

Snazzlefrag's Introduction to Computing DSST Study Notes

Contact: <http://www.degreeforum.net/members/snazzlefrag.html>

Hosted at: <http://www.free-clep-prep.com>

Hardware - Eg, Monitor, Printer, CPU, Hard Drive

Software - Programs

Operating System (OS) - Master Program

Central Processing Unity (CPU) - Microprocessor, controls the computer.

1) Arithmetic Logic Unit 2) Control Unit 3) Registers

Complex Instruction Set Computer (CISC)

Reduced Instruction Set Computer (RISC)

RAM - Random Access Memory (info can be read from AND written to it)

ROM - Read Only Memory (info can only be read from it), Info placed at the factory.

Input Devices - Eg, Mouse, Keyboard

Output Devices - Eg, Monitor, Printer, Speakers

Peripheral Devices - Any external equipment (Eg, a scanner, a printer, a mouse)

Personal Computer (PC) - In the home

Personal Digital Assistant (PDA) - Hand held, personal organization software (Eg, calendar, address book, notepad, email)

Mainframe Computer - 1960's, very large, can handle multiple-users and complex calculations simultaneously (government computers).

Binary Digits - 0's and 1's

Bit - Each individual binary digit (always either a 0 or a 1)

Byte - 1byte = 8 bits (consecutive digits, Eg, 01101111 = 1byte, 11110111 = 1byte), 256 possible characters.

Kilobyte (KB) = 1024 bytes, **Megabyte (MB)** = 1000kb, **Gigabyte (GB)** = 1000MB

Telecommunications - Transmitting computer data over a network.

Network - two or more computers connected together

Network Interface Card (NIC) - connects each computer in the network by cables.

Network Node - Each computer on the network.

Local Area Network (LAN) - In one room, or one building.

Network Hub - Central hardware device to which all computers in the LAN are connected.

Peer-to-peer - every computer is equal and share equal access to each other's files

Client/Server - One central computer hold all the files (server), other computers (clients) access the server (also called workstations).

Print Server, Database Server, File Server, Web Server, Mail Server (each serves a specific purpose)

Network Topology - How the computers are linked together.

Star Topology - All computers (node) is connected to a central computer (expensive)

Bus Network - Each computer is connected to the next in the line (inexpensive, if one link fails the whole network fails)

Ring Network - A bus network that forms a complete circle (capable of two-way communication so if one link fails the others still work)

Token Ring Network - Combination of Ring and Star (not used now, used Token Passing)

Network Operating System - Handles all communication between computers (Eg, Windows NT)

Network Protocol - Locks files that are currently being accessed so there won't be any conflict between computers.

Token Passing - Token is passed like a "baton" between computers. The one which currently holds the token has access to files.

Wide Area Network (WAN) - Spread out over large area (two buildings, a city, a state, a country, the world)

Types of Network Cable - ARCnet (old, not used now), Ethernet (fast, supports 1,024 workstations), Fiber-optic..just have read them and be aware of cable (uses lasers, very expensive)

Communications Protocol - Standard set of rules so that each computer can understand the other.

Asynchronous - One bit is sent after the other. A START and a STOP BIT are sent to mark the beginning and end of each message. (Telephone lines)

Synchronous - A clock synchronizes the transfer of data. Very Fast.

Full-duplex - Send AND Receive at the same time.

Half-duplex - Can only Send OR Receive at one time. Each computer takes its turn.

Modem - Modulator/Demodulator. Converts digital signal to analog signal (for sending down phone lines) and vice versa.

Multiprogramming - More than one program can run at the same time (Eg, OS and several applications)

Device Manager (I/O Supervisor) - Controls I/O devices to ensure they don't clash.

Device Driver - A small piece of software which contains instructions for the OS on how to work with a particular device.

Spooler - Puts PRINTER requests into a queue for orderly printing.

Batch Processing - Saves up requests and then performs them all at one time. (.BAT files on a PC)

Real-time Processing (online processing) - Immediate processing of requests as they occur. (Eg, credit card processing in eCommerce)

Multiprocessing - When a computer has more than one CPU and can process multiple requests at the same time.

Multitasking - One program operates in the foreground while others operate silently in the background.

Multithreading - Multiple instances of the same software can be opened at the same time.

Cold Boot - Starting the computer with the ON/OFF button.

Warm Boot - Restarting the computer without turning it off altogether.

System Utilities - Defrag, Scandisk..software that maintains the OS in good working order.

Software Development Methods -

Waterfall

Analysis (feasibility study), Design, Implementation (conversion from old to new)

software), Maintenance (updates, troubleshooting etc.) [ADIM]

Prototyping

Design a working prototype and see if it works well....make adjustments.....final version.

Rapid Application Development (RAD)

Uses computer applications to speed up the development process.

Object-oriented Development

Re-usable pre-existing "objects" are used to create a new product.

Conversion to a New Software or System

Parallel Conversion

Both old and new software are used side by side to compare performance

Phased Conversion

One department starts using the new software, then another department, then another.

Pilot Conversion

One department uses the new software to see if they like it.

Plunge

Total and immediate switch to new software

Gantt Chart - Plots out the time allocated to each step in the software development process.

PERT Chart (Program Evaluation and Review Techniques) - Shows the ORDER in which different tasks must be completed.

Pseudocode - Standardized, plain English coding language.

Always follows Order of Operations (Parentheses, Exponents, Multiplication/Division, then Add/Subtract - P.E.M.D.A.S.)

Conditional Statements - IF, ELSE, THEN... (Eg, **IF** $2+2*3 < 15$ **THEN** PRINT "YES", **ELSE** PRINT "NO")