

NOTES ON EMACS

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1 SHORTCUTS

1.1 Notation and Definition

C- → Control key followed by one or several keys.

M- → Alt key followed by one or several keys (on Macs, it is the ESC key instead).

S- → Shift key followed by or several keys.

DEL → Backspace key.

RET → Return or Enter key.

SPC → space key.

ESC → Escape key.

TAB → Tab key.

Frame → main window of the application.

Window → sub-window within the frame.

Buffer → window at the bottom of the frame to enter commands and select files.

1.2 General Commands

emacs -nw <file> → launch emacs in terminal mode (no frame).

C-u <number> <shortcut> → repeat <shortcut> <number> times.

M-x <extended-command> → execute <extended-command>.

C-g → cancel the current command.

1.2.1 On-line help

C-h t → launch the Emacs tutorial.

C-h k <key> → explicit the shortcut <key>.

C-h f <func> → explicit the function <func>.

C-h w <func> → give the shortcut corresponding to function <func>.

C-h m → help about the current text mode.

1.3 Managing Files

1.3.1 Opening and closing

C-x C-f → open a new file.

C-x C-s → save the file.

C-x C-w → save the file under a different name.

C-x C-b → open a new buffer (useful to open files closed during the current session).

C-x C-c → close all windows and quit Emacs.

1.3.2 Splitting windows

C-x 5 2 → open a new frame.

C-x 5 0 → close the frame.

C-x 2 → open a new window below.

C-x 3 → open a new window on the left.

C-x 1 → close all other window except the current one.

C-x o → move the cursor to the other windows.

C-x left → open the previous file in the buffer.

C-x right → open the next file in the buffer.

1.3.3 Appearance

M-F8 → resize the frame (this is a Ubuntu shortcut).

C-x } → move to the right the vertical bar splitting a frame (opened with **C-x 3**).

C-x { → move to the left the vertical bar splitting a frame (opened with **C-x 3**).

C-u 1 C-x 3 → split the frame horizontally in two windows, with the right one 1.618 times wider. This is not a standard emacs command, it is implemented in my `.emacs`.

1.3.4 Bookmarks to manage files

C-x r m <name> → save the current file in a bookmark.

C-x r b <name> → open a bookmark.

C-x r l → list the saved bookmarks:

d → mark the file to be erased;

x → erase all the marked files;

r → rename the bookmark;

s → save the bookmark file.

1.4 Text Editing

C-/ → undo the previous command.

C-u <number> <character> → insert <character> <number> times.

M-x visual-line-mode → toggle to cyclic text mode (without linebreak symbols; soft wrapping).

M-x toggle-truncate-lines → same as above, but for hard-wrapping.

M-; → comment/uncomment the selection.

C-M-SPC → if the cursor is on a left parenthesis, this command selects the whole text until the corresponding right parenthesis (there can be other parentheses within the text).

1.4.1 Moving

C-v → go to the next page.
M-v → go to the previous page.
M-f → go to the next word.
M-b → go to the previous word.
C-a → go to the beginning of the line.
C-e → go to the end of the line.
M-< → go to the beginning of the document.
M-> → go to the end of the document.
C-f → go to the next character.
C-b → go to the previous character.
C-n → go to the next line.
C-p → go to the previous line.
C-l → center the window on the cursor.

1.4.2 Case

C-x C-u → convert the selected text to upper case.
C-x C-l → convert the selected text to lower case.

1.4.3 Order by alphabetical order

M-x sort-lines → sort the selected lines by alphabetical order.
M-x reverse-region → invert the order of the lines.

1.5 Text Searching

1.5.1 Regular expressions

. → any character except `\n`.
\. → the character `.`.
+ → search the expression once or more.
***** → search the expression 0 times or more.
? → search the expression 0 or 1 times.
^... → beginning of a line.
...\$ → end of a line.
\b → borders of a word.
[0-9]+ → one or several digits.
[^0-9]+ → one or several non-digits.
[A-Za-z]+ → one or several letters.
[;A-Z-z0-9]+ → one or several characters of the ensemble: letter, digite or ;.

1.5.2 Simple search

C-s → forward search.
C-r → backward search.
M-g g <num> → go to line `<num>`.

1.5.3 Search and replace

M-% → replace a sequence of characters:

- `y` to replace the current sequence and go to the next one;
- `n` to go to the next sequence without replacing the current one;
- `!` to replace everything at once.

1.5.4 Search by line

M-s o <exp> → search all the lines containing `<exp>`.
M-s h p <word> → highlight all occurrences of `<word>`.
M-s h r <exp> → highlight all occurrences of `<exp>`.

