Introduction

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1 Administrivia

Announcements

Assignment

Read 2.1–2.

Outline

1. Syllabus.
2. Big picture: architecture of a PC.
3. Tiny picture: current, voltage, etc.

Coming Up

Binary logic, gates, Boolean algebra.

2 Syllabus

3 Big Picture

Block diagram of a PC, centered on system bus chip.

Include: keyboard, mouse, monitor, disk, CD, modem, network card, sound.

Terms (define): ISA, PCI, AGP, PCI-X, PCI Express, USB, SATA front side, etc. MHz, bandwidth, b, B, etc.

Why so many buses?

4 Electrical Level Considerations

Why are computers *digital*?

What number system do they use?

Consider a circuit containing a power source, a resistor, and a capacitor, all in parallel.

1. Voltage.
2. Current.
3. Capacitance.
4. Resistance.

How do we represent 0 and 1? Voltage. Or current.

Logic levels for SN7400 5 V part (see class home page for data sheet):

1. VoH: 2.4 V min

2. VoL: 0.4 V max

3. ViH: 2.0 V min

4. ViL: 0.8 V max

Why the discrepancy on input/output voltages?

Example: 7400 two-input NAND gate waveform. Note voltage vs. time.

Why is digital logic *binary*?