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Qassim University
Art and Science College
Computer Science Department

المملكة العربية السعودية
جامعة القصيم
كلية العلوم والآداب
قسم علوم الحاسب

A comparison between operating systems Windows and Linux

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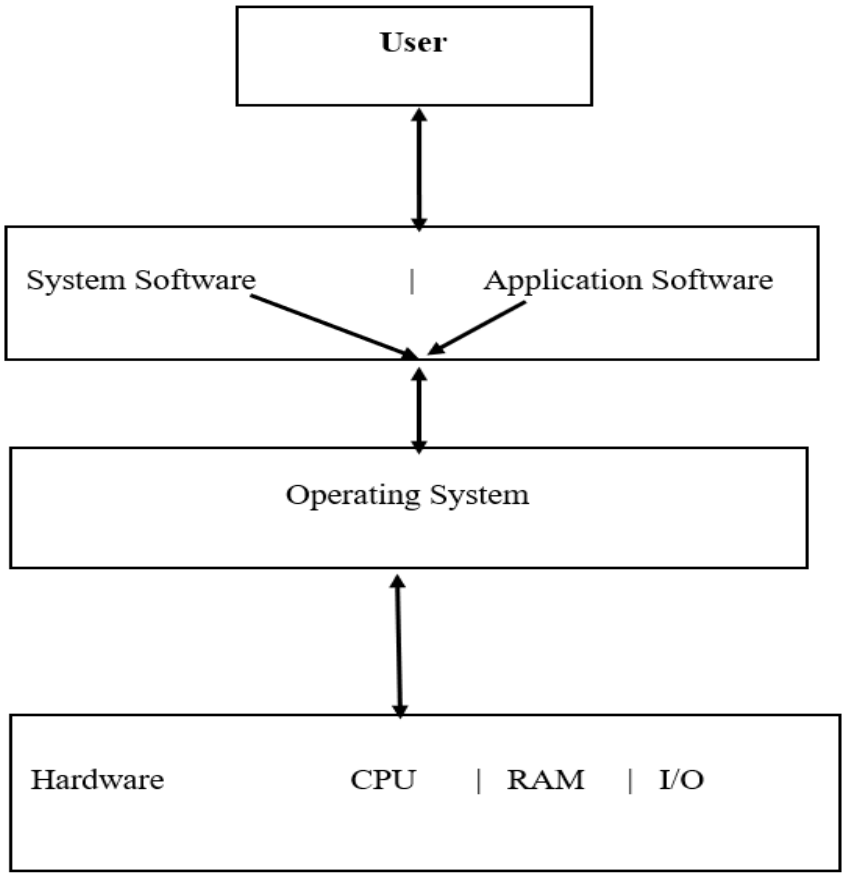
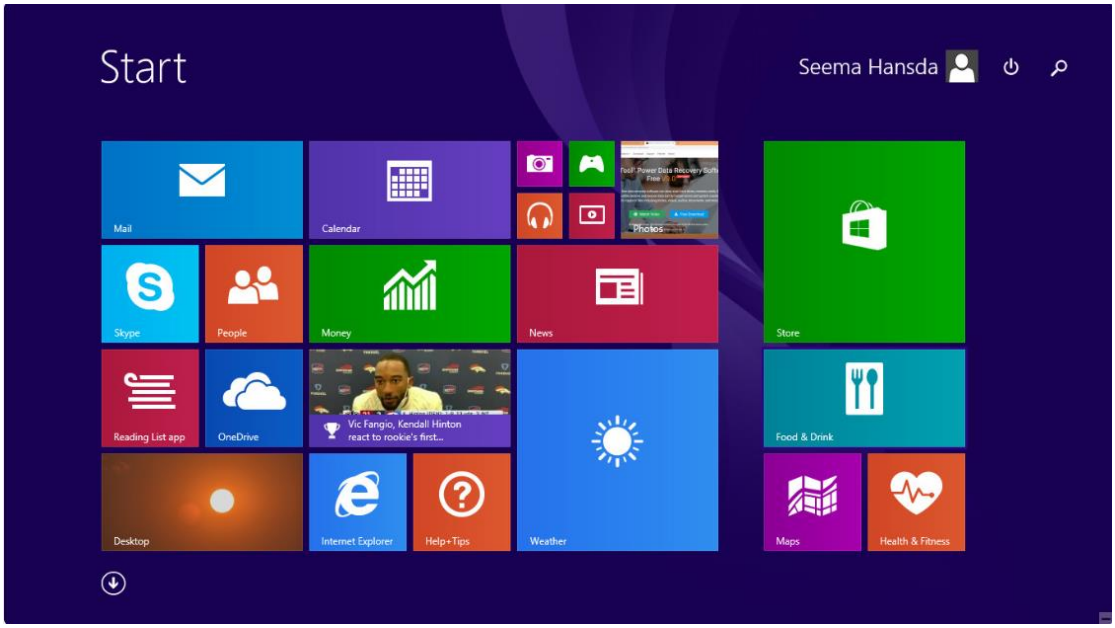
Introduction:

