

Cheat Sheet

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VIM

Global

:help keyword → open help for keyword
:o file → open file
:saveas file → save file as
:close → close current pane

Cursor Movement

h → move cursor left
j → move cursor right
k → move cursor up
l → move cursor down
H → move to top of screen
M → move to middle of screen
L → move to bottom of screen
w → jump forward to the start of a word
W → jump forward to the start of a word (words can contain punctuation)
e → jump forward to the end of a word
E → jump forward to the end of the word (words can contain punctuation)
b → jump backward to the start of a word
B → jump backward to the start of a word (words can contain punctuation)
0 → jump to the start of a line
^ → jump to first non-blank character of the line
\$ → jump to the end of the line
g → jump to the last non-blank character of the line
gg → go to the first line of the document
G → go to the last line of the document
5G → go to line 5
:x → go to line number **x**
fx → jump to the next occurrence of character **x**
tx → jump to before next occurrence of character **x**
} → jump to next paragraph (or function block, when editing code)
- → jump to previous paragraph (or function block when editing code)
zz → center cursor on screen
Ctrl+b → move back one full screen
Ctrl+f → move forward one full screen
Ctrl+d → move down half screen
Ctrl+u → move up half screen

Tip: Prefix a cursor movement command with a number to repeat it. For example, 4j moves down 4 lines

Insert Mode

i → insert before the cursor
I → insert at the beginning of the line
a → insert (append) after the cursor
A → insert (append) at the end of the line

o → append (open) a new line below the current line
O → append (open) a new line above the current line
ea → insert (append) at the end of the word
Esc → exit insert mode

Editing

r → replace a single character
R → replace multiple character
J → join line below to the current line
cc → change (replace) entire line (enters the insert mode)
cw → change (replace) to the end of the word
c\$ → change (replace) to the end of the line
s → delete character and substitute text
S → delete line and substitute text (same as **cc**)
xp → transpose two letters (delete and paste)
u → undo
Ctrl+r → redo
. → repeat last command

Visual Mode

v → start visual mode, mark line, then do a command (like **y-yank**)
V → start linewise visual mode
Ctrl+v → Start blockwise visual mode
o → move to the end of marked area
O → move to the other corner of block
xaw → mark **x** words
ab → a block with **()**
aB → a block with **{}**
ib → inner block with **()**
iB → inner block with **{}**
Esc → exit visual mode
≥ → shift text right
≤ → shift text left
y → yank (copy) marked text
d → delete marked text
~ → switch case

Cut and Paste

yy → yank (copy) a line
2yy → yank (copy) 2 lines
yw → yank (copy) the characters of the word from the cursor position to the start of the next word
y\$ → yank (copy) to end of line
p → put (paste) the clipboard after cursor
P → put (paste) before cursor
dd → delete (cut) a line
xdd → delete (cut) **x** lines
x dw → delete (cut) **x** words from the cursor position to the start of the next word

D → delete (cut) to the end of the line
d\$ → delete (cut) to the end of the line
d^ → delete (cut) to the first non-blank character of the line
d0 → delete (cut) to the beginning of the line
x → delete (cut) character

Exiting

:w → write (save) the file, but don't exit
:w !sudo tee % → write out the current file using sudo
:wq or **:x** or **ZZ** → write (save) and quit
:q → quit (fails if there are unsaved changes)
:q! or **ZQ** → quit and throw away unsaved changes

Search and Replace

Search

/pattern → search for **pattern**
?pattern → search backward for **pattern**
vpattern → 'very magic' pattern: non-alphanumeric characters are interpreted as special regex symbols (no escaping needed)
:%s/pattern//gn → count the number of matches of a **pattern** in the current buffer
:%s/pattern//n → count the number of matches of a **pattern**
:a,bs/pattern//gn → count the number of matches of a **pattern** from line **a** to **b**
:'<,'>s/pattern//gn → count the number of matches of a **pattern** in the lines in the most recent visual selection
:%s///gn → count the number of occurrences of the last used search pattern
n → repeat search in same direction
N → repeat search in opposite direction
:noh → remove highlighting of search matches

