September 8, 2003

- Administrivia
- What are FPGAs?
- Xilinx Virtex Architecture
- Logic Design Review
- Design Flows
- Using DK
Administrivia

Send email to vickery@babbage.cs.qc.edu
  - Must have CSCI 345 in the Subject line
  - Put your name and ID in the message body

Computer accounts should be available tomorrow; definitely by Wednesday.
  - I’ll email your account name and password to you.

First lab will be Wednesday. I’ll post it on the course web site.

Manuals

Full URL for course is:
  - babbage.cs.qc.edu/courses/cs345/2003_09
What are FPGAs?

- Field Programmable Gate Array
- Manufactured by Xilinx, Altera, and other companies.
  - Xilinx: Virtex-II Pro, Virtex, Spartan, etc.
  - Altera: Stratix, Cyclone, FLEX, etc.
- Include circuits for I/O, clock management, memory, registers, and combinational logic.
Xilinx Virtex Architecture

- See the *Virtex-II Data Sheet*
  - More information than you need to know; don’t be intimidated.

- I/O Blocks (IOBs)
  - Each IOB is connected to one or two pins
  - Can be configured to interface with different voltage/current requirements

- Complex Logic Blocks
  - Can be configured to implement combinational or sequential logic.
Logic Design Review

- Combinational Logic
  - Multiplexers
  - Lookup Tables
- Sequential Logic
  - Registers
  - Shift Registers
- Programmable Logic
Design Flows

- Design Capture
  - Schematic, HDL, Netlist, HIL, or combination
- Simulation
- Synthesis
- Verification