ADMINISTRATION OF OS SERVICES IN WINDOWS

BCNS/19A/FT

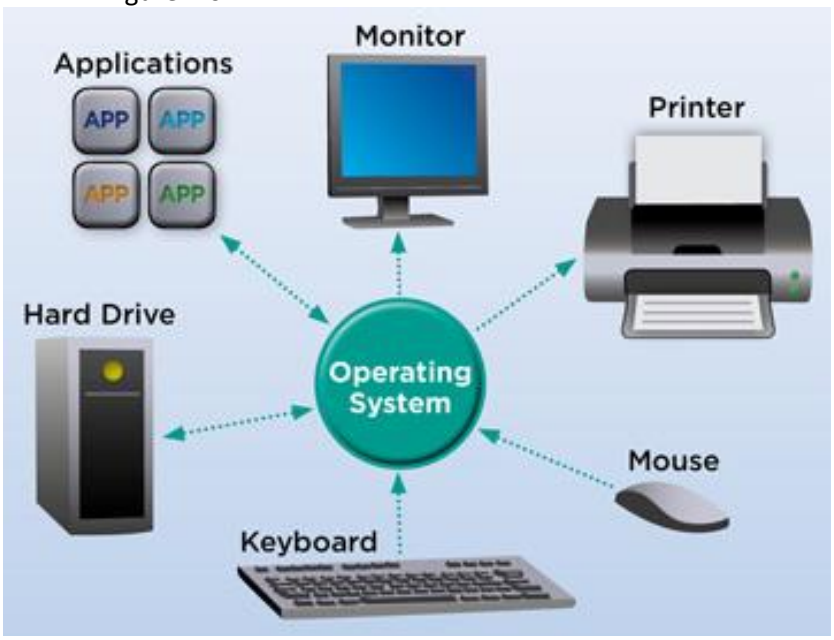
PASCAL ST LOUIS

1903_16967

Introduction:

An operating System is one of the crucial software that deals with computer hardware, software, resources and provides common services for computer programs. The Os services acts like a bridge between the user and the Os. Figure 1.0 shows the responsibility of the Os, dealing with different hardware and resources.

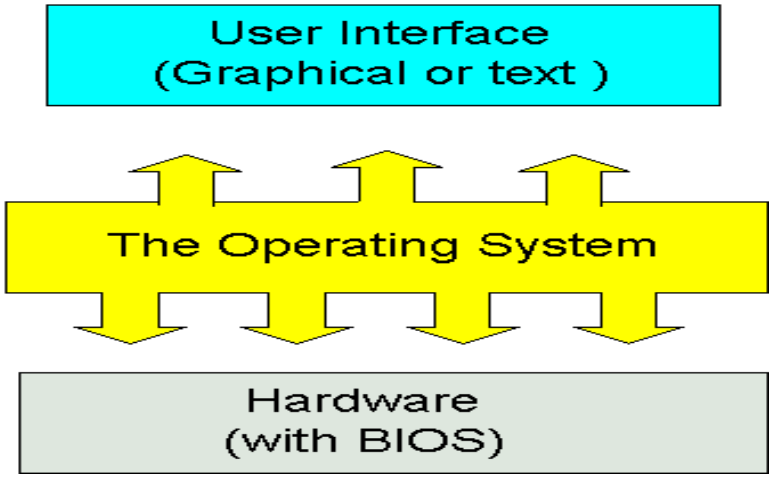
Figure 1.0



Operating System has in his sleeve lots of capabilities. But here, we will see the most use and important ones. Here is the plan : memory management,data security,disk management, device controlling, printing controlling, provide interface

