Basic Computer Structure and Knowledge

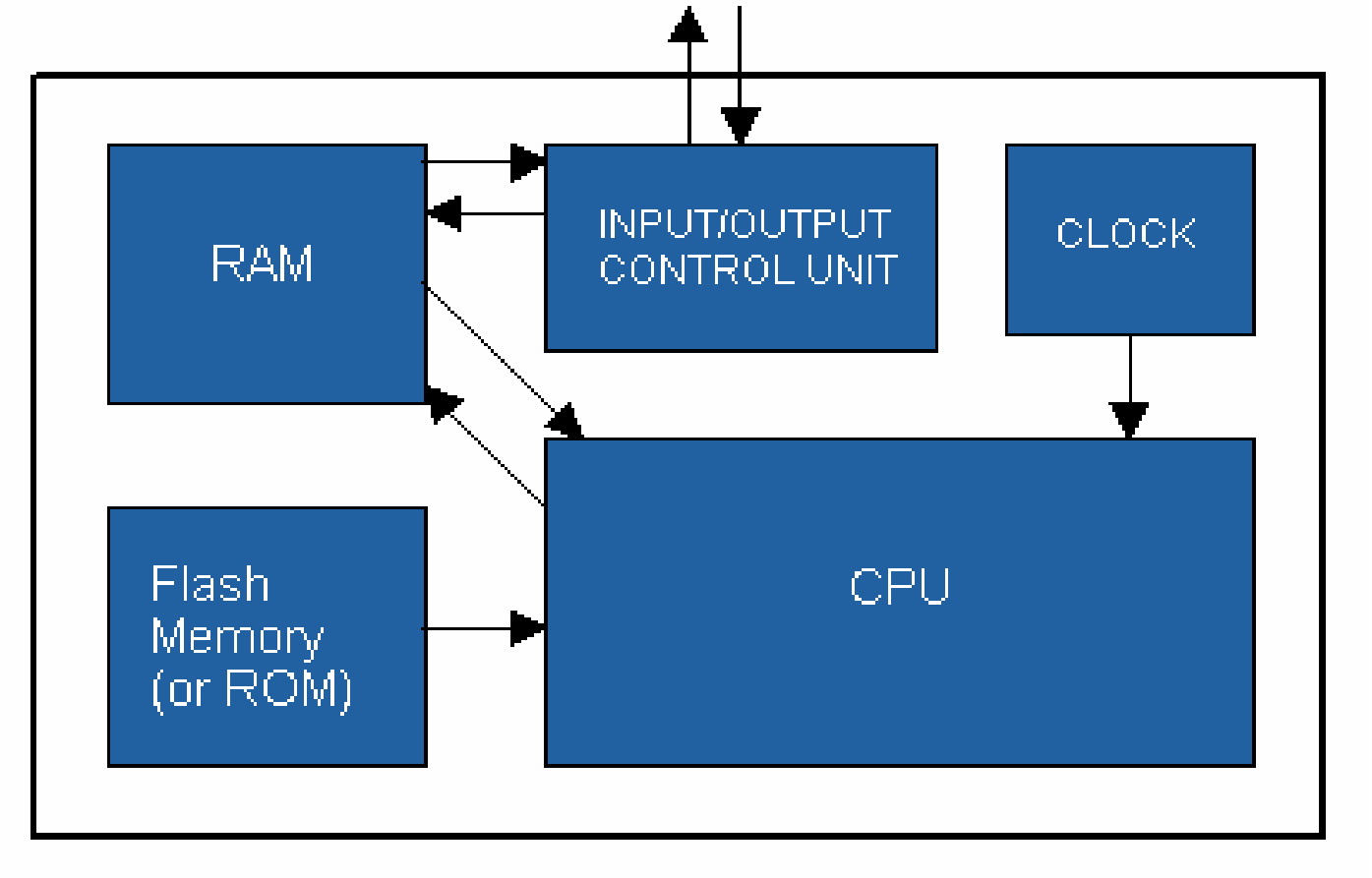
Project Work

Basic Computer Structure

1. Logical Structure of a computer includes:

- BIOS (The Basic Input Output System)
- CPU (The Processor)
- Memory / RAM (Temporary Storage)
- Hard Disk (Permanent Storage)
- Input / Output Device
- Communication Channel (Eg. USB)
- Bus (High Speed Internal Communication)
- Other Add-on Device…

