

CHAPTER 1.0

INTRODUCTION TO OPERATING SYSTEM

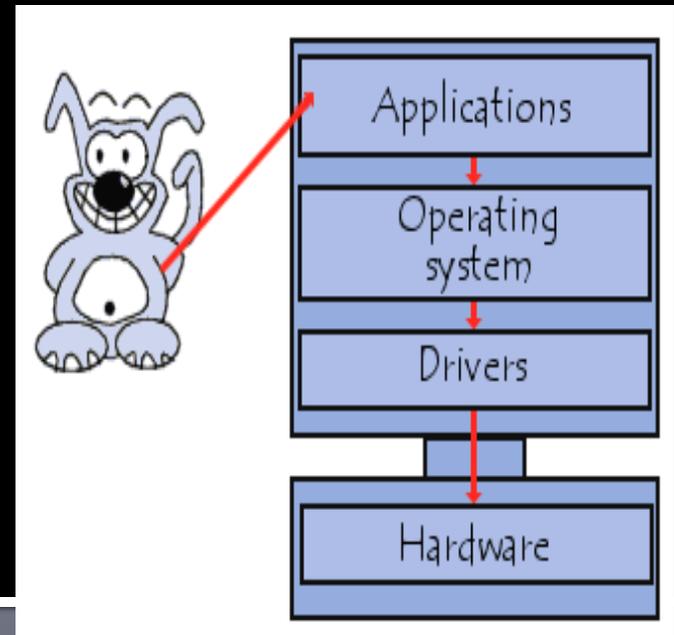
INTRODUCTION TO OPERATING SYSTEM (OS)

WHAT IS OPERATING SYSTEM ?



**OS IS THE SOUL
OF
THE COMPUTER**

- ◆ a program that acts as an intermediary between a user and the computer hardware
- ◆ An operating system, or OS, is a software program that enables the computer hardware to communicate and operate with the computer software. Without a computer operating system, a computer would be useless
- ◆ Operating systems can also be considered to be managers of the resources. An operating system determines which computer resources will be utilized for solving which problem and the order in which they will be used
- ◆ Software controlling the overall operation of a multipurpose computer system, including such tasks as memory allocation, input and output distribution, interrupt processing, and job scheduling.



MAIN RESPONSIBILITIES OF OS

Three (3) main responsibilities of operating system :

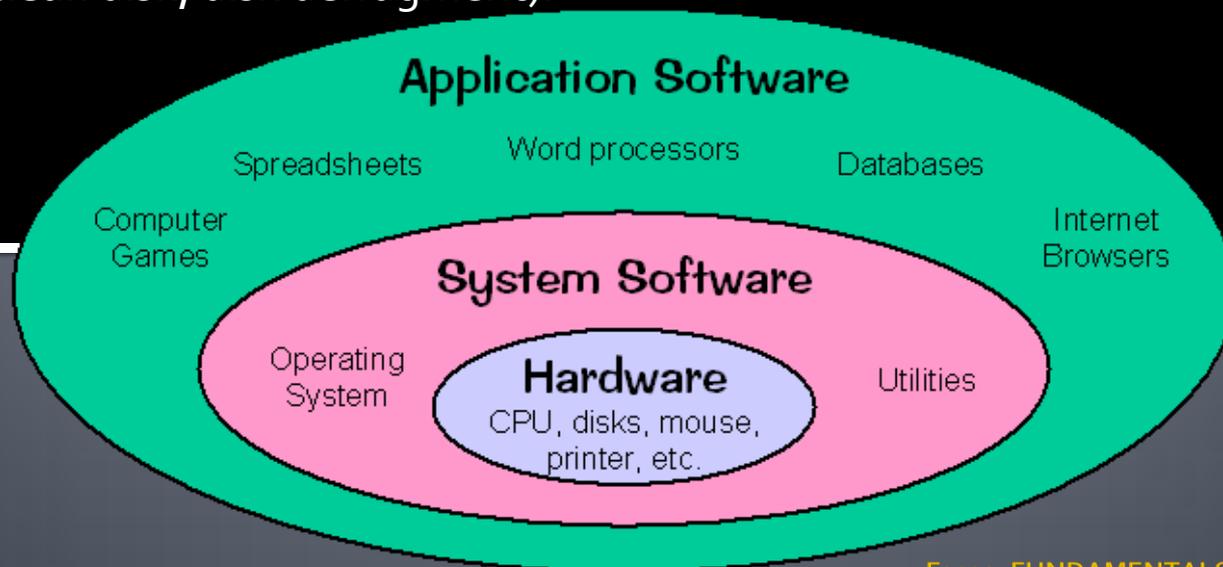
- ◆ Perform basic tasks, such as recognizing input from the keyboard, sending output to the display screen, keeping track of files and directories on the disk, and controlling peripheral devices such as disk drives and printers.
- ◆ Ensure that different programs and users running at the same time do not interfere with each other.
- ◆ Provide a software platform on top of which other programs (i.e., application software) can run.

