# Ex Quick Reference

## Entering ex

| | |
|---|---|
| **% ex** *name* | edit *name*, start at end |
| **% ex +***n* *name* | ... at line *n* |
| **% ex –t** *tag* | start at *tag* |
| **% ex –r** | list saved files |
| **% ex –r** *name* | recover file *name* |
| **% ex** *name* **...** | edit first; rest via **:n** |

## Ex states

| | |
|---|---|
| Command | Normal and initial state. Input prompted for by **:**. Your kill character cancels partial command. |
| Insert | Entered by **a i** and **c**. Arbitrary text then terminates with line having only **.** character on it or abnormally with interrupt. |
| Open/visual | Entered by **o** or **v**, terminates with **q** or two successive interrupts. |

## Ex commands

| | | | | | |
|---|---|---|---|---|---|
| append | **a** | next | **n** | substitute | **s** |
| args | **ar** | number | **nu** | undo | **u** |
| change | **c** | open | **o** | version | **ve** |
| copy | **co** | preserve | **pre** | visual | **vi** |
| delete | **d** | print | **p** | write | **w** |
| edit | **e** | put | **pu** | yank | **ya** |
| file | **f** | quit | **q** | *window* | **z** |
| global | **g** | read | **re** | *escape* | **!** |
| insert | **i** | recover | **rec** | *lshift* | **<** |
| join | **j** | rewind | **rew** | *print next* | CR |
| list | **l** | set | **se** | *resubst* | **&** |
| mark | **ma** | shell | **sh** | *rshift* | **>** |
| move | **m** | source | **so** | *scroll* | **^D** |

## Ex command addresses

| | | | |
|---|---|---|---|
| *n* | line *n* | */pat* | next with *pat* |
| **.** | current | **?***pat* | previous with *pat* |
| **$** | last | *x***-***n* | *n* before *x* |
| **+** | next | *x***,***y* | *x* through *y* |
| **–** | previous | *´x* | marked with *x* |
| **+***n* | *n* forward | *´´* | previous context |

## Specifying terminal type

| | |
|---|---|
| **% setenv TERM** *type* | *csh* and all version 6 |
| **$ TERM=***type* | *sh* in Version 7 |

## Some terminal types

| | | | | |
|---|---|---|---|---|
| 2621 | 43 | adm31 | dw1 | i100 |
| 2645 | 733 | adm3a | dw2 | mime |
| 300s | 745 | c100 | gt40 | owl |
| 33 | act4 | dm1520 | gt42 | t1061 |
| 37 | act5 | dm2500 | h1500 | vt52 |
| 4014 | adm3 | dm3025 | h1510 | |

## Initializing options

| | |
|---|---|
| **.exrc** | place **set**'s here in HOME directory |
| **set** *x* | enable option |
| **set no***x* | disable option |
| **set** *x*=*val* | give value *val* |
| **set** | show changed options |
| **set** *x***?** | show value of option *x* |

## Useful options

| | | |
|---|---|---|
| **autoindent** | ai | supply indent |
| **beautify** | bf | discard nonprinting chars |
| **ignorecase** | ic | in scanning |
| **lisp** | | ( ) { } are s-exp's |
| **list** | | print ˆI for tab, $ at end |
| **magic** | | **.** **[** ***** special in patterns |
| **number** | nu | number lines |
| **paragraphs** | para | macro names which start ... |
| **redraw** | | simulate smart terminal |
| **sections** | sect | macro names ... |
| **shiftwidth** | sw | for **< >**, and input **ˆD ˆT** |
| **showmatch** | sm | to **)** and **}** as typed |
| **slowopen** | slow | choke updates during insert |
| **wrapscan** | ws | around end of buffer? |
| **wrapmargin** | wm | automatic line splitting |

## Scanning pattern formation

| | |
|---|---|
| ↑ | beginning of line |
| **$** | end of line |
| **.** | any character |
| \< | beginning of word |
| \> | end of word |
| [*str*] | any char in *str* |
| [↑*str*] | ... not in *str* |
| [*x*–*y*] | ... between *x* and *y* |
| ***** | any number of preceding |

# Vi Quick Reference

## Starting vi

| | |
|---|---|
| **% vi** *name* | edit *name* at top |
| **% vi +***n* *name* | ... at line *n* |
| **% vi +** *name* | ... at end |
| **% vi –r** | list saved files |
| **% vi –r** *name* | recover file *name* |
| **% vi** *name* **...** | edit first; rest via **:n** |
| **% vi –t** *tag* | start at *tag* |

## The display

| | |
|---|---|
| Last line | Error messages, echoing input to **: / ?** and **!**, feedback about i/o and large changes. |
| @ lines | On screen only, not in file. |
| ˜ lines | Lines past end of file. |
| ˆ*x* | Control characters, ˆ? is delete. |
| tabs | Expand to spaces, cursor at last. |

## Vi states

| | |
|---|---|
| Command | Normal and initial state. Others return here. ESC (escape) cancels partial command. |
| Insert | Entered by **a i A I o O c C s S R**. Arbitrary text then terminates with ESC character, or abnormally with interrupt. |
| Last line | Reading input for **: / ?** or **!**; terminate with ESC or CR to execute, interrupt to cancel. |

## Counts before vi commands

| | |
|---|---|
| new window size | **: / ? [[ ]] ˆF ˆB ` ´** |
| line/column number | **z G |** |
| scroll amount | **ˆD ˆU** |
| replicate insert | **a i A I** |
| repeat effect | most rest |

## Simple commands

| | |
|---|---|
| **dw** | delete a word |
| **de** | ... leaving punctuation |
| **dd** | delete a line |
| **3dd** | ... 3 lines |
| **i***text*ESC | insert text *abc* |
| **cw***new*ESC | change word to *new* |
| **ea***s*ESC | pluralize word |
| **xp** | transpose characters |