PROVIDE USER-INTERFACE

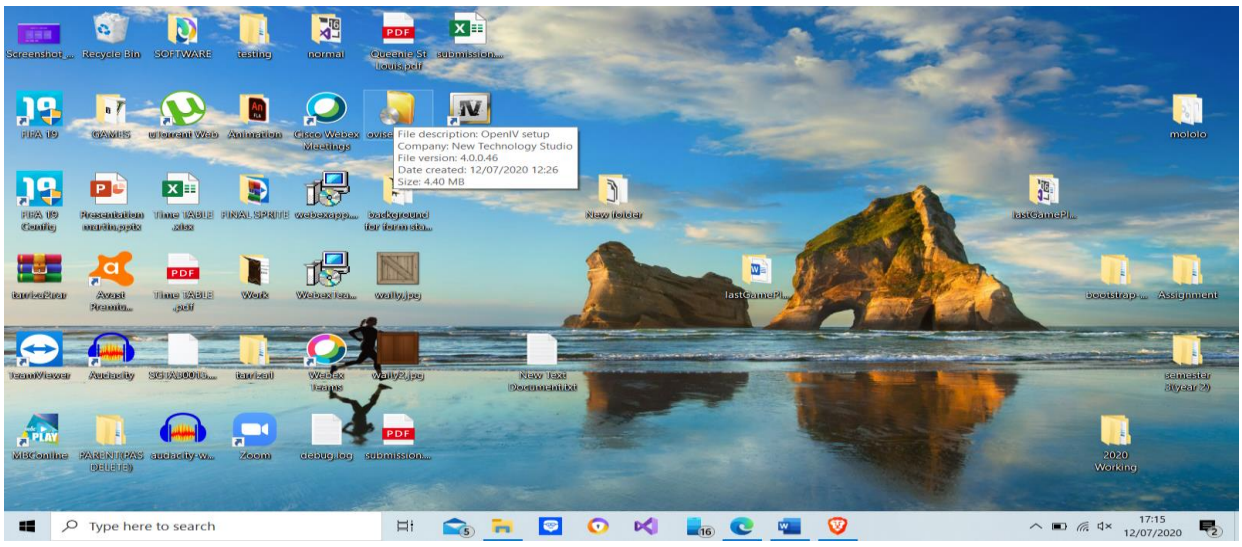
The Operating system is a link between the user and the cpu. It hides all the complexity of the computer from the user.



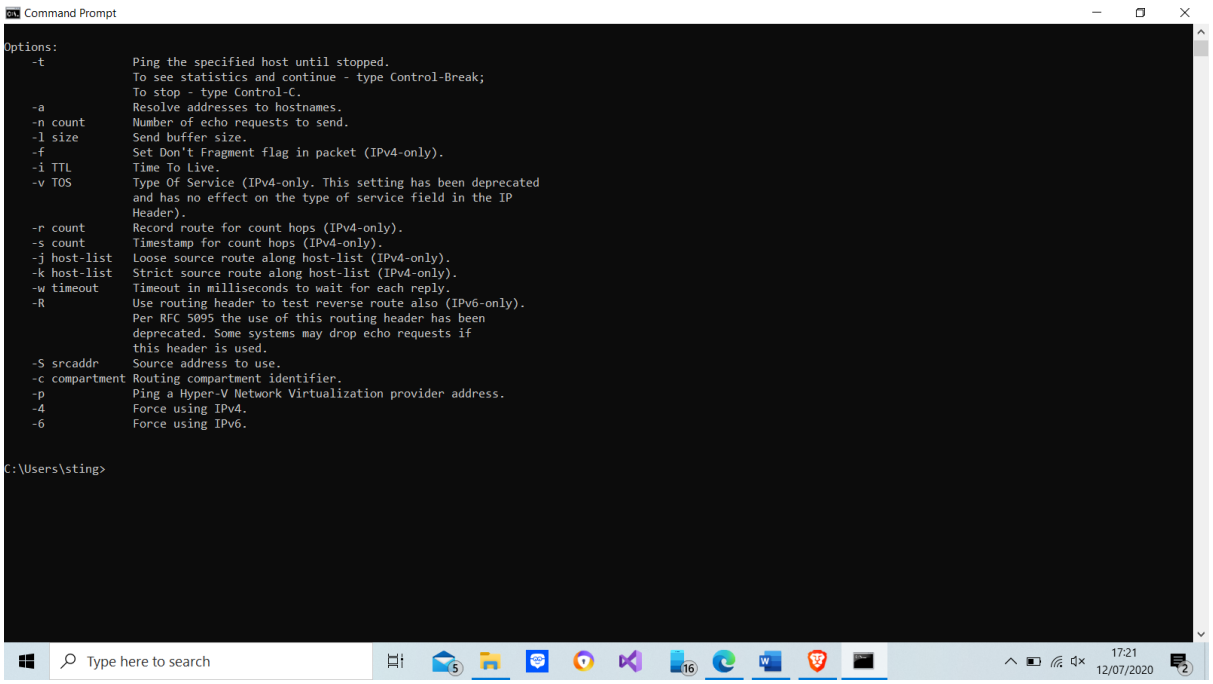
The interface in Microsoft Window can be represented in forms of GUI or CLI

