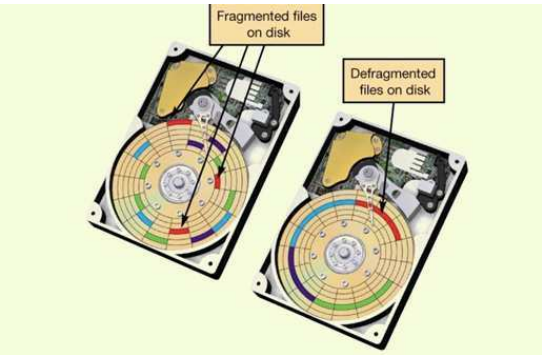
Utility programs are small applications that perform special functions.

- Some utility programs (such as disk defragmenter utilities) manage system resources.
- Some (such as screen savers) help make your time and work on the computer more pleasant.
- Others (such as file compression utilities) improve efficiency.

File Management recycle bin or trash: A file on desktop where files deleted from hard drive resides until purge permanently. It usually can be restored.
Files deleted from other drives, such as flash storage or dvd are automatically deleted from the system and don't go in the trash.

Display Utilities Box - Accessible from the Control Panel - Place where you can modify the appearance of some utilities (Click right)
File Compression Utilities: Program that takes out any redundancy in a file to reduce its size. (e.g Rain in Spain - has two Ain)

System Maintenance Utilities: Ensure efficiency of the system. It does disk cleanup.
Disk Defragmenter Utilities: Regroup related pieces of file together and put it on the hard disk. User should check multiple times in the year the Windows Disk Defragmenter Analyzer Feature.



System Restore: Restore system settings back to a specific date.
vs. System Backup: Creates a copy of a hard drive to another device.
Windows 7 has a location called Ease of Access Center for assistance.

Error checking: Check for lost files and fragments and other physical error in your hard drive. Usually it deletes necessary files.

If a program stops working. You should use Task Manager Utility.

System Backup: Creates a copy of hard drive to another storage device, such as external hard drive.

Task Scheduler: Task to run at predetermined times with no action of your part.

Module 5: Understanding and Assessing Hardware

Computer evolve just like a human being. It shows signs, and it has symptoms. It is very important to understand its system. Be able to identify a problem or an issue, and carry a discussion of the possibilities. Why is that possible? At what frequence? What does it mean?
Note down the symptoms, try to reproduce it, and figure it out. Troubleshooting problems are very important to understand. Visualize your career perspective.
How to evaluate your computer system to determine whether it is meeting your needs.

1. How can I determine whether I should upgrade my existing computer or buy a new one? *(pp. 268–272)*

Situation: Computer freezes when she try to open a file or scroll down through the Web.What to do? Buy a new one or Upgrade? Why the computer is doing that?

Is now a good time to buy a Computer?

Yes.

1. CPU FASTER: Rule of thumb, Moore's law, describes the pace at which CPUs (The brain) improve. The number of transistors inside a CPU will increase so fast that CPU capacity will double every 18 months (The # of transistors on a CPU Chip helps determine how fast it can process data).

2. Improvement of other components.

E.g. Memory Chips (Dynamic RAM) increases by 60% every year.

Hard Drives have been growing in storage capacity by 50% each year.

Then why, shouldn't you do it every year?

Opportunity Cost: Time to transfer files, environmental and security concerns.

What to do then? Decision Process Steps:

1. <u>Figure out what you want your computer to do (The Computer System):</u>

- What kinds of CPUs are in there? How does it affect my system?
- What best system suits you? (Do you want to bring it to school? Do you want to edit content with it?)
- Evaluate according to your priorities (from high to low)
- Do you need to buy additional hardware? Example: If you need need more storage, then you may want to add more memory and so forth).

Compare Options: Choosing either a desktop or a notebook system

- ***How and where you will use the computer?***

Pros: Notebook

+ Portability

+ Lightweight

Cons Notebook:

space is small, hence you pay more for each components. Why? Because the conception process was longer.