M-s h l → highlight all the lines containing an occurrence of <exp>.

M-s h u → cancel the highlighting.

1.6 Copying and Pasting

1.6.1 General commands

C-x h → select the whole window.

C-SPC → initialize text selection (set a marker).

M-w → copy the selected text.

C-w → copy and cut the selected text.

C-y → paste the copied text.

M-y → after C-y, this command replaces the cut text by the previous copy (can iteratively work).

C-k → copy and cut the end of a line.

M-DEL → copy and cut the word to the left of the cursor.

M-d → copy and cut the word to the right of the cursor.

C-x r t → cut a rectangle of text between the cursor and the marker.

C-x r y → paste the copied rectangle of text.

1.6.2 Rectangular selection

1. Go to the upper left corner of the text to be selected;
2. C-SPC;
3. Go to the lower right corner of the text to be selected;
4. C-x SPC.
5. Once the rectangle is selected, you can do C-x r t and enter a string that will appear on each line of the rectangle.

1.6.3 Managing several sequences

Several sequences to be pasted can be save in memory.

1. Select a text sequence with C-SPC.
2. C-x r s <id> to copy. The ID <id> of the sequence can be a single character.
3. At the desired location, C-x r i <id> pastes the sequence.

1.7 Acrobatic editing

1.7.1 Indenting

C-x TAB → indent the selected text (you then need to use the arrows to choose the indentation size; 4 characters in Python).

C-u <N> C-x TAB → indent the selected text by <N> characters (<N> can be negative).

1.7.2 Add a prefix to each selected line

1. Select a region with C-SPC.
2. C-x r t.
3. Enter a string that will be placed at the beginning.

This command also allows us to add a column of characters in the middle or at the end of a text. The position of the insertion depends on the abscissa of the cursor at the beginning (x1) and at the end of the selection (x2). If $x1 \neq x2$, the column $(\max(x1, x2), |x2 - x1|)$ is suppressed before inserting the new string. The command C-x r k allows us to remove the column $(\max(x1, x2), |x2 - x1|)$.

1.7.3 Blanks

M-x delete-trailing-whitespace → erase all the blanks at the end of a line.

1.8 Analyzing

1.8.1 Spelling checks

M-x ispell → launch the check.

M-x ispell-change-dictionary → change the dictionary (TAB to print the list).

M- $\$$ → verify the spelling of the word at the cursor position.

M-x flyspell-mode → launch the spell check on the fly.

1.8.2 Counting

M=- → prints the number of lines, words and characters of a selection of of the whole buffer.

1.9 Other

C-x C+ zoom in.

C-x C- zoom out.

M-x tetris → open a new tetris.

2 ORG MODE

2.1 Structure

Sections start with one or several *. The higher the number of stars, the lower the level of the section is (section, subsection, *etc.*).

TAB → show/hide the current section.

S-TAB → show/hide all sections.

C-c C-n → go to the next section.

C-c C-p → go to the previous section.

C-c C-f → go to the next section of the same level.

C-c C-b → go to the previous section of the same level.

M-up → move the current section upward.

M-down → move the current section downward.

M-right → decrease the level of the current section.

M-left → increase the level of the current section.

2.2 Lists

2.2.1 Normal lists

Bullets lists → SPC followed by one of the characters: -, +, *.

Numbered lists → SPC followed by 1. or 1).

Description lists → bullet lists with a description followed by : .

M-RET → create the next element in the list.

S-left or S-right → change the bullet or number style.

2.2.2 Checkmark lists [2/4]

Defining a box → after the bullet, type [].

Defining a counter → type [0/0] at the first line above the list to count the number of checkmarks.

C-c C-c → check/uncheck the box at the current line.

C-u C-u C-c C-c → intermediate state of the box.

2.3 Tables

Cells are separated by |.

2.3.1 Editing tables

C-c - → create a line of ---.

TAB → create the next line or move to the next cell.

C-c | → create a new empty table (prompt for dimensions) or convert text to a table.

C-c C-c → align the table.

M-S-left → erase the current column.

M-S-right → insert a new column to the left.

M-S-up → erase the current row.

M-S-down → insert a new row above..

2.3.2 Exporting tables

M-x org-table-export → start exportation to a file (prompt).

orgtbl-to-csv → save to a CSV file.

orgtbl-to-latex → save as a L^AT_EX table.

orgtbl-to-tsv → save to a TSV file.

orgtbl-to-html → save to HTML.

2.3.3 Formulae

C-c + → give the sum of the numbers in the current column.

2.4 Hyperlinks

Format → [[link][description]] or simply [[link]] without the spaces.

