



Further on Linux

Day4_MoreLinux.md



Last time topics

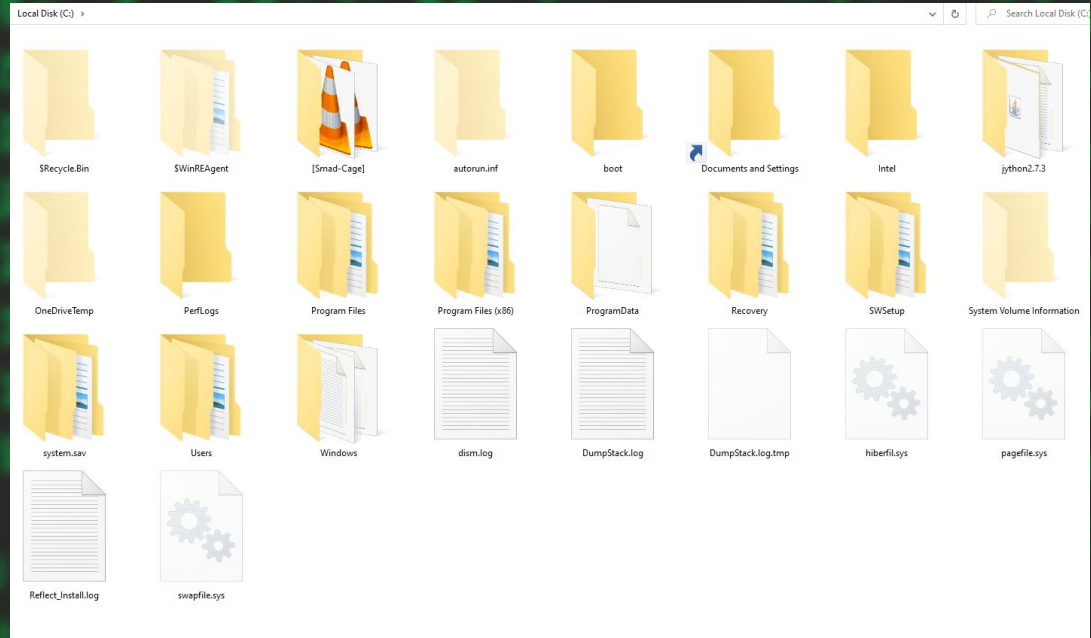


Topics

- Linux File Hierarchy
- VIM
- NANO
- Linux user management

Linux File Hierarchy

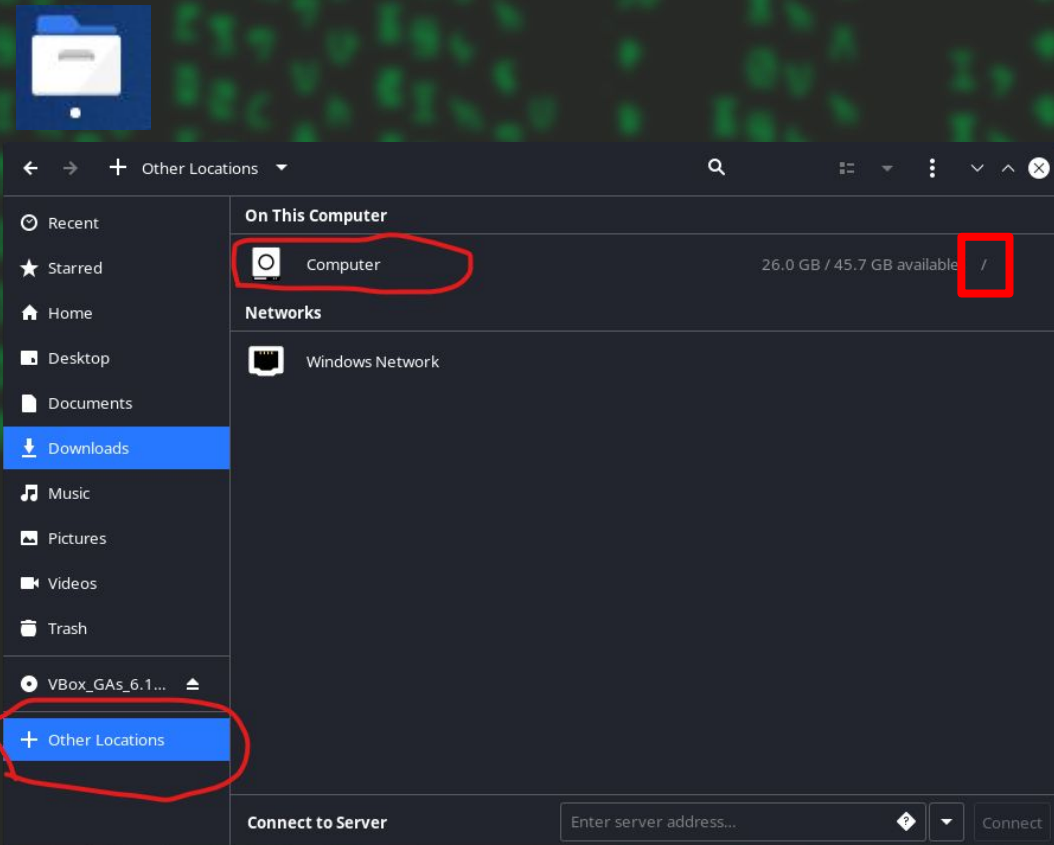
- Linux/UNIX have a special file system than windows.
- File system is a directory structure that the OS uses.

