

## Linux Basics

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<b>cd</b>	change to home directory
<b>cd ..</b>	change to parent directory
<b>cd directory</b>	change to the directory called “directory”
<b>cd ../directory</b>	change to the directory called “directory” which is in the parent
<b>ls</b>	list everything in the current directory
<b>pwd</b>	print working directory (full path of current directory)
<b>mkdir directory</b>	make a new directory called “directory”
<b>rmdir directory</b>	remove an existing directory called “directory” (cannot be undone)
<b>vim file</b>	open a file called “file” or create it if it doesn’t exist
<b>vim file1 file2 etc.</b>	open up as many files as you want simultaneously
<b>rm file</b>	remove a file called “file” (cannot be undone)
<b>cp file1 file2</b>	copy “file1” into a new file called “file2”
<b>cp file ../file2</b>	copy “file” into the parent directory and name it “file2”
<b>cp file directory/file2</b>	copy “file” into directory “directory” and name it “file2”
<b>mv file directory</b>	move “file” into a directory called “directory”
<b>mv file ../</b>	move “file” into parent directory

*Note:* if you create a new file but leave it blank, you must save and quit for it to remain. Else it will get deleted. Saving and quitting in vim is discussed on the next page.

### *Command Line Shortcuts*

- *The “tab” key:* the tab key will auto-complete something you are writing in the command line. For example, say there was a file called “my\_file.c” and no other file in the directory started with the letter ‘m’. To open up the file, instead of having to manually type out “vim my\_file.c”, simply write “vim m” and then press the tab key. It will auto-complete the filename in the command line and jump from “vim m” immediately to “vim my\_file.c”. Therefore, you won’t need to type out the whole file name.
  - When the file being opened could be multiple files, entering tab will auto-complete as far as it can go. For example, if in addition to “my\_file.c” there was a file called “my\_file.h”, then pressing tab after entering “vim m” will auto-complete all the way to “vim my\_file.”. It stops there because this could either be “my\_file.h” or “my\_file.c”. Simply then enter the ‘c’ or ‘h’ for the desired file.
- *The “up” and “down” arrows:* a history of all of the entries to the command line are saved, and the up and down arrow keys can be used to scroll through them. This way, if a recently entered command needs to be put into the command line again, it can be accessed via the arrow keys and does not have to be manually typed out. For example, say “vim my\_file.c”, “vim my\_file.h”, “vim text.txt”, and “./my\_program” were all entered into the command line in that order. To get “./my\_program” into the command line again, enter the up arrow once. To get “vim text.txt” into the command line again, hit the up arrow twice. Etc. etc. This will save you a lot of time from having to constantly type in the same things over and over again in the command line.

## Vim Basics

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- Enter the escape key to enter **normal/command mode**. This is the mode where you enter commands and is the default mode you are in when you open a file.
- Enter “i” to enter **insert mode**. This is the text editing mode.

### The below commands are all while in normal mode

#### Saving and Quitting

<b>:q</b>	quit if you haven't made any changes
<b>:q!</b>	quit without saving
<b>:w</b>	save
<b>:wq</b>	save and quit

#### Moving the Cursor

<b>gg</b>	go to the beginning of the file
<b>G</b>	go to the end of the file
<b>nG</b>	go to the “nth” line of the file
<b>ctrl-d</b>	go halfway down the screen
<b>ctrl-u</b>	go halfway up the screen
<b>shift-4</b> aka <b>\$</b>	go to the end of the line
	- Then, to enter insert mode and start inserting text immediately after the end of the line, enter “a” instead of “i”.
<b>0</b> (zero, not O)	go to the beginning of the line
	- Then, to enter insert mode and start inserting text immediately before the beginning of the line, enter “i”.

#### Text Editing Commands

##### *Single Line Shortcuts*

<b>yy</b>	copy current line
<b>dd</b>	delete or cut current line

##### *Highlighting Text*

<b>shift-v</b>	<b>visual line mode:</b> highlight a line. Now use the up and down arrow keys or jump commands (described above) to highlight multiple lines of text.
<b>ctrl-v</b>	<b>visual block mode:</b> highlight blocks of text irregardless of rows and columns (i.e. blocks on the screen). Most useful for highlighting pieces of text on a line but not the whole line. Use the left and right arrow keys to highlight character by character on the line.

##### *General Copying/Cutting/Pasting*

<b>y</b>	copy currently highlighted text
<b>d</b>	delete/cut currently highlighted text
<b>p</b>	paste the copied or cut text on the line directly below the one the cursor is currently on

### Navigating Multiple Open Files

**:first** go to the first file  
**:last** go to the last file  
**:next** go to the next file  
**:previous** go to the previous file  
 - put “w” before any of these to save i.e. **:wnext** means save current file, go to next file  
**:nnext** go “n” files ahead  
**:nprevious** go “n” files backwards  
 - put “w” after the n to save i.e. **:2wnext** means save current file, go 2 files ahead  
**:args** display the list of files currently open for editing

### Viewing 2 files simultaneously

**:split file** split the screen with the file called “file”  
**Ctrl-w** navigate between the split screen. If you’re on the top file, enter the down arrow after entering Ctrl-w to go to the file on the bottom. If you’re on the bottom file, enter the up arrow after entering Ctrl-w to go to the file on the top.  
 - use the quit commands on page 2 to end the split screen by closing the file the cursor is currently on i.e. if the cursor is on the top file and you enter **:wq** that will save the top file and quit out of the split screen leaving the bottom file on the screen only.

### Other Commands

**u** undo  
**/text** search for all occurrences of “text” in the file. Use “n” to go to the next occurrence.  
**:%s/text1/text2/g** search and replace. Find all occurrences of “text1” and replace it with “text2”.