Smaller Screen

Lifespan of Notebook:

What is the maximum amount of memory. If it is small, upgrade with an external hard drive (SATA)

Pros Desktop:

+ Less Expansive

+ Expandability (More space, more ports)

+ Reliability (Lifespan)

+ Larger Monitor (Screen)

+ Easier to Upgrade

2. What does the CPU do, and how can I evaluate its performance? *(pp. 272–276)*

2. Do a System Evaluation: Does your computer has the right hardware?

The **CPU** is composed of 2 units:

- The control Unit - Coordinates all the activities of the components.
- The Arithmetic Unit (ALU) - Responsible for logic and comparisons decisions.

To execute a task, the CPU goes through this processus:

1. Look for the piece of data and Instruction from the Random Access Memory.
2. Decodes it in a langage the computer can understand
3. Execute
4. Stores results to RAM when done.

Differentiation of CPUs

Processing Power:

- Core: A processing section from a CPU embedded in same physical chip.
- Clock Speed: Responsiveness Speed of the Processor.
- Cache Memory: Amount of immediate memory access.
- Front-Side Bus: Connects processor to system memory.

Evaluation of CPUs

Is it meeting your need?

Go to task manager to review CPU usage

Consider how quickly data moves to or from CPU.

You may consider a multi-core CPU (Hyperthreading: Quicker processing of information by enabling a set of instructions to start executing before the previous one has finished

3. How does memory work in my computer, and how can I evaluate how much memory I need? *(pp. 276–279)*

RAM is your computer's **temporary storage** space. However, it is volatile storage. When the power is off, the data stored in RAM is cleared out. The **amount of RAM** sitting on memory modules (memory card: Small series of circuit board that holds a series of RAM CHIPS - fit into special slots of the motherboard) in your computer is your computer's **physical memory**. The **memory** your **OS** uses is **kernel** memory. At a minimum, you need enough RAM to run the OS plus the software applications you're using, plus a bit more to hold the data you will input.

4. What are the computer's main storage devices, and how can I evaluate whether they match my needs? *(pp. 279–286)*

Storage devices for a typical computer system may include a hard drive, a flash drive, and CD and DVD drives. **Non-volatile**. Bluray drives are gaining in popularity for viewing and burning high-density media. **Hard drives** have the **largest storage capacity (2 Terabytes)** of any storage device and are the most **economical.** Newer SSD drives have the fastest access time and data transfer rate of all nonvolatile storage options. CDs and DVDs have capacities from 700 MB to 17 GB, while Blu-ray discs can hold up to 50 GB. Portable flash drives allow easy transfer of 64 GB or more of

To determine the **storage capacity your system needs**, calculate your hard drive total capacity and determine if it suits your needs. To add more storage or to provide more functionality for your system, you can install additional drives, either internally or externally. For instance, Optical Storage (Store data as pits burned by laser)

**How an hard-disk works? It consist of many platters stacked on a spindle.*

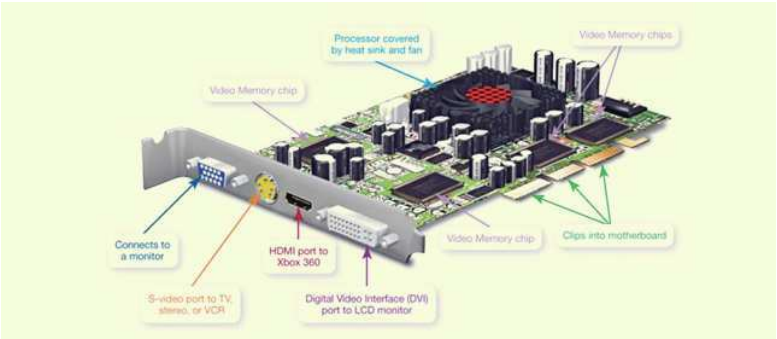
When data is saved to an hard-disk, a pattern of magnetized spots (1) is created on each platter. Space (0). Then, between each platter there is 'arms' that contains the 'read or write heads' . They go from outer edge to center to read the platter.