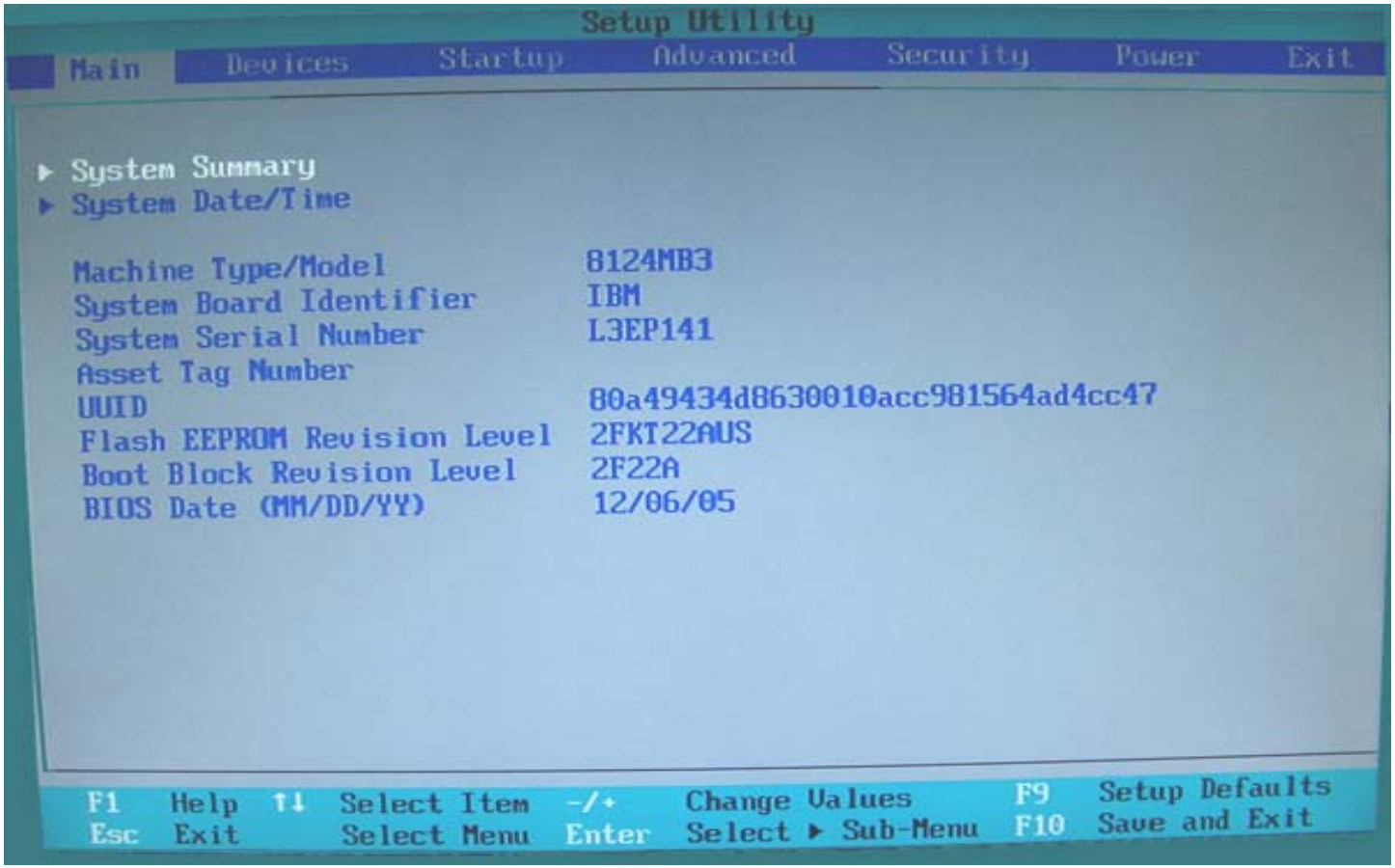
Example of a Computer Structure



BIOS

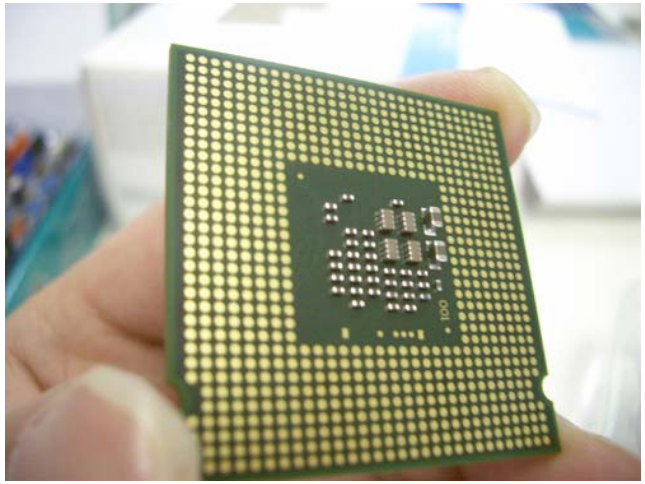
- **B**asic **I**nput **O**utput **S**ystem
- Store all the parameter before the OS Load (Example are Hard Disk Size, Memory Speed, Turn on or turn off the build in device such as Sound Card, USB, printer etc)
- Usually stored in Flash Memory

One of the BIOS Screen Dump



Identify the Component - CPU

- Central Processing Unit
- It is the core of a computer.
- Responsible for all the calculation and part of the video.
- Usually in the Speed of GHz
- 1G around 1,000 MHz
- 1M = 1Million Instruction / second
- Some Expensive CPU have more build in memory (Cache Memory)



How to Choose a CPU ?

- Mainly AMD / Intel Dominate the Market.
- In the current market you have several categories of microprocessors to choose for your desktop computers: Xeon, Pentium IV, Celeron, Dual Core, Quad Core, Athlon, and AMDX64 etc.
- **Price vs. Performance**: There is typically no good correlation between these two factors, especially at the top speeds. Average users should not purchase the top-speed on the market. The price difference is not worthy of the performance difference.
- Based on your budget, find a suitable CPU.

Memory / RAM

- RAM – Random Access Memory
- Act as a temporary Storage.
- EDO > SDRAM > DDR > DDR2
- All data stored in memory are volatile. (Need electricity to keep the data)
