



# Further on Linux

Day4\_MoreLinux.md



# Last time topics

Have you seen about awk and sed?

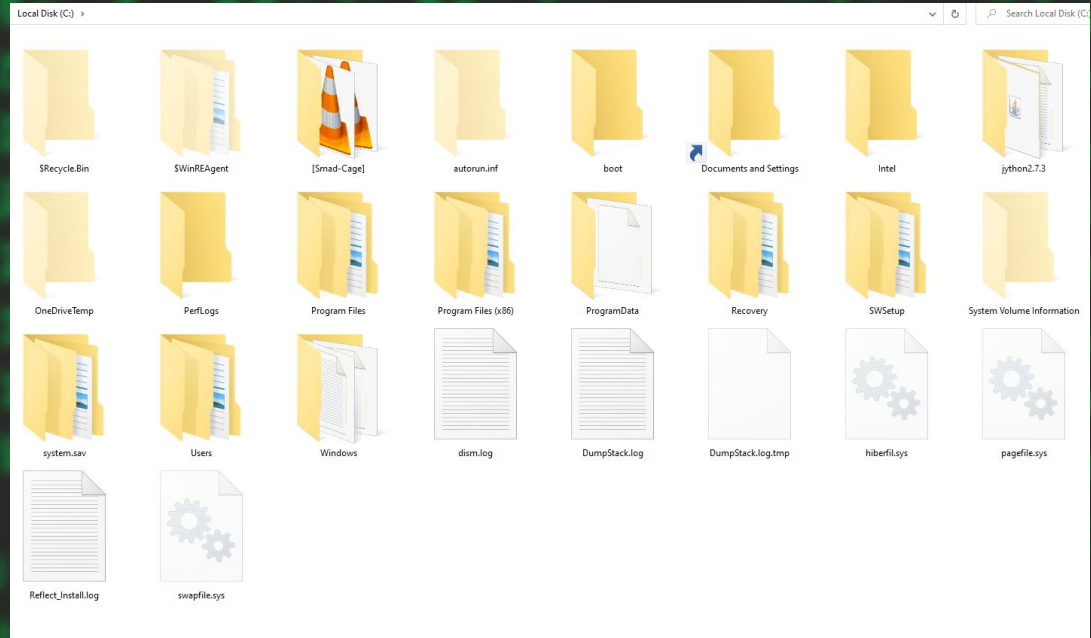


# Topics

- 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.