Replace

:%s/old/new/g → replace all **old** with **new** throughout file
:%s/old/new/gc → replace all **old** with **new** throughout file with confirmations
:%s/old/new/gci → replace all **old** (case sensitive because of flag **i**) with **new** throughout file with confirmations (**%s/old\c/new/gci** does the same thing)
:%s/\<old\>/new/gc → replace all **old** (exact pattern) with **new** throughout file with confirmations
.,+as/foo/bar/g → replace all **old** with **new** for the current line (**.**) and the **a** lines.
:g/^word/s/old/new/g → replace all **old** with **new** for each line that starts with **word**
:s/foo/bar/g → replace all **old** with **new** in the current line.
:A,Bs/foo/bar/g → replace all **old** with **new** from line **A** to **B**.

Notes: **/\t** is tab, **/\s** is white space, **/\n** is new line,

After an opening **[**, everything until the next closing **]** specifies a collection.

Sessions

:mksession ~/x.vim → create a session named **x.vim** and save it
:source ~/x.vim → restore session named **x.vim**, while in vi
\$ vim -S ~/x.vim → restore a session named **x.vim** (in command line)

Miscellaneous

:ab word1 word2 → change word1 to word 2 (helps to store abbreviations or avoid common typos)
:una word → remove word from the list of abbreviations
:ab → lists all the abbreviations being used

Tip: The abbreviations work at local level, and once the session gets over those are lost. In order to make it universal, go to '.vimrc' and add the command :iabbrev w1 w2

Marks

:marks → list of marks
ma → set current position for mark **A**
'a → jump to position of mark **A**
y'a → yank text to position of mark **A**

Multiple Tabs and windows

`vi -p x y z` → open files **x**, **y** and **z**
`:tabnew x` → open file **x** in a new tab
`:tabc` → close the tab
`:tabn` → switch to next tab
`:tabp` → switch to previous tab
`:tabn x` → move to **xth** tab
`gt` or `:tabnext` or `:tabn` → move to the next tab
`gT` or `:tabprev` or `:tabp` → move to the previous tab
`xgt` → go to **xth** tab
`:tabr` → move to first tab
`:tabl` → move to last tab
`:tabs` → list all open tabs
`:tabmove x` → move current tab to the **xth** position (indexed from 0)
`:tabclose` or `:tabc` → close the current tab and all its windows
`:tabonly` or `:tabo` → close all tabs except for the current one
`:tabdo command` → run the command on all tabs (e.g. `:tabdo q` - closes all opened tabs)
`:qa` → close all open tabs
`:wa` → save all the open tabs
`:qwa` or `:xa` → save and exit all open tabs
`:e x` → open file **x** in this window (closes the previous file)
`:ls` → show the list of currently open buffers (windows)
`:b x` → go to buffer (window) **x**
`:split x` → split window horizontally and load file **x**
`:vs x` → split window vertically and open file **x** (readmode only)
`:vsplit x` → split window vertically and open file **x**
`:hide` → close the current window
`:only` → keep only the current window open
`Ctrl + ww` → switch windows
`Ctrl + wq` → quit a window
`Ctrl + wv` → split window vertically
`Ctrl + wh/wl` → move cursor to the left/right window (vertical split)
`Ctrl + wj/wk` → move cursor to the window below/above (horizontal split)
`Ctrl + wT` → move the current split window into its own tab
`:e file` → edit a file in a new buffer
`:bnext` or `:bn` → go to the next buffer
`:bprev` or `:bp` → go to the previous buffer
`:bd` → delete a buffer (close a file)
`:ls` → list all open buffers
`:sp file` → open a file in a new buffer and split window
`:vsp file` → open a file in a new buffer and vertically split window

Search in Multiple Files

`:vimgrep /pattern/ file` → search for pattern in multiple files
`:cn` → jump to the next match
`:cp` → jump to the previous match
`:copen` → open a window containing the list of matches

Registers

`:reg` → show registers content
`"xy` → yank into register **x**
`"xp` → paste into register **x**

Tip: Registers are stored in /.viminfo, and will be loaded again on next restart of vim.

Tip: Register 0 always contains the value of the last yank

Macros

`qa` → record macro **a**
`q` → stop recording macro
`@a` → run macro **a**
`@@` → rerun last macro

Opening a file from another folder while being inside VIM

`:Ex` → Opens the pwd. Can navigate through the folders by moving up and down to the name of the folder and pressing Enter.