- Memory Size is around 256M / 512M / 1G / 2G per memory module
- Basic Configuration is around 512M RAM

Hard Disk (ATA / SATA / SCSI)

- Used to stored data permanently.
- Different Type of Hard Disk Size (3.5”, 2.5”, 1.8”, Micro Drive)
- Different Interface : ATA / SATA / SCSI
  (Speed : ATA < SATA < SCSI)
- Different Speed (Mechanical)
  (4,200rpm / 5,400rpm /
  7,200rpm / 10,000 rpm)

Hard Disk (ATA / SATA / SCSI) – Cond.

- Different Build in Memory Size
  (2M / 8M / 16M etc)
- Different Capacity
  (80G to 500G or even 1T)
- Small Size Hard Disk are more popular as they are portable size.

Main Board / Mother Board (MB)

- Provide a platform to connecting all the devices.
  (Keyboard / Mouse / Power / CPU / Memory / Hard Disk / Floppy Disk / Display Card etc)
- Many Main Board has already build in Sound Card / Network Card or even display card.

I/O Device & Interface

- ATA / SATA /SCSI (For Hard Disk)
- Parallel Port or LPT Port (For Printer)
- COM Port (For Modem)
- RJ45 Socket (For Network)
- PS/2 (For Keyboard / Mouse)
- D-Sub / DVI (For Monitor)
- USB (All compatible device)

Power Supply

- Power Supply Convert the A.C. Voltage to Lower D.C. Voltage which is suitable for Computer.
- Power Supply can be classified by their loading (Watt).
- Different type of socket for different device.

Case

- Case is used to place the main board and the power supply.
- Most case have external USB connection.

End

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