Hardware

PORTS: Ports are the connection points that we can connect the devices to extend the functionality of computer.

CPU: Brain of computer where all the data processing and calculations performed.
RAM: Our computer short-term memory.
Hard Drive: stores all the permanent data.
Motherboard: The body or circulatory system of computer that holds that connect all the pieces together.
Programs: Instructions that tells the computer what to do.
External Data Bus (EDB): To communicate
Memory Control Chip (MCC): MCC is the bridge between the CPU and the RAM.
Address Bus connect CPU to MCC. MCC takes address and look for data and data is then sent over the EDB.
Cache: Stores frequently accessed and is fastest.
There are 3 different cache levels in CPU.
L1 - smallest and fastest cache (Fastest memory of computer).
L2 - Bigger and slower.
L3 - largest and slowest.

2.3 GHz – Clock speed of the CPU: The max number of clock cycle that it can handle in a certain time period.
2.3 Billion Cycles per sec.
If you go beyond this speed: Overclocking- It increases the rate of your CPU clock cycles to perform more tasks.

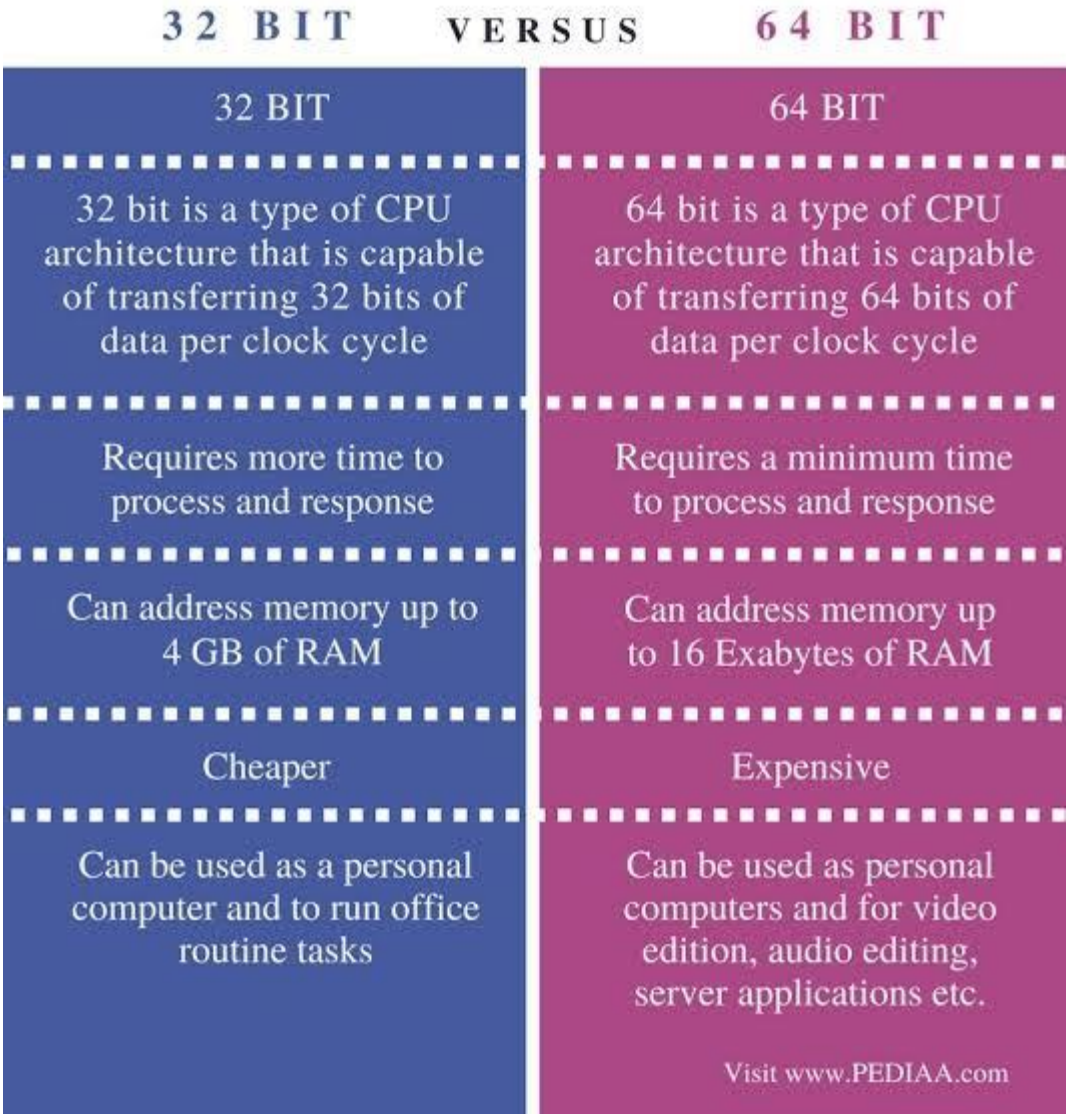
Components

CPU: It contains Instruction set- A list of Instruction that our CPU is able to run. Instruction set are Hard Coded inside our CPU.
Few CPU manufacturers: Intel, AMD and Qualcomm
These CPU manufacturers use different names to differentiate their processors like Intel Core i7, AMD Athlon, Snapdragon 810, Apple A8.
CPU must be compatible with your motherboard.

Two type of CPU socket:
Land grid array (LGA)
Pin grid array (PGA)

Heat sink: Remove heat through fans.

32 bit and 64 bit architecture



RAM: volatile memory

One of the most commonly found RAM: DRAM (dynamic RAM). When a binary number 1 0 is send to RAM, It stores in microscopic capacitor which is charge or discharge according to 1 or 0.
There are usually different types of memory stick where DRAM can be put on. The more modern DIMM sticks, Dual Inline Memory Module, have different types of pins on them.
SDRAM (synchronized DRAM) allow quicker processing of data.
Today DDR SDRAM double data rate SDRAM are used.
There are lots of iteration of DDR from DDR1 to DDR4.
DDR4 is faster with larger capacity

Motherboards: A foundation that holds our computer together.

Chipset: decides how components talk to each other on our machine.
One is Northbridge: that interconnects stuffs like RAM and video cards.
Southbridge maintains IO controllers like hard drives and USB devices
Chipset is the key component of our motherboard that allow us to manage data between CPU, RAM and peripherals.

Expansion slots: Give us the ability to increase the functionality of our computer.
Standard for Expansion slot today is PCI Express Peripheral Component Interconnect Express.

Form factor: Advance Technology extended (ATX). Another is ITX

Hard disk Drive: RPM Revolution per minute
Solid State Drive
There are few interfaces that hard drive use to connect to our system like ATA. Most popular ATA Serial ATA SATA.

Power supply: Our computer use DC voltage, so we a way to convert the AC voltage.
2.1 amp
USB Universal Serial Bus

BIOS:
Drivers contains instruction for CPU to understand external devices.
The BIOS is a software that helps to initialize the hardware in our computer and gets our OS up and running.
BIOS store in ROM non-volatile. Today another place for BIOS is UEFI Unified Extensible Firmware Interface.
POST: Power On Self Test- Test to check all hardware devices are working correctly.

Single Beep: successful boots up
Two Beep: POST error

CMOS Battery: special chip that stores basic data about booting your computer like date time and how long
Formal I T Task is Reimaging or Reinstalling.