C-c C-1 → edit the link.

Internal links → [[Hyperlinks][pipo]] is a link to the pipo section.

External links → [[http: or file: or mailto:][description]].

2.5 To do lists

Setting → any section starting with TODO is a TODO list.

C-c C-t or S-left/S-right → toggle the status (TODO ↔ DONE).

Customizing → more status can be defined in = ~/.emacs= (e.g. WAITING, CANCELLED, etc.).

Task counter → adding [/] or [%] at the level above the tasks counts how many of them have been completed.

Tip → combine TODO lists and checkmark lists.

2.6 Properties and tags

C-c C-c → put a tag at the end of the line.

2.7 Rich text

2.7.1 Fonts

Fonts can be modified by putting two similar symbols on each side of the text:

bold → **bold**;

/italic/ → *italic*;

underline → underline;

+barred+ → **barred**;

=verbatim= → verbatim;

~overline~ → overline (my alias).

2.7.2 Indices et exponents

a^1 → a¹;

b_2 → b₂.

2.7.3 Special symbols

- Greek letters and math symbols can be typed with L^AT_EX commands: α , β , \int , etc.
- Other useful symbols are given in [Table 1](#).

2.7.4 Equations

A L^AT_EX equation will be exported (to PDF or HTML) as a compiled equation:

$$F = \int f(x) dx. \tag{1}$$

2.7.5 Horizontal lines

Horizontal lines can be traced with 5 consecutive dashes:

Table 1: L^AT_EX symbols (remove the + sign).

L ^A T _E X	ORG
\ + checkmark	✓
\ + pound	£
\ + cent	¢
\ + yen	¥
\ + euro	€
\ + S	§
\ + copy	©
\ + laquo	«
\ + raquo	»
\ + pm	±
\ + odot	⊙
\ + times	×
\ + to	→
\ + gets	←
\ + uarr	↑
\ + darr	↓
\ + harr	↔
\ + lArr	⇐
\ + rArr	⇒
\ + hArr	⇔
\ + gg	≫
\ + ll	≪
\ + ge	≥
\ + le	≤
\ + radic	√
\ + prop	∝
\ + infty	∞
\ + approx	≈
\ + ne	≠

2.8 Exporting

Export options can be given, starting with #+:

- C-c C-e t a** → export to an ASCII file;
- C-c C-e t u** → export to a UTF-8 file;
- C-c C-e h h** → export to an HTML file;
- C-c C-e l p** → export to a L^AT_EX file and compiles it to PDF;
- C-c C-e m m** → export to a Markdown file.

2.9 Code Evaluation and Tangling

2.9.1 Evaluating a code snippet

It is possible to execute source code blocks within org mode.

1. Write a piece of code between `#+BEGIN_SRC <language>` and `#+END_SRC`.
2. **C-c C-c** ⇒ execute the code and write the results in a `#+RESULTS:` field.

The most useful language environments are: `emacs-lisp`, `shell`, `awk`, `python`, `F90`.

2.9.2 Tangling

If one or several source blocks are in an org file, tangling consists in writing a file with this code. **C-c C-v t** does the job. The

3 AGENDA AND ORG MODE

3.1 Date Formats

- <YYYY-MM-DD>** → standard format.
- <YYYY-MM-DD day>** → format with the day of the week.
- <YYYY-MM-DD day HH:MM>** → format with the time.
- <YYYY-MM-DD +Nd ou +Nw ou +Nm ou +Ny>** → program a task every N days, N weeks, N months or N years.
- <YYYY-MM-DD>-<YYYY-MM-DD>** → task during several days.
- [YYYY-MM-DD]** → inactive date (will not have an agenda entry).

3.2 Inserting Formatted Dates

- C-c .** → open the calendar to insert a date.
- C-c !** → open the calendar to insert an inactive date.
- C-u C-c .** → open the calendar to insert a date with time.
- C-u C-c !** → open the calendar to insert an inactive date with time.

Shortcuts → from the calendar prompt:

- 18-10-22 RET** → `<lun. 22 oct. 2018>`;
- 23 RET** → `<mar. 23 oct. 2018>`;
- fri RET** → `<ven. 26 oct. 2018>`;
- nov 12 RET** → `<lun. 12 nov. 2018>`;
- 15:10 RET** → `<lun. 12 nov. 2018, 15:10>`;
- +4d RET** → `<ven. 26 oct. 2018>`;
- 2wed RET** → `<mer. 10 oct. 2018>`.

S-arrowss RET → move through the open calendar and select the date on which RET is typed.