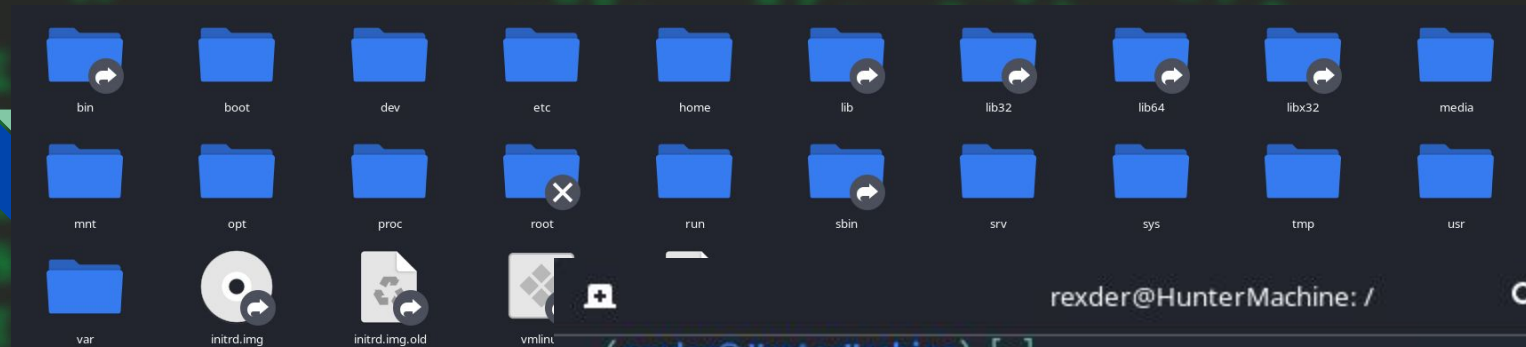


File system: **WINDOWS 10**

System Files

- System Files are files used by the system software(OS).
- Windows: System files appear under the **local disk C:**
- Linux: System files appear under the **root directory (/)**





```
(rexder@HunterMachine)-[~]  
$ ls  
Desktop  Downloads  linux  Pictures  Templates  
Documents  gtst      Music  Public    Videos
```

```
(rexder@HunterMachine)-[~]  
$ pwd  
/home/rexder
```

```
(rexder@HunterMachine)-[~]  
$ cd /
```

```
(rexder@HunterMachine)-[/]  
$ ls  
bin      home      lib32     media     root      sys      vmlinuz  
boot     initrd.img  lib64     mnt       run       tmp      vmlinuz.old  
dev      initrd.img.old  libx32    opt       sbin      usr  
etc      lib        lost+found  proc      srv       var
```

You can Check it
in terminal also in
file manager

File structure in detail

1) / (root)

- Every single file and directory starts from the root directory
- The only root user has the right to write under this directory
- /root is the root user's home directory, which is not the same as /

```
(rexder@HunterMachine)-[/]  
$ ls  
bin    home    lib32    media    root    sys    vmlinuz  
boot  initrd.img  lib64    mnt     run    tmp    vmlinuz.old  
dev    initrd.img.old  libx32   opt     sbin   usr  
etc    lib      lost+found  proc    srv    var
```

```
(rexder@HunterMachine)-[~]  
$ pwd  
/home/rexder
```


File structure in detail

2) bin - Binary executables

- Essential command binaries that need to be available in single-user mode; for all users
- i) e.g) cat, ls, cp, pwd

```
lrwxrwxrwx 1 root root
/count
-rwxr-xr-x 1 root root
-rwxr-xr-x 1 root root
-rwxr-xr-x 1 root root
-rwxr-xr-x 1 root root
-rwxr-xr-x 1 root root
```

```
(rexder@HunterMachine)-[/]
$ cd bin

(rexder@HunterMachine)-[/bin]
$ ls -la
total 528200
drwxr-xr-x  2 root root      114688 Dec  6 02:48 .
drwxr-xr-x 15 root root       4096 Dec  6 02:32 ..
-rwxr-xr-x  1 root root     60224 Sep 24 2020 '['
-rwxr-xr-x  1 root root      2376 Sep 25 2020 0trace.sh
-rwxr-xr-x  1 root root       96 Jul 14 2021 2to3-2.7
-rwxr-xr-x  1 root root    18504 Feb  7 2021 411toppm
-rwxr-xr-x  1 root root       39 Aug 15 2020 7z
-rwxr-xr-x  1 root root       40 Aug 15 2020 7za
-rwxr-xr-x  1 root root       40 Aug 15 2020 7zr
-rwxr-xr-x  1 root root     31096 Apr  3 2021 aa-enabled
-rwxr-xr-x  1 root root     31096 Apr  3 2021 aa-exec
lrwxrwxrwx  1 root root         42 Jan  5 2021 aapt -> ../lib/android-sdk/b
uild-tools/debian/aapt
lrwxrwxrwx  1 root root         43 Jan  5 2021 aapt2 -> ../lib/android-sdk/b
uild-tools/debian/aapt2
-rwxr-xr-x  1 root root     59744 Aug 12 2021 ab
-rwxr-xr-x  1 root root     14600 May  8 2021 acyclic
                23 Jul 10 2021 count-9 -> ../lib/llvm-9/bin
                30872 Sep 12 2020 cowpatty
                151168 Sep 24 2020 cp
                8357 Aug  5 2021 cpan
                8378 Aug  5 2021 cpan5.32-x86_64-linux-gnu
                162352 Aug 22 2021 cpio
                6 Jan 11 2021 cpan -> cpan-10
```


File structure in detail

3) /boot - Boot loader files

- Kernel initrd, vmlinuz, grub files are located under /boot
- Example:
initrd.img-2.6.32-24-generic,
vmlinuz-2.6.32-24-generic

```
(rexder@HunterMachine)-[/boot]  
$ ls  
config-5.10.0-kali9-amd64      System.map-5.10.0-kali9-amd64  
grub                          vmlinuz-5.10.0-kali9-amd64  
initrd.img-5.10.0-kali9-amd64
```

File structure in detail

4) /dev - Essential Device files

- These include terminal devices, usb, or any device attached to the system.
- Example: /dev/tty1, /dev/usbmon0

```
(rexder@HunterMachine) - [/dev]
$ ls
autofs      input       sg0         tty19      tty4        tty60      vcsa
block       kmsg        sg1         tty2       tty40       tty61      vcsa1
bsg         log         sg2         tty20      tty41       tty62      vcsa2
btrfs-control loop-control shm          tty21      tty42       tty63      vcsa3
bus         mapper      snapshot    tty22      tty43       tty7        vcsa4
cdrom       mem         snd         tty23      tty44       tty8        vcsa5
char        mqueue     sr0         tty24      tty45       tty9        vcsa6
console     net         sr1         tty25      tty46       ttyS0       vcsu
core        null        stderr      tty26      tty47       ttyS1       vcsu1
cpu         nvram       stdin       tty27      tty48       ttyS2       vcsu2
cpu_dma_latency port        stdout      tty28      tty49       ttyS3       vcsu3
cuse        ppp         tty         tty29      tty5        uhid        vcsu4
disk        psaux       tty0        tty3        tty50       uinput      vcsu5
dri         ptmx        tty1        tty30      tty51       urandom     vcsu6
dvd         pts         tty10       tty31      tty52       vboxguest   vfio
fb0         random      tty11       tty32      tty53       vboxuser    vga_arbiter
fd          rfkill      tty12       tty33      tty54       vcs         vhci
full        rtc         tty13       tty34      tty55       vcs1        vhost-net
fuse        rtc0        tty14       tty35      tty56       vcs2        vhost-vsock
hidraw0     sda         tty15       tty36      tty57       vcs3        zero
hpet        sda1        tty16       tty37      tty58       vcs4
hugepages   sda2        tty17       tty38      tty59       vcs5
```