In Microsoft Window, we mostly use GUI to interact with the operating System.

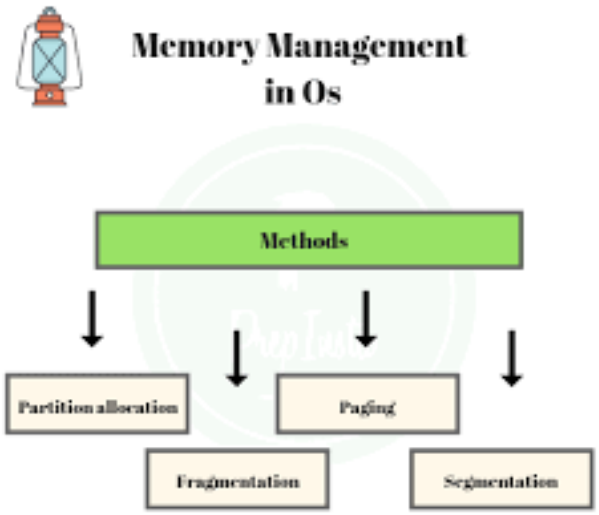
The user can make use of a mouse and a keyboard to interact with the interface like shown below:



But Microsoft window has also a CLI part for less GUI. In the CLI, you are restricted to the use of keyboard and a black window to write some commands. For example :



Memory management



Memory management is the main part of an operating system. It is a way managing the computer memory by allocating portions also known as blocks to running programs. This method enhances the working speed of the system.

Memory management ensures that programs do not collide with each other in memory. Protect processes from each other.

Types of memory management techniques.

- Fixed Partitioning
    - In this technique number of partitions in RAM are fixed but size of each partition or may not be the same. Partition are created before processing or during System configuration.
- Dynamic partitioning
    - In this technique process is loaded into a partition of the same size.
- Simple Paging
    - Main memory is divided into a chunk of fixed size
- Simple Segmentation
    - This technique divide a process into several chunks/segments of different size.

Memory management consist also of protection. In order to maintain control over memory access. Use to prevent or minimize the risk of 2 or more processes trying to use the same memory location. Therefore prevent crash of the whole system.

Fragmentation

When we get rid of used process in the memory, it creates free space in the memory but too small to be re allocated to new processes. This result in memory inefficient use of memory.

Types of fragmentation :

- Internal Fragmentation
- External Fragmentation

Process Management

A process is where a program is executed by the os. A process created by the main process is called a child process.

Process management includes creation ,scheduling, termination of processes and a dead lock.

Process Architecture diagram

Stack – Store function parameters, return addresses and local variables

Heap – Assign memory that can be used during run time.

Data – Contain the variable.

Text – Represent the actual running process.

PROCESS CONTROL BLACK(PCB)

Reference :

1. https://medium.com/computing-technology-with-it-fundamentals/operating-system-its-functions-and-characteristics-c0946e4215c6
2. https://www.guru99.com/
3. https://medium.com/@akhandmishra/operating-system-process-and-process-management-108d83e8ce60