CS 35L Software Construction Laboratory (Lab1-B)
Wed, Jan 11, 2012

FAQ:
   How can I install Linux into my own laptop?
      Two opitions: 1) Ask Linux working group for help
                    2) Use VirtualBox (http://piazza.com/class#winter2012/cs35l/6)

   How should I prepare lab1.log?
       "record each action in a file lab1.log"
       Such actions include: linux command you typed in CLI
                             commands in man pages
       You can also literally descripe what you did to figure out the answer,
       as long as someone else who reads your log file can reproduce the answer.

PATH variable in Linux:
    echo $PATH
    -- Linux system will search for the directories listed in the PATH variable
       to find the executable file to be called by the command.

Linux file ownership:
    Files and directories are owned by a user
    Files and directories are assigned a group

Linux file attributes (10 bits):
    First bit: file type
        -   normal file
        d   directory
        l   denotes a symbolic link
    the rest 9 bits: "Three groups of three"
        first   what the owner can do
        second what the group members can do
        third   what other users can do
    The triplet:
        first   r: readable.
        second w: writable.
        third   x: executable.
    9 bits can be translated into a group of thre digitals
        rwx rwx rwx -> 111 111 111 -> 777
        rw- r-- r-- -> 110 100 100 -> 644
    command: chmod -- change file mode bits
        chmod 644 "filename"
        chmod [''references''][''operator''][''modes''] ''filename''
        references: u (owner), g (group), o (other), a (all)
        operator: +(add), -(remove), = (set)
        modes: r, w, x, s

Useful Linux commands:
    mkdir -- make directories
    rmdir -- remove empty directories
    cp -- copy files and directories
    rm -- remove files or directories
    mv -- move (rename) files
    apropos -- search the whatis database for string

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    readlink -- print value of a symbolic link or canonical file name
    find -- search for files in a directory hierarchy
    locate -- find files by name
    top -- display Linux tasks
    ps -- report a snapshot of the current processes
    kill -- send a signal to a process (The  default signal for kill is TERM)

Learning Emacs:
    "mode" in Emacs is different than "mode" in Vim
    "Emacs is a good operating system, but it lacks a good editor"
    Combination of keys:
        Ctrl-x --> C-x
        Meta-x --> M-x (Meta key: second ctrl)

    C-h k    helper for key sequence
    C-h F    helper for command
    C-g      cancel command

    C-x C-c  exit Emacs
    C-x C-f  open file

    Move in Emacs
    C-n      next line
    C-p      previous line
    C-a      begin of line
    C-e      end of line
    C-f      move forward for one character
    C-b      move backward for one character
    M-f      move forward for one word
    M-b      move backward for one word
    NOTE: You can also move cursor in ternimal using such keys.
          (Maybe you need set meta-key in ternimal first)
    C-v      page down
    M-v      page up

    Search in Emacs
    C-s      incremental search

    Undo and Redo in Emacs
    C-x u    undo and redo, use C-g to change direction

    Cut, Copy, and Paste
    C-d      delete/cut/kill one character
    M-d      delete/cut/kill one word
    C-k      delete/cut/kill line
    M-k      delete/cut/kill sentence
    C-w      delete/cut/kill region
    M-w      copy region
    C-SPC    set mark to select region, like visual mode in Vim
    C-y      paste/yank the last stretch of killed text
    M-y      Replace just-yanked stretch of killed text with a different stretch
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