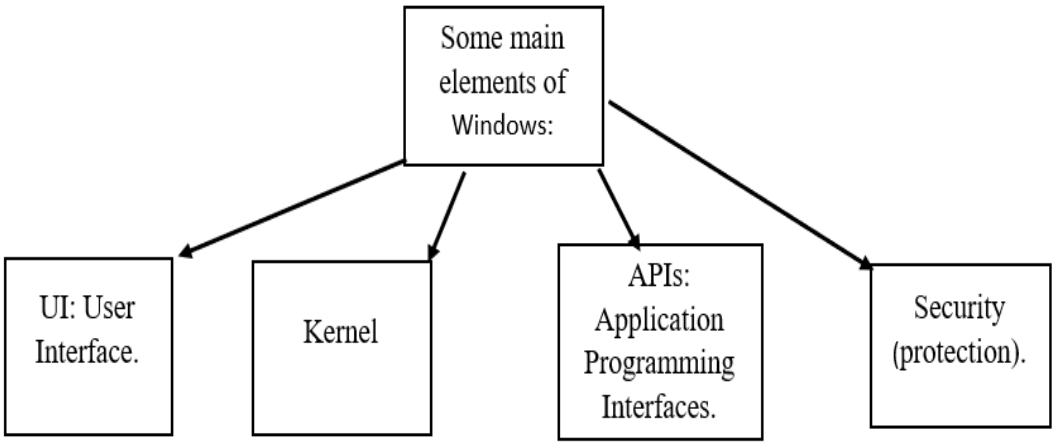
What are the operating systems and what do they provides for users and computer? The operating systems are software on computer or device that manages software resources and computer device hardware, and provides popular services to computer programs Operating system objective is for implementation of user programs and make solution user troubles easier and make the computer system appropriate to use. An operation system is necessary for per computer because computer without an operating system is it has no use. And in this essay, we will compare between windows system and Linux system of operating systems in use today and will discuss how they make use of the CLI and GUI, memory management techniques and process management and historical development.



