General Items:
- Tests? How was it?
- Anyone used the online practice test?
- Lab work?
- Will not be here in Oct 24-27th no review on Oct 25th

Reading Materials:
-

Miscellaneous:

Type of software
- Application (perform a specific task)
  - o Graphics, Multimedia, Web page designer, Communication software
- System Software
  - o programs controlling the operation of the computer and devices
    - ▪ starting application programs
    - ▪ transferring data between devices
  - o Resides in the memory (copied from the disk into the memory-*loaded*)

Application software
- Packaged Software: Copyrighted, mass produced, meets variety of users
- Custom software: Typically used for specific applications
- Shareware: Trial period, pay later!
- Freeware: Copyrighted, Free
- Public domain: Not copyrighted, free, do whatever you want!

System Software examples
- Operating system
  - o Coordinates all communication between hardware devices
  - o Resides in the STORAGE device
  - o Needs to be loaded in the memory every time the computer is turned on (Stays in the memory until?)
  - o Tells the computer hardware/software how to operate:
    - ▪ What input/out put devices are there
- Utility Program
  - o Antivirus program
    - ▪ What is a VIRUS?

- It is a program and copies itself to a device, system software, application software, and tells them to do something!
- It piggybacks on other programs (needs an AGENT)
- First Widespread Virus:
  - 1981: Started from Texas A&M, Called: Elk Cloner
  - Appeared on the monitor as follow (more info HERE):

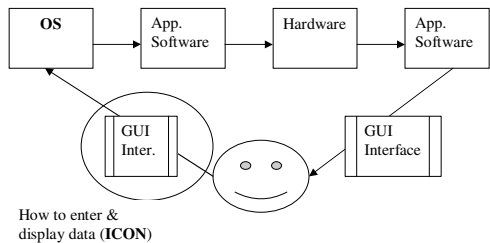> **It will get on all your disks**
> **It will infiltrate your chips**
> **Yes it's Cloner!**
> **It will stick to you like glue**
> **It will modify ram too**
> **Send in the Cloner!**

More on computer Virus (just for you to know)
- o Real or hype?
  - o 500 billion dollars was spent to protect 2K bug!
  - o Millions are spent each year to protect against computer viruses
  - o By 2002, the odds of getting a computer virus were 1 in 9 (1 in 1000, in 1995)
- o A virus can impact any executable file:
  - o Boot codes
  - o Executable programs
  - o Can aim at a specific OS
  - o Data files are not effected
    - ▪ gif, mp3, txt (reading text email)
- o Virus types
  - o Micro virus (hides in an application)
  - o Sector virus (infects the computer boot up process)
  - o File virus (attaches itself to a program file – Win32.Hatraed)
  - o Stealth virus (hides in the working code)
  - o Polymorphic virus (changes its code as it infects computers
    - ▪ Win32.Hatred writes itself to other files and changes shape
  - o Time bomb virus (activates itself at a designated time)
- o How does it spread?
  - o Opening a file causes the virus to execute (some have timers)
  - o When we share files we send the virus
  - o Be careful when you exchange files online!
  - o Remember a virus only affects the software *not* the hardware!
- o Ways to fix a virus:
  - o Install an anti-virus program
  - o Keep your anti-virus program up-to-date
- o Most recent viruses:
  - o The *WORM!* – resides in the active part of the memory
  - o Trojan.Xombe (huh?) – Typically don't replicate themselves, they capture and send information, more like spies!
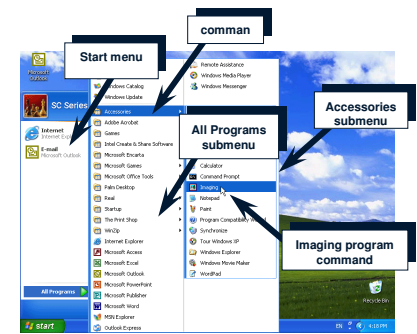
Operating a computer
- User Interface
  - o Describes *how* to input
  - o Types:
    - ▪ GUI Interface (1984 – Apple Computer)
    - ▪ Commands Lines(DOS – 1984 Windows)