File structure in detail

5) /etc - et cetera

- Contains configuration files required by all programs.
- This also contains startup and shutdown shell scripts used to start/stop individual programs.
- Example: /etc/resolv.conf, /etc/hosts, /etc/passwd

```
(rexder@HunterMachine)-[/etc]
$ ls
adduser.conf      initramfs-tools  pulse
adjtime           inputrc          python2.7
alsa             insserv.conf.d  python3
alternatives     ipp-usb          python3.9
amap             iproute2         rc0.d
apache2          ipsec.conf       rc1.d
apg.conf         ipsec.d          rc2.d
apparmor         ipsec.secrets    rc3.d
apparmor.d       issue            rc4.d
appstream.conf   issue.net        rc5.d
apt             java-11-openjdk  rc6.d
arpwatch         john             rcS.d
avahi            kernel           rearj.cfg
bash.bashrc      kernel-img.conf  redsocks.conf
bash_completion  king-phisher     request-key.conf
bash_completion.d kismet           request-key.d
beef-xss         ksysguarddrc    resolv.conf
bindresvport.blacklist ld.so.cache      responder
binfmt.d         ld.so.conf       rmt
bluetooth        ld.so.conf.d     rpc
btscanner.dtd    libao.conf       rsyslog.conf
btscanner.xml    libaudit.conf    rsvslog.d
```


File structure in detail

6) /home - Home directory

- Home directories for all users to store their personal files.
- example: /home/nathan, /home/rexder
- Here, You cant access files of other users.
 - i) Example: if your home is /home/nathan You cant access /home/rexder
- Your home directory /home/nathan will be denoted by ~

```
(rexder@HunterMachine)-[/home]
$ ls
rexder
```

```
(rexder@HunterMachine)-[/home]
$ ls
rexder

(rexder@HunterMachine)-[/home]
$ cd rexder

(rexder@HunterMachine)-[~]
$ ls
Desktop    Downloads  linux      Pictures   Templates
Documents  gtst       Music      Public     Videos
```

File structure in detail

7) /lib - Libraries essential for the binaries in /bin & /sbin

- Library filenames are either ld* or lib*.so.*
- Example: ld-2.11.1.so, libncurses.so.5.7

```
(rexder@HunterMachine)-[/lib]
$ ls
android-sdk      libhardsid-builder.so.0.0.1
apache2          libhotpatch.a
apg              libhotpatch.so
apparmor         libhotpatchtest.so
apt              libhtsjava.so.2
arpwatch         libhtsjava.so.2.0.49
aspell           libhttrack.so.2
atril            libhttrack.so.2.0.49
bfd-plugins      libmfmhdfalt.so.0
binfmt.d         libmfmhdfalt.so.0.0.0
binfmt-support   libnetpbm.so.10
blt2.5           libnetpbm.so.10.0
caribou          libogdi.so.4
cgi-bin          libogdi.so.4.1
chkrootkit       libpe.so
chromium         libpe.so.1
clang            libpe.so.1.0
cmake            libqscintilla2_qt5.so.15
cnf-update-db    libqscintilla2_qt5.so.15.0
code-oss         libqscintilla2_qt5.so.15.0.0
command-not-found libregfi.so.1
compat-ld        libregfi.so.1.0.1
```



File structure in detail

8) /media - Mount points for removable media such as CD-ROMs

- Temporary mount directory for removable devices.
- Examples, /media/cdrom for CD-ROM; /media/floppy for floppy drives; /media/cdrecorder for CD writer

```
(rexder@HunterMachine)-[/media]  
$ ls  
cdrom  cdrom0  cdrom1  rexder
```




File structure in detail

- 9) /mnt - Temporarily mounted file
- Temporary mount directory where sysadmins can mount filesystems.

```
(rexder@HunterMachine)-[/mnt]  
$ ls
```



File structure in detail

10) /opt - Optional application software packages

- Contains add-on applications from individual vendors.
- Add-on applications should be installed under either /opt/ or /opt/ sub-directory.

```
(rexder@HunterMachine)-[/opt]  
$ ls  
microsoft
```

