

# GNU Emacs Reference Card

(for version 25)

## Starting Emacs

To enter GNU Emacs 25, just type its name: `emacs`

## Leaving Emacs

suspend Emacs (or iconify it under X)	<code>C-z</code>
exit Emacs permanently	<code>C-x C-c</code>

## Files

<b>read</b> a file into Emacs	<code>C-x C-f</code>
<b>save</b> a file back to disk	<code>C-x C-s</code>
save <b>all</b> files	<code>C-x s</code>
<b>insert</b> contents of another file into this buffer	<code>C-x i</code>
replace this file with the file you really want	<code>C-x C-v</code>
write buffer to a specified file	<code>C-x C-w</code>
toggle read-only status of buffer	<code>C-x C-q</code>

## 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	<code>C-x 1</code>
scroll help window	<code>C-M-v</code>
apropos: show commands matching a string	<code>C-h a</code>
describe the function a key runs	<code>C-h k</code>
describe a function	<code>C-h f</code>
get mode-specific information	<code>C-h m</code>

## Error Recovery

<b>abort</b> partially typed or executing command	<code>C-g</code>
<b>recover</b> files lost by a system crash	<code>M-x recover-session</code>
<b>undo</b> an unwanted change	<code>C-x u</code> , <code>C-_</code> or <code>C-/</code>
restore a buffer to its original contents	<code>M-x revert-buffer</code>
redraw garbaged screen	<code>C-l</code>

## Incremental Search

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

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

## Killing and Deleting

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

## Marking

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

## Query Replace

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

## Multiple Windows

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

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

## Formatting

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

## Case Change

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

## The Minibuffer

The following keys are defined in the minibuffer.

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

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

## 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
regex 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-!
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 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-/

## 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 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 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
move <b>up</b>	u
select menu item by name	m
select <i>n</i> th menu item by number (1–9)	<i>n</i>
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 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 <i>command-name</i> ( <i>args</i> ) " <i>documentation</i> " (interactive " <i>template</i> ") <i>body</i> )	
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.