

Hardware

Physical parts of the computer

Definitions

▶ CPU:

- ▶ Central Processing Unit
- ▶ Brains of the computer
- ▶ All of the processing goes on through the CPU

Hertz

- ▶ Hertz measures the speed of a CPU
 - ▶ Hertz = number of cycles per second
- ▶ Megahertz
- ▶ Gigahertz
- ▶ Terahertz



Definitions

RAM

- ▶ Random Access Memory
- ▶ Like the short term memory on the computer
- ▶ Only VOLITILE INFORMATION CAN BE STORED HERE

Definitions

▶ ROM

- ▶ Read Only Memory
- ▶ Like the Long Term Memory on the computer
- ▶ ONLY NON-VOLATILE INFORMATION CAN BE STORED HERE

RAM vs ROM

- ▶ Requires a constant form of power to work
- ▶ Programs that are turned on and running stored here for better efficiency

▶ Volatile

(Elements erased when device is turned off)

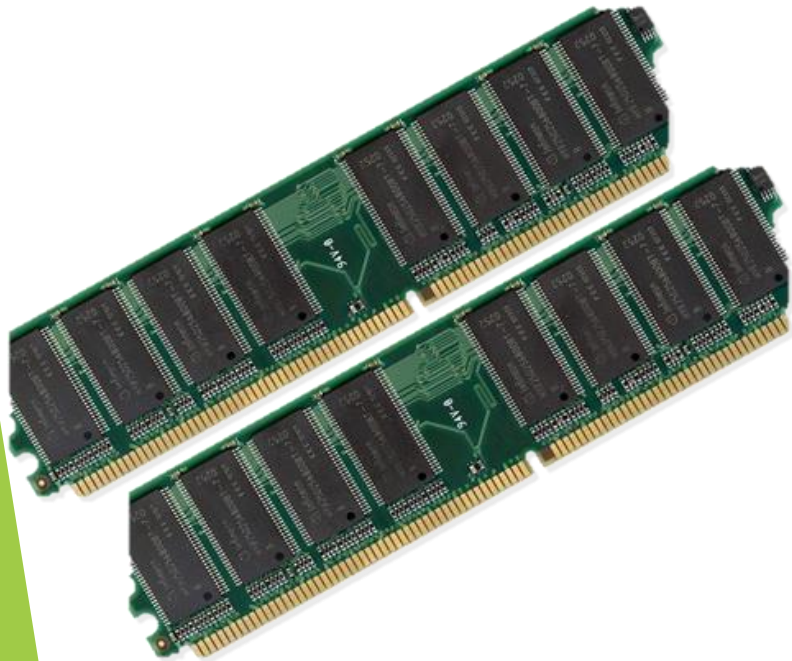
- ▶ Does not require a constant form of power
- ▶ Start up files are found here

▶ Non-Volatile

(Memory that will be saved when turned off)

RAM vs. ROM

RAM
(Random Access
Memory)



ROM
(Read Only
Memory)



How to Remember RAM v. ROM



**Think of all the brain cells that were lost
when they hit their heads**

How to remember RAM v. ROM

ROM

ON

Definitions Continued:

▶ **Motherboard**

- ▶ Heart of the computer
- ▶ Main circuit board that connects everything together on the computer

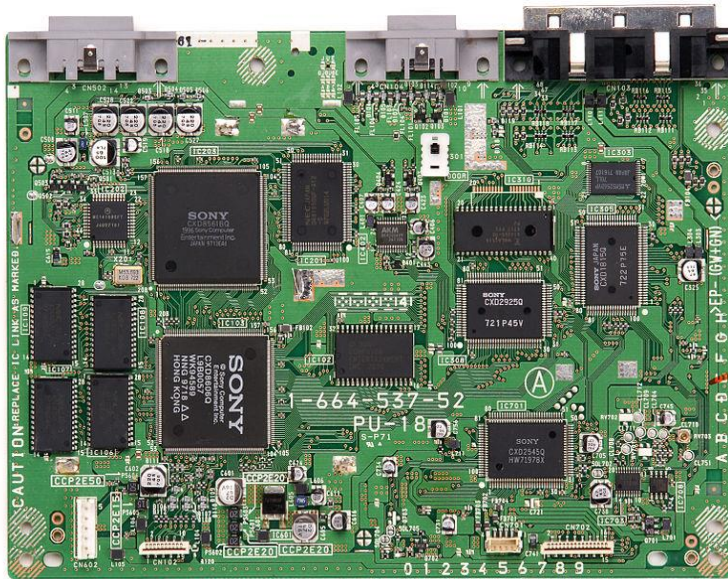
▶ **Hard Disk Drive (Hard Drive)**

- ▶ Main storage unit on the computer

Motherboard & Hard Drive

Motherboard

The Green board that holds it all together



Hard Drive

Main Storage area



Computer Hardware like unto a kitchen





Chef = CPU

What if you had 2 Chef's?
What if the chef was slow?



Counter = RAM

Everything prepared
on counter
What if there was
little counter space?



Fridge & Cupboards = Hard Drive

All the food for the kitchen
is stored here until it is
ready to use.

What if it gets too full?



Customer = Computer user
If there isn't sufficient
counter space, or the chef is
slow your food is slow

Memory, what's it all mean?

- ▶ **Bit** ····· **Smallest Unit of Memory**
- ▶ **Byte** ··· **8 Bits = Bite**
- ▶ **Kilobyte** ····· **1000 Bites (approx)**
- ▶ **Megabyte** ··· **1 Million Bites (approx)**
- ▶ **Gigabyte** ····· **1 Billion Bites (approx)**
 - ▶ **250 Songs**
- ▶ **Terabyte** ····· **1 Trillion Bites (approx)**
- ▶ **Others: Petabyte, Exabyte, Zettabyte, Yottabyte**

How are you going to remember it?

Mnemonic Devices . . .

STORAGE SIZES

BIT	B IG
BYTE	B IRD
KILOBYTE	K ICKED
MEGABYTE	M Y
GIGABYTE	G RANDMA
TERABYTE	T ODAY



How Much Memory Do You Have?

▶ 1st Generation iPod



▶ iPod Classic (the newest one)

- ▶ 160 GB =
- ▶ 40,000 Songs
- ▶ 200 Hours of



How much memory do you have?



▶ Researchers estimate that your brain's storage capacity is equal to:

▶ 2.5 Petabytes or 2,500 Terabytes

OR

▶ 3 Million hours of TV Shows

▶ 2.2 Trillion Photos

▶ 625,000,000 Songs

Input

- ▶ Devices that give information to your computer
- ▶ It's how you tell your computer what you want it to do or give information into your computer



Output

- ▶ Devices that give YOU information from your computer
- ▶ How your computer gives you data or information



Needed for permanently storing important information such as computer programs, files, and data.

Storage

Magnetic Storage

Hard Drive
Floppy Disk



Optical Storage

CD
DVD



USB Storage

USB



Peripheral Device

- ▶ Any device that broadens the use of your computer
 - ▶ Printer
 - ▶ Scanner
 - ▶ Microphone
 - ▶ Webcam

