

# GNU Emacs Reference Card

(for version 29)

## Key Binding Notation

In the Emacs key binding notation, C-x is Ctrl+X; M-x is usually Alt+X; S-x is Shift+X; and C-M-x is Ctrl+Alt+X, etc.

## Leaving Emacs

iconify Emacs (or suspend it in terminal)	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
toggle read-only status of buffer	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
describe the function a key runs	C-h k
describe a function	C-h f
get mode-specific information	C-h m

## Error Recovery

abort partially typed or executing command	C-g
recover files lost by a system crash	M-x recover-session
undo an unwanted change	C-x u, C-_ 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 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 matched.

## Motion

<b>entity to move over</b>	<b>backward</b>	<b>forward</b>
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, top, bottom		C-l
goto line		M-g g
goto char		M-g c
back to indentation		M-m

## Killing and Deleting

<b>entity to kill</b>	<b>backward</b>	<b>forward</b>
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 <b>region</b>		C-w
copy region to kill ring		M-w
kill through next occurrence of <i>char</i>		M-z <i>char</i>
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 <i>arg</i> words away	M-@
mark <b>paragraph</b>	M-h
mark <b>page</b>	C-x C-p
mark <b>sexp</b>	C-M-@
mark <b>function</b>	C-M-h
mark entire <b>buffer</b>	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	
<b>replace</b> this one, go on to next	SPC or y
replace this one, don't move	,
<b>skip</b> to next without replacing	DEL or n
replace all remaining matches	!
<b>back up</b> to the previous match	^
<b>exit</b> query-replace	RET
enter recursive edit (C-M-c to exit)	C-r

## Multiple Windows

When two commands are shown, the second is a similar command for a frame instead of a window.

delete all other windows	C-x 1	C-x 5 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 <b>line</b> (mode-dependent)	TAB
indent <b>region</b> (mode-dependent)	C-M-\
indent <b>sexp</b> (mode-dependent)	C-M-q
indent region rigidly <i>arg</i> columns	C-x TAB
indent for comment	M-;
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 to <i>arg</i>	C-x f
set prefix each line starts with	C-x .

## 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
regex search backward through history	M-r
regex 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 menu bar items on text terminals.

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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 <b>ispell-region</b>
check spelling of entire buffer	M-x <b>ispell-buffer</b>
toggle on-the-fly spell checking	M-x <b>flyspell-mode</b>

## Tags

find a tag (a definition)	M-.
specify a new tags file	M-x <b>visit-tags-table</b>
regexp search on all files in tags table	M-x <b>tags-search</b>
run query-replace on all the files	M-x <b>tags-query-replace</b>
continue last tags search or query-replace	M-,

## Shells

execute a shell command	M-!
execute a shell command asynchronously	M-&
run a shell command on the region	M-
filter region through a shell command	C-u M-
start a shell in window <b>*shell*</b>	M-x <b>shell</b>

## 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-/

## Miscellaneous

numeric argument	C-u <i>num</i>
negative argument	M--
quoted insert	C-q <i>char</i>

## Regular Expressions

any single character except a newline	.	(dot)
zero or more repeats	*	
one or more repeats	+	
zero or one repeat	?	
quote special characters	\	
quote regular expression special character <i>c</i>	\c	
alternative ("or")		
grouping	\( ... \)	
shy grouping	\(?: ... \)	
explicit numbered grouping	\(?:NUM: ... \)	
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	\<	\>
symbol	\_<	\_>
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
character with category <i>c</i>	\cc	\Cc

## International Character Sets

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

## Info

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

Moving within a node:

scroll forward	SPC
scroll reverse	DEL
beginning of node	b

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 top node of Info file	t
go to any node by name	g

Other:

run Info <b>tutorial</b>	h
look up a subject in the indices	i
search nodes for regexp	s
<b>quit</b> Info	q

## 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 <b>name-last-kbd-macro</b>
insert Lisp definition in buffer	M-x <b>insert-kbd-macro</b>

## 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 <b>eval-region</b>
read and eval minibuffer	M-:
load a Lisp library from <b>load-path</b>	M-x <b>load-library</b>

## Simple Customization

customize variables and faces M-x **customize**

Making global key bindings in Emacs Lisp (example):

```
(global-set-key (kbd "C-c g") 'search-forward)
(global-set-key (kbd "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 current line to top of window.
With prefix argument LINE, put point on LINE."
  (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** RET for more details.

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