5. What components affect the output of video on my computer, and how can I evaluate whether they match my needs? *(pp. 286–290)*

How video is displayed depends on two components: your video card and your monitor. A video card translates binary data into the images you see. These cards include their own RAM (video memory) as well as ports that allow you to connect to video equipment. The amount of video memory you need depends on what you want to display on the monitor. A more powerful card will allow you to play graphics-intense games and multimedia.

Do you have the right video card and monitor to suit your needs?

A video card (Adapter): Expansion card installed inside your system unit to transform the data into image on your screen (monitor). Usually the video cards have various ports so that you can connect to different video equipment. For instance, DVI (Digital Video Interface) or HDMI (to x-box) etc. They have their own RAM (Video Memory). Video Card controls number of colours the monitor display (#Bits represents each pixel = bit depth). The more bits, the more color detail (E.g. 4 bit = 16 colors, minimum. 24-bit is 16 million



If you use your computer system to display complex graphics, you may want to consider upgrading to a powerful card.

Video Cards have their own processor, which increase the speed for processing

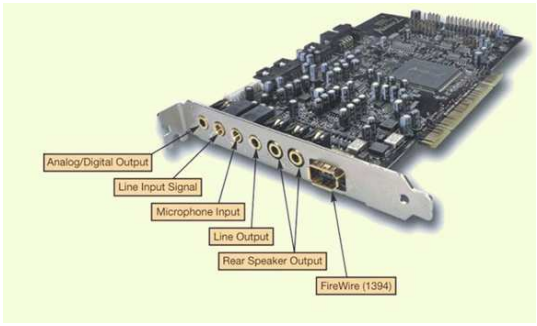
graphics. Is a GPU different from a CPU?

The graphics processing unit (GPU) performs the same kind of computational work that a CPU performs. However, a GPU is specialized to handle 3-D graphics and image and video processing with incredible efficiency and speed.

How can I tell how much memory my video card has? Information about your system's video card can be found in the Advanced Settings of the Screen resolution dialog box. Click right.

6. What components affect my computer's sound quality, and how can I evaluate whether they match my needs? *(pp. 290–291)*

Your computer's sound depends on your speakers and sound card.



A sound card: enables the computer to produce sounds. It is an expansion card attached to the motherboard.

Most of computers have 3D Sound Card. Sound is left or right.

Surround Soud: Sound is coming from eight different direction.

Users upgrade their sound cards to provide for 3D sound, surround sound, and additional ports for audio equipment.

7. How can I improve the reliability of my system? *(pp. 291–294)*

Consider this if crash, freeze, slow.

If crash, check your ram. Make sure you have properly installed software or hardware (System Restore for Windows, Max OS X Time Machine). If you see an error code, look up your system support online or integrated prog. The Microsoft Windows 7 Upgrade Advisor will perform a scan of your system to determine what upgrades might be required before converting to Windows 7.

1. **Clean up Startup Folder:** Some programs install themselves into your Startup folder and run automatically when the computer starts. This is necessary and it uses your ram. Hence you have less place for other programs. Click Start - All Programs. Then Click Startup Folder and verify.

2. **Delete Unnecessary Files:** Run the disk Cleanup utility to be sure temporary internet files don't take up too much space in your hard drive.

3. **Run Spyware:** It deletes virus and unwanted programs.

4. **Run Disk Defragmenter on the hard drive:** When the hard drive is fragmented, it's negatively affected. It will then organize your file so that the hard drive will eventually work more efficiently.

* You can setup your disk defragmenter, spyware, and antivirus to run at any time interval you want.

What if none of this work?

Upgrade Operating System to the latest Version. However, it may require to hardware upgrades to do so (additional ram, updated graphics processor, larger hard drive).

Reinstall the Operation System (Back up all data and files, Be sure you have original discs for the software, the serial number, product keys etc. Well everything)

When you have figured all of what is going on with the computer's system, abord the question of value.

