Introduction to Humanities Computing

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URL: http://www.humanities.mcmaster.ca/~hccrs/ihchome.htm

McMaster University
Administration

- Web Design due next week
  - Hand in to TA in tutorial
- Weird Web Sites
What is a computer?
What is a computer?

- One who computes; a calculator, reckoner; spec. a person employed to make calculations in an observatory, in surveying, etc. (OED II)
- A calculating-machine; esp. an automatic electronic device for performing mathematical or logical operations
Definition of a computer:

- General Purpose
- Stored-Program
- Electronic
- Binary Digits
- Calculating Machine
General Purpose

- Is it dedicated to one purpose if can it do any type of calculation?
- Would a calculator be a computer?

Is a PDA like this a computer?
Stored-Program

• How are programs and data loaded into the device?

ENIAC - Programmed Manually
EDVAC - Stored-Program (John von Neumann)
Electronic

- Does it have gears, vacuum tubes, or chips?

Babbage’s engines were mechanical
Binary Digits

- How is information stored and manipulated in the computer?

  0 1 1 0 1 0

  Hi! My name is C3P0. Alphanumeric (Letters & Numbers)

  12 23 45 01 94 89 59  Numbers - 10 Possible Settings

  0111011010101000  Binary Digits - 2 Possible Settings

What is “hexadecimal”? 
Calculating Machine

- Capable of performing logical or mathematical operations on binary data.
- Capable of processing information.

Translation engine
Administration

- Students to come talk to me:
  - 0163111, 0371501, 0375677, 0354069
- Reading on History of Multimedia
- No class on Thursday! Meet in small groups to discuss reading.
  
  [http://www.artmuseum.net/w2vr/contents.html](http://www.artmuseum.net/w2vr/contents.html)
Types of Computer

- Mainframe
- Mini(computer)
- Workstation (UNIX)
- Microcomputer
  - Personal Computer (PC)
- Laptops & PDAs
- Game computers
- Terminals (NCs)

Brand Names
- IBM & IBM Clones
  Compaq, Dell, Toshiba
- Apple Macintosh
- Sony & Nintendo
- SGI (Silicon Graphics)

Other Types?
Perspectives on Computers

- Definitions
- History
- Types (Topology)
- Metaphors
- Uses (Functions)
- Components (Analysis)
- When a computer starts
- Input/Output
Metaphors for Computers?

What is your favorite metaphor for a computer?
Metaphors for Computers

The Mind - Processing = Thinking

Office - Processing = Working

Memory (Hard Drive)  Consciousness (RAM)

Running, Opening, Loading

Saving, Filing

Deleting

Storage

Desktop
Brain and Computer

• Brain vs. Mind
  • Is the Brain a Computer in the mechanical/electronic sense?
  • Does the Mind work like a computer?
  • Can computers perform functions we ascribe to the mind?
  • Does it matter? What are the implications of acting as if a computer could perform mental functions?
Wire Heads
What are the uses of computers?

Is the computer just a tool?

Just what is a tool?

Means and Ends

To a hammer everything looks like a nail.
some of the

Uses of the computer

- As a fancy calculator
- As a fancy typewriter
- As a servant/controller for other devices
- As an extension of your TV
- As type of toy
- As a fancy telephone

Is the computer just a tool?
Input and Output

- How does information get into the computer? (Info-processing Model)
- How does the computer return information?
Input and Output

- Input
  - Keyboard
  - Mouse
  - Scanner
  - Microphone (Audio digitizer)
  - Video digitizer

- Output
  - Screen
  - Printer
  - Speaker
Parts of the Computer

- System Unit
  - Motherboard
    - CPU (Central Processing Unit)
    - RAM
  - Hard Drive and Floppy Drive
  - Power Supply
  - Daughterboards
- Keyboard
- Monitor
- Peripherals
Power Supply

- Socket
- Power Supply
- Motherboard
- Monitor
- Hard Drive
- Floppy Drive
- Keyboard

Electricity
Data
Bus

the electric connection linking internal components of the computer

How is the Bus like the net?

Central Processing Unit

Data

RAM/ROM  Hard Drive  Floppy Disk Drive

Bus (PCI, SCSI)

16 bit  32 bit

Daughter Boards

Modem  Monitor
Starting-up (Booting)

**Layered Model**

- **Document(s)**
- **Running**
- **Opening**
- **Program (WordPerfect)**
- **Program/File Management**
- **Operating System**
- **Boot**
- **Hardware (RAM)**

**IBM Class**

- document (*.wpd)
- WP (wp.exe)

**Mac**

- document
- Word Perfect
- Finder

**Windows**

- Intel (X86)

**Mac OS**

- Power PC
Types of Storage

Storage

Permanent

Removable

Removable

Floppy

CD-ROM

Rom

Hard Drive

Magneto-Optical

Temporary

RAM

Storage typically measured in

K (Kilobytes),

MB (Megabytes) or

GB (Gigabytes)
Review - From letters to bytes

“A” → 1 Byte
01000001

Laser
CD-ROM

Floppy Disk

(8 Bits)
off.on.off.off.off.off.on
Storage (bits and bytes)

- Computer is digital.
- Information has to be digitized. (binary digits)
- Bits and Bytes
  - Bit - 0 or 1/On or Off/
  - Byte - Eight Bits 00110011
  - K (Kilobyte) 1024 bytes
  - MB (Megabyte) about 1000 K
  - GB (Gigabyte) about 1000 MB

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