File structure in detail

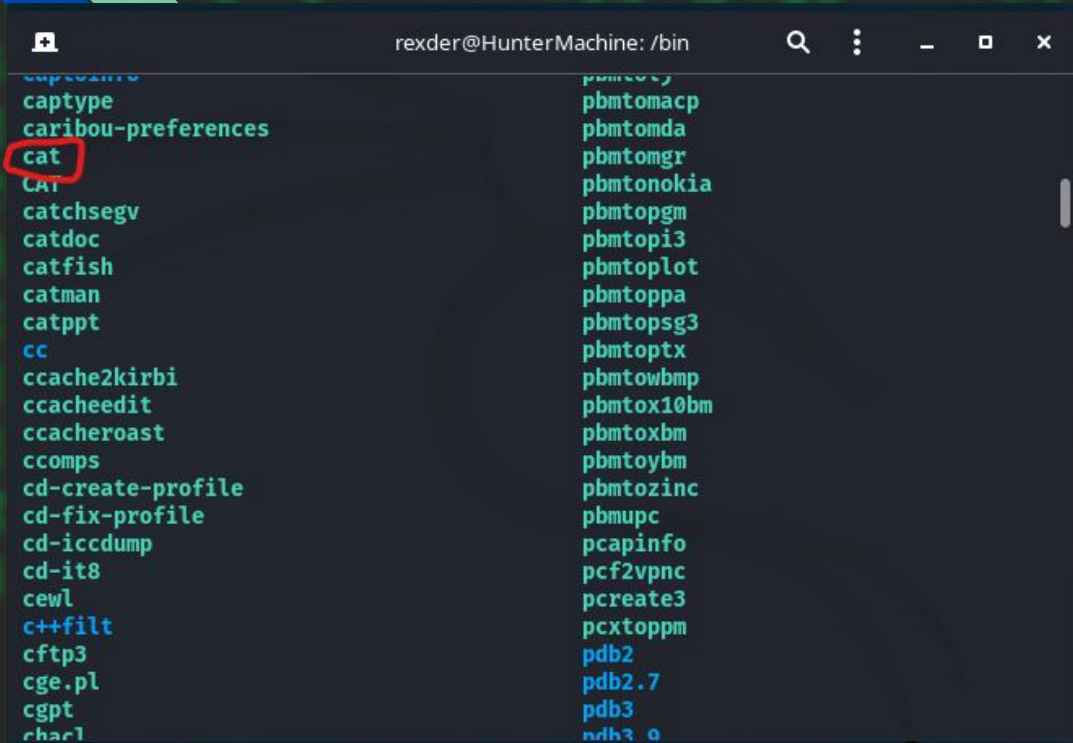
11) /sbin - Essential system binaries

- Just like /bin, /sbin also contains binary executables.
- The linux commands located under this directory are used typically by system administrator, for system maintenance purpose.

```
(rexder@HunterMachine)-[/sbin]
$ ls
a2disconf      lynis
a2dismod       macof
a2dissite      mailer
a2enconf       mailsnarf
a2enmod        make-ssl-cert
a2ensite       mariadb
a2query        messagevendor
aa-remove-unknown mausezahn
aa-status      mdk3
aa-teardown    memdump
accessdb       mii-tool
addgnupghome   miredo
addgroup       miredo-checkconf
add-shell      mkdosfs
adduser        mke2fs
agetty         mkfs
airbase-ng     mkfs.bfs
aireplay-ng    mkfs.cramfs
airmon-ng      mkfs.exfat
airodump-ng    mkfs.ext2
airodump-ng-oui-update mkfs.ext3
```



```
CONT... /bin
```



```
└─(rexder@HunterMachine)-[~/gtst]
```

```
$ cat linux.txt
```

Hello This is my first text

```
—(rexder@HunterMachine)-[~/gtst]
```

```
$ sudo cat linux.txt
```

Hello This is my first text

CONT... /sbin

```
(rexder@HunterMachine)-[/sbin]
$ ls
a2disconf      lynis
a2dismod       macof
a2dissite      mailer
a2enconf       mailsnarf
a2enmod        make-ssl-cert
a2ensite       mariadb
a2query        messagevendor
aa-remove-unknown
aa-status      mausezahn
aa-teardown    mdk3
accessdb       memdump
addgnupghome   mii-tool
addgroup       miredo
add-shell      miredo-checkconf
adduser       mkdosfs
agetty         mke2fs
               mkfs
```

```
(rexder@HunterMachine)-[/sbin]
$ adduser nathan
adduser: Only root may add a user or group to the system.
```

```
(rexder@HunterMachine)-[/sbin]
$ sudo adduser nathan
Adding user `nathan' ...
Adding new group `nathan' (1001) ...
Adding new user `nathan' (1001) with group `nathan' ...
Creating home directory `/home/nathan' ...
Copying files from `/etc/skel' ...
New password: █
```

File structure in detail

12) /tmp - Temporary Files

- Directory that contains temporary files created by system and users.
- Files under this directory are **deleted** when system is rebooted.

```
(rexder@ HunterMachine)-[/tmp]
$ ls
dbus-EmaMUYgrDx
ssh-Qrg9JZmKnR3H
systemd-private-9e8cd917afab453985de23a0a12cc250-colord.service-R3Txgf
systemd-private-9e8cd917afab453985de23a0a12cc250-haveged.service-aRK7Ci
systemd-private-9e8cd917afab453985de23a0a12cc250-ModemManager.service-ZFm25h
systemd-private-9e8cd917afab453985de23a0a12cc250-systemd-logind.service-3Mx6Hi
systemd-private-9e8cd917afab453985de23a0a12cc250-upower.service-wnIqlf
tracker-extract-files.1000
tracker-extract-files.136
```


File structure in detail

13) /usr - User Utilities

- Contains binaries, libraries, documentation, and source-code for second level programs.
- /usr/bin contains binary files for user programs. If you can't find a user binary under /bin, look under /usr/bin. For example: at, awk, cc, less, scp
- /usr/sbin contains binary files for system administrators. If you can't find a system binary under /sbin, look under /usr/sbin. For example: atd, cron, sshd, useradd, userdel
- /usr/lib contains libraries for /usr/bin and /usr/sbin
- /usr/src holds the Linux kernel sources, header-files and documentation.

```
(rexder@HunterMachine)-[/usr]
$ ls
bin      include  lib32    libexec  local    share    var
games    lib      lib64    libx32   sbin     src
```



Text Editors

- Programs That used for text processing.
- Linux command line text editors
 - VIM
 - Nano
 - Emacs
 - Neovim
 -
- Linux Graphical Text editors
 - Sublime
 - Vscode
 - Gedit
 - Pluma
 - ...

VIM



- Before vi the primary editor used on Unix was the **line editor**
 - User was able to see/edit only one line of the text at a time
- Then then vi editor improved and developed VIM. (VI iMproved)
- The vim editor is:
 - a very powerful
 - but at the same time it is cryptic
 - It is hard to learn, specially for windows users
- It have mainly to modes
 - Command Mode
 - Input Mode
 - Visual Mode
 - Normal Mode

```
VIM - Vi IMproved

version 8.2.2434
by Bram Moolenaar et al.
Modified by team+vim@tracker.debian.org
Vim is open source and freely distributable

Help poor children in Uganda!
type  :help iccf<Enter>      for information

type  :q<Enter>              to exit
type  :help<Enter> or <F1>   for on-line help
type  :help version8<Enter> for version info
```