`:Ex <directory>` → Takes you to the **directory**. Once inside the directory, navigate to the file you want to open and press enter.

Terminal

source .bashrc → Updates terminal with the updated **.bashrc** file

history x → Displays last **x** used commands

history | grep str → Displays all commands which started with **str** (*You have aliased this command to **ch** (in .bashrc), so can just use **ch str** instead of **history | grep str** .*)

ctrl+u → Deletes everything before cursor

ctrl+k → Deletes everything after cursor

ctrl+l → Clear the screen

nautilus /path/folder → Open the **folder**

!# → run command number **#**

!str → execute last command that began with **str**

!?str? → execute last command that contains **str** (and not necessarily starts with)

cat or less ~ /.bash_history → print out the history file

ls -l | wc -l → counts the number of files in the present directory

du -command file/folder → has several uses based on the **command** given. Following are few examples:

- → Without any additional command, gives the size of each folder and sub-folders.
- **-a** → Gives the size of every folder and file
- **-h** → Outputs size in human readable format.
- **-s** → Gives the summary of sizes.
- **-k/m** → Gives size in kilobyte/ megabytes.
- **-c** → Gives total disk space in the last line.
- **-exclude= '*fmt'** → Excludes displaying results of file with format **fmt** .
- **-time** → Shows disk usage based on last modification time and displays time of modification as well.

man command → Shows the manual for **command**

find command → Has several uses. Following are a few example:

- **.** → Display all the files and directory inside the present directory (replace dot with a directory name to display everything in that directory)
- **-type d/f** → Display all the directory/file in the present directory

- **-type f -fname "test*"** → Display the location of all the files and the name of the files which start with name **test** (use **-iname** instead of **-name** to make search case insensitive.)

- **-type f -mmin -/+t** → Display all the files modified in less/more than **t** minutes (use **-mtime** for days)

- **-size +5M** → Display all the files larger than **5 MB** in size (use 'k' for kilobytes and 'G' for gigabytes)

- **-empty** → Display all the empty files

grep -winlr -A/B x "str" file.ext → Search for text **str** in the file **file.ext**.

- **w** → Only display the ones with the whole match
- **i** → Make the search case insensitive
- **n** → Display the line number
- **l** → Display only the files which has **str** (doesn't show line numbers) (using 'c' instead of 'l' which also display the number of matches in each file)
- **r** → Does recursive search, in the present and all the other sub-directories
- **A/B** → Display **x** number of lines after/before the place where **str** has been used
- **C** → Display **x/2** number of lines before and after the place where **str** has been used

crontab

crontab -e → Gives you access (edit) to the **crontab** file.

In the edit mode type the task you want to schedule in the following way:

*** * * * *** command

- ***** means minute (0-59)
- ***** means hour (0-23)
- ***** means day of the month (1-31)
- ***** means month of the year (1-12)
- ***** means day of the week (0-6, Sunday to Saturday)

crontab -r → Removes any stored crontask!

Be very icareful while executing this command. Will wipe out every stored tasks!

RSYNC

Notes 2: Use **crontab** to start the rsync options
rsync /dir/dir1/* dir2/ → Copies every file in /dir1/ into /dir2 (Set * to filename if you want to transfer a specific file)

rsync -r /dir/dir1/ dir2/ → Copies everything (including directories) from /dir1/ into /dir2

Notes 3: Use of '/' after dir1 is important. It makes sure that the content of dir1 is copied into dir2 and not the dir1 itself.

rsync -av -in (or - -dry-run) - -delete /dir/dir1/* dir2/ → Syncs files from /dir1 to /dir2 with various options.

- i) **-a** : Stands for 'archive', recurses into directory like '-r' and preserves the information like modified date, owners etc.
- ii) **-av** : 'v' stands for verbose, thus it prints out the list of files it is changing.
- iii) **-in (or - -dry-run)** : Shows the list of files and folders which will be copied (needs '-av' before it prints).
- iv) **- -delete** : Completely syncs /dir1 to dir2, meaning, it will delete any file/folder from /dir2 which weren't present in /dir1. Be super careful while using this command.

