Lecture 12: MidTerm Review (Mar 1, 2005) Yap

March 1, 2005

1 ADMIN

- Reminder that Midterm is on Thu Mar 3.
- This a closed book exam but you will be allowed a 8”x11” sheet of notes (you can write anything in any size on both sides of this sheet).
- Format of the midterm: Short Questions (multiple choice or single sentence answers), plus 2 longer questions.

2 Study Guide

- Programming Facts.
  We may ask some basic questions about C-programming, unix and Make program, especially issues related to our homework.

- Below, we will go over the assigned chapters for reading. But the general rule is that we will emphasize (1) whatever is actually lectured upon, and (2) whatever is asked in homework.

  That is why it is vital that you attend all lectures – attendance is not optional.

- Chapter 1: Intro to OS
  COMMENT: Light reading of historical background. Many of the themes here would be repeated in greater detail later!

Some Study Questions:

1. Question 15 (p.68), relocation.
2. Question 18 (p.69), failure of fork, exec, unlink.
3. Question 26 (p.69), unit conversions.
• Chapter 2: Processes and threads.
  SKIP: Sect.2.3.7 (monitor), Sect.2.3.8 (message passing), Sect.2.3.9 (barrier).
  Some Study Questions:
  1. Question 16 (p.154), priority inversion.
  2. Question 22 (p.154), TSL alternative.
  3. Question 29 (p.155), fast food restaurant.
  4. Question 44 (p.157), Schedulability.

• Chapter 3: Deadlocks.
  SKIP Section 3.7 and beyond.
  COMMENT: Conditions for deadlock, Resource Graphs, Deadlock Detection Algorithm, Bankers Algorithm.
  Study Questions:
  1. Question 20 (p.187), safety.
  2. Question 28 (p.188), baboons.

• Chapter 4: Memory Management
  SKIP: Sect. 4.6. (Design Issues), Sect.4.7 (Implementation Issues). Skip most of Sect.4.8 (Segmentation), but do read Sect.4.8.3 (Intel Segmentation).
  COMMENT: Page replacement algorithms and Working Set Algorithms are key topics.
  1. Can you show an anomaly for FIFO page replacement where having 3 pages will cause more page faults than having 2 pages? (p.229)
  2. Question 7, p.264. Virtual page numbers and offset.
  5. Question 29, p.266. Page replacement policies.