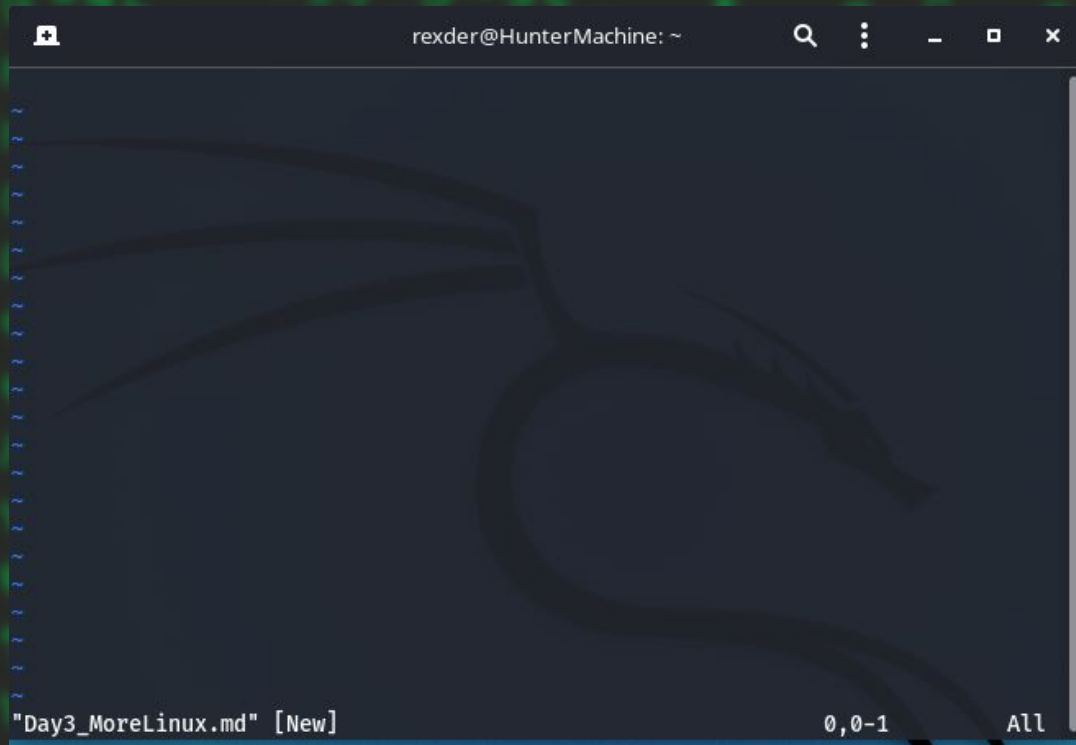

Opening vim

Syntax

vim yourfilename

```
(rexder@HunterMachine)-[~]  
$ vim Day3_MoreLinux.md
```

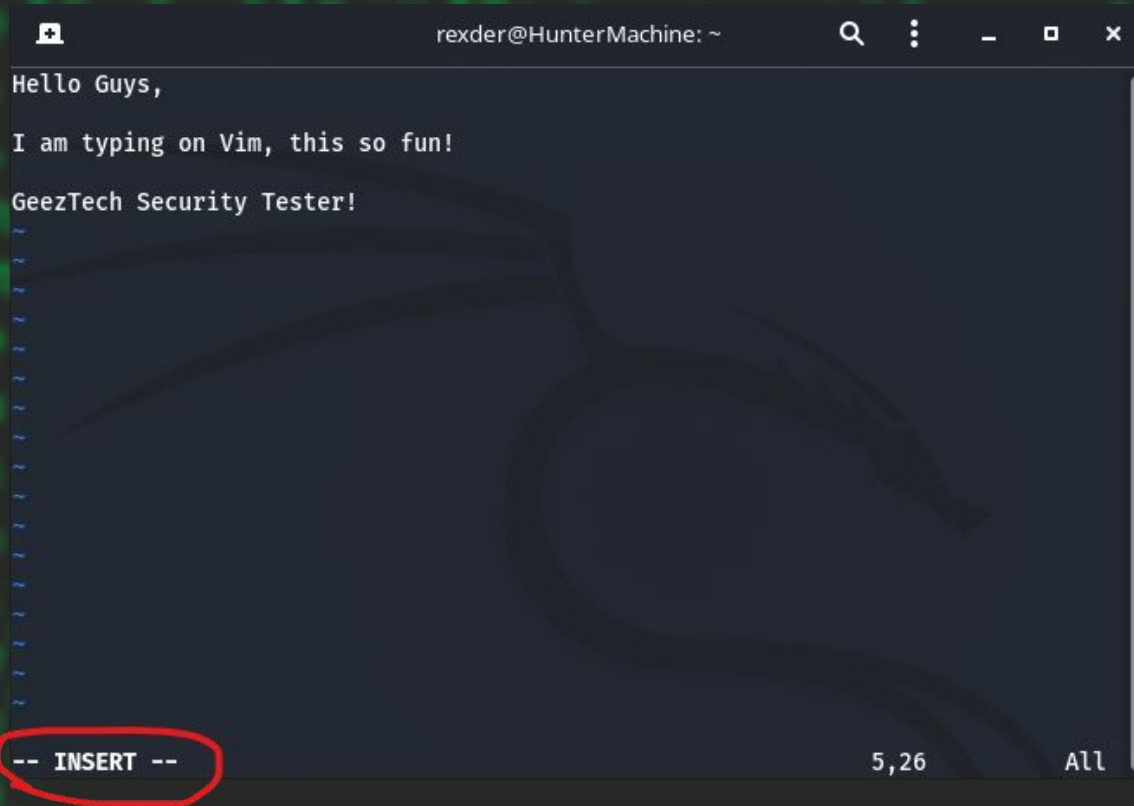
Vim is by default on **Normal mode** when you open it.
To get on **insert mode** you have to type 'i'



Insert mode

Press 'i'

- Here You can Type anything you want, and Edit your text

A screenshot of a terminal window titled 'rexder@HunterMachine: ~'. The terminal shows the text 'Hello Guys,', 'I am typing on Vim, this so fun!', and 'GeezTech Security Tester!'. At the bottom of the terminal, the status line '-- INSERT --' is highlighted with a red circle. The terminal also shows a line number '5,26' and the word 'All' on the right side.

```
rexder@HunterMachine: ~  
Hello Guys,  
I am typing on Vim, this so fun!  
GeezTech Security Tester!  
-- INSERT -- 5,26 All
```

Command mode

To get back to command mode
you press 'esc'

A terminal window titled 'rexder@HunterMachine: ~' showing a Vim editor in command mode. The terminal has a dark blue background with a faint dragon logo. The text in the terminal is white. The cursor is at the end of the line 'GeezTech Security Tester!'. The terminal window has standard window controls (search, list, close) in the top right corner. At the bottom right, it shows '5,24' and 'All'.



