

# GNU Emacs Reference Card

(for version 30)

## 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

entity to move over	backward	forward
character	<b>C-b</b>	<b>C-f</b>
word	<b>M-b</b>	<b>M-f</b>
line	<b>C-p</b>	<b>C-n</b>
go to line beginning (or end)	<b>C-a</b>	<b>C-e</b>
sentence	<b>M-a</b>	<b>M-e</b>
paragraph	<b>M-{</b>	<b>M-}</b>
page	<b>C-x [</b>	<b>C-x ]</b>
sexp	<b>C-M-b</b>	<b>C-M-f</b>
function	<b>C-M-a</b>	<b>C-M-e</b>
go to buffer beginning (or end)	<b>M-&lt;</b>	<b>M-&gt;</b>
scroll to next screen		<b>C-v</b>
scroll to previous screen		<b>M-v</b>
scroll left		<b>C-x &lt;</b>
scroll right		<b>C-x &gt;</b>
scroll current line to center, top, bottom		<b>C-l</b>
goto line		<b>M-g g</b>
goto char		<b>M-g c</b>
back to indentation		<b>M-m</b>

## Killing and Deleting

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

## Marking

set mark here	<b>C-@ or C-SPC</b>
exchange point and mark	<b>C-x C-x</b>
set mark <i>arg</i> words away	<b>M-@</b>
mark paragraph	<b>M-h</b>
mark page	<b>C-x C-p</b>
mark sexp	<b>C-M-@</b>
mark function	<b>C-M-h</b>
mark entire buffer	<b>C-x h</b>

## Query Replace

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

## Multiple Windows

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

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

## Formatting

indent current line (mode-dependent)	<b>TAB</b>
indent region (mode-dependent)	<b>C-M-\</b>
indent SEXP (mode-dependent)	<b>C-M-q</b>
indent region rigidly <i>arg</i> columns	<b>C-x TAB</b>
indent for comment	<b>M-;</b>
insert newline after point	<b>C-o</b>
move rest of line vertically down	<b>C-M-o</b>
delete blank lines around point	<b>C-x C-o</b>
join line with previous (with arg, next)	<b>M-^</b>
delete all white space around point	<b>M-\</b>
put exactly one space at point	<b>M-SPC</b>
fill paragraph	<b>M-q</b>
set fill column to <i>arg</i>	<b>C-x f</b>
set prefix each line starts with	<b>C-x .</b>

## Case Change

uppercase word	<b>M-u</b>
lowercase word	<b>M-l</b>
capitalize word	<b>M-c</b>
uppercase region	<b>C-x C-u</b>
lowercase region	<b>C-x C-l</b>

## The Minibuffer

The following keys are defined in the minibuffer.

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

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  
list all buffers  
kill a buffer

C-x b  
C-x C-b  
C-x k

## Transposing

transpose **characters**  
transpose **words**  
transpose **lines**  
transpose **sexps**

C-t  
M-t  
C-x C-t  
C-M-t

## Spelling Check

check spelling of current word  
check spelling of all words in region  
check spelling of entire buffer  
toggle on-the-fly spell checking

M-\$  
M-x ispell-region  
M-x ispell-buffer  
M-x flyspell-mode

## Tags

find a tag (a definition)  
specify a new tags file  
regexp search on all files in tags table  
run query-replace on all the files

M-.  
M-x visit-tags-table  
M-x tags-search  
M-x tags-query-replace

## Shells

execute a shell command  
execute a shell command asynchronously  
run a shell command on the region  
filter region through a shell command  
start a shell in window \*shell\*

M-!  
M-&  
M-|  
C-u M-|  
M-x shell

## Rectangles

copy rectangle to register  
kill rectangle  
yank rectangle  
open rectangle, shifting text right  
blank out rectangle  
prefix each line with a string

C-x r r  
C-x r k  
C-x r y  
C-x r o  
C-x r c  
C-x r t

## Abbrevs

add global abbrev  
add mode-local abbrev  
add global expansion for this abbrev  
add mode-local expansion for this abbrev  
explicitly expand abbrev  
expand previous word dynamically

C-x a g  
C-x a l  
C-x a i g  
C-x a i l  
C-x a e  
M-/

## Miscellaneous

numeric argument  
negative argument  
quoted insert

C-u num  
M--  
C-q char

## 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	

entity	match start	match end
line	^	\$
word	\<	\>
symbol	\_<	\_>
buffer	\`	\`
class of characters	match these	match others
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 1
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  
find specified function or variable in Info

C-h i  
C-h S

Moving within a node:

SPC  
DEL  
b

Moving between nodes:

n  
p  
u  
m  
n  
f  
l  
d  
t  
g

next node  
previous node  
move up  
select menu item by name  
select *n*th menu item by number (1-9)  
follow cross reference (return with 1)  
return to last node you saw  
return to directory node  
go to top node of Info file  
go to any node by name

Other:

h  
i  
s  
q

run Info tutorial  
look up a subject in the indices  
search nodes for regexp  
quit Info

## 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

start defining a keyboard macro	C-x (
end keyboard macro definition	C-x )
execute 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 a Lisp library from <b>load-path</b>	M-x load-library

## 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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