

15-213

“The course that gives CMU its Zip!”

Exceptional Control Flow Part II

October 16, 2003

Topics

- Process Hierarchy
- Shells
- Signals
- Nonlocal jumps

ECF Exists at All Levels of a System

Exceptions

- Hardware and operating system kernel software

Concurrent processes

- Hardware timer and kernel software

Signals

- Kernel software

Non-local jumps

- Application code

Previous Lecture

This Lecture

The World of Multitasking

System Runs Many Processes Concurrently

- **Process: executing program**
 - State consists of memory image + register values + program counter
- **Continually switches from one process to another**
 - Suspend process when it needs I/O resource or timer event occurs
 - Resume process when I/O available or given scheduling priority
- **Appears to user(s) as if all processes executing simultaneously**
 - Even though most systems can only execute one process at a time
 - Except possibly with lower performance than if running alone