

# 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) | <code>C-z</code>     |
| exit Emacs permanently                | <code>C-x C-c</code> |

## Files

|  |                      |
|--|----------------------|
| read a file into Emacs                           | <code>C-x C-f</code> |
| save a file back to disk                         | <code>C-x C-s</code> |
| save all files                                   | <code>C-x s</code>   |
| insert 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> |
| version control checkin/checkout                 | <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> |
| show the function a key runs             | <code>C-h c</code> |
| describe a function                      | <code>C-h f</code> |
| get mode-specific information            | <code>C-h m</code> |

## Error Recovery

|  |  |
|--|--|
| abort partially typed or executing command | <code>C-g</code>                       |
| recover a file lost by a system crash      | <code>M-x recover-file</code>          |
| undo an unwanted change                    | <code>C-x u</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 done.

## Motion

|   |                           |                           |
|---|---------------------------|---------------------------|
| <b>entity to move over</b>              | <b>backward</b>           | <b>forward</b>            |
| 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-<b>[</b></code>   | <code>M-<b>]</b></code>   |
| page                                    | <code>C-x <b>[</b></code> | <code>C-x <b>]</b></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 of screen |                           | <code>C-u C-l</code>      |

## Killing and Deleting

|   |                        |                       |
|---|------------------------|-----------------------|
| <b>entity to kill</b>                       | <b>backward</b>        | <b>forward</b>        |
| 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>    |
| <b>kill 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> words 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> |
| replace this one, don't move                       | <code>,</code>   |
| <b>skip</b> to next without replacing              | <code>DEL</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 for "other frame."

|                                     |                        |                        |
|-------------------------------------|------------------------|------------------------|
| delete all other windows            |                        | <code>C-x 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 line (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> |
| 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                                  | <code>C-x f</code>   |
| set prefix each line starts with                 | <code>C-x .</code>   |
| set face   | <code>M-g</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> |
| regexp search backward through history  | <code>M-r</code> |
| regexp 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 the menu bar using the minibuffer.

# GNU Emacs Reference Card

## 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 c | \c        |       |
| alternative ("or")                           | \         |       |
| grouping                                     | \( ... \) |       |
| same text as nth 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 c    | \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 nth menu item by number (1-9)   | n |
| follow cross reference (return with l) | 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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designed by Stephen Gildea

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