How to enter &
display data (**ICON**)

GUI Interface
- A graphical approach to run a software or perform an action
- Related definitions:
  - o Desktop (on-screen work area)
  - o Button (to activate an action – START Button)
  - o Icon (representing a program, software, etc.)
  - o Pointer (I-beam, block arrow, pointing hand)
  - o Click!
  - o Menu (collection of commands)
  - o Dialog Box (Printer box)
  - o Command (We run a command to perform an action)
  - o Window (an area of the screen that displays a program, application, etc.)

Windows XP is a GUI interface:

Application Software Categories:
- ▪ Productivity
- ▪ Graphic Design and Multimedia
- ▪ Home/ Personal/Education
- ▪ Communications

Productivity/Business Software
- Helps people to be more efficient
- Examples: Word Processing, Spreadsheet, Database

World processors
- What are its applications?
- Developing stages (5)
  - o Creating
  - o Formatting: changing the document's appearance
    - Font: Character design name
    - Font size: Based on the point system in the computer
      - Point = 1/72 of an inch (the height)
      - 25 Point = 20/72 almost 1/3 of an inch HEIGHT
    - Font style: (**Bold**, *Italic*, underline)
  - o Editing:
    - Making changes to the existing document
    - Checking for spelling and grammar
  - o Saving: Coping from memory to a storage device - such as?
  - o Printing: Sending a file to an output device called Printer
    - What is PDF? A common page –description language that works with many applications programs and printers
- Basic Definitions
  - o Opening a document? – Copying from storage device into memory
  - o Generating a File: A document that is saved is called a File
  - o Voice recognition (speech recognition)
    - Accepting spoken words
      - Words to type, commands, etc.

A little history – just for you to know:
- One of the earliest application for PCs
- Early word processors were more like typewriters
  - o Only used by typists!
  - o Early editors "page oriented" and not "document oriented"
    - Adding in between was a pain!
- First editors were command based (TJ-2 – 1962)
- The challenge:
  - o **WYSIWYG** (pronounced "whizzy-wig") editors
    - the technology that makes sure the image seen on the screen corresponds to what is printed out on paper
    - Bravo (first multifont editor 1970)
- Related vocabularies:
  - o Wordwrap – (continue typing without carriage return -1970s)
  - o Page margin (outside the page body, how many Margins?)
  - o Clip art (collection of pictures and drawings)
  - o Spell Checker: (is it intelligent?)
  - o Clipboard
    - Cut: store from document on the clipboard
    - Paste: Move from the clipboard into the document
    - Copy: duplicate a copy on the ?
    - So where is the clipboard?

COOL STUFF: A little about Speech Recognition (SR):
- Process by which a computer identifies spoken words
- Basic properties:
  - o Utterance (leak or lick?)
  - o Vocabularies (Hot Cake or Hotcake?)
  - o Accuracy (Farid or Sarid?; The color is Pink or "Link"?)
  - o Training (Pa Yr Ca around the Pa)

- o Recognition ability:
  - − Isolated words (Dallas, Plano…)
  - − Continues Speech (Advanced Research Center at UTD)
- o Try this number: 1-800-223-5436

Note Taking Software
- Such as MS OneNote, Tablet PC
- Uses digital pen
- Includes audio recording
- Recognizes handwriting

Spreadsheet Software
- o Allows organizing and manipulating data
  - o Organization of the data is done in the "worksheet"
  - o Cells (each entry goes in a cell – about 16 million cells)
    - ▪ Contains three types of data:
      - • Label or text, Numbers or values, Formulas
  - o Functions: Predefined formulas in the software:
    - ▪ SUM, AVG, MIN, MAX, etc. (3.13)
  - o What-if-analysis: Changing a value to identify the effects
    - ▪ Total New Salaries Paid = SUM (Old Salaries x 12%)
  - o Macros: Sequence of keystrokes / instruction which can be recorded and played
  - o Recalculation (when the data changes)

