Physics 305
Introduction to Computational Physics
Fall 2010

The `emacs` text editor [1]

There are many reasonable choices for a text editor. Two that are powerful and universally available are "`vi`" and "`emacs`". These notes will help you get started using the `emacs` editor; if you prefer `vi` go right ahead and use that instead.

The first thing you have to know about text editors is that the keyboard has to serve two purposes. Sometimes when you type something it is text that is to be entered into the file you are editing, and sometimes it is a command to do something to the file. For example, typing ``delete line 15'' might mean to enter the text "delete line 15" into the file (I just did that in making these notes), or it might mean that whatever is on line 15 of your file is no longer wanted. It isn't really practical to have two keyboards, so a text editor must have some way to distinguish the two kinds of input. In the `emacs` editor this is done by using the control and alt keys together with regular characters, or by using the mouse and pull-down menus.

When you type `emacs <file_name> &` at the command line, a window will appear in which you can see the contents of the named file and type or delete as you see fit. The arrow keys can be used to move the location of the cursor, or you can use the left-button of the mouse to re-position the cursor. To save what you have done, hold the control key down and hit `x` and then `s`. This is usually written as `Ctrl-x Ctrl-s`. To quit `emacs`, type `Ctrl-x Ctrl-c`.

Many commands in `emacs` are accessed by using the Control key in this fashion. For example, `Ctrl-a` will move to the beginning of the current line, while `Ctrl-e` will move to the end of that line. Other commands are accessed by the "Meta" key; for example, `Meta-a` moves to the beginning of a sentence. However, there is no key called "Meta" on your keyboard! Instead, it is called "Alt". Also, you can access Meta commands by the "Esc" key; unlike "Alt", you simply type "Esc" and then the next key (e.g. `a` in the `Meta-a` example) rather than holding it down. Try it!

If you find yourself in a situation where `emacs` is prompting you for input that you don't want to give (like the subject of a Find command), typing `Ctrl-g` will cancel the previous keystrokes and return you to the initial environment.

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[1]Daniel Eisenstein wrote most of these notes

Modern implementations of `emacs` have a set of pull-down menus along the top of the window that will give you access to many of the popular commands. All of these commands have a keystroke equivalent, but you will probably find it easier to start with the menus.

When you save a file with `emacs`, `emacs` keeps the previous version for you. If your file is called `arizona.c`, the old version is in `arizona.c~`. Only the next-to-last version is saved, so if you really want to keep a version for posterity, you should make a copy with a new name. An example of this is if you have a working version of a C program and you want to experiment with a new way to do a step!

If you are logging in to faraday from a Windows or Mac, you may be limited to a simple text window. In this case, `emacs` is not able to create a new window on your monitor. You can run `emacs` directly in your text window by adding the `-nw` option, i.e. `emacs -nw <file_name>` (with no ampersand). However, `emacs` will now lack menus, so you must give the commands simply by keystroke.

If you are logging in to faraday from another Unix machine or a computer running the X environment (*i.e.* `Xming`, then `emacs` should be able to create windows as usual.

A good introduction to `emacs` is given by its online tutorial. You can start this either by selecting "Emacs Tutorial" from the "Help" menu or by typing `Ctrl-h t`. If you intend to learn and use `emacs`, you should study this tutorial!

You can find additional `emacs` tutorials on the web. The course web page has a few listed:

- http://www2.lib.uchicago.edu/ keith//tcl-course/emacs-tutorial.html

- http://xahlee.org/emacs/emacs.html

- http://www.linuxhelp.net/guides/emacs/

Here are some quick reference pages, just to list the commands.

- http://www.cs.rutgers.edu/LCSR-Computing/some-docs/emacs-chart.html

- webdev.apl.jhu.edu/ rbe/java/.../Emacs_Quick_Reference.pdf