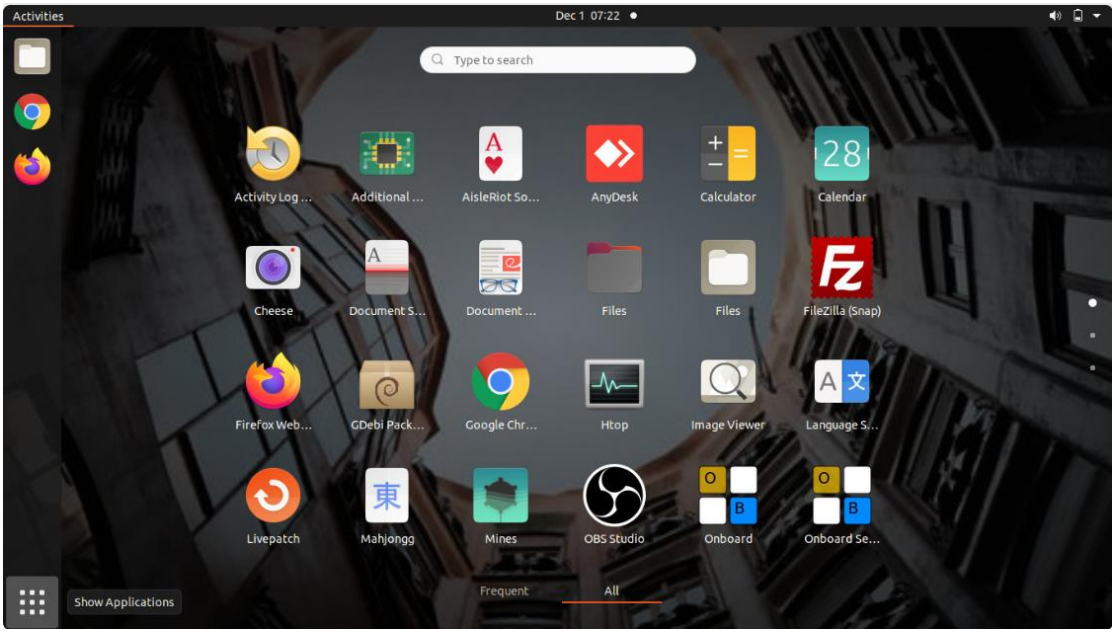
The difference between Windows and Linux:

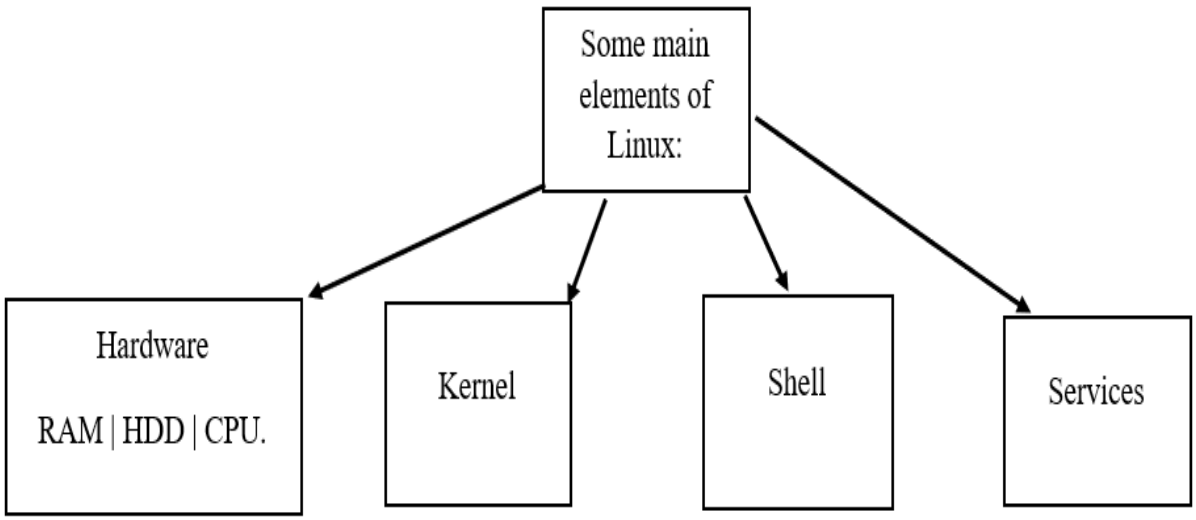
Windows: A window is a separate showing region on a computer show monitor in a system that allows various showing region as part of a graphical user interface (GUI) a window can habit be change size by the user.





Linux: is an operating system open source, depends on UNIX, and is one of the oldest operating systems. Linux has a desktop called K Desktop Environment. Run on 32 bits and 64 bits, Run on multiple platforms. It is multiuser, multitasking and multiprocessor.





Similarities between Windows & Linux
Both have GUI: Graphical User Interfaces. GUI: Graphical User Interfaces are a part of user interface that allows users to use applications in multiple way.
Both working as host for programs that run on the computer (Operating systems).
Both they have WB: Web browsers.
They are responsible for everything that happens in a computer and share it.
They come 32 bits or 64 bits.
Both have software to protect against viruses.

