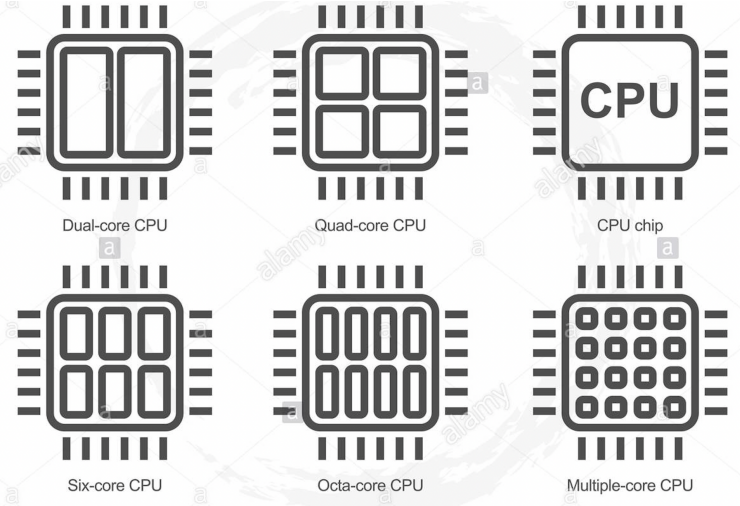
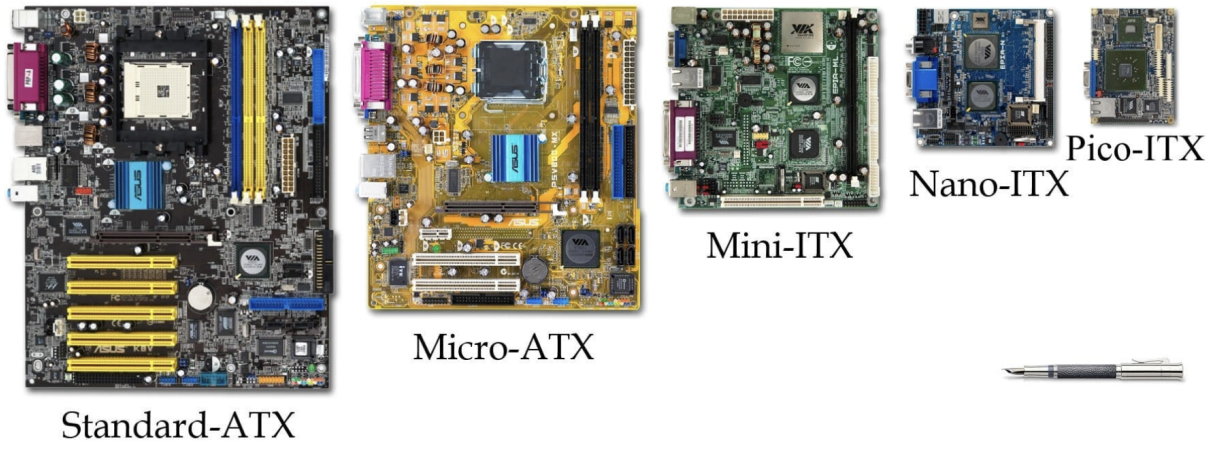
Computer Components

1. **CPU (central processing unit)**: Is the brain of the computer that retrieves and executes instructions. It performs basic arithmetic and works at the lightning speed and does millions of calculations per second.They are built in different architectures like 64 bit and 32 bit with maximum speed and flexible capacity.

   _ CPU consists of 6 types: Single-core, Dual-core, Quad-core, Hexa core, Octa-core, and Deca core processor (The more cores they have the faster they could process.). Deca-core as an example: it is faster than other processors and very successful in Multi-tasking.



2. **Motherboard**: It is like a structure of a computer where every component is put in one spot so that they can talk to each other.
   - There are many different type of motherboard form factors such as:



THE difference between ATX *(Advanced Technology Extended)* **and ITX** *(Information Technology eXtended)* is that ATX has a standard size and is intended for use in standard PCs, have a high number of PCI slots and higher RAM capacity whilst an ITX is smaller than the standard size and are used in compact PCs usually meant for traveling.

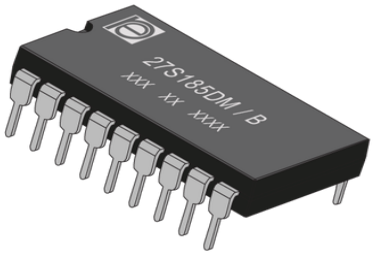
Motherboard Diagram

1. CPU socket
2. Chipset
3. DIMM/RAM slots
4. PCIe x16 slot
5. PCI x1 slot
6. M.2 connector
7. SATA ports
8. Front panel connectors
9. USB header (10-11)
12. ATX power connector
13. CPU power connector
14. BIOS chips
15. CMOS battery
16. Fan headers
17. Front panel header
18. VRM heatsink
19. COM/Serial header
20. TPM header
21. RGB header