C-c C-c → normalize the date on which the cursor is.

3.3 Programming Tasks

- Simple date** → gives the date an event happens.
- C-c C-s** → open the calendar to select the scheduled beginning of the task (SCHEDULED).
- C-c C-d** → open the calendar to select the deadline of the task (DEADLINE).
- Nd** → if added to the date, the task will be announced N days before.
- +Nw** → if added to the date, the task will be repeated every N weeks.
- C-c / d** → print the upcoming deadlines of a ORG file.

3.4 ORG Agenda

C-c a t → open the list of tasks to do defined in the ORG file (`agenda-org-files` variable in `~/ .emacs`):
t → toggle the status of the task the cursor is on;
RET → open the file where the task is defined, in the same frame;
SPC → point to the task in the file where it is defined, in another window.
C-c a a → open the ORG agenda:
l → display the task journal.
g → update an open agenda.

4 AUCTEX

4.1 Preview Mode

C-c C-p C-s → enter the Preview mode.
C-c C-p C-c C-b → exit the Preview mode.

4.2 Table of Contents

C-c = → open a buffer on the top of the frame containing the table of contents of the \LaTeX file.
up/down → navigate within this buffer.
SPC → go to the selected section without closing the buffer.
RET → go to the selected section and close the buffer.

4.3 Compiling

C-c C-c l TAB RET → compile the \LaTeX file.
C-c C-c b TAB t TAB RET → run BibTeX.
C-c C-c v TAB RET → print the PDF in a window.
Zoom on the PDF → using the characters + and -.
C-c C-g → show the line in the PDF corresponding to the cursor position in the \LaTeX file.
C-click-left on the PDF → send the cursor to the corresponding position in the \LaTeX file..

5 TOOLS

5.1 Calendar

Open: → `M-x calendar`.
Slow browsing: → arrows.
Fast browsing: → `<` and `>`.
Quit: → `q`.

5.2 Calculator

Open: → `M-x calc`.
Syntax: → `<number1> RET <number2> <operator>`.
Quit: → `q`.

5.3 Hexadecimal Colors

Open: → `M-x list-colors-display`.

5.4 Annotate PDF

1. Open a PDF with Emacs
2. Highlight a part with the mouse
3. `C-c C-a`: choose highlighting options. In particular:
 - C-c C-a t**: adds a text comment
 - C-c C-a h**: highlight the text

5.5 BibTeX manager: helm-bibtex

C-x b: open the BibTeX database

Type regexp: narrow down the search

Arrows: to navigate and select the library

RET: open the PDF if it is there

6 CUSTOMIZATION

6.1 General

6.1.1 Manuals

official Emacs manual and Lisp programming tutorial.

6.1.2 Custmoization file

~/.emacs.

6.1.3 Loading the customization file after modifications

1. M-x load-file;
2. ~/.emacs.

6.1.4 Installing packages

Use [ELPA](#) and [MELPA](#) :

M-x list-packages → lists the packages that can be installed. Then, click on the name of the package and on the install button.

Installing a <package>.el → by hand:

1. download <package>.el and put it in ~/.emacs.d/lisp/;
2. in Emacs, type M-x byte-compile-file RET, and select ~/.emacs.d/lisp/<package>.el; this creates ~/.emacs.d/lisp/<package>.elc;
3. add in ~/.emacs the instructions: (require '<package>) and (<package>-initialize).

M-x list-colors-display → show the available colors.

6.2 AucTeX/SyncTeX/PDF-tools

Required packages → auctex, set-alist, tablist, pdf-tools.

PDF tools → follow the instructions at [pdf-tools](#).

6.3 Template

Documentation → <http://lilypond.org/vc/texi2html.git/test/misc/res/templates/templates.html>.

Package → <http://emacs-template.sourceforge.net/details.html>.

Templates → one per extension, in the directory ~/.templates.

6.4 Personal Shortcuts

6.4.1 Electric Delimiters

C-M-(→ create a pair (). If a text is selected this pair encompasses it.

C-M-{ → same for {}.

C-M-[→ same for [].

C-M-' → same for ''.

C-M-" → same for "".

6.4.2 Sophisticated selection

M-p s → select the text between two delimiters.

M-p l → select the current line.

M-p b → select the current block.

6.4.3 Format

M-p d → insert the date in a file.

6.4.4 Neotree

F7 → open neotree.

6.4.5 On-line help

F1 → open list of useful shortcuts.

6.4.6 Window

M-p f → M-x follow-mode when a frame is split into two windows, the rest of the file is displayed in the second window.

F8 → undo the window configuration.

C-F8 → redo a window configuration.