

15-213

“The course that gives CMU its Zip!”

Exceptional Control Flow

Oct 24, 2000

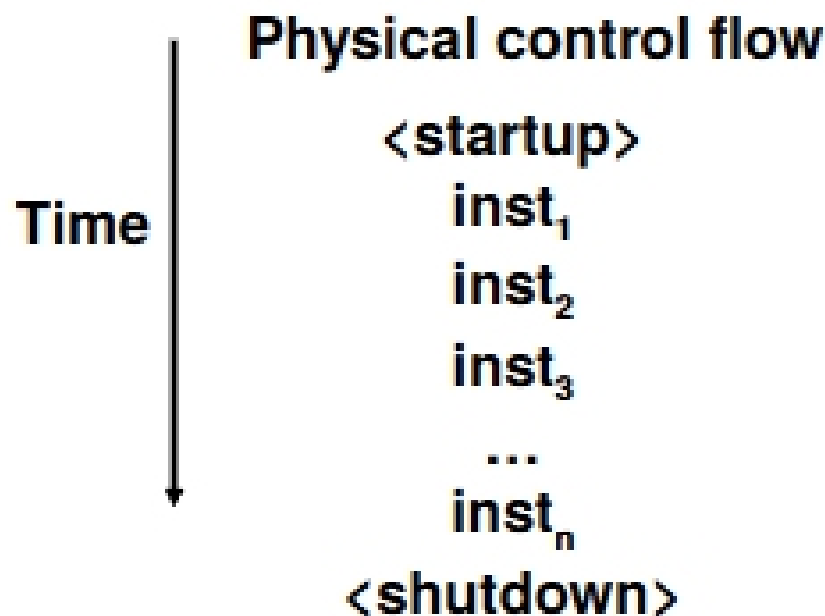
Topics

- Exceptions
- Process context switches
- Signals
- Non-local jumps

Control flow

From startup to shutdown, a CPU simply reads and executes (interprets) a sequence of instructions, one at a time.

This sequence is the system's physical *control flow* (or *flow of control*).



Altering the control flow

So far in class, we've discussed two mechanisms for changing the control flow:

- jumps and branches
- call and return using the stack discipline.
- both react to changes in program state.

These are insufficient for a useful system

- difficult for the CPU to react to changes in system state.
 - data arrives from a disk or a network adapter.
 - instruction divides by zero
 - user hitting ctrl-c at the keyboard
 - system timer expires

Real systems need mechanisms for “exceptional control flow”