How much would it cost to upgrade the system and will it match your needs in a few years. How much would it cost to purchase a new system? What are the benefits? What would you do with the computer afterward?

Example of a chart with the informations (Value):

Figure 6.37 UPGRADE/NEW PURCHASE COMPARISON WORKSHEET

Needs	Hardware Upgrade Cost	Included on New System?	Additional Expense If Not Included on New System
CPU and Memory Subsystems			
CPU upgrade			
RAM upgrade			
Storage Subsystem			
Hard drive upgrade			
SSD drive			
DVD+/-RW burner			
Blu-ray burner			
Video and Audio Subsystems			
Video card upgrade			
Sound card upgrade			

Chapter 7

1. What is a network, and what are the 5. advantages/disadvantages of setting up one?

Computer Network: 2 + connected computers
Node: Anything connected to a Network

Advantages of Networks:

include allowing users to (1) share High-Speed Internet connection, (2) share peripheral devices (School printer) and (3) share files. A disadvantage is that the network must be administered (Install the new computers, and configure the network security)

Types of Networks:

Peer-to-peer (P2P) (Local Administration. Device can communicate with any other device instead of having a separate device exercise parental control over the network.)Eg. Windows, OS X, Linux.

Client-Server (NOS) (Central Administration. Clients: To accomplish tasks and Server: Administer) Eg. SUSE Linux Enterprise

How to Secure Wireless Networks:

Piggybacking: Connecting to a wireless network other than yours, without permission. It can be unintentional.

Precautions:

- Change your network name (SSID)
- Disable SSID Broadcast
- Change the default password on the router
- Turn on the security protocols (Eg. WPA)
- Limit the range of your signal.
- If it is for a firm, apply the firmware upgrades.

Most common type found at home:

Ethernet (Combination of Wired and Wireless)

The Wireless Devices need Wireless Network Interface Cards (NICs)

It is the most sophisticated Network Attached Server (NAS) Device.

It performs only a limited set of functions performed on the client and server network.

How to Configure a Home Network:

How to turn on your equipment respectively (Very Logic)

1. Broadband modern is the first thing you should turn on.
2. The Router
3. Computers and Peripherals.

What you should do before running the automated Wizards:

1. Make sure each of your node has a network adapter.
2. If wired connections, plug cables.
3. Broadband modern connected to router.

Afterwards (Mostly for Windows 7)

1. Access Network and Sharing Centre starting from Control Panels.
2. Turn Network Discovery On.
3. Turn file and Public Sharing On.
4. Set Up a New Connection Wizard. What is that?

How to Connect a Mac Wirelessly

1. Set up Router Security 2. Log onto account with SSID 3.Choose Network and enter a password

How to Test the Internet Connection Speed? Go on speediest.net and Run test at several times during the day and over the week.

The Distance of Networks:

LAN: Local Area Network

HAN: Home

WAN: Wide

MAN: Metropolitan

Network Components

1. Transmission Media: Wireless networks connect node with radio waves.

Might have decreased throughput: Interference with other networks, magnetic sources, materials and metal, distance.

Wired Networks: Twisted-Pair Cable, Coaxial Cable, Fibre-Optic.

2. Networks adapters that allow nodes on the network to communicate.

3. Network Navigation Devices (Eg. Routers) that move the data around the network. It controls the flow of data through the network. The Routers transfer packets between two or more networks. The Switches send packets to nodes on same network.

4. Software to run

FYI: All computing equipment that will connect to a network has to contain a network adapter. Network adapters allow computers to communicate (either wired or wirelessly) with network navigation devices such as routers and switches. Wired connections are usually made with Cat 6 twisted pair cable. A router is needed to share an Internet connection as it transmits data between two networks (the home network and the Internet).

Throughput Speeds: Throughput is a measure of how many units of information a system can process in a given amount of time (Can be measured with Net Meter).

Types of Devices:

Digital Entertainment Devices: Connect to network to access and share the content. Use gaming devices to play multiplayer games. Blu-ray players.

Specialized Devices: Ipad, Digital Picture Frames, Security Monitoring Cameras.