Cont...

- Inside Command mode you can
 - Save
 - Save & quit
 - Force Quit & Save
 - Undo
 - Execute bash commands



Save

Type

:w +

enter

```
Hello Guys,  
I am typing on Vim, this so fun!  
GeezTech Security Tester!
```

:w



"Day3_MoreLinux.md" 5L, 73B written

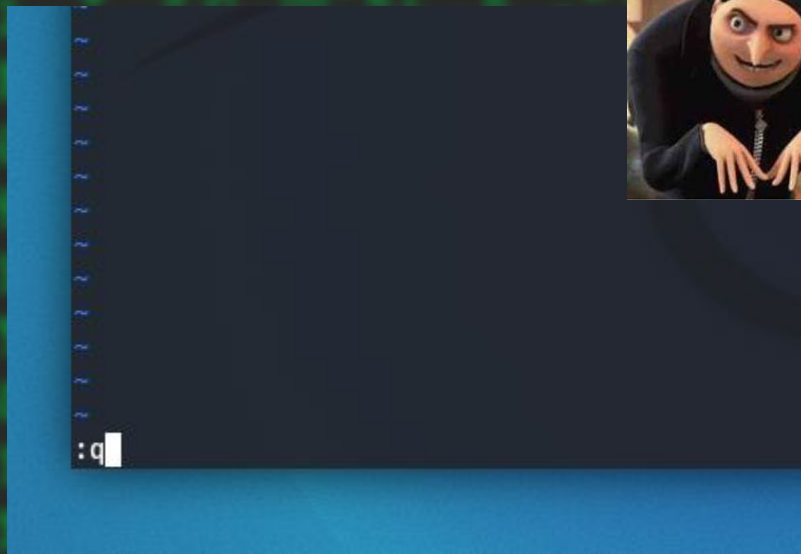
5,25

All

Quit

Type

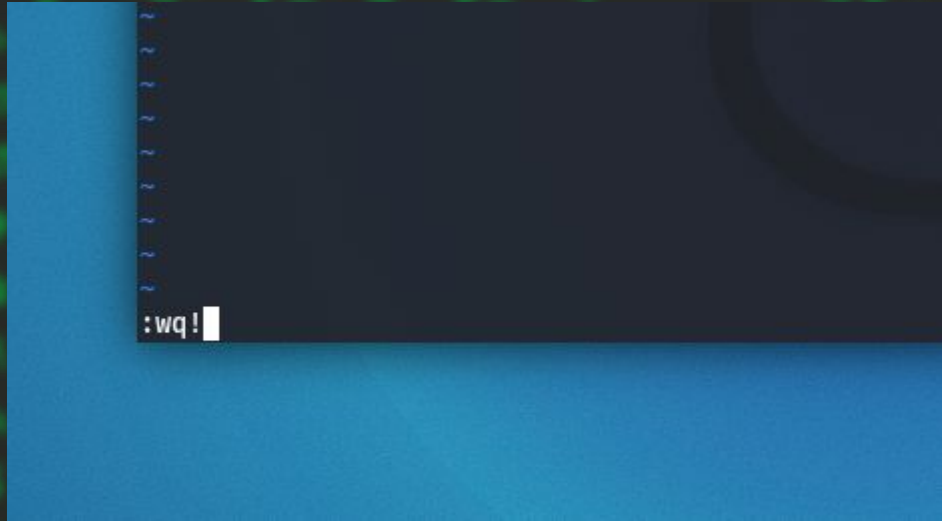
:q +
enter





Quit

Type
:wq! +
enter
Force = !



Type

```
:undo +  
enter
```

Or :u

```
Hello Guys,  
I am typing on Vim, this so fun!  
GeezTech S!
```



```
:u
```

[illegible]

```
:%!yourcommand
```

*there is no space between them

```
Hello Guys,  
I am typing on Vim, this so fun!  
GeezTech Security Tester!
```

```
:%! grep fun
```

rexder@Hu

```
I am typing on Vim, this so fun!
```

5 lines filtered



Visual Mode

Visual Mode in vim allows users to select and manipulate blocks of text.

Types of Visual Mode:

- **Character-wise Visual Mode:** Selects text character by character.
 - a. Press 'v'
- **Line-wise Visual Mode:** Selects entire lines of text.
 - a. Press 'shift+v'
- **Block-wise Visual Mode:** Selects rectangular blocks of text.
 - a. Press 'ctrl+v' or 'ctrl+q'

```
3 Hello there
2
1 GTSTv2 is amazing.
0 Linux is also Fun
~
~
~
~
~
-- VISUAL --
```

```
3 Hello there
2
1 GTSTv2 is amazing.
0 Linux is also Fun
~
~
~
~
~
-- VISUAL LINE --
```

```
3 Hello there
2
1 GTSTv2 is amazing.
0 Linux is also Fun
~
~
~
~
~
-- VISUAL BLOCK --
```

Commands in Visual Mode

Once You select the texts on visual mode

Common Commands:

- d: Delete the selected text.
- y: Yank (copy) the selected text.
- p: Paste the yanked text after the cursor.

For more check this video on youtube



```
3 Hello there
2
1 GTSTv2 is amazing.
0 Linux is also Fun
```

- VISUAL LINE -

```
7 Hello there
6
5 GTSTv2 is amazing.
4 Linux is also Fun
3 Linux is also Fun
2 Linux is also Fun
1 Linux is also Fun
0 Linux is also Fun
```

NANO

The GNU nano text editor is a user-friendly, free and open-source text editor that usually comes pre-installed in modern Linux systems.

```
          :::  
      iLE88Dj.  :jD88888Dj:  
      .LGitE888D.f8GjjjL8888E;  
      iE      :8888Et.      .G8888.  
      ;i      E888,          ,8888,  
              D888,          :8888:  
              D888,          :8888:  
              D888,          :8888:  
              D888,          :8888:  
              888W,          :8888:  
              W88W,          :8888:  
              W88W,          :8888:  
              DGGD,          :8888:  
                          :8888:  
                          :W888:  
                          :8888:  
                          E888i  
                          tW88D
```

