EECS 211: Advanced System Software Lecture 6

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Lecture 6: Overview

- Assignment 1
  - Discussion: Introduction to Nachos
- Assignment 2
  - Discussion: Concurrency and Synchronization
- Assignment 3
  - Safe (!) use of Condition Variables
- Memory Management
  - Paging
  - Segmentation

Assignment 1

- The Nachos System
  - Task 1: Read the overview chapter
    - Text book, Appendix D (contents online)
  - Task 2: Install the software
    - Setup environment, copy tar-ball, unpack, compile, test
  - Task 3: *Understand* the Nachos system!
    - Read documents and source code
- Deliverables
  - log output when running the plain Nachos installation
  - brief explanation of **`Yield`** and **`SWITCH`** functions
  - Email to **`doemer@uci.edu`**
- Due
  - Wednesday, Jan 21, 2009, at 12pm (noon)

Assignment 2

- The Nachos System
  - Task 1: Implement locks and condition variables
    - files **`synch.h`** and **`synch.cc`**
  - Task 2: Test the locks and condition variables
    - file **`threadtest.cc`**
- Deliverables
  - code for locks and condition variables
  - code for test of two alternative threads
  - log files of test runs with different five random seeds
  - Email to **`doemer@uci.edu`**
- Due
  - Wednesday, Jan 28, 2009, at 12pm (noon)

Assignment 3

- The Nachos System
  - Task: Safely (!) use locks and condition variables
    - re-do Assignment 2, Task 2
      - no need to resubmit if you got 20 points already!
    - use only provided locks and condition variables
      - use files **`synch.h`** and **`synch.cc`**
    - implement *safe* scheduling of two alternating threads
      - *no change in execution order due to any* **`-rs`** *# option!*
- Deliverables
  - Explain what it means to *own the lock* **`CL`** in this example!
  - Supply code for safe **`threadtest.cc`**
  - Supply log of 5 test runs for options **`-rs 1, 2, 3, 4, 5`**
  - Email to **`doemer@uci.edu`**
- Due
  - Wednesday, Feb 4, 2009, at 12pm (noon)

Memory Management

- Excerpts from chapter 8 of *"Operating System Concepts",* 8th Edition, by A. Silberschatz, P. B. Galvin, G. Gagne, John Wiley & Sons, 2009.
- Memory Management
  - Paging
  - Segmentation