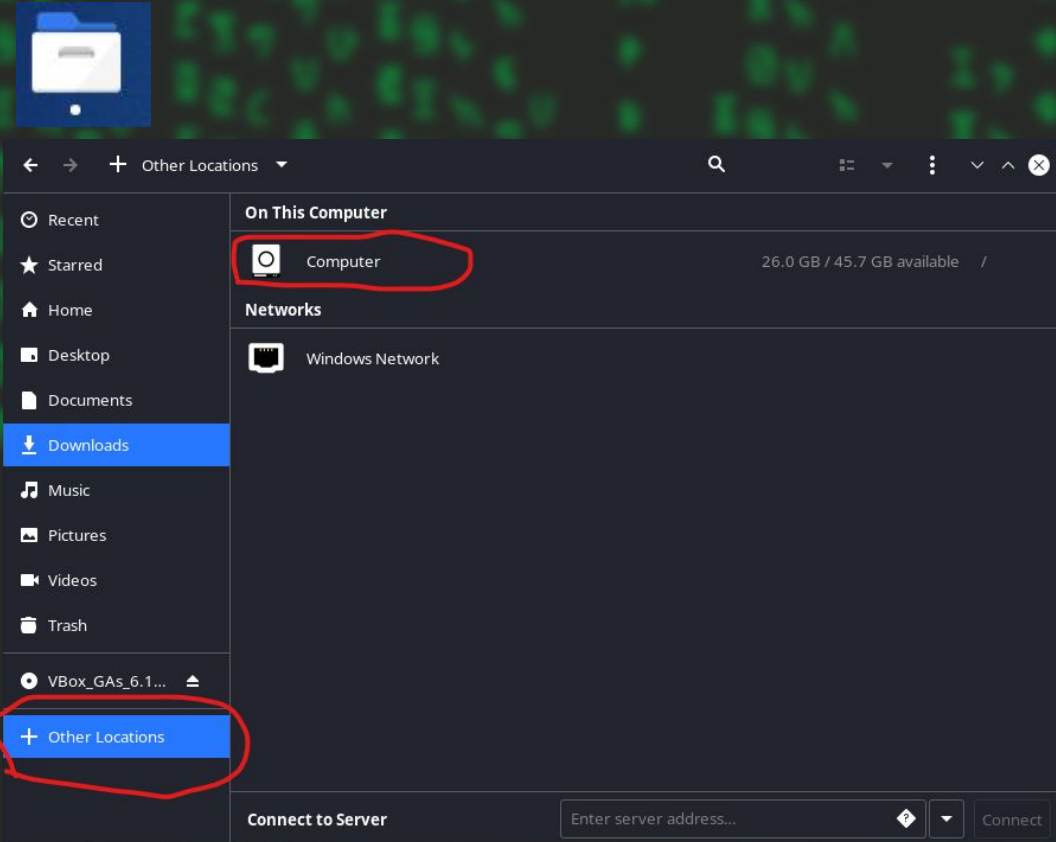


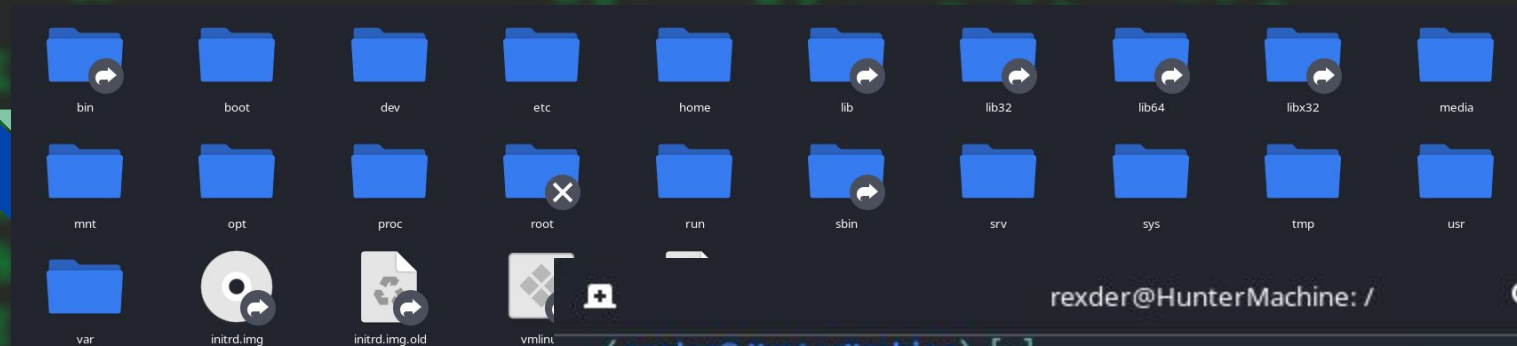
File system: **WINDOWS 10**



# 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     stdout     tty27      tty48      ttyS2      vcsu2
cpu_dma_latency port      tty        tty28      tty49      ttyS3      vcsu3
cuse        ppp       tty0       tty29      tty5       uhid       vcsu4
disk        psaux     tty1       tty3       tty50      uinput     vcsu5
dri         ptmx      tty10      tty30      tty51      urandom    vcsu6
dvd         pts       tty11      tty31      tty52      vboxguest  vfio
fb0         random    tty12      tty32      tty53      vboxuser   vga_arbiter
fd          rfkill    tty13      tty33      tty54      vcs        vhci
full        rtc       tty14      tty34      tty55      vcs1       vhost-net
fuse        rtc0      tty15      tty35      tty56      vcs2       vhost-vsock
hidraw0     sda       tty16      tty36      tty57      vcs3       zero
hpet        sda1     tty17      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/logrotate.conf.

```
(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

