Lecture 1: Class Overview

Kenneth M. Anderson

Software Methods and Tools

CSCI 3308 - Fall Semester 2003

Goals of this Class

- To learn the basics of software engineering
  - Standard methods and techniques
  - Standard tools
- To prepare for a career in software engineering
  - What is software engineering?
  - Programmer vs. Software Engineer
    - What's the difference between them? Consider...
      - Chemist and Chemical Engineer
      - Amateur Musician and Professional Musician
- Secondary goal: to learn Unix skills and tools
  - *But you can be a software engineer independent of platform!*

Class Participation

- I expect you to participate!
  - Questions
    - "Stupid questions" -- No such thing
      - Typically more than one person has the same question
  - Discussion
    - "Silent Tomb" -- Not allowed
    - (Its boring for you AND me!)

The Instructor

- Ken Anderson
  - Office Hours: ECOT 822
    - Monday, Friday 11 AM - 12 PM
    - Send me e-mail to let me know you are coming...
  - E-mail
    - <kena@cs.colorado.edu>

Background

- Assistant Professor
  - Eleventh semester, fourth 3308 class
  - Ph.D. from UC, Irvine
  - Research Topics
    - Open Hypermedia
    - Software Engineering
  - Software Experience
    - Ten Systems ranging from 30K-75K LOC

Anderson's Teaching Philosophy

- "sage-on-stage" vs. "guide-at-your-side"
- lecture vs. participation
- Answering questions
  - Sometimes the answer will be "I don't know!"
- I welcome comments and questions from students!

Teaching Assistant

- Eric Palmer
  - eric.palmer@colorado.edu
- Note
  - Hand in homeworks, labs and programs to the TA. Quizzes will be turned in at the end of class on Friday. All graded homework will be received from the TA in lab
  - Grader (I'm hoping to get one)

Useful URLs

- Computer Science Department
  - <http://www.cs.colorado.edu/>
- Instructor's Homepage
  - <http://www.cs.colorado.edu/users/kena/>
- Class Homepage
  - <http://www.cs.colorado.edu/users/kena/classes/3308/f03/>
- Syllabus
  - Available as a PDF document from the "reference materials" section of the website

About the Class Website

- You have one continuous homework assignment this semester:
  - Check the class website EVERY day
    - Preferably more than once each day
- Website will be your source for
  - Class schedule
  - Homework & Lab assignments
  - Pointers to class-related information

Currently-Planned Course Topics

- Software Engineering Theory
- Unix Shell
  - Basic commands
- Regular Expressions
  - wildcards, grep, find
- Program Deployment
  - install
- Build Management
  - Make
- Specifications
- Versioning
  - rcs
- Testing
  - Functional, structural
- Debugging
  - gdb
- Program Profiling
  - gprof
- XML
- Perhaps more!

Textbooks

- Required
  - The Mythical Man-Month, 20th Anniversary Edition, by Fred Brooks
    - provides insight into the nature of software engineering
  - Linux Shells by Example by Ellie Quigley
    - No readings will be assigned; you are expected to use this book as a reference guide
    - contains lots of information on the Unix shell that will **not** be covered in class or in the labs

Generic Weekly Calendar

Monday Lecture	Lab	Friday Lecture
		Homework Assigned
	Homework Due; Lab Assigned and Due	Quiz; Next Homework Assigned

First Two Weeks

Monday Lecture	Lab	Friday Lecture
Homework 1 Assigned	Lab 0 Assigned and Due	Quiz 0
Labor Day	Homework 1 Due; Lab 1 Assigned and Due	Quiz 1; Homework 2 Assigned

Course Evaluation

- The class grade is determined by a student's work in each of the following categories
  - Homeworks
  - Labs
  - Quizzes
  - Programs
  - Midterm (in-class and take-home)
  - Notebook
  - Final
    - Wednesday, Dec. 17th, 1:30 - 4:00 PM

Honor Code

- Honor Code (see syllabus for URL)
  - You may work together on homeworks and labs
  - You may not work together on
    - quizzes, programs, and exams
    - Honor code statement will be printed on these items and you must sign the statement
  - Plagiarism on these assignments will not be tolerated; (and its pretty easy to detect)

Late Policy

- Items handed in late incur a 20% penalty
  - for example, a 10 point lab handed in late can only receive a maximum of 8 points
  - Items can be turned in late up to two weeks after its initial due date; after that you are out of luck
    - This is NOT true of programs, you only get "one chance" at submitting a program! ("one chance" is in quotes, because you can always submit before the due date and have the TA give you feedback)
- If you must miss an exam or a quiz, please contact me **before** the exam takes place
  - preferably at least two weeks before the exam

Brooks' Corner

- Each lecture we will cover a little more of the Mythical Man-Month
  - which we will refer to as Brooks' Corner
- Meant to provide insight into the theoretical foundations of software engineering
  - This book is a classic!
  - Indeed some software development project managers make it required reading of their employees; I know of at least one manager who will not a hire a person if they have not read it!

Background of the Book

- Fred Brooks
  - 1964 Became the manager for Operating System/360 for IBM
    - Previous experience was in hardware design
      - 1956-1963
  - OS/360 "was late, took more memory than was planned, costs were several times the estimate, and it did not perform very well until several releases after the first."

Background, continued

- The book is the result of analyzing the OS/360 experience:
  - What were the management and technical lessons to be learned?
  - Why was the process different from the 360 hardware development effort?
- Brooks is now a professor at the University of North Carolina, Chapel Hill

This Week

- Read the No Silver Bullet chapters of the Mythical Man-Month
  - Chapters 16 and 17
  - You will be quizzed on this topic this Friday, so be prepared!
    - Chapter 16 is especially important, so you may even be quizzed on its material **next** Friday, as well