

Crashing Linux & Git

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Linux?



+Necessary for git

```
0 0
                                   \sim PortOSX — bash — 108 \times 58
           1 beusebio staff
                              1.4K Sep 27 15:07 multilevel queue.h
                              3.7K Oct 7 23:07 multilevel_queue.o
-rw-r--r-- 1 beusebio staff
                               12K Sep 27 15:07 network.c
           1 beusebio staff
                              4.1K Sep 27 15:07 network.h
           1 beusebio staff
                              5.0K Oct 8 23:07 queue.c
                              1.7K Oct 7 22:03 queue.h
           1 beusebio staff
                              7.0K Oct 7 23:07 queue.o
                              4.1K Sep 27 15:07 random.c
           1 beusebio staff
                              442B Sep 27 15:07 random.h
                              5.1K Oct 7 23:07 random.o
           1 beusebio staff
                              2.9K Oct 7 22:03 retail.c
-rw-r--r-- 1 beusebio staff
-rw-r--r-- 1 beusebio staff 2.5K Sep 27 15:07 sieve.c
           1 beusebio staff
                              256B Sep 27 15:07 start.c
-rw-r--r-- 1 beusebio staff
                              2.4K Oct 7 23:07 start.o
-rwxr-xr-x 1 beusebio staff 2.0K Oct 7 22:17
           1 beusebio staff
                              1.0K Sep 27 15:07 synch.h
                              5.3K Oct 7 23:07 synch.o
           1 beusebio staff
           1 beusebio staff 276B Oct 7 22:03 test1.c
                              3.0K Oct 7 23:07 test1.o
           1 beusebio staff
                              576B Oct 7 22:03 test2.c
-rw-r--r-- 1 beusebio staff 780B Oct 7 22:03 test3.c
Brandons-MacBookAir:PortOSX beusebio$ aits
# On branch master
# Changes not staged for commit:
   (use "git add <file>..." to update what will be committed)
   (use "git checkout -- <file>..." to discard changes in working directory)
       modified: minithread.c
```

+Feel like a pro hax0r

```
Main Options YT Options YT Fonts
utente@homepc ~
$ ls /lrt
ls: impossibile accedere a /lrt: No such file or directory
utente@homepc ~
$ ls -lrt
totale 5
-rwxr-xr-x 1 utente Administrators 121 Feb 8 2008 pulisci_stampa.bat
lrwxrwxrwx 1 utente Administrators 16 Nov 12 14:04 Profile -> /Settings/utente
lrwxrwxrwx 1 utente Administrators 25 Nov 12 14:04 Dati -> Profile/Dati applica
lrwxrwxrwx 1 utente Administrators 15 Nov 12 14:05 Desktop -> Profile/Desktop
lrwxrwxrwx 1 utente Administrators 17 Nov 12 14:06 Documenti -> Profile/Documen
utente@homepc ~
$ mrxvt&
[1] 2440
utente@homepc ~
$ Cannot open font 'Bitstream Vera Sans Mono'. Using font 'Luxi Mono' instead.
Bold font too wide. Using overstrike
couldn't load image file ".lucerna_a_patadeo.jpg"
```

Built into Mac OS X (UNIX)

Cygwin (Linux in Windows)

Git?



"Distributed Version Control System"

- Fancy words for great for group/complex projects.
- Git keeps track of all changes made to files.
 - Allows reverting to old versions without multiple copies

//TODO: Install Git

Store/Share git repositories on Github
//TODO: Get a Github account



Essential Linux



- Is List Services (shows all files in current directory)
- clear Clear terminal
- pwd Print Working Directory
- cd <path> Change Directory
 - Important directory symbols:
 - ~/ = home/root directory
 - ./ = current directory
 - ../ = parent directory
- mv <file> <destination> Move file(s) to destination
 - mv tmp.txt final.txt simply renames file in current directory
- cp <file> <new file> Copy file(s)
- rm <file1> [<file2> ... <filen>] Remove file(s)
 - rm -rf <Directory> DANGEROUS! -> Removes entire directory

Tab 2 Good



Shell/Terminal provides Tab Completion



Tab Tab -> Shows options

Moar Commands



- sudo grants root privilege to app
- mkdir <dirname> Make new Directory
- cat <filename> Catenate/Print file to Console
- man <command/app> Manual for command
- which <command/app> see Which path for command, if installed

Special Flags:

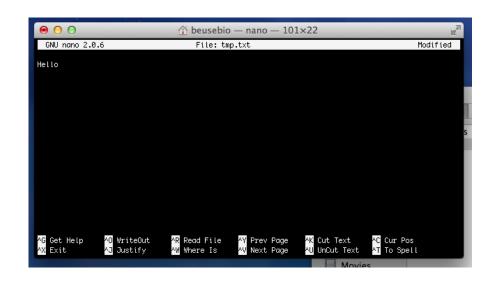
- Linux uses "-" for flags/options to commands.
 - "-" for single character / "--" for word option
- rm -rf <dir>: means use recursive force option for rm
- <command> --help : SUPER USEFUL