```
(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      libmfhdfalt.so.0
binfmt.d          libmfhdfalt.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/cd recorder 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: /bin
cat
catchsegv
catdoc
catfish
catman
catppt
cc
ccache2kirbi
ccacheedit
ccacheroast
ccomps
cd-create-profile
cd-fix-profile
cd-iccdump
cd-it8
cewl
c++filt
cftp3
cge.pl
cgpt
charl
```

```
(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 -> where you can do commands
  - Input mode -> where you can write



```
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

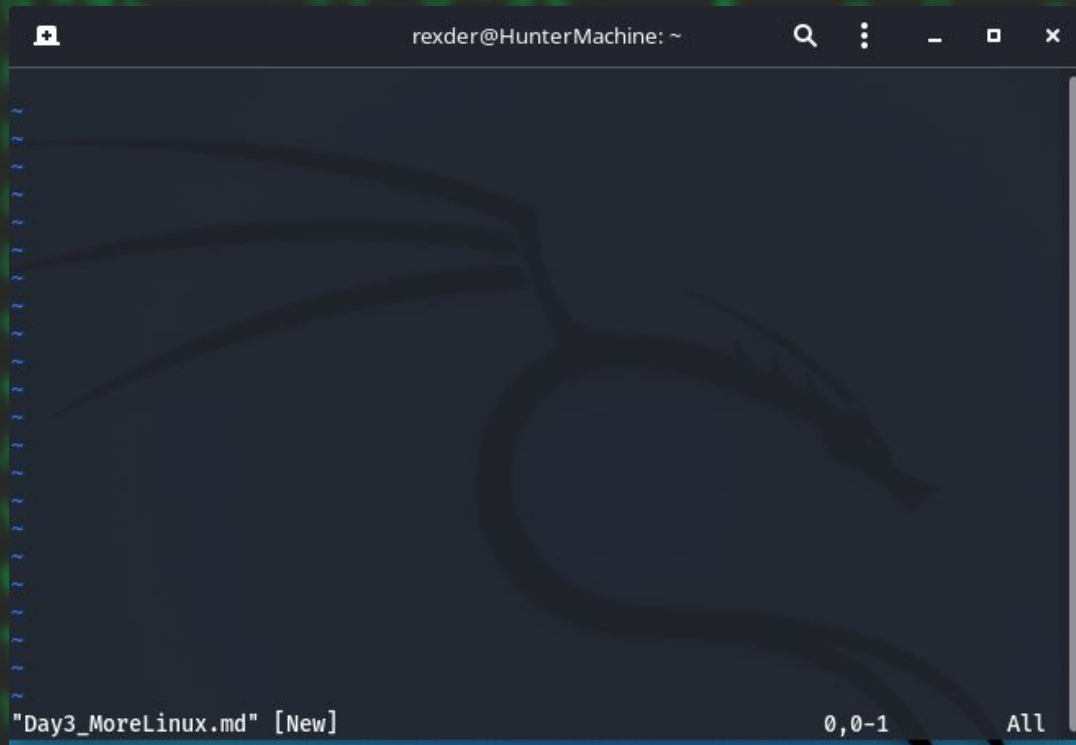
Syntax

`vim yourfilename`

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

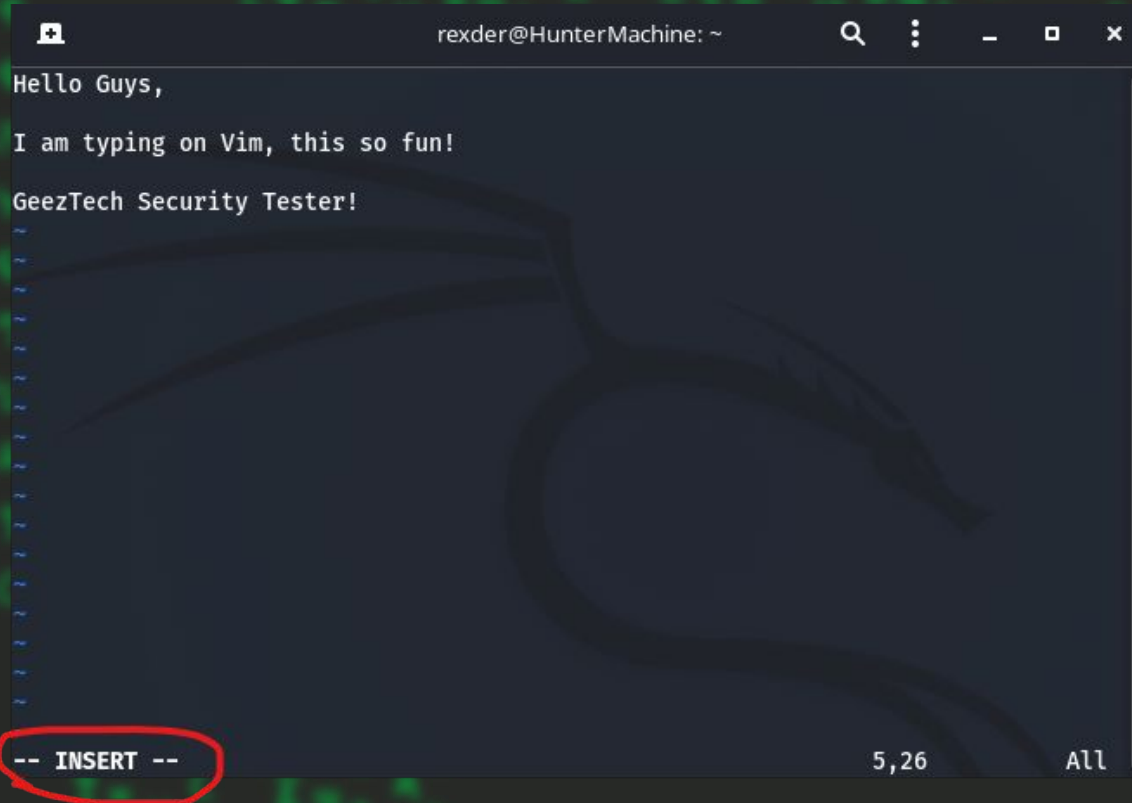
Vim is by default on **command mode** when you open it.

To get on **insert mode** you have to type 'i'



# Insert mode

Press 'i'



