

# GNU Emacs Reference Card

(for version 20)

## Starting Emacs

To enter GNU Emacs 20, just type its name: `emacs`

To read in a file to edit, see Files, below.

## Leaving Emacs

suspend Emacs (or iconify it under X) `C-z`  
exit Emacs permanently `C-x C-c`

## Files

read a file into Emacs `C-x C-f`  
save a file back to disk `C-x C-s`  
save all files `C-x s`  
insert contents of another file into this buffer `C-x i`  
replace this file with the file you really want `C-x C-v`  
write buffer to a specified file `C-x C-w`  
version control checkin/checkout `C-x C-q`

## Getting Help

The help system is simple. Type `C-h` (or `F1`) and follow the directions. If you are a first-time user, type `C-h t` for a **tutorial**.

remove help window `C-x 1`  
scroll help window `C-M-v`  
apropos: show commands matching a string `C-h a`  
show the function a key runs `C-h c`  
describe a function `C-h f`  
get mode-specific information `C-h m`

## Error Recovery

abort partially typed or executing command `C-g`  
recover a file lost by a system crash `M-x recover-file`  
undo an unwanted change `C-x u` or `C-_`  
restore a buffer to its original contents `M-x revert-buffer`  
redraw garbaged screen `C-l`

## Incremental Search

search forward `C-s`  
search backward `C-r`  
regular expression search `C-M-s`  
reverse regular expression search `C-M-r`  
select previous search string `M-p`  
select next later search string `M-n`  
exit incremental search `RET`  
undo effect of last character `DEL`  
abort current search `C-g`

Use `C-s` or `C-r` again to repeat the search in either direction. If Emacs is still searching, `C-g` cancels only the part not done.

## Motion

entity to move over  
character `C-b` `C-f`  
word `M-b` `M-f`  
line `C-p` `C-n`  
go to line beginning (or end) `C-a` `C-e`  
sentence `M-a` `M-e`  
paragraph `M-{` `M-}`  
page `C-x [` `C-x ]`  
sexp `C-M-b` `C-M-f`  
function `C-M-a` `C-M-e`  
go to buffer beginning (or end) `M-<` `M->`  
  
scroll to next screen `C-v`  
scroll to previous screen `M-v`  
scroll left `C-x <`  
scroll right `C-x >`  
scroll current line to center of screen `C-u C-l`

## Killing and Deleting

entity to kill  
character (delete, not kill) `DEL` `C-d`  
word `M-DEL` `M-d`  
line (to end of) `M-o C-k` `C-k`  
sentence `C-x DEL` `M-k`  
sexp `M-- C-M-k` `C-M-k`  
  
kill region `C-w`  
copy region to kill ring `M-w`  
kill through next occurrence of *char* `M-z char`  
  
yank back last thing killed `C-y`  
replace last yank with previous kill `M-y`

## Marking

set mark here `C-@` or `C-SPC`  
exchange point and mark `C-x C-x`  
  
set mark *arg* words away `M-@`  
mark paragraph `M-h`  
mark page `C-x C-p`  
mark sexp `C-M-@`  
mark function `C-M-h`  
mark entire buffer `C-x h`

## Query Replace

interactively replace a text string `M-%`  
using regular expressions `M-x query-replace-regexp`  
  
Valid responses in query-replace mode are  
  
replace this one, go on to next `SPC`  
replace this one, don't move `,`  
skip to next without replacing `DEL`  
replace all remaining matches `!`  
back up to the previous match `~`  
exit query-replace `RET`  
enter recursive edit (`C-M-c` to exit) `C-r`

## Multiple Windows

When two commands are shown, the second is for "other frame."

delete all other windows `C-x 1`  
split window, above and below `C-x 2` `C-x 5 2`  
delete this window `C-x 0` `C-x 5 0`  
split window, side by side `C-x 3`  
scroll other window `C-M-v`  
switch cursor to another window `C-x o` `C-x 5 o`  
select buffer in other window `C-x 4 b` `C-x 5 b`  
display buffer in other window `C-x 4 C-o` `C-x 5 C-o`  
find file in other window `C-x 4 f` `C-x 5 f`  
find file read-only in other window `C-x 4 r` `C-x 5 r`  
run Dired in other window `C-x 4 d` `C-x 5 d`  
find tag in other window `C-x 4 .` `C-x 5 .`  
  
grow window taller `C-x ^`  
shrink window narrower `C-x }`  
grow window wider `C-x {`

## Formatting

indent current line (mode-dependent) `TAB`  
indent region (mode-dependent) `C-M-\`  
indent sexp (mode-dependent) `C-M-q`  
indent region rigidly *arg* columns `C-x TAB`  
insert newline after point `C-o`  
move rest of line vertically down `C-M-o`  
delete blank lines around point `C-x C-o`  
join line with previous (with *arg*, next) `M-^`  
delete all white space around point `M-\`  
put exactly one space at point `M-SPC`  
fill paragraph `M-q`  
set fill column `C-x f`  
set prefix each line starts with `C-x .`  
set face `M-g`

## Case Change

uppercase word `M-u`  
lowercase word `M-l`  
capitalize word `M-c`  
  
uppercase region `C-x C-u`  
lowercase region `C-x C-l`

## The Minibuffer

The following keys are defined in the minibuffer.

complete as much as possible `TAB`  
complete up to one word `SPC`  
complete and execute `RET`  
show possible completions `?`  
fetch previous minibuffer input `M-p`  
fetch later minibuffer input or default `M-n`  
regexp search backward through history `M-r`  
regexp search forward through history `M-s`  
abort command `C-g`

Type `C-x ESC ESC` to edit and repeat the last command that used the minibuffer. Type `F10` to activate the menu bar using the minibuffer.