Differences between Windows & Linux	
Windows	**Linux**
Not Open-Source OS (closed).	Open-Source OS.
Size too large (greater than Linux).	Size small (smaller than Windows).
Low efficient less than Linux.	High efficiency greater than Windows.
Too low security less than Linux.	High secure greater than Windows.
With cost for anyone.	Without cost for everyone.
Updates will come at inappropriate times.	Users have whole control of updates.
WS: Web Server nearly 23% share.	WS: Web Server nearly 70% share.

How they make use of the CLI and GUI?

GUI: graphical user interface as the virtual for OSs Windows and Linux.

CLI: Command Line Interface is a text-based user interface used to operation programs, administration computer files and react with the computer in OSs Widows and Linux.

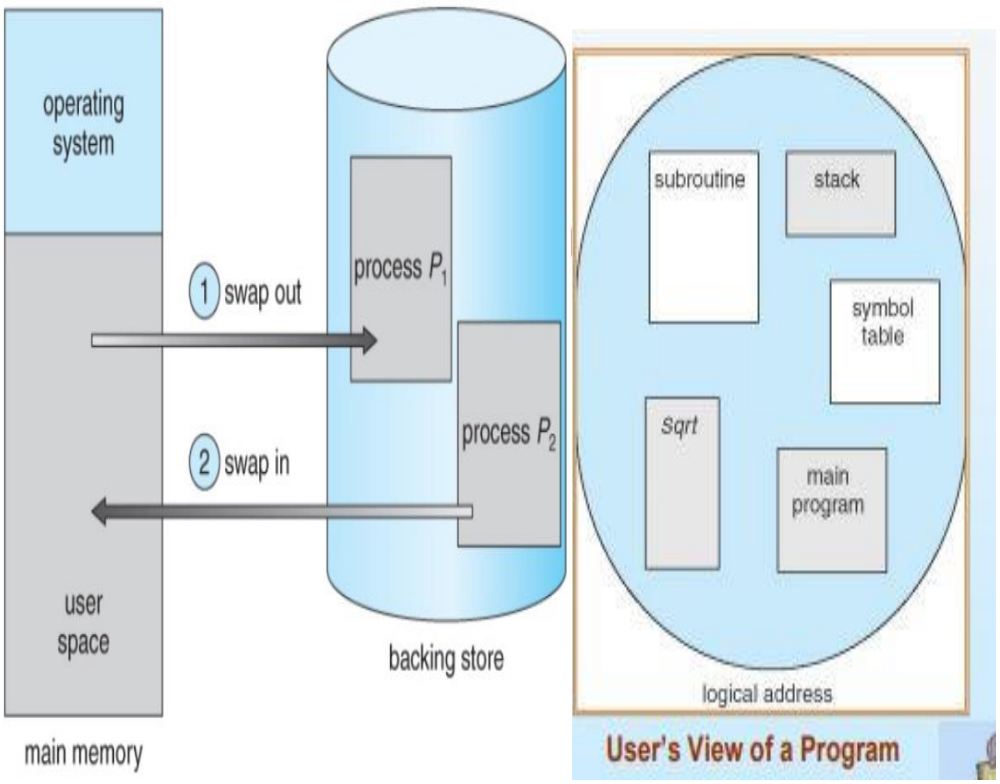
GUI-based shells are better than CLI to use for beginners in OSs Windows and Linux.

CLI-based shells users a brief and efficient mode of react with the OS, without need the loading of a graphical user interface.

GUI	**CLI**
Graphical User Interface.	Command Line Interface
Interaction with devices is by graphics and visible ingredients and symbols.	Interaction is by writing commands.
The interface modifies as the software is updated.	The interface is fixed all of the time.
Commands easy to understand.	Commands need to be saved them for understand.
More flexible than CLI.	Less flexible than GUI.
Slow compared to CLI.	Fast compared to GUI.
Need a keyboard and a mouse.	Need only keyboard.