VS Code

Note 3: For detailed descriptions click on the following [link](#)

Notes 4: By default, the **VS code** is in **vim** mode, so any short-cut that is also in **vim** won't work.

Ctrl+ or - → Change the font size of various UI elements

Ctrl+ → Open another editor side by side (similar to **:vs** functionality of vim)

Shift+Alt → Box selection or column aligned selection

Alt → Fast scrolling (5x)

Alt+Up or Alt+Down → Move a selection of lines up or down (works in VI mode)

Shift+Alt+Left or Shift+Alt+Right → Shrink or expand selection

Shift+Alt+Up or Shift+Alt+Down → Copy the line below or above the present line

Ctrl+Shift+[or Ctrl+Shift+] → Code folding or expanding (if folded)

Alt+F12 → Peek at the definition and options (a new small window opens up with definition, press Esc to close the new window)

F12 → Go to the definition file (opens a new tab)

select a word + F2 → Rename all occurrences of the selected word by renaming it to whatever.

GIT

git config --global credential.helper "cache --timeout=360" → Saves your credentials for **360 seconds** so that you won't have to enter password for every push and pull requests.

git add -a → add all the file for committing

git add -a → Commit all the added files for pushing to the repository

git push → Push all the committed file to the online repository/branch

git config --global alias.hist "log --pretty=format: '%h %ad -- %s%d [%an]' --graph --date=short" → Aliasing **hist** command for GitHub

git hist → Check the history of commits on GIT

git clone "url" "where to clone" → Clone a remote repository to your local directory

git merge "branch" → Merges the **branch** to the present branch (the one you are in)

git branch -d "branch" → Delete **branch** locally

git push origin --delete "branch" → Delete **branch** from the online repository

git checkout afe52 → checkout the commit based on the hash

git checkout 'master@1918-05-11 12:00:00' → Checkout based on date

git checkout @314.days.ago → Checkout based on day

git log → To check the commits

git commit -m "insert message here" → Make commit alongwith a message

git log → To check the commits

git reset → Uncommit all the files

git reset --hard ID → will make local code and local history be just like it was at that commit

git reset --soft ID → will make local files changed to be like they were then, but leave your history etc. the same.

git cherry-pick ID → Sets the present repository to the state of other repository whose **ID** was used.

git stash save "message" → Stash the changes and return the files to before the all the changes made to it

git stash list → Lists out all the stashed instances alongwith their IDs

git stash apply "stash ID" → Apply the stashed file. (this way the Stash ID is still stored and doesn't get deleted)

git stash pop → Grabs the stash on the top of the list, applies it, and drop the stash

git stash drop ID → Drops the stash of that **ID**

Active Aliases in .bash_aliases file

- `..` = “`cd ..`”
- `...` = “`cd ../../`”
- `....` = “`cd ../../..`”
- `.....` = “`cd ../../../..`”
- `~` = “`cd ~`”
- `dr` = “`cd ~/Dropbox/Studies/Research`”
- `dl` = “`cd ~/Downloads`”
- `d` = “`cd ~/Desktop`”
- `gh` = “`cd ~/Desktop/GIT`”
- `fm` = “`cd ~/Desktop/GIT/ fm_development`”
- `pr` = “`cd ~/Desktop/GIT/Personal/Janus`”
- `dt` = “`cd /data/Research/`”
- `dfm` = “`cd /data/Research/Active_Research/fc/Janus`”
- `sjfm` = “`vi -S ~/session_janus_fm.vim`”
- `sjma` = “`vi -S ~/session_janus_master.vim`”
- `sjlo` = “`vi -S ~/session_janus_fm_local.vim`”
- `sjpr` = “`vi -S ~/session_janus_personal.vim`”
- `smms` = “`vi -S ~/session_mms.vim`”
- `ipfm` = “`ipython --matplotlib =qt4 --profile = fm`”
- `ipma` = “`ipython --matplotlib =qt4 --profile = master`”
- `ippr` = “`ipython --matplotlib =qt4 --profile = personal`”
- `ipar` = “`ipython --matplotlib =qt4 --profile = active`”
- `week` = “`date +%V`” (shows week number)
- `khamosh` = “something” (mutes the computer)
- `bajao` = “something” (sets volume to maximum)