



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