Nano



In-Terminal Text Editor

- Usage: nano <filename>
 - will make new file if non-existent
- Arrow keys to move
- ^ means ctrl + <key>



Try It Out



```
//TODO: Add these shortcuts to ~/.bashrc alias Is = "Is --color=auto" alias II = "Is -alhF" alias gits = "git status"
```

Start: nano ~./bashrc

Only the Beginning



```
Battery 0: Full. 100% | 0.05 0.11 0.09 | Sat Feb 13 03:15:22 WST 201
                                                                                                                 -[shaun@hacktop][~]
           l Zelut, yeah, besides wondering if it would take forever to learn, my othe
                                                                                                                 — packer -Syu
            concern was if I did learn that I would come across several areas where I
            wouldn't be able to use it.
                                                                                                                  Synchronizing package databases...
MrElendig | or don't try to load it
                                                                                                                 local database is up to date
                                                                                                                  Synchronizing aur database...
   tlonim | bnijk: i mean save their state ? more like X hibernation ?
                                                                                                                                                              6 6 [########################## 100
                                                                                                                  Starting full aur upgrade...
                                                                                                                 local database is up to date
                                                                                                                 —[shaun@hacktop][~]
MrElendig | nisstyre65: if you are going to write your own webapps, the I would strongly
                                                                                                                → uptime
                                                                                               adamor james
                                                                                                                03:16:23 up 5:10. 1 user. load average: 0.02, 0.08, 0.08
                                                                                                                 —[shaun@hacktop][~]
      --> | AkiraYB ("FarSeer@189-041-188-012.xd-dunamic.ctbcnetsuper.com.br) has joined
                                                                                               addison i
                                                                                                                └─ acpi
Battery 0: Full, 100%
                                                                                                                ─[shaun@hacktop][~]
                                                                                                                uname -a
                                                                                                                 inux hacktop 2.6.32-ARCH #1 SMP PREEMPT Tue Feb 9 14:46:08 UTC 2010 i686 Intel(R) Pent.
      <-- | stufe (stufe@dsl-tkubrasgw3-fecff900-170.dhcp.inet.fi) has guit (Quit: Lost</p>
                                                                                                                um(R) M processor 1.73GHz GenuineIntel GNU/Linux
                                                                                                                 —[shaun@hacktop][~]
                                                                                               akawaka
      <-- | Ramla ("ramla@cs189206.pp.htv.fi) has left #archlinux</p>
     Zelut | [here]: but you've got to think about the amount of time you'll spend on your
                                                                                                                Taking shot in 3.. 2.. 1..
           I own machine, and if its worth it, for me, absolutely
      <-- | seaotter ("seaotter@116.127.49.119) has quit (Quit: WeeChat 0.3.1.1)</p>
    [here] | Zelut, thanks for the advise
      <-- | dizzie ("dizzie@pdpc/supporter/active/dizzie) has quit (Ping timeout: 240</p>
MrElendig | nisstyre65: for what reason? python is superiour in every way
                                                                                                                shaun@hacktop:
MrElendia ( :)
                                                                                                                -[shaun@hacktop][~]
      --> | stufe (stufe@dsl-tkubrasgw3-fecff900-170.dhcp.inet.fi) has joined #archlinux
   tlonim | what do dvorak people do when they use other computers ....wont they feel
                                                                                                                                               OS: Arch Linux i686
      --> | PeGa ("pega@host197.200-82-74.telecom.net.ar) has joined #archlinux
                                                                                               AnMaster
                                                                                                                                               Hostname: hacktop
Kernel: 2.6.32-ARCH
MrElendig | no
                                                                                                                            ****
    jonnor | MrElendig: except when it comes to easy of deployment :(
                                                                                                                            *****
                                                                                                                                               Uptime: 5:10
                                                                                                                            ; #####;
                                                                                               anteaua
                                                                                                                          +##.#####
                                                                                                                                               Desktop Environment: Non<u>e found</u>
    Zelut | bnijk: for what its worth, I have a check in my .bashrc to auto-launch / attach
                                                                                                                         +#############
                                                                                                                                               Packages: 364
RAM: 274 MB / 2017 MB
            to screen so I'm never in the situation where I wish I'd used it and hadn't. I
                                                                                                                       ***************
                                                                                                                                               CPU: Intel(R) Pentium(R) M processor 1.73GHz
MrElendig | it's not hard to know both dvorak and gwerty
                                                                                                                      ...... ......
      <-- | Jebus_ ("jebus@host217-44-18-206.range217-44.btcentralplus.com) has quit (Quit</p>
      <-- | twixman ("regemail10194.79.21.143) has quit
                                                                                                                   *********
                                                                                                                                 I time simply toggle the keyboard input (which is simple)
MrElendig | jonnor: there are frameworks for python that is easier to work with that most
    jonnor | missture65: Non-trivial scripts will not be easily ported.
                                                                                                                —[shaun@hacktop][~]
      --> | Jebus_ ("jebus@host217-44-18-206.range217-44.btcentralplus.com) has joined
           I back after just a minute or two of practice)
      --> | b0b ("bob085-168-178-227.rev.numericable.fr) has joined #archlinux
```

