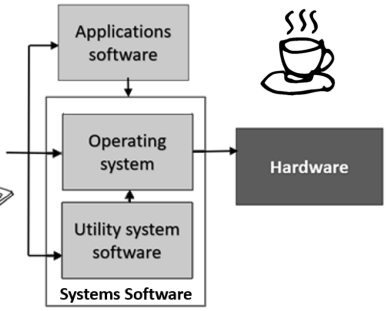
Systems Software

Purpose

To provide an interface between the user, the applications software and the hardware

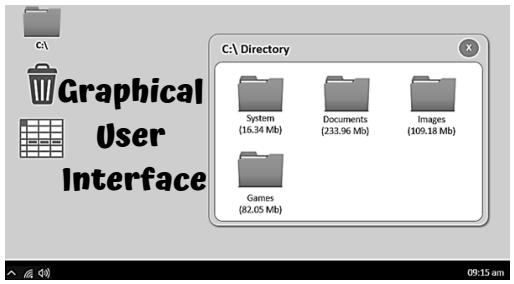
Functions

- Providing an interface for computer users
- Allocating system resources
- Operating and controlling the computer hardware
- Disk and file management



OPERATING SYSTEM

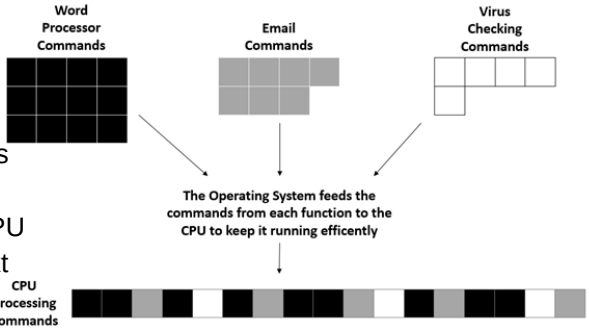
Command Driven Interface



Graphical User Interface

Memory management and multitasking

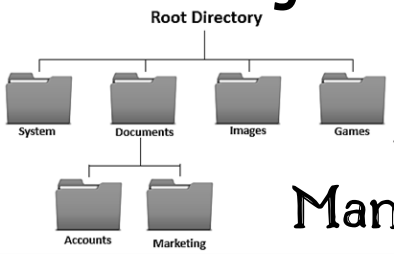
The CPU works at a much higher speed than RAM and can work at full capacity and process one commands without waiting for the next as operating system feeds multiple commands to the CPU so it is not waiting for the next command to be loaded.



Peripherals are controlled by software called device drivers. Standard drivers (mouse and keyboard) are included in the operating system, however more specialist peripherals may need drivers programmed by the manufacturer which convert signals into machine code.

User Management

One computer can be set up to allow several users to log in, each with their own personalised settings and preferences (i.e. left handed mouse) and these settings are all controlled by the operating system.



File Management

The most common way for files to be organised in a system is with a hierarchical system where files are stored in directories (known as "folders" in a Windows system). This is controlled by the operating system.

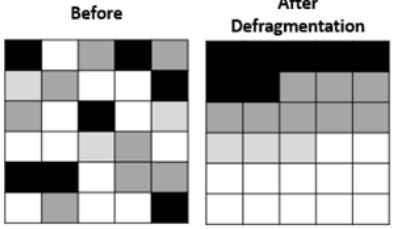
UTILITY SYSTEM SOFTWARE

Utility software are programs that are installed to perform a specific function, usually to improve the efficiency or security of a computer system.

ENCRYPTION

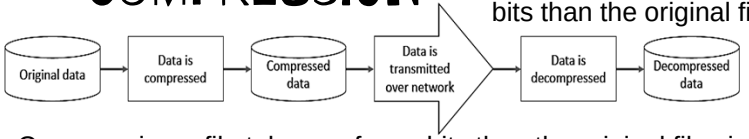
Encryption software converts data into an unreadable format which only authorised users can decode to stop cyber-criminals from "listening in" when messages are transported around a network.

Defragmentation



As files are deleted, they leave gaps and future files fill these gaps by splitting data into small chunks. This can slow down a system and defragmentation (also known as "defrag") software allows the system to reorganise the files so that the pieces of data are put back together.

DATA COMPRESSION



Compressing a file takes up fewer bits than the original file size and can save space.

Compressing a file takes up fewer bits than the original file size and can save space. When data is compressed it can be transmitted over a network more quickly than sending a large file in a decompressed state.

Backing up data allows a copy to be stored in case the original data is lost or damaged

- **Full -** backs up everything
- **Incremental -** only backs up those files which have been altered since last backup