The screenshot shows a terminal window titled 'rexder@HunterMachine: ~'. Inside the terminal, a Vim editor is open, displaying the text: 'Hello Guys,', 'I am typing on Vim, this so fun!', and 'GeezTech Security Tester!'. The background of the editor features a faint, stylized dragon. At the bottom left of the editor, the text '-- INSERT --' is displayed and circled in red. At the bottom right, the text '5,26' and 'All' are visible. The terminal window has standard Linux window controls (search, list, close) in the top right corner.

To get back to command mode  
you press 'esc'

[illegible]





## 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

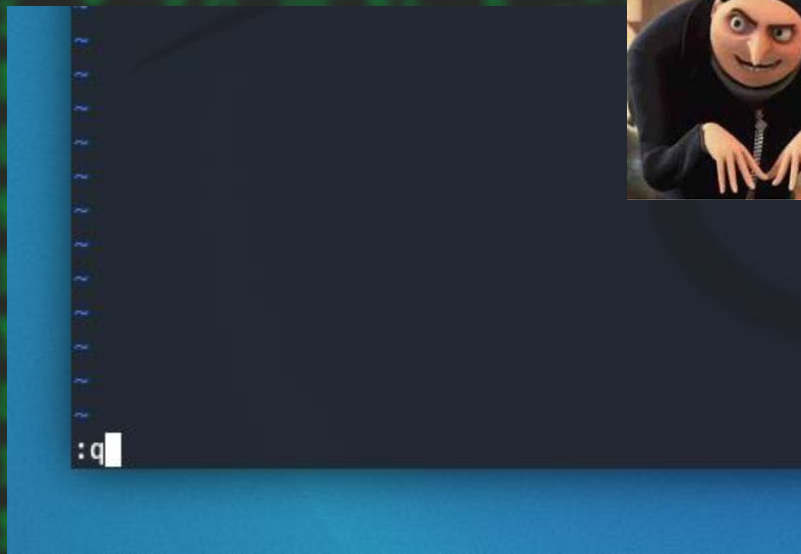
All

Quit

Type

:q +

enter

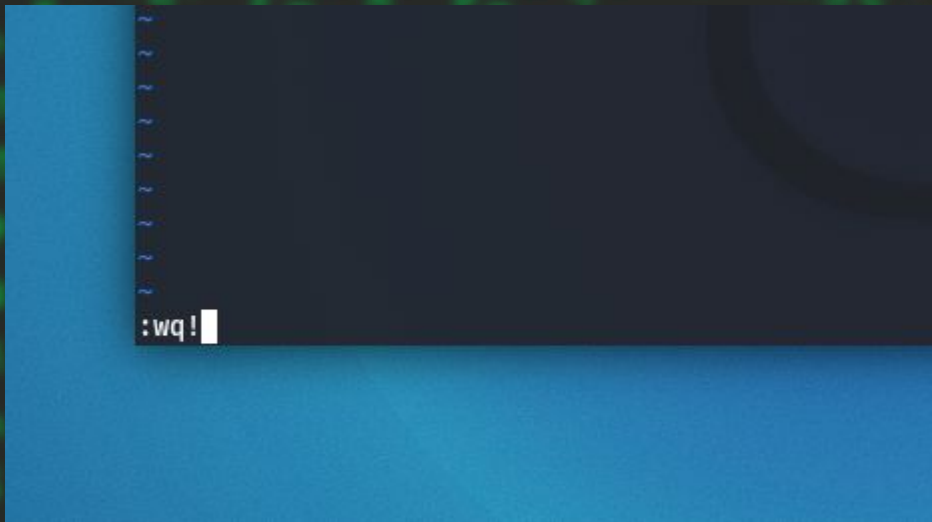






Quit

Type  
:wq! +  
enter  
Force = !





# Undo

Type  
:undo +  
enter  
Or :u

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