COMPUTER SOFTWARE

◆ Computer software can be divided into two main categories :

a) **application software** :consists of the programs for performing tasks particular on behalf of user .Examples: spreadsheets, database systems, desktop publishing systems, program development software, and games

b) **system software** : designed to operate the computer hardware and to provide and maintain a platform for running application software. Divided into two categories which are operating system (MS Windows, Linux,Mac)and utilities (eq: antivirus software, clean disk, disk defragment).



HISTORY OF OS : GENERATIONS OF COMPUTER

1st GENERATION

2nd GENERATION



GENERATIONS OF
COMPUTER

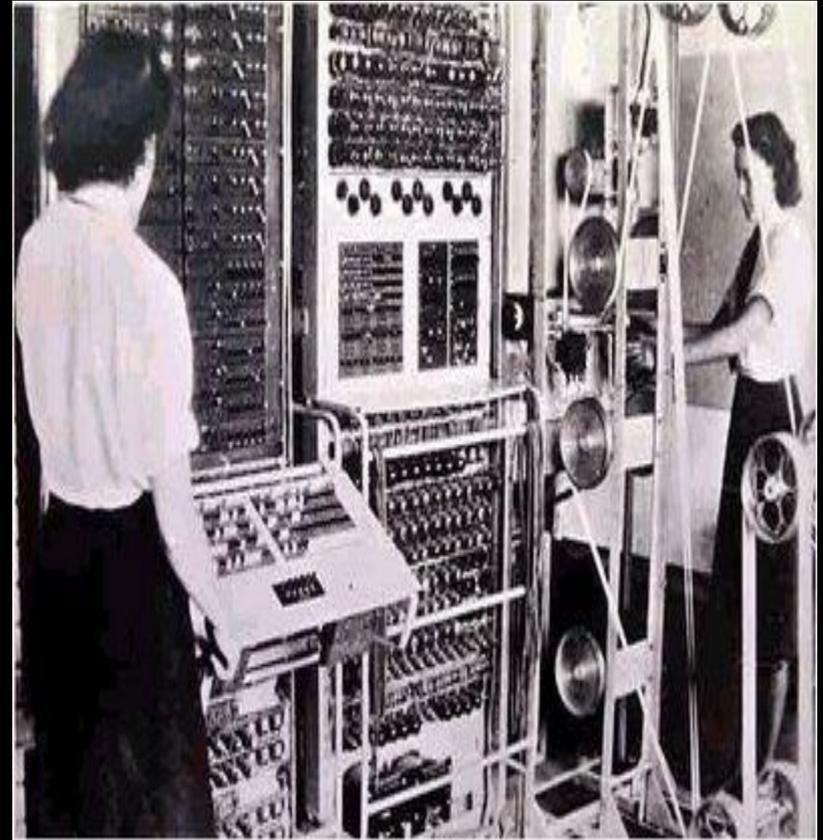
3rd GENERATION

5th GENERATION

4th GENERATION

1st GENERATIONS OF COMPUTER : VACUUM TUBES & PLUG BOARDS (1945-1955)

1. Use of vacuum tubes
2. Big & Clumsy
3. High Electricity Consumption
4. Programming in Mechanical Language
5. Larger AC were needed
6. Lot of electricity failure occurred



2nd GENERATIONS OF COMPUTER : TRANSISTORS & BATCH SYSTEMS, (1955-1965)

1. Transistors were used
2. Core Memory was developed
3. Faster than First Generation computers
4. First Operating System was developed
5. Programming was in Machine Language & Assembly Language
6. Magnetic tapes & discs were used
7. Computers became smaller in size than the First Generation computers
8. Computers consumed less heat & consumed less electricity



3rd GENERATIONS OF COMPUTER : ICs & MULTIPROGRAMMING (1965-1980)

1. Integrated circuits developed
2. Power consumption was low
3. SSI & MSI Technology was used
4. High level languages were used



4th GENERATIONS OF COMPUTER : PERSONAL COMPUTERS, (1980-Present)

