# GNU Emacs Reference Card 

(for version 24)

## Starting Emacs

To enter GNU Emacs 24, just type its name: emacs

## Leaving Emacs

| suspend Emacs (or iconify it under X) exit Emacs permanently | $\mathrm{C}-\mathrm{z}$ |
| :---: | :---: |
|  | C-x C-c |
| Files |  |
| read a file into Emacs | $\mathrm{C}-\mathrm{x} \mathrm{C-f}$ |
| save a file back to disk | $\mathrm{C}-\mathrm{x} \mathrm{C}-\mathrm{s}$ |
| save all files | C-x |
| insert contents of another file into this buffer | $\mathrm{C}-\mathrm{x}$ |
| replace this file with the file you really want | $\mathrm{C}-\mathrm{xC-v}$ |
| write buffer to a specified file | $\mathrm{C}-\mathrm{x}$ C-w |
| toggle read-only status of buffer | $\mathrm{C}-\mathrm{x} \mathrm{C}-\mathrm{q}$ |

## Getting Help

The help system is simple. Type C-h (or F1) and follow the directions. If you are a first-time user, type $\mathrm{C}-\mathrm{h} \mathrm{t}$ for a tutorial. remove help window

C-x 1
scroll help window $\quad \mathrm{C}-\mathrm{M}-\mathrm{v}$
apropos: show commands matching a string describe the function a key runs $\quad \mathrm{C}-\mathrm{hk}$ describe a function
get mode-specific information
C-h

## Error Recovery

abort partially typed or executing command $\quad \mathrm{C}-\mathrm{g}$
recover files lost by a system crash $\quad M-x$ recover-session undo an unwanted change $\quad \mathrm{C}-\mathrm{x} \mathrm{u}, \mathrm{C}-$ _ or $\mathrm{C}-/$ restore a buffer to its original contents $M-x$ revert-buffer redraw garbaged screen

C-1

## Incremental Search

| search forward | $\mathrm{C}-\mathrm{s}$ |
| :--- | :--- |
| search backward | $\mathrm{C}-\mathrm{r}$ |
| regular expression search | $\mathrm{C}-\mathrm{M}-\mathrm{s}$ |
| reverse regular expression search | $\mathrm{C}-\mathrm{M}-\mathrm{r}$ |
| select previous search string | $\mathrm{M}-\mathrm{p}$ |
| select next later search string | $\mathrm{M}-\mathrm{n}$ |
| 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, $\mathrm{C}-\mathrm{g}$ cancels only the part not matched.

## Motion

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

## Killing and Deleting

entity to kill backward forward
character (delete, not kill)
word
line (to end of)
sentence
sexp

| backward DEL | forward $\mathrm{C}-\mathrm{d}$ |
| :---: | :---: |
| M-DEL | M-d |
| M-0 C-k | C-k |
| C-x DEL | M-k |
| M-- C-M-k | C-M-k |
| C-w |  |
| M-w |  |
| M-z | char |
| C-y |  |
| M-y |  |

## kill region

copy region to kill ring
kill through next occurrence of char
yank back last thing killed 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 $\quad M-x$ query-replace-regexp
Valid responses in query-replace mode are

## eplace this one, go on to next

replace this one, don't move
skip to next without replacing
SPC or y
eplace all remaining matches
back up to the previous match
exit query-replace
DEL or n
enter recursive edit ( $C-M-c$ to exit)

## 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 |  |

## switch cursor to another window

select buffer in other window
display buffer in other window find file in other window
find file read-only in other window
run Dired in other window
find tag in other window
grow window taller
shrink window narrower
$C-x 4$ b $\quad C-x 5 b$
C-x 4 C-o C-x 5 C-
C-x $4 \mathrm{f} \quad \mathrm{C}-\mathrm{x} 5 \mathrm{f}$
$C-x 4 r \quad C-x 5 r$
$C-x 4 d \quad C-x 5 d$
C-x 4 . C-x 5
C-x -
grow window wider
C-x \{
$C-x\}$

## Formatting

indent current line (mode-dependent) indent region (mode-dependent)
indent sexp (mode-dependent)
indent region rigidly arg columns
TAB
indent for comment
$\mathrm{C}-\mathrm{M}-$ \}
$\mathrm{C}-\mathrm{M}-\mathrm{q}$
indent for comment
insert newline after point
move rest of line vertically down
delete blank lines around point
-;
join line with previous (with arg, next)
delete all white space around point
put exactly one space at point
fill paragraph
set fill column to arg
set prefix each line starts with
set face
M--
M- \}
M-SPC
M-SP
M-q

C-x f
$\mathrm{C}-\mathrm{x}$
M-o

## Case Change

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

## 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
show possible completions
fetch previous minibuffer input
?
fetch later minibuffer input or default
regexp search backward through history
regexp search forward through history
M-n
abort command
M-s
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.

## GNU Emacs Reference Card

## Buffers

select another buffer<br>list all buffers

kill a buffer

## 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

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

## Tags

find a tag (a definition)
find next occurrence of tag
specify a new tags file

## M-.

C-u Mregexp search on all files in tags table $\quad M-x$ tags-search run query-replace on all the files $\quad M-x$ tags-query-replace continue last tags search or query-replace $\quad \mathrm{M}$ - ,

## Shells

## execute a shell command

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

## M-!

M-I
C-u M-I
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
$\mathrm{C}-\mathrm{xrk}$
C-x ry
C-x r o
C-x r c
$\mathrm{C}-\mathrm{x} \boldsymbol{r} \mathrm{t}$

## 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 1
$C-x$ a $i g$
C-x a il
$C-x$ a e
M-/

## Miscellaneous

## Regular Expressions

any single character except a newline
zero or more repeats
one or more repeat
zero or one repeat
quote regular expression special character $c$
alternative ("or") \।
grouping
same text as $n$th group
at word break
not at word break
entity
line
word
buffer
class of characters explicit set
word-syntax character
character with syntax $c$

## Registers

save region in register $\quad \mathrm{C}-\mathrm{x} \mathrm{r} \mathrm{s}$ insert register contents into buffer

C-x ri
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
end keyboard macro definition
execute last-defined keyboard macro
append to last keyboard macro
name last keyboard macro
insert Lisp definition in buffer
C-x (
C-x )
C-x e
C-u C-x (

## Commands Dealing with Emacs Lisp

eval sexp before point
eval current defun
eval region
read and eval minibuffer
load from standard system directory

## C-x C-e

C-M-x
M-x eval-region M-:
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 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 interac tively. Type C-h f interactive for more details.

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