

## GNU Emacs Quick Reference Guide for CS61B

Bullets (●) mark a suggested starting set of commands. Daggers (†) denote key bindings that are not standard in GNU Emacs. *ARG* denotes the prefix numeric argument (entered with `C-u` or `M-digit`).

### Cursor motion.

<code>C-f</code>	Forward character.●
<code>M-f</code>	Forward word.●
<code>C-e</code>	Forward to end of line.●
<code>C-b</code>	Backward character.●
<code>M-b</code>	Backward word.●
<code>C-a</code>	Backward to start of line.●
<code>M-e</code>	Forward sentence.
<code>M-[</code>	Forward paragraph.
<code>M-a</code>	Backward sentence.
<code>M-]</code>	Backward paragraph.
<code>C-n</code>	Next line.●
<code>C-p</code>	Previous line.●
<code>M-&lt;</code>	Beginning of buffer.●
<code>M-&gt;</code>	End of buffer.●
<code>C-v</code>	Scroll text up one screen (or <i>ARG</i> lines).●
<code>M-v</code>	Scroll text down (or <i>ARG</i> lines).●
<code>M-g</code>	Go to line number <i>ARG</i> .†
<code>M-x what-line</code>	Display line number.
<code>C-M-v</code>	Scroll other window up one screen (or <i>ARG</i> lines).

### Marking regions of text

<code>C-@</code>	Set mark at point.●
<code>C-x C-x</code>	Exchange mark and point.●
<code>C-SPC</code>	Same as <code>C-@</code> .
<code>M-@</code>	Set mark after end of next word.
<code>M-h</code>	Set mark and point around current paragraph.
<code>C-x h</code>	Set mark and point around current buffer.

### Deletion and yanking

<code>DEL</code>	Delete character before cursor.●
<code>M-DEL</code>	Delete word before cursor and add to kill buffer.●
<code>C-d</code>	Delete character at cursor.●
<code>M-d</code>	Delete word at and after cursor and add to kill buffer.●
<code>C-k</code>	Delete to end of line and add to kill buffer.●
<code>M-W</code>	Delete current region, and add to kill buffer.†●

<code>M-\</code>	Delete surrounding blanks and tabs.
<code>M-SPC</code>	Delete all but one surrounding blank.
<code>C-x C-o</code>	Delete all but one surrounding blank line.
<code>C-M-w</code>	Cause next command, if a kill, to append to previous kill buffer, instead of new one.
<code>C-y</code>	Insert text from kill buffer at point.●
<code>C-u C-y</code>	Insert text from kill buffer at point without moving point.
<code>M-y</code>	Replace preceding <code>C-y</code> text with next most recent kill buffer.
<code>M-w</code>	Copy region to kill buffer, no deletion.

### Indentation

<code>TAB</code>	Indent according to mode.●
<code>LF</code>	Same as <code>RET TAB</code> .
<code>M-;</code>	Indent and start comment.
<code>M-LF</code>	Continue comment on next line.
<code>C-x TAB</code>	Indent region rigidly by <i>ARG</i> .
<code>C-M-\</code>	Indent region according to mode.●

### Search

<code>C-s</code>	Search forward.●
<code>C-s C-s</code>	Same as <code>C-s</code> with last string.●
<code>C-r</code>	Search backward.●
<code>C-r C-r</code>	Same as <code>C-r</code> with last string.●
<code>C-u C-s</code>	Search forward for regular expression.
<code>M-x occur</code>	Display lines matching a regular expression.
<code>M-x grep</code>	Display results of UNIX <code>grep</code> utility.
<code>M-x count-matches</code>	

The following subcommands are valid during a search.

<code>RET</code>	End search.●
<code>DEL</code>	Undo effect of last search character typed.●
<code>C-g</code>	Abort search.●
<code>C-s</code>	Search for next match forward.●
<code>C-r</code>	Search for next match backward.●
<code>C-q</code>	Quote next character.
<code>C-w</code>	Extend search string with next word.
<code>LF</code>	Extend search string with rest of line.

### Replacement

<code>M-q</code>	Query replace.●†
<code>M-Q</code>	Query replace regular expression.†
<code>M-x delete-matching-lines</code>	
<code>M-x delete-non-matching-lines</code>	

During a query-replacement, the following are valid responses to prompts.