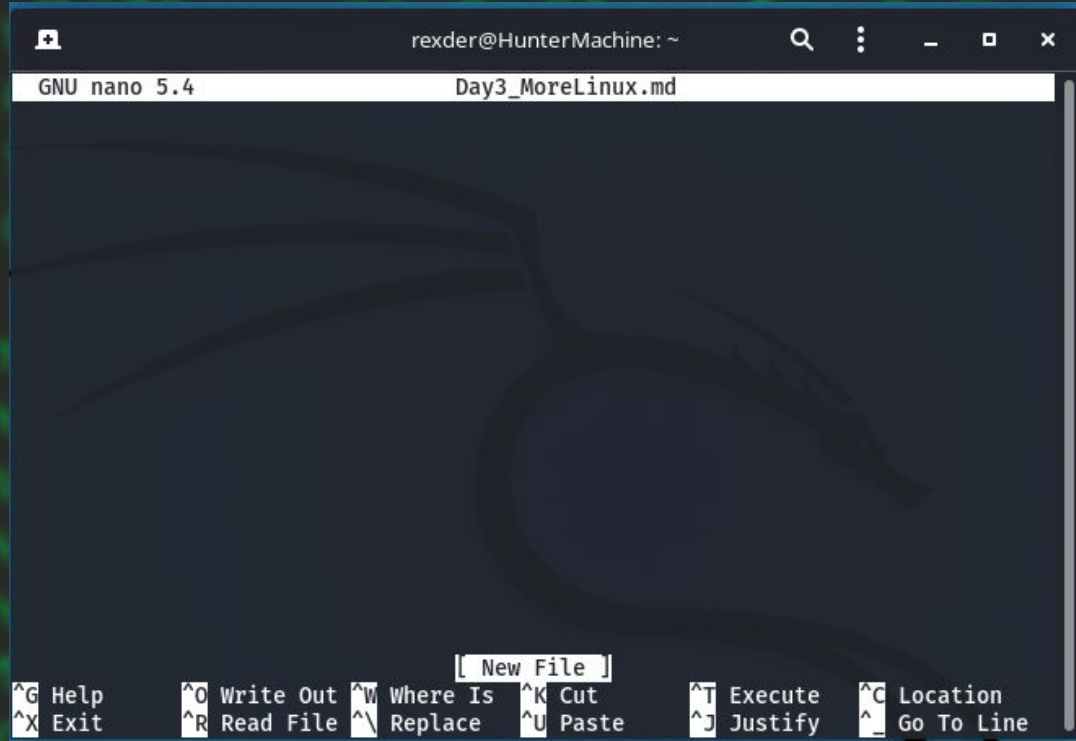


Starting nano

Syntax

`nano filename`

Then start typing.



The screenshot shows the GNU nano 5.4 text editor running in a terminal window. The window title is 'rexder@HunterMachine: ~'. The editor's status bar at the top indicates 'GNU nano 5.4' and the filename 'Day3_MoreLinux.md'. The main editing area is dark blue with a faint, stylized dragon logo. At the bottom, a menu bar lists various commands with their corresponding keyboard shortcuts: ^G Help, ^O Write Out, ^W Where Is, ^K Cut, ^T Execute, ^C Location, ^X Exit, ^R Read File, ^\ Replace, ^U Paste, ^J Justify, and ^_ Go To Line. A 'New File' button is also visible in the center of the bottom bar.

Nano hotkeys

Ctrl + S - save

Alt + U - Undo the ^ is equal to 'Ctrl'

Alt + E - Redo

Ctrl + X - Exit

Paste, Copy & paste all over the linux is

Ctrl+shift+C - copy

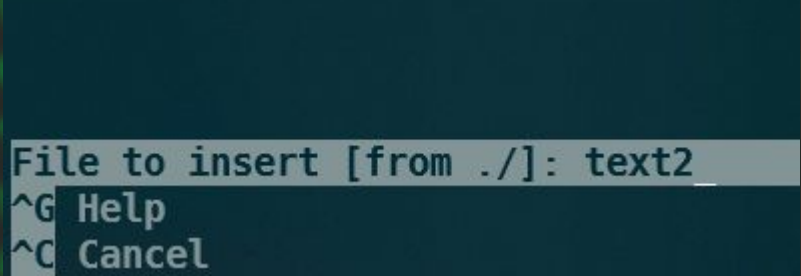
Ctrl+shift+X - Cut

Ctrl+shift+V - Paste



| | | | | | |
|----------------|---------------------|--------------------|-----------------|-------------------|----------------------|
| ^G Help | ^O Write Out | ^W Where Is | ^K Cut | ^T Execute | ^C Location |
| ^X Exit | ^R Read File | ^\\ Replace | ^U Paste | ^J Justify | ^_ Go To Line |

**You can append texts from other files with
Ctrl + R and Specify the Path**



File to insert [from ./]: text2_

^G Help
^C Cancel



Lets make our hand Dirty!

Open Your Linux



Break Time

15 min

1. Create A text file called “takeme.txt” using vim
 - a. Text: “ This is The Inserted Text from Planet Mars!”
 - b. Save and Exit
2. Create Another text file called “Day3_MoreLinux.md” using nano
 - a. Text: “This is day 3 course note.”
 - b. Save and exit
3. Open Day3_MoreLinux.md Read the file “takeme.txt” **using nano** and add it to “Day3_MoreLinux.md”

Linux User Management

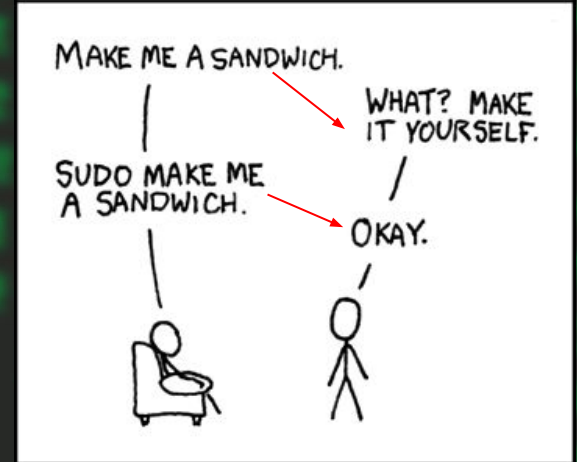
- On Computer system, person who uses the computer is called “**user**”
- Every Users have Group.
- Users have their own file & applications.
- To know our name on linux -> “ whoami “
- Those users have power/privilege.
- On linux there's 2 kinds users.
 - Root id = 0
 - Normal User id start with 1-999

The root user have the power to do everything on linux ,

but if users want to have a root access they add **sudo** in front of the command .

