CSci 4061
Introduction to Operating Systems
(Wrap-Up)
Today

- VM wrap-up
- Performance
- Course wrap-up
- Final
- Evaluations
Announcements

• No more projects
• Project 3: no regrading except in extreme cases
• Tomorrow
  • OH for me -- 9:30-11:30; 2-4
• IFF you are an active student
  • Gone to lecture, recitation, office hrs
  • Cusp of failing $> 50\% \leq 60\%$
  • Oral Dec. 19/20
VM Wrap-Up

- Address Translation
- Why does it work?
Performance Analysis
Course wrap-up

• Systems are complex beasts ...
• Programming them is hard
  • concurrency
  • asynchrony
  • memory!
  • metrics (sometimes competing):
    • performance, reliability, security
  • stakeholders: user, admin, “system”
Abstraction hides complexity promotes usability

• Systems programming abstractions
  • Process: running program/resource container
  • I/O: data movement to/from external device
  • File: container for data
  • Directory: container for related files
  • Pipes/Mailbox: communication stream
  • Thread: control
  • Synchronization: CV, semaphore, lock
  • Socket: communication end-point
Want More?

• Take CSCi 5103 Operating Systems
• Take CSCi 5105 Distributed Systems
The Final

- Closed + 1 page cheat sheet allowed
  - I’ll give APIs
- 90% incremental since exam #2
  - network programming: sockets, addressing, etc
  - virtual memory, performance
- 10% older
- Length of an in-class exam
- ~ 20% short answer
- ~ 80% longer answer
The Final

• 4 Longer questions
  • Virtual memory
  • Network programming
  • Synchronization
  • Performance Modeling

• Will post a sample exam
That's all Folks!