Memory Management Techniques:

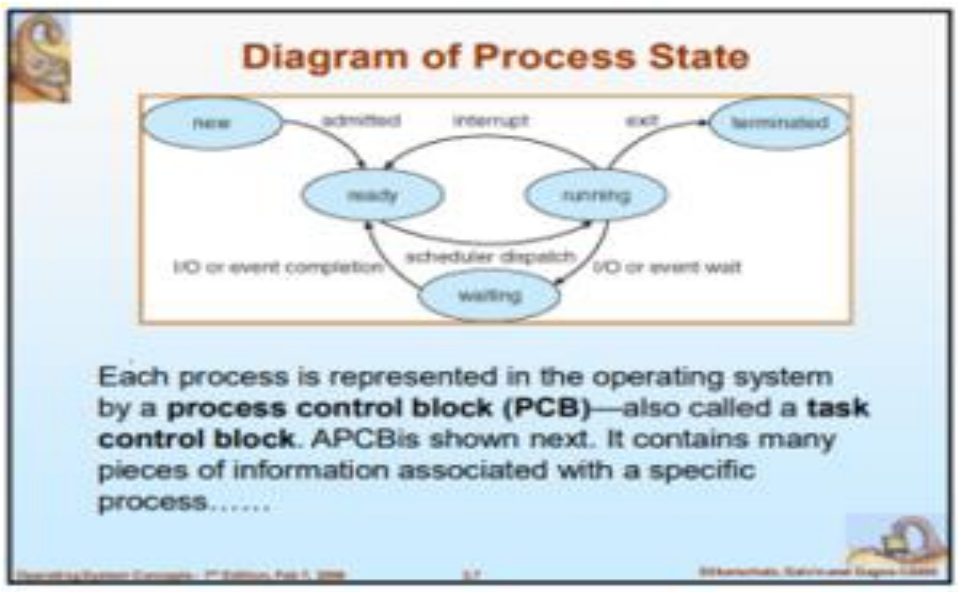
memory management techniques are the technique responsible for administering the primary memory in computer memory management function retains next of the current status in memory location The subsystem of Linux: memory management is administrator to manage the memory in the system. It contains the execution of demand paging and virtual memory. Common memory management techniques are: dynamic partitioning, simple paging, simple segmentation and virtual-memory paging and virtual memory segmentation. Guarantee more efficient use of the main memory and without internal fragmentation. Weakness point of this approach are inefficient use of processor because of the need for pressure and external retail. Swapping is the process should be swapped temporarily from the main memory to the copying store. It will be brought back into the memory for continue implementation. Paging is a storage mechanism that allows operating system to recover processes from the sub storage into the main memory in the form of pages. Windows Memory Management Virtual memory manager (VMM) –Executive component administrator for managing memory Lazy customization. Avoid allocating memory until necessary Prefetching. Move pages from disk to main memory before they are needed Page file.

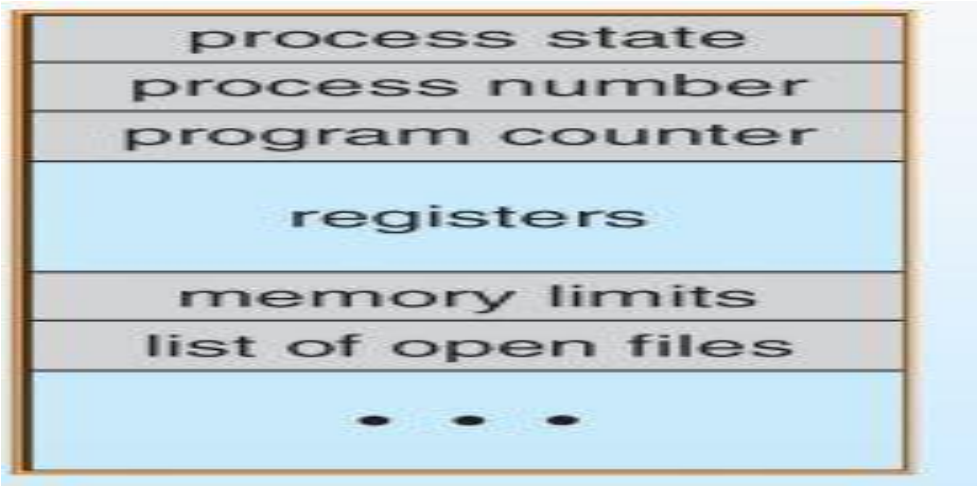


Process Management:

A process is a program in implementation and process execution must progress in sequential fashion. A process contains its especially independent virtual address space with both code and data, protected from other processes. All process contains one or more threads, and the Windows thread is the basic executable unit. A process in Linux is a program in execution. Must a command be to be executed then the process is created.