You Can Linux, Now Let's Git



First Things First:

- 1.) See if git was successfully installed:
 - Run: which git
- 2.) Change some global git settings
 - git config --global user.name <name>
 - git config --global user.email <email>
 - *git config --global core.editor nano

Fork 1st Repo



//TODO: Get the project for this School.

https://github.com/AznSensationXIII/git_school

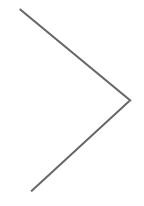
Steps:

- 1.) cd to desired parent directory
- 2.) git clone https://github.com/AznSensationXIII/git_school.git
- 3.) cd git_school & explore (II and git log -> "q" to quit)

Git Process



- 1.) Make your changes
- 2.) git add <files>
- 3.) git commit
- 4.) Repeat 1-3 until satisfied



Local Machine

- 5.) git pull
- 6.) git push



Remote/Server

Add Yourself



//TODO: Make a <name>.py and add to repo.

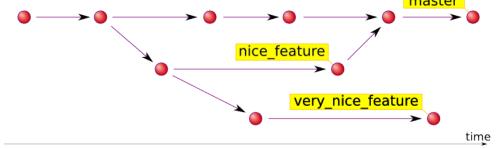
After you made the script:

- 1.) git add <name>.py stage/prep changes*Use git diff to see the changes you made
- 2.) git commit save changes to local repo
- 3.) git pull to get other/faster people's changes
- 4.) git push update the shared repo

Branches are Friends



If you know you will be editing same files as another, work in separate branches.



Commands:

- git branch -r --list : list all branches (remote & local)
- git branch <newBranch> make a new Branch
- git checkout <branchName> switch to branch

What does the fox say?



//TODO: Make a new branch and implement // whatDoesTheFoxSay() in fox.py



Restoring the Old



But wait, how do I go back to old versions?

Take Caution and Use:

- git reset --hard <commitID>: all tracked files
- git checkout <commitID> <file>: single file

*Can use HEAD for latest commit

//TODO: git checkout ca2391c7 fox.py

Tricky, but Useful



- git pull will not always be successful if others have edited same portion as you.
 - 1.) use git stash to temporarily save your changes on local
 - o 2.) git pull
 - 3.) git stash apply to apply changes (Hopefully it works...)

- Merging branches
 - 1.) switch to main branch you want to use
 - 2.) git merge <otherbranch>

Hopefully there are no conflicts, else you will have to merge manually... A big pain!

YAY!!





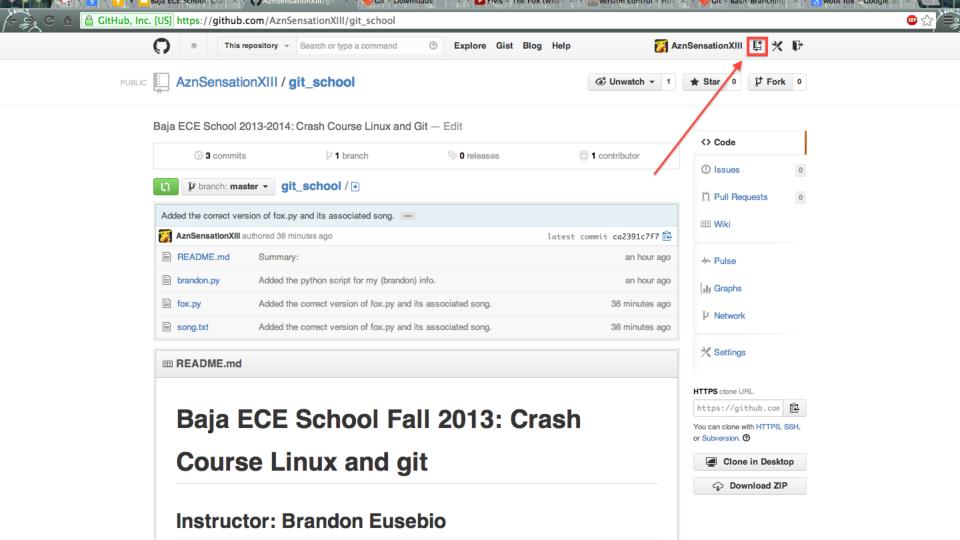
Making New Repos



- Just Log onto Github and click "New Repository" in upper right corner.
- Instructions will show up.

Essentially:

- 1.) cd to directory of project
- 2.) git init
- 3.) commit and add references to remote



Closing



Congratulations you are now more pro!

Bear in mind, this is just a crash course.

Linux and git are "hard"/complex topics.

My advice: Google it before doing

Questions?