<code>SPC</code>	Make replacement and go to next.●
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DEL Skip replacement and go to next.●  
RET End replacement.●  
! Replace all remaining instances without asking.●  
C-r Enter recursive edit; return with C-M-c.

## Regular expressions

. Match any character.●  
^ Match at start of line.●  
\$ Match at end of line.●  
[...] Match any character in the '...'.●  
[~...] Match any character except those in '...'.●  
\* Match 0 or more of pattern to left.●  
+ Match 1 or more of pattern to left.  
? Match 0 or 1 of pattern to left.  
\c Quotes *c*, except for the following.  
\b Match at beginning or end of word.  
\B Match except at beginning or end of word.  
\| Match either pattern to left or right.  
\(...\) Grouping.  
\n Match copy of whatever matched *n*<sup>th</sup> group.

## Miscellaneous editing

C-o Insert newline after cursor.  
C-t Transpose characters.  
M-t Transpose words.  
C-x C-t Transpose lines.  
M-u Convert whole word to upper case.  
M-l Convert whole word to lower case.  
M-c Capitalize word.

## Files

C-x C-f Find file; load if needed.●  
C-x 4 C-f Find file in other window.●  
C-x C-s Save file.●  
C-x C-w Write to explicitly-named file.  
C-x i Insert file at cursor.  
M-x recover-file Recover file after disaster from auto-save file.  
M-x revert-buffer Throw away changes to buffer and restore from file.

## Buffers and windows

C-x o Put cursor in other window.●  
C-x 1 Grow current window to full screen.●  
C-x 2 Split current window vertically.●  
C-x b Put named buffer in window.●  
C-x 0 Remove current window.  
C-x 3 Split current window horizontally.

C-x C-b List all buffers.  
C-x k Delete buffer.

## Shells

M-x shell Run UNIX shell in a buffer.●  
M-| Execute single shell command on region.  
With *ARG*, replaces region.

Commands active in shell buffers:

RET Send current line to shell.●  
TAB Complete preceding file name.●  
C-c C-c Send interrupt to shell.●  
C-c C-u Erase current input line.●  
C-c C-z Send stop signal to shell.●  
C-c C-d Send EOF to shell.

## Compilation, debugging, and tags

M-x compile Execute command (by default, *make*) asynchronously.●  
C-x ' Position to next error or next line found by M-x *grep* command.●  
M-x kill-compiler Stop active compile.

M-x visit-tags-table Specify file containing tags produced by *etags*.●  
M-. Display source for given tag.●  
C-u M-. Find next alternate definition for last tag.●  
C-x 4 . Display source for tag in other window.  
M-x tags-search  
M-x tags-query-replace Look for pattern in all files named in tags table.  
M-x tags-apropos Display matching tags.

M-x gdb Run GNU debugger on file.  
M-x gjdb Run Java debugger on class.

Commands valid in *gdb* and *gjdb* modes.

C-c C-s Step.●  
C-c C-n Next.●  
C-c < Up stack.●  
C-c > Down stack.●  
C-c C-r Finish.●  
C-x SPC In any source file, sets a break point.●  
C-c C-i Stepi (*gdb* only).

## Help and documentation

M-x manual-entry UNIX man page for given topic.  
C-h a Look up names of matching commands.●  
C-h b Display key bindings.●  
C-h f Help for M-x function.●  
C-h C-h Help for C-h.●

**C-h i** Run info browser.●  
**C-h k** Help for key.●  
**C-h m** Help for current mode.  
**C-h t** Tutorial.  
**C-h w** Key containing function.

Inside an \*info\* buffer (result of **C-h i**), the following are defined.

**m** Select menu item.●  
**l** Go to last-visited node.●  
**?** Get help for browser.●  
**u** Go to node's parent.●  
**n** Go to next node in sequence.●  
**q** Leave browser.●  
**.** Go to top of node.  
**d** Go to top-level node.

## Mouse commands

Left, middle, and right buttons are **LB**, **MB**, and **RB**.

**LB** Put cursor at mouse. Dragging marks region.  
**MB** Paste text from window-system cut buffer at mouse.  
**RB** Extend region to pointer and copy into cut and kill buffers. Clicking twice deletes region.  
**C-LB** Select a buffer.