CS 35L Software Construction Laboratory (Lab1-A)
Mon, Sept 26, 2011

Course Information:
    Course Web: http://cs.ucla.edu/classes/fall11/cs35L/
    Piazza: http://piazza.com/class#fall2011/cs35l/
    Instructor in charge: Paul Eggert, Boelter 4532J.
    Office hours: Mondays 11:55–12:55 and Tuesdays 10:30–11:30.
    Instructor: Jiwen Cai (jwcai@cs.ucla.edu)
    Tentative Office hours: Tuesday and Thursday 16:30-17:30 in Boelter 2432
    Prerequisite: CS 31

What is CS35?

    This course leads you to train yourself as a professional and efficient software
engineer.
    In this course, we will cover:
    Basic linux commands, vim, emacs, man, shell scripting, python, make, automake,
version control (diff, git, svn), gdb, valgrind, and etc.

Grading:
    50% homeworks and in-class presentations
    10 homesworks, each homeworks contains two parts: 1) Lab 2) Assignment
        We will go through the lab in class and leave assignments to you.
        The deadline of the 1st homework is Sept 30, 2011 (this Friday!!!).
    Lateness penlty: 1 day late: 1%, 2 days late: 2%, 3 days late: 4%, ...
    Hour code: you may discuss in form of study group, but no copying from others

    50% final exam
    Final exam: December 08, 2011 3:00 PM - 6:00 PM, no makeup.

Today's plan:
    Introduction to several basic linux commands.
    Learning Vim
    Walking through part of Lab 1

Wednesday's plan:
    Introduction to file attributes
    More Linux commands
    Learning Emacs
    Finishing Lab 1

Unix and Linux:
    Read wiki by yourslef:
    http://en.wikipedia.org/wiki/Unix
    http://en.wikipedia.org/wiki/Linux

CLI (Command Line Interface) vs GUI (Graphic User Interface)
    Steep learning curve
    Speed with commands
    Low resources usgae
    Power of scripting
    Convenient remote access

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Linux File System
    Starts from root
    Tree structured hierarchy
    Command 1: ls -- list directory contents
    Command 2: cd -- change directory
    Command 3: pwd -- print name of current/working directory

Helper Commands:
    Command 4: man -- an interface to the on-line reference manuals
    Command 5: which -- locate a command
    Command 6: whereis -- locate the binary, source, and manual page files for a command
    Sometimes, just try [command] --help or [command] -h

Command is CLI programs with arguments:
    man, ls, cd, and etc are actually programs, i.e. executable binary files
    $PATH environment variable tells the system where to find such programs
    echo $PATH -- view the current path

Vim Level 1: Survival
    Command mode and Insert Mode
    i     switch to insert mode before the current position
    a     switch to insert mode after the current position (append)
    I     jump to the first non-blank character in the current line and switch to the
insert mode
    A     jump to the last character of the current line and switch to the insert mode
    x     delete one character
    :wq   save and exit (:w save, :q exit)
    :q!   exit without saving
    hjkl  move cursor

Vim Level 2: Feeling good
    o     insert new line below the cursor
    O     insert new line above the cursor
    0     move to the begin of the line
    ^     move to the first non-blank character in the line
    $     move to the end of the line
    g_    move to the last non-blacnk character in the line
    /     search for pattern
    dd    delete current line
    p     paste

Vim Level 3 and more:
    Please read: http://blog.interlinked.org/tutorials/vim_tutorial.html
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