```
:u
```

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

```
1 change; before #1 38 seconds ago
```

```
:%!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



# 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.

```
rexder@HunterMachine: ~
GNU nano 5.4 Day3_MoreLinux.md

[ New File ]
^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
```

# SAving Exiting & Undo\_redo

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

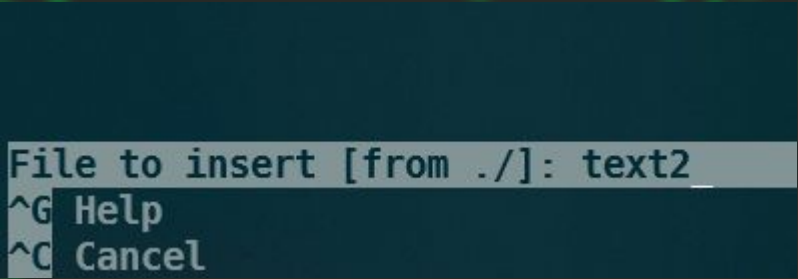
Ctrl+shift+X - Cut

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

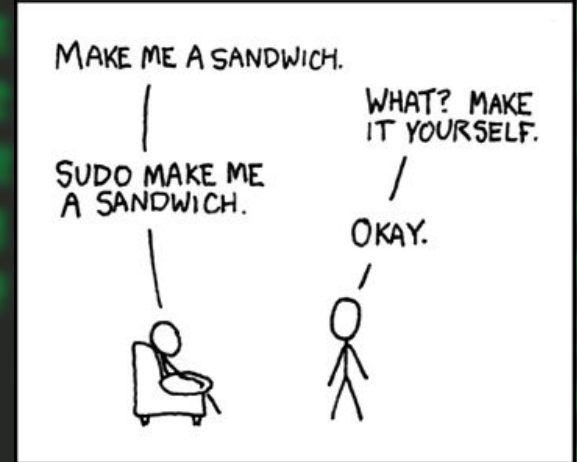
The root user have the power to do everything on linux ,

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

`sudo YourCommand`

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

- SUDO = Superuser do , used to pass permission denied





# 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