## Interrupting, cancelling

| | |
|---|---|
| **ESC** | end insert or incomplete cmd |
| **^?** | (delete or rubout) interrupts |
| **^L** | reprint screen if **^?** scrambles it |

## File manipulation

| | |
|---|---|
| **:w** | write back changes |
| **:wq** | write and quit |
| **:q** | quit |
| **:q!** | quit, discard changes |
| **:e** *name* | edit file *name* |
| **:e!** | reedit, discard changes |
| **:e +** *name* | edit, starting at end |
| **:e +***n* | edit starting at line *n* |
| **:e #** | edit alternate file |
| **^↑** | synonym for **:e #** |
| **:w** *name* | write file *name* |
| **:w!** *name* | overwrite file *name* |
| **:sh** | run shell, then return |
| **:!***cmd* | run *cmd*, then return |
| **:n** | edit next file in arglist |
| **:n** *args* | specify new arglist |
| **:f** | show current file and line |
| **^G** | synonym for **:f** |
| **:ta** *tag* | to tag file entry *tag* |
| **^]** | **:ta**, following word is *tag* |

## Positioning within file

| | |
|---|---|
| **^F** | forward screenful |
| **^B** | backward screenful |
| **^D** | scroll down half screen |
| **^U** | scroll up half screen |
| **G** | goto line (end default) |
| */pat* | next line matching *pat* |
| **?***pat* | prev line matching *pat* |
| **n** | repeat last **/** or **?** |
| **N** | reverse last **/** or **?** |
| */pat***/+***n* | n'th line after *pat* |
| **?***pat***?–***n* | n'th line before *pat* |
| **]]** | next section/function |
| **[[** | previous section/function |
| **%** | find matching ( ) { or } |

## Adjusting the screen

| | |
|---|---|
| **^L** | clear and redraw |
| **^R** | retype, eliminate @ lines |
| **z**CR | redraw, current at window top |
| **z–** | ... at bottom |
| **z.** | ... at center |
| */pat***/z–** | *pat* line at bottom |
| **z***n***.** | use *n* line window |

## Marking and returning

| | |
|---|---|
| `` | previous context |
| ´´ | ... at first non-white in line |
| **m***x* | mark position with letter *x* |
| `*x* | to mark *x* |
| ´*x* | ... at first non-white in line |

## Line positioning

| | |
|---|---|
| **H** | home window line |
| **L** | last window line |
| **M** | middle window line |
| **+** | next line, at first non-white |
| **–** | previous line, at first non-white |
| CR | return, same as + |
| **^N** | next line, same column |
| **^P** | previous line, same column |
| **LF** | linefeed, same as **^N** |

## Character positioning

| | |
|---|---|
| ↑ | first non white |
| **0** | beginning of line |
| **$** | end of line |
| space | forward |
| **^H** | backwards |
| **h** | same as **^H** |
| **f***x* | find *x* forward |
| **F***x* | **f** backward |
| **t***x* | upto *x* forward |
| **T***x* | back upto *x* |
| **;** | repeat last **f F t** or **T** |
| **,** | inverse of **;** |
| **|** | to specified column |
| **%** | find matching ( { ) or } |

## Words, sentences, paragraphs

| | |
|---|---|
| **w** | word forward |
| **b** | back word |
| **e** | end of word |
| ) | to next sentence |
| } | to next paragraph |
| ( | back sentence |
| { | back paragraph |
| **W** | blank delimited word |
| **B** | back **W** |
| **E** | to end of **W** |

## Commands for LISP

| | |
|---|---|
| ) | Forward s-expression |
| } | ... but don't stop at atoms |
| ( | Back s-expression |
| { | ... but don't stop at atoms |

## Corrections during insert

| | |
|---|---|
| **ˆH** | erase last character |
| **ˆW** | erases last word |
| erase | your erase, same as **ˆH** |
| kill | your kill, erase input this line |
| **\\** | escapes **ˆH**, your erase and kill |
| ESC | ends insertion, back to command |
| **ˆ?** | interrupt, terminates insert |
| **ˆD** | backtab over *autoindent* |
| **↑ˆD** | kill *autoindent*, save for next |
| **0ˆD** | ... but at margin next also |
| **ˆQ** | quote non-printing character |
| **ˆT** | *shiftwidth* forward tab |

## Insert and replace

| | |
|---|---|
| **a** | append after cursor |
| **i** | insert before |
| **A** | append at end of line |
| **I** | insert before first non-blank |
| **o** | open line below |
| **O** | open above |
| **r**$x$ | replace single char with $x$ |
| **R** | replace characters |

## Operators (double to affect lines)

| | |
|---|---|
| **d** | delete |
| **c** | change |
| **<** | left shift |
| **>** | right shift |
| **!** | filter through command |
| **=** | indent for LISP |
| **y** | yank lines to buffer |

## Miscellaneous operations

| | |
|---|---|
| **C** | change rest of line |
| **D** | delete rest of line |
| **s** | substitute chars |
| **S** | substitute lines |
| **J** | join lines |
| **x** | delete characters |
| **X** | ... before cursor |
| **Y** | yank lines |

## Yank and put

| | |
|---|---|
| **p** | put back lines |
| **P** | put before |
| **"**$x$**p** | put from buffer $x$ |
| **"**$x$**y** | yank to buffer $x$ |
| **"**$x$**d** | delete into buffer $x$ |

## Undo, redo, retrieve

| | |
|---|---|
| **u** | undo last change |
| **U** | restore current line |
| **.** | repeat last change |
| **"**$d$**p** | retrieve $d$'th last delete |