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## Buffers

select another buffer	C-x b
list all buffers	C-x C-b
kill a buffer	C-x k

## Transposing

transpose <b>characters</b>	C-t
transpose <b>words</b>	M-t
transpose <b>lines</b>	C-x C-t
transpose <b>sexps</b>	C-M-t

## Spelling Check

check spelling of current word	M- $\$$
check spelling of all words in region	M-x ispell-region
check spelling of entire buffer	M-x ispell-buffer

## Tags

find a tag (a definition)	M-.
find next occurrence of tag	C-u M-.
specify a new tags file	M-x visit-tags-table
regexp search on all files in tags table	M-x tags-search
run query-replace on all the files	M-x tags-query-replace
continue last tags search or query-replace	M-,

## Shells

execute a shell command	M-!
run a shell command on the region	M-
filter region through a shell command	C-u M-
start a shell in window *shell*	M-x shell

## Rectangles

copy rectangle to register	C-x r r
kill rectangle	C-x r k
yank rectangle	C-x r y
open rectangle, shifting text right	C-x r o
blank out rectangle	C-x r c
prefix each line with a string	C-x r t

## Abbrevs

add global abbrev	C-x a g
add mode-local abbrev	C-x a l
add global expansion for this abbrev	C-x a i g
add mode-local expansion for this abbrev	C-x a i l
explicitly expand abbrev	C-x a e
expand previous word dynamically	M-/

## Regular Expressions

any single character except a newline	.	(dot)
zero or more repeats	*	
one or more repeats	+	
zero or one repeat	?	
quote regular expression special character <i>c</i>	\c	
alternative ("or")		
grouping	\( ... \)	
same text as <i>n</i> th group	\n	
at word break	\b	
not at word break	\B	
<b>entity</b>	<b>match start</b>	<b>match end</b>
line	^	\$
word	\<	\>
buffer	\'	\'
<b>class of characters</b>	<b>match these</b>	<b>match others</b>
explicit set	[ ... ]	[^ ... ]
word-syntax character	\w	\W
character with syntax <i>c</i>	\sc	\Sc

## International Character Sets

specify principal language	M-x set-language-environment
show all input methods	M-x list-input-methods
enable or disable input method	C-\
set coding system for next command	C-x RET c
show all coding systems	M-x list-coding-systems
choose preferred coding system	M-x prefer-coding-system

## Info

enter the Info documentation reader	C-h i
find specified function or variable in Info	C-h C-i

Moving within a node:

scroll forward	SPC	
scroll reverse	DEL	
beginning of node	.	(dot)

Moving between nodes:

<b>next</b> node	n
<b>previous</b> node	p
<b>move up</b>	u
select menu item by name	m
select <i>n</i> th menu item by number (1-9)	n
follow cross reference (return with 1)	f
return to last node you saw	l
return to directory node	d
go to any node by name	g

Other:

run Info <b>tutorial</b>	h
<b>quit</b> Info	q
search nodes for regexp	M-s

## Registers

save region in register	C-x r s
insert register contents into buffer	C-x r i
save value of point in register	C-x r SPC
jump to point saved in register	C-x r j

## Keyboard Macros

<b>start</b> defining a keyboard macro	C-x (
<b>end</b> keyboard macro definition	C-x )
<b>execute</b> last-defined keyboard macro	C-x e
append to last keyboard macro	C-u C-x (
name last keyboard macro	M-x name-last-kbd-macro
insert Lisp definition in buffer	M-x insert-kbd-macro

## Commands Dealing with Emacs Lisp

eval <b>sexp</b> before point	C-x C-e
eval current <b>defun</b>	C-M-x
eval <b>region</b>	M-x eval-region
read and eval minibuffer	M-:
load from standard system directory	M-x load-library

## Simple Customization

customize variables and faces M-x customize

Making global key bindings in Emacs Lisp (examples):

```
(global-set-key "\C-cg" 'goto-line)
(global-set-key "\M-#" 'query-replace-regexp)
```

## Writing Commands

```
(defun command-name (args)
  "documentation" (interactive "template")
  body)
```

An example:

```
(defun this-line-to-top-of-window (line)
  "Reposition line point is on to top of window.
With ARG, put point on line ARG."
  (interactive "P")
  (recenter (if (null line)
                0
                (prefix-numeric-value line))))
```

The interactive spec says how to read arguments interactively. Type C-h f interactive for more details.

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