1. LSI & VLSI Technology used
2. Development of Portable Computers
3. RAID Technology of data storage
4. Used in virtual reality, multimedia, simulation
5. Computers started in use for Data Communication
6. Different types of memories with very high accessing speed & storage capacity



5th GENERATIONS OF COMPUTER (Present)

1. Used in parallel processing
2. Used superconductors
3. Used in speech recognition
4. Used in intelligent robots
5. Used in artificial intelligence



VARIOUS TYPES OF OS STRATEGY

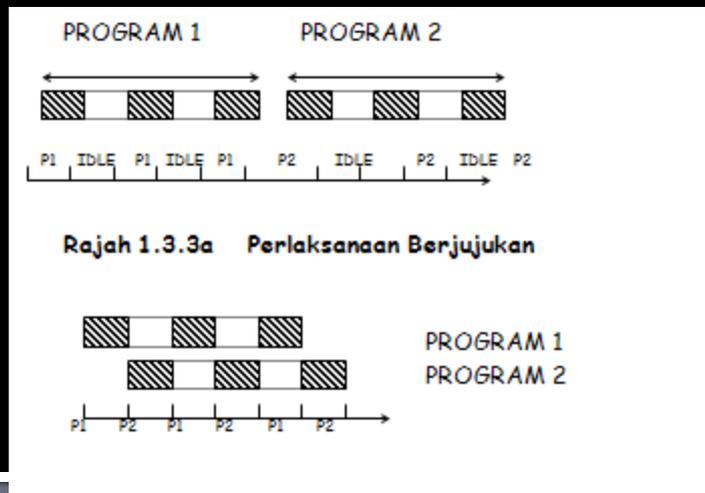
- ◆ Batch Operating System (BERKELOMPOK)

- This strategy involves reading a series of jobs (called a batch) into the machine and then executing the programs for each job in the batch. This approach does not allow users to interact with programs while they operate.

VARIOUS TYPES OF OS STRATEGY

◆ Multiprogramming Operating System (PENGAUTURCARAAN)

- The ability to do more than one job is called multiprogramming. The system separates the memory out into several pieces and lets each one of the pieces be a different job that the computer was running. The ability to do multiprogramming speed the computers up tremendously.
- When one job idled to wait for input or output, the operating system could automatically switch to another job that was ready.



Beberapa aturcara dimasukkan ke dalam ingatan secara serentak dan pemproses pusat membahagikan masa untuk memproses tiap-tiap aturcara tersebut. Semasa pelaksanaan program-program biasanya dilihat kepada 2 fasa iaitu intensif-komputeran (kotak lorek) dan intensif i/o (tanpa lorek).

- ◆ Distributed Operating System (AGIHAN)
 - An operating system that manages a group of independent computers and makes them appear to be a single computer
 - Distributed computations are carried out on more than one machine
 - When computers in a group work in cooperation, they make distributed system.

VARIOUS PRODUCT /TYPES OF OS INTODAY'S MARKET



MICROSOFT WINDOWS



SUN / SOLARIS



MAC OS



LINUX

VERSIONS OF WINDOWS OPERATING SYSTEM



WINDOWS 95



WINDOWS 98



WINDOWS 2000



WINDOWS ME



WINDOWS XP



WINDOWS VISTA



WINDOWS 7

DISTRIBUTIONS OF LINUX OPERATING SYSTEM



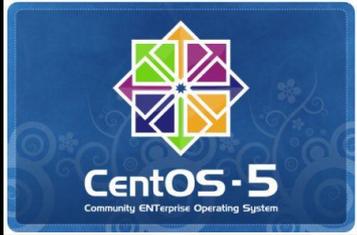
UBUNTU LINUX



SUSE LINUX



RED HAT LINUX



CENTOS LINUX



DEBIAN LINUX



FEDORA LINUX



TURBO LINUX

MINIMUM REQUIREMENT FOR INSTALLATION OF WINDOWS OPERATING SYSTEM

System requirements

Recommended system requirements

- 1 GHz 32-bit (x86) or 64-bit (x64) processor
- 1 GB of system memory
- 40 GB hard drive with at least 15 GB of available space
- Support for DirectX 9 graphics with:
 - WDDM Driver
 - 128 MB of graphics memory (minimum)
 - Pixel Shader 2.0 in hardware
 - 32 bits per pixel
- DVD-ROM drive
- Audio output
- Internet access (fees may apply)

Windows 7 system requirements

If you want to run Windows 7 on your PC, here's what it takes:

