Computers and Programming I

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**Program**

**Outputs**

**Computer**

**Data**

Program – a set of instruction

Hardware:

* Anything tangible
* Central Processing Unit
* Main Memory (ROM and RAM)
  + Very volatile (cannot save information permanently)
  + Used to provide frequent data instructions to CPU
  + ROM is read only memory (only manufactures use this to load default system settings on computer)
  + RAM (volatile)

Secondary Storage

* To save things permanently (non-violent)
* Eg: flash drive, hard disk , CD/ DVD (optical devices), Disk drive.

Data vs. Information

|  |  |
| --- | --- |
| **Data** | **Information** |
| Raw Facts | Processed Data |

Input Devices

* Used to enter data
* Keyboard, mouse, scanner

Output Devices

* Used to display or extract info
* Monitor, Printer, Speakers

Software

* There are two types of software: application and system
* Application Software
  + Day to day softwares used to make our lives easier:
    - Office, Adobe, Browser
* System Software
  + Three sub categories: Operating, Utility and Software Development
    - Operating Systems:
      * Windows, Macs, Linux
    - Utility Programs
      * Zip Files, Virus Scanners
    - Software Development
      * Compilers, editors and debuggers

**How Do Computers Store Data?**

* All data in a computer is stored in a sequence of 0’s and 1’s.
* 8 bits is called 1 byte

Convert 1710 to binary

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 16 | 8 | 4 | 2 | 1 |
| 1 | 0 | 0 | 0 | 1 |

Watch this YouTube video, I think it explains well:

https://www.youtube.com/watch?v=ku4KOFQ-bB4