Database Software
- o Database: Collection of data which is organized and can easily be accessed, manipulated, saved, etc.
- o Database management software (DBMS)
  - o Sort, create forms, etc.
- o Data types (different kinds of data formats a field can accept – 6)

- o Text (letters) and numbers
- o Currency
- o Date
- o Long text (Memo)
- o Hyperlink
- o Object (picture)
- o Data manipulation (converting the raw data into useful information)
  - o Sort: Organizing the data in a particular order
  - o Query: Requesting for a specific data from the database based on a give criteria

Other Productivity Business Software
- o Project management software
  - o Plan and schedule resources, events, etc.
- o Accounting software
  - o Keeping records of financial transactions (payroll)

Graphics and Multimedia Software
- o Used by Power Users (engineers, architectures, publishers, etc.)
- o Examples
  - o Computer Aided Design (CAD)
    - ▪ Creating architectural designs – 3-D shapes
  - o Desktop publishing (DTP)
    - ▪ Used for high-quality color documents (textbooks)
    - ▪ Supports Page-layout
      - • Arranging text and graphics page-by-page
    - ▪ Includes a Color Library (standard set of colors used to ensure that colors will print as expected)
  - o Paint/Image Editing
  - o Video and audio editing
  - o Multimedia Authoring
  - o Web Page Authoring

Software Application	Popular Packages
Computer-Aided Design (CAD)	• Autodesk AutoCAD • Microsoft Visio Technical
Desktop Publishing (Professional)	• Adobe InDesign • Adobe PageMaker • Corel VENTURA • QuarkXPress
Paint/Image Editing (Professional)	• Adobe Illustrator • Adobe Photoshop • CorelDRAW • Macromedia FreeHand
Video and Audio Editing	• Adobe Premiere • Ulead Systems MediaStudio Pro
Multimedia Authoring	• click2learn com ToolBook • Macromedia Authorware • Macromedia Director
Web Page Authoring	• Adobe GoLive • Lotus FastSite • Macromedia Dreamweaver • Macromedia Flash • Microsoft FrontPage

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Software packages for home and personal use
- o Relatively inexpensive
- o User friendly and easy to use
- o Integrated Software:
  - o Combining different application into a single package
- o Examples of Integrated Software:
  - o Personal finance software (Quicken, Microsoft Money)
    - ▪ Offering online banking
  - o Legal Software
    - ▪ Helping in preparing legal documents (Quicken Lawyer)
  - o Personal paint/image editing software
    - ▪ Manipulating and changing images in different formats
      - • Taking the *Red Eye* out from a photo!
    - ▪ Online print service
      - • Email "them" the digital photograph -> they mail you a high-resolution printed image
  - o Education/ Reference/ Entertainment
    - ▪ Education - Online learning
      - • Computer-based training (CBT)
        - o Independent learning
        - o Consists self-directed self-paced instructions
    - ▪ Reference – encyclopedias, dictionaries, medical guides

Communication Software
- o Email, Web browser
- o Newsgroup, Instant messaging, Chat rooms,
- o Groupware, Video conferencing
- o FTP (uploading and downloading files)
- o Web browser (view web pages)

Web-based applications
- o A software application that exists on the web (free or paid)
- o Examples: Yahoo Map, Yahoo Yellow page, Tax
- o Some applications allows downloading the software
  - o MS Web applications (.NET)
- o Web based training (WBT)
  - o Online Computer-based training
  - o Distance learning (off-campus access to lectures)
- o Application service provider (ASP)
  - o A third-party organization that manages and distributes software and services on the web

Learning aids
- o Online help: electronic manual
- o FAQ: answering common questions
- o Wizard: automated assistant helping to complete a task