- 1 gigahertz (GHz) or faster 32-bit (x86) or 64-bit (x64) processor
- 1 gigabyte (GB) RAM (32-bit) or 2 GB RAM (64-bit)
- 16 GB available hard disk space (32-bit) or 20 GB (64-bit)
- DirectX 9 graphics device with WDDM 1.0 or higher driver

VISTA BUSINESS EDITION

Windows XP Professional System Requirements

Published: August 24, 2001

Here's What You Need to Use Windows XP Professional

- PC with 300 megahertz or higher processor clock speed recommended; 233 MHz minimum required (single or dual processor system);* Intel Pentium/Celeron family, or AMD K6/Athlon/Duron family, or compatible processor recommended
- 128 megabytes (MB) of RAM or higher recommended (64 MB minimum supported; may limit performance and some features)
- 1.5 gigabytes (GB) of available hard disk space*
- Super VGA (800 x 600) or higher-resolution video adapter and monitor
- CD-ROM or DVD drive
- Keyboard and Microsoft Mouse or compatible pointing device

MINIMUM REQUIREMENT FOR INSTALLATION OF LINUX OPERATING SYSTEM

Recommended minimum requirements

Ubuntu should run reasonably well on a computer with the following minimum hardware specification. However, features such as visual effects may not run smoothly.

- 700 MHz x86 processor
- 384 MB of system memory (RAM)
- 8 GB of disk space
- Graphics card capable of 1024x768 resolution
- *Sound card*
- *A network or Internet connection*

UBUNTU LINUX

Note: All 64-bit (x86-64) PCs should be able to run Ubuntu. Use the 64-bit installation CD for a 64-bit-optimised installation.

Processor: Intel: Pentium 1-4 or Xeon; AMD: Duron, Athlon, Athlon XP, Athlon MP, Athlon 64, Sempron or Opteron

256 MB of RAM (512 MB recommended)

500 MB of disk space (800 MB to 2 GB often required when including a basic set of applications)

- OPEN SOURCE OS
- allows for able users to view and modify a product's source code
- A non-free license is used to limit what [free software movement](#) advocates consider to be the essential freedom

- CLOSED SOURCE OS
- source code is not released to the public
- Closed source software is maintained by a team who produces their product in a compiled executable state, which is what the market is allowed access to

A SHELL PROGRAM

- 1) MENU DRIVEN SYSTEM
- 2) FULLY GRAPHICAL USER INTERFACE

MENU DRIVEN SYSTEM

- An interactive computer system in which the operator requests the processing to be performed by making selections from a series of menus

FULLY GRAPHICAL USER INTERFACE

MAJOR SUBSYSTEM IN OS

1) PROCESS MANAGEMENT

- ◆ A *process* is a program in execution
- ◆ A process needs certain resources, including CPU time, memory, files, and I/O devices, to accomplish its task.
- ◆ A process is an *active entity* whereas a program is a *passive entity*.
- ◆ OS process management activities:
 - Process creation and deletion.
 - Process suspension and resumption.
 - Process synchronization.
 - Process communication.
 - Process deadlock handling

2) FILE MANAGEMENT

- ◆ The OS provides a uniform logical view of information storage. (Many different types of physical media.)
- ◆ A file is a collection of related information defined by its creator. File contents, file formats, file structures, file attributes.
- ◆ Files are organized into directories.
- ◆ OS file management activities
 - File creation and deletion.
 - Directory creation and deletion.
 - Support of primitives for manipulating files and directories.
 - Mapping files onto secondary storage.
 - File backup on stable (nonvolatile) storage media.

3) MEMORY MANAGEMENT

- ◆ Memory is a large array of words or bytes, each with its own address.
- ◆ Memory is a repository of quickly accessible data shared by the CPU and I/O devices.
- ◆ Main memory is a volatile storage device. It loses its contents in the case of system failure.
- ◆ OS memory management activities:
 - Keep track of which parts of memory are used and by whom.
 - Decide which processes are to be loaded when memory space becomes available.
 - Allocate and deallocate memory space as needed.

suatu aturcara kawalan utama sesuatu komputer. Ia memperuntukkan antara muka pengguna yang mentafsirkan perintah yang dimasukkan oleh pengguna, menjadualkan kerja, menguruskan storan dan mengendalikan komunikasi dengan persisian.

DEFINISI OS

- ❑ Memastikan kerja-kerja pengguna dapat dilakukan dengan teratur
- ❑ Mentafsirkan perintah-perintah pengguna
- ❑ Mengendalikan sebarang ralat yang ada
- ❑ Mengendalikan input output
- ❑ Mengendalikan sampukan
- ❑ Menguruskan ingatan

KEGUNAAN OS