Basic Emacs Guide for CS 61A Students

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Emacs is one of many text editors provided for you on your class accounts. Although you may use any text editor to write your Scheme programs, Emacs has many features you may find useful when coding (and it even has games!). The following are the basic features and keyboard shortcuts that you may find useful. Commands can be accessed through the menu with your mouse, but you will find that you can do almost everything faster by just using your keyboard. If you would like to learn more, read the help tutorial in Emacs. There is also another (longer) Emacs reference in the reader that you may wish to read.

A Note on Emacs commands

Commands in the form "control-x control-y" mean you hold down control, hit the first letter, then hold down control again and hit the second letter. Commands in the form "control-x y" means you hold down control, hit first letter, *release* the control button and then hit the second button. **Furthermore, on UNIX keyboards, there is a Meta key (it's the key with a diamond on it). On Windows computers, you may use the Esc key instead.**

Running Emacs

At the prompt, type in `emacs` followed by the filename of the file you wish to edit or create followed by an ampersand.

h50 [1] > emacs *filename* & [The filename may be omitted if you wish to just open Emacs]

Getting Started

Emacs is divided into buffers; buffers are like having many open windows within the same window. For example, each open file you have will have its own buffer (i.e. you can switch between them) but you will only have one Emacs window open for all of them. There is also a mini-buffer that resides along the bottom of the Emacs window. *This is where all the messages show up for any commands that you may execute.* To cancel any commands (in the mini-buffer) that you messed up or accidentally activated, just hit**Control-g**.

To switch between (full-screen) buffers	Control-x b *<buffer-name>*
To switch between (split-screen) buffers	Control-x o
To open a new or existing file	Control-x Control-f
To save current buffer (file)	Control-x Control-s **(Make sure you have selected the correct buffer)**
To kill(close) a buffer	Control-x k *This is useful if STk dies*
To **exit** Emacs	Control-x Control-c

Using STk in Emacs

To run STk within Emacs, **hit Meta-s** (which is a shortcut for **Meta-x *run-scheme***). This will split your window such that your code text will be on top and your STk prompt will be on the bottom. This is handy because you can edit your code and then run it immediately.

Instead of copying and pasting your code into STk, Emacs has shortcuts that allow you to send your code directly to the interpreter so that it may be evaluated. Your cursor must be over the code that you wish to evaluate when you use these commands. *Remember that you must reload any changes you make to your code after you load it.*

Evaluate an expression	Control-c Control-e
Load a definition	Meta-p
Load the entire file	Control-c Meta-l

While in the STk buffer, you may bring up previous commands by hitting **control** followed by the **up or down arrow**. Therefore, *you do not need to retype expressions that you have already evaluated or mistyped the first time*. This becomes useful when you make a spelling error and/or you have a bug in your code and want to execute the same expression after fixing the bug.

Editing within Emacs

The following are commands that may make it easier for you to edit your files. Notice that if you are in the lab, there is a **copy** button and a **paste** button (along with other useful buttons) on the left side of the keyboard. Furthermore, if you highlight some text (and keep it highlighted), you can paste it to another place by clicking the middle mouse button.

Copy	Move cursor to the beginning of desired region Hit **Control-spacebar** Move cursor to the end of desired region Hit **Meta-w**
Cut region	Move cursor to the beginning of desired region Hit **Control-spacebar** Move cursor to the end of desired region Hit **Control-w**
Cut line	**Control-k** This will cut from the cursor to the end of the line You may use this to cut consecutive lines
Paste	**Control-y**
Undo	**Control-_** [Note: that is an underscore, so it's really **Control-Shift-_**]
Forward search (I-search)	**Control-s *search-term*** Hit Control-s again to find the next occurrence If you type all lowercase letters, it is not case sensitive
Backward search (I-search backward)	**Control-r *search-term*** Hit Control-r again to find the next occurrence

Other Useful Features

Parentheses matching:

You may notice that when you type a closing parenthesis, it will show you which opening parenthesis matches it. If the opening parenthesis isn't currently on the screen, then the matching parenthesis will be shown in the mini-buffer. Please take *careful* note of this to make sure that all your parentheses are closed off in the right places. Under the Options Menu, you may toggle the **Paren Match Highlighting** feature to highlight matching parenthesis when your cursor is over them.

Auto-indenting:

Make sure that your code is properly indented! This makes it easier for other people to read your code. To auto-indent your entire file, type **Control-x h**, then **Meta-x *indent-region***. Note that pressing tab will correctly indent the current line based on the previous text. Also note that you must save your file as a .scm file for this to work.

Syntax highlighting:

Under the Options Menu, you can turn on syntax highlighting. This will color code your text so that it makes it easier to read.

Auto-save mode:

Sometimes (especially late at night), Emacs will auto-save your file (i.e. save it to a backup file). If this freezes Emacs for an annoyingly long period, you may turn it off by typing
Meta-x auto-save-mode

Showing multiple buffers:

You may wish to view more than one file at once. To do so, type **Control-x #**.
Replace # with one of the following choices
1: Make the current buffer full screen
2: Split the window into two horizontal buffers
3: Split the window into two vertical buffers

Reference Sheet

Files and buffers:

To switch between (full-screen) buffers	Control-x b *<buffer-name>*
To switch between (split-screen) buffers	Control-x o
To open a new or existing file	Control-x Control-f
To save current buffer (file)	Control-x Control-s
To kill (close) a buffer	Control-x k
To **exit** Emacs	Control-x Control-c

Editing:

Copy	**Control-spacebar** to mark then **Meta-w**
Cut region	**Control-spacebar** to mark then **Control-w**
Cut line	Control-k
Paste	Control-y
Undo	Control-_ [Note: that is an underscore]
Forward search (I-search)	Control-s *search-term*
Backward search (I-search backward)	Control-r *search-term*

Misc:

Control-g	Cancel current command
Control-x 1	Make current buffer full screen
Control-x 2	Horizontal split-screen
Control-x 3	Vertical split-screen
Meta-x *auto-save-mode*	Toggle auto-save

Scheme:

Start Scheme	**Meta-s** or **Meta-x *run-scheme***
Load definition	Meta-p
Load region	Control-c Control-e
Load file	Control-c Meta-l
Attempt #1 to recover if STk gets stuck	Type numerous close parentheses and press enter
Attempt #2 to recover if STk gets stuck	Control-d
Attempt #3 to recover if STk gets stuck	Control-c
Attempt #4 to recover if STk gets stuck	Control-x k [This kills the buffer; all work is lost]