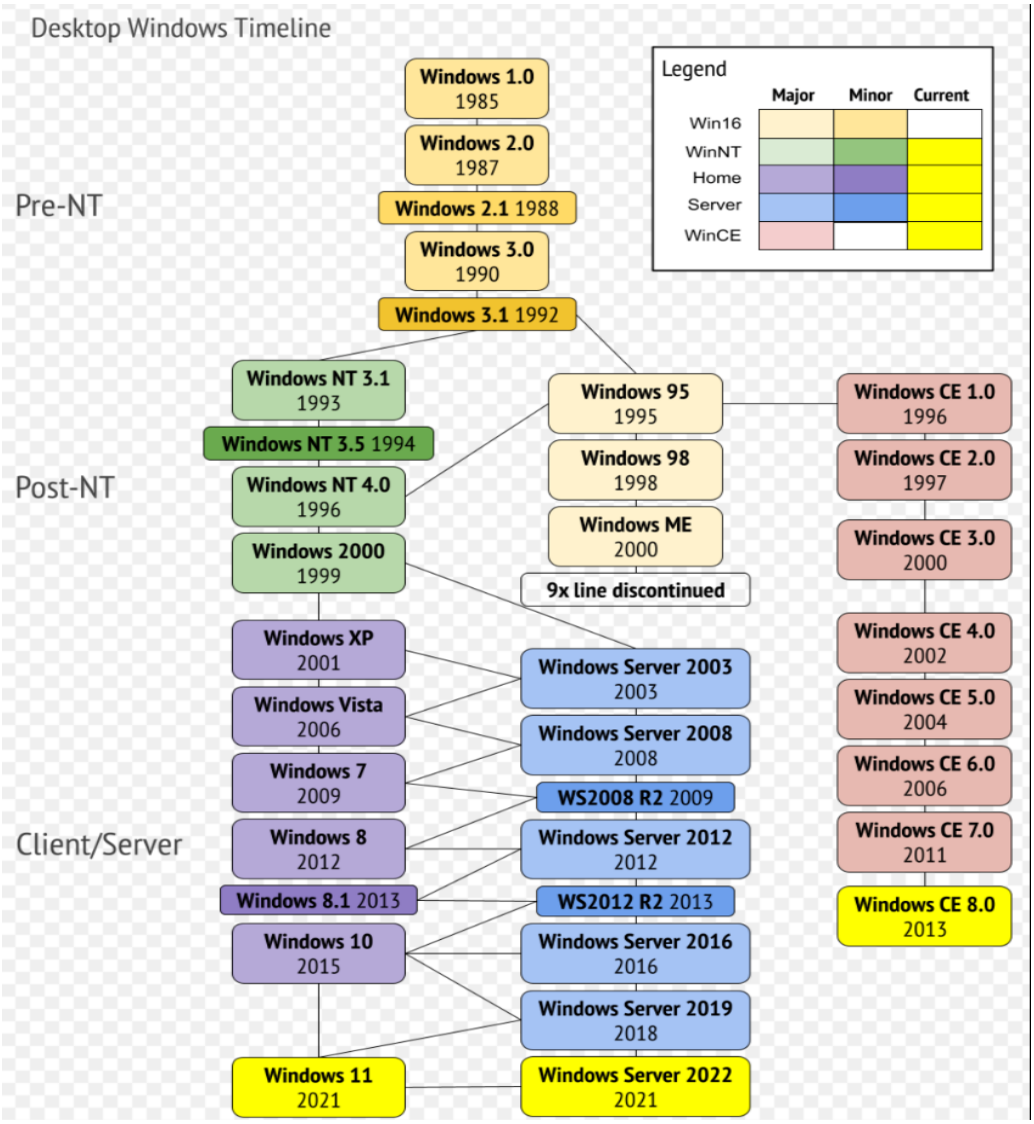
This processing can be rating into four parts. These are batch system or jobs time shared systems or user programs or tasks when a process executes, it changes state. The state of a process is determined in part by the present activity of that process. ""