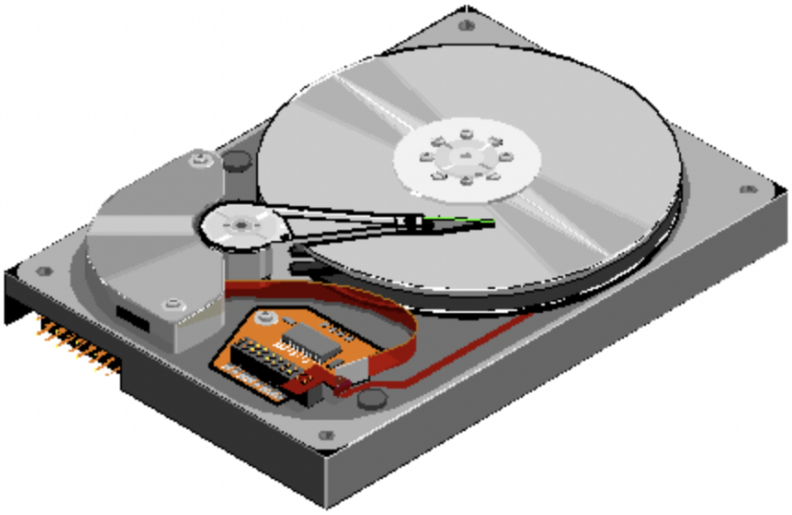
3. Memory: It is like a brain where it has the capability to store information. It is capable of storing information temporarily, like **RAM** (random access memory), or permanently, like **ROM** (read only memory).

- **RAM** is known as " volatile memory " which means that it will only store data as long as the system is turned off, anything stored in RAM is automatically deleted.

- **ROM** is a non- volatile memory. As the name indicates, data stored in ROM may only be read. It is either modified with extreme difficulty or not at all.

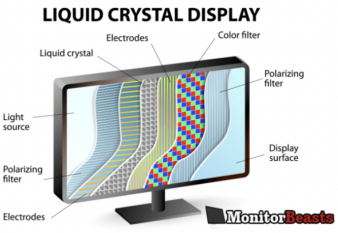


4. **Hard disk:** Hard Disk **(HDD)** is usually installed internally in a computer, attached directly to the disk controller of the computer's motherboard. As for the **SSD** (Solid State Drive), it is a device that uses integrated circuit assemblies to store data, however, it is far speedier than the HDD as it requires less manual labor for getting information.



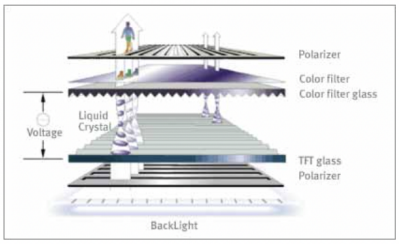
5. **Display:** Display is a project mechanism that shows text and often graphic images. It is a type of computer output surface that uses different types of technology.
    - There are many types of display monitor:
        1. **CRT (cathode ray tube)**
            - It is a monitor that uses black and white display.

        2. **LCD (liquid crystal display)**
            - Its structure is then and works through a series of monochrome pixels that take shape through a light.



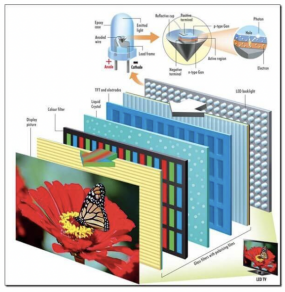
3.**TFT (Thin-Film Transistor)**

- It is a variant of LCD televisions and the image can be transmitted clearly and not in a pixelated way.



4. **LED (light emitting diodes)**

- This type of screen is composed of light-emitting diodes or LEDs.

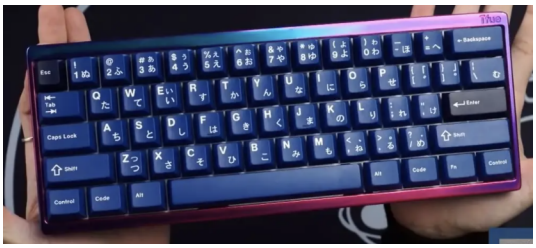


and a lot more…

6. **Keyboard**: It is an input device that is for typing letters and numbers to write something or search for information.
   Evolution of keyboards:
   - **IBM Selectric typewriter** was Introduced in 1961, the Selectric electric typewriter was an enormous influence on the modern computer keyboard.

- **IBM Model M keyboard** was introduced in the mid 80s, IBM's classic Model M remains a favorite for keyboard purists.

- **Mechanical keyboard** is built with high quality, typically spring activated, key switches. The key switches vary based on the keyboard's application or user preference.



7. Mouse: It is also an input device similar to a keyboard, however, it purpose is to control a cursor and select text, icons, files, and folders.

- **The Engelbart mouse:** invented in the early 1960s by Doug Engelbart in his research lat at Stanford Research Institute (SRI)

- **Mechanical Mouse:** It is a computer mouse that contains a metal or rubber ball on its under side. (Best selling mouse these day)

8. **Power Supply**: It is a hardware component that delivers power to electrical units.

9. **Network Interface:** It is a type of interconnection between a computer and a private or public network.
    - The **Network interface controller** or **Network interface Card** is a hardware component that connects to the network. Some people prefer to call it **Network Adapter** or **LAN.**

      _ There are two types of Network Cards: internal and external.

      Internal Network Card: It requires network cables to provide network access.

      External Network Card: No network cable is needed to connect to the internet and it has two types of network card Wireless and USB based.