`sudo YourCommand`

- SUDO = Superuser do , used to pass permission denied



```
(rexder@HunterMachine)-[~]  
$ sudo adduser geeztech  
[sudo] password for rexder: █
```

Creating Users

- On linux, to create users you can use the following commands
 - Useradd -> simple
 - Adduser -> Detailed
- Useradd command
 - `sudo useradd username`
- Adduser command
 - `sudo adduser username`

```
(rexder@HunterMachine)-[~]  
$ sudo adduser geeztech  
[sudo] password for rexder:  
Adding user `geeztech' ...  
Adding new group `geeztech' (1002) ...  
Adding new user `geeztech' (1002) with group `geeztech' ...  
Creating home directory `/home/geeztech' ...  
Copying files from `/etc/skel' ...  
New password:
```

The User files are stored inside `/etc/passwd`

The User password are stored inside `/etc/shadow`

When you create a user **it creates a group with that name.**

Checking /etc/passwd

This happened what shall i do?

```
(rexder@HunterMachine)-[~]  
$ cat /etc/shadow  
cat: /etc/shadow: Permission denied
```

```
(rexder@HunterMachine)-[~]  
$ id  
uid=1000(rexder) gid=1000(rexder) groups=1000(rexder)
```

```
list:x:38:38:Mailing List Manager:/var/list:/usr/sbin/nologin  
irc:x:39:39:ircd:/run/ircd:/usr/sbin/nologin  
gnats:x:41:41:Gnats Bug-Reporting System (admin):/var/lib/gnats:/usr/sbin/nologin  
nobody:x:65534:65534:nobody:/nonexistent:/usr/sbin/nologin  
_apt:x:100:65534:/nonexistent:/usr/sbin/nologin  
systemd-timesync:x:101:101:systemd Time Synchronization,,:/run/systemd:/usr/sbin/nologin  
systemd-network:x:102:103:systemd Network Management,,:/run/systemd:/usr/sbin/nologin  
systemd-resolve:x:103:104:systemd Resolver,,:/run/systemd:/usr/sbin/nologin  
mysql:x:104:110:MySQL Server,,:/nonexistent:/bin/false  
tss:x:105:111:TPM software stack,,:/var/lib/tpm:/bin/false  
strongswan:x:106:65534:/var/lib/strongswan:/usr/sbin/nologin  
ntp:x:107:112:/nonexistent:/usr/sbin/nologin  
messagebus:x:108:113:/nonexistent:/usr/sbin/nologin  
redsocks:x:109:114:/var/run/redsocks:/usr/sbin/nologin  
rwho:x:110:65534:/var/spool/rwho:/usr/sbin/nologin  
iodine:x:111:65534:/run/iodine:/usr/sbin/nologin  
miredo:x:112:65534:/var/run/miredo:/usr/sbin/nologin  
_rpc:x:113:65534:/run/rpcbind:/usr/sbin/nologin  
arpwatch:x:114:120:ARP Watcher,,:/var/lib/arpwatch:/bin/sh  
usbmux:x:115:46:usbmux daemon,,:/var/lib/usbmux:/usr/sbin/nologin  
tcpdump:x:116:122:/nonexistent:/usr/sbin/nologin  
rtkit:x:117:123:RealtimeKit,,:/proc:/usr/sbin/nologin  
sshd:x:118:65534:/run/sshd:/usr/sbin/nologin  
statd:x:119:65534:/var/lib/nfs:/usr/sbin/nologin  
postgres:x:120:125:PostgreSQL administrator,,:/var/lib/postgresql:/bin/bash  
avahi:x:121:127:Avahi mDNS daemon,,:/run/avahi-daemon:/usr/sbin/nologin  
stunnel4:x:122:128:/var/run/stunnel4:/usr/sbin/nologin  
Debian-snmpp:x:123:129:/var/lib/snmpp:/bin/false  
speech-dispatcher:x:124:29:Speech Dispatcher,,:/run/speech-dispatcher:/bin/false  
sslh:x:125:131:/nonexistent:/usr/sbin/nologin  
nm-openvpn:x:126:132:NetworkManager OpenVPN,,:/var/lib/openvpn/chroot:/usr/sbin/nologin  
nm-openconnect:x:127:133:NetworkManager OpenConnect plugin,,:/var/lib/NetworkManager:/usr/sbin/  
pulse:x:128:134:PulseAudio daemon,,:/run/pulse:/usr/sbin/nologin  
saned:x:129:137:/var/lib/saned:/usr/sbin/nologin  
inetsim:x:130:139:/var/lib/inetsim:/usr/sbin/nologin  
lightdm:x:131:140:Light Display Manager:/var/lib/lightdm:/bin/false  
colord:x:132:141:colord colour management daemon,,:/var/lib/colord:/usr/sbin/nologin  
geoclue:x:133:142:/var/lib/geoclue:/usr/sbin/nologin  
sddm:x:134:143:Simple Desktop Display Manager:/var/lib/sddm:/bin/false  
king-phisher:x:135:144:/var/lib/king-phisher:/usr/sbin/nologin  
Debian-gdm:x:136:145:Gnome Display Manager:/var/lib/gdm3:/bin/false  
dradis:x:137:146:/var/lib/dradis:/usr/sbin/nologin  
beef-xss:x:138:147:/var/lib/beef-xss:/usr/sbin/nologin  
_caldera:x:139:148:/var/lib/caldera:/usr/sbin/nologin  
rexder:x:1000:1000:Rexder,,:/home/rexder:/usr/bin/zsh  
systemd-coredump:x:999:999:systemd Core Dumper:/usr/sbin/nologin  
nathan:x:1001:1001:Nathan Hailu,001,09200000000,07098765432:/home/nathan:/bin/bash  
geeztech:x:1002:1002:/home/geeztech:/bin/bash
```



To access root user

Command

sudo su

```
(rexder@HunterMachine)-[~]  
$ sudo su  
[sudo] password for rexder:  
(root@HunterMachine)-[/home/rexder]  
#
```

```
(root@HunterMachine)-[/home/rexder]  
# id  
uid=0(root) gid=0(root) groups=0(root),4
```



Class is Over

- 1) Push your note to Github
- 2) Repeat the commands
- 3) Stay Strong and curious