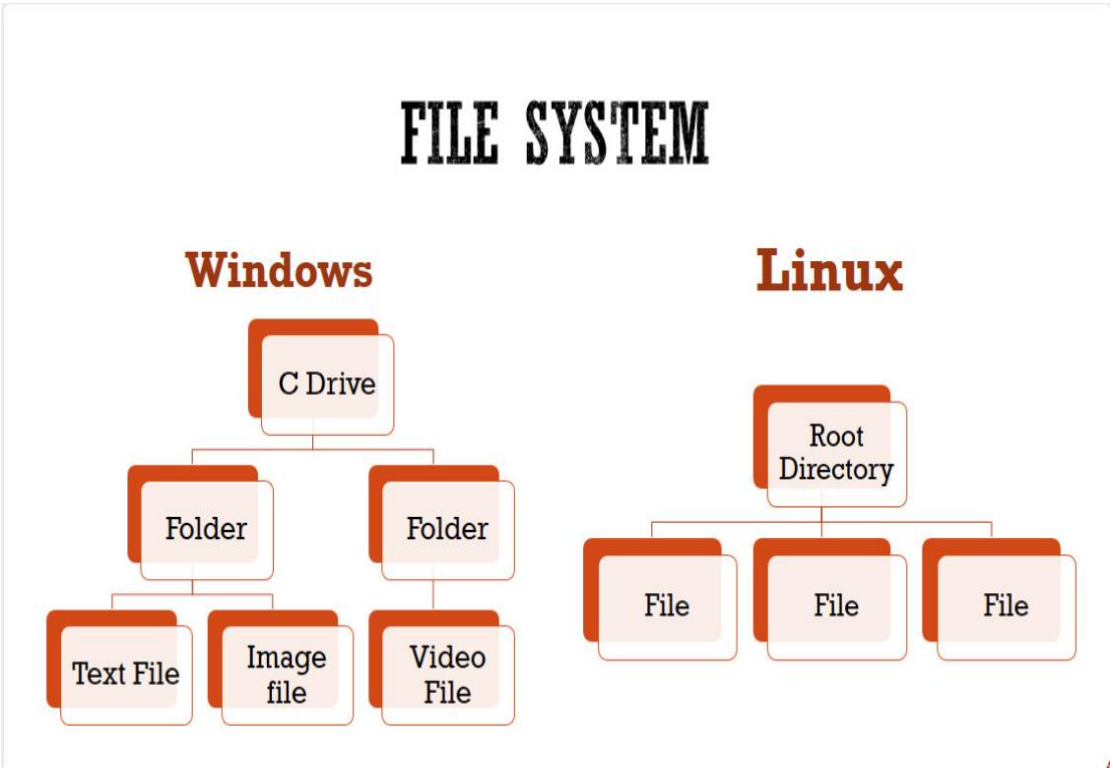


Historical development of operating systems Windows & Linux:

""The first operating system was created by General Motors in 1956 to run a single IBM mainframe computer. The name windows were first used in 1985 when a graphical user interface was created and paired with MS-DOS. Its first major update arrived in 1987. The first OS built by Microsoft wasn't called windows, it was called MS-DOS and was built in 1981.Linux was launched later than Windows, in 1991. Linux was first distributed under GNU General Public License in 1992"".




Ubuntu
Edubuntu
Kubuntu
Lubuntu
Ubuntu
Mythbuntu
Server
ubuntu
Sever
Xubuntu
Blackbuntu


FILE SYSTEM
Windows
C Drive
Folder
Folder
Text File
Image file
Video File
Linux
Root Directory
File
File
File

References:

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