


Computer Guts




CSCI 101 Week Two
Dannelly's Lecture Sections

Numbers

- To computers, everything is a number.
- Binary Numbers
 - 00000001 = 1
 - 00000010 = 2
 - 00000011 = 3
 - ...
 - 11111111 = 255

Storage Amounts



- Bit = 0 or 1
- Byte = 8 bits
- Kilobyte (KB) = 2^{10} bytes = 1024 = about one thousand
- Megabyte (MB) = 2^{20} bytes = about one million bytes
- Gigabyte (GB) = 2^{30} bytes = about one billion bytes
- Terabyte (TB) = 2^{40} bytes = about one trillion bytes
- Petabyte (PB) = 2^{50} bytes = about one quadrillion bytes

Key Components



- Motherboard
- CPU - central processing unit
- Main Memory / RAM
- Input/Output Processors
- Bus

How a CPU works

- **Instruction Set:**
 - Get a number from memory, Send number to memory
 - Subtract one number from another number
 - Add, Multiply, Divide
 - Add 1 to a number
 - Compare two numbers - A and B
 - If A was bigger, do this
 - If B was bigger, do that
 - go back and some instructions again
 - *and a few more similar instructions*

Types of Computers

- Embedded Computer
- PC
- Workstation
- Server
- Supercomputer
