

## Basic Linux Commands Assignments

### Assignment-1 :

Cannot be done as i'm a Mac M1 user and using Linode; hence GUI is not available for the instance.

### Assignment-2 :

Cannot be done as i'm a Mac M1 user and using Linode; hence GUI is not available for the instance.

### Assignment-3 :

#### Working with Directories

- Enter the command `cd /` and then `ls` and then hit Enter key

```
[shreesha@localhost:/$ cd /  
[shreesha@localhost:/$  
[shreesha@localhost:/$ ls  
bin  boot  dev  etc  home  lib  lib32  lib64  libx32  lost+found  media  mnt  opt  proc  root  run  sbin  snap  srv  sys  tmp  usr  var
```

Observed that '`cd /`' command takes us to the root directory which is the parent of all directory.

- Enter the command now **`cd /home`** and then hit **Enter** key
  - Do **`ls`**, provide screenshot and explain what is **`/home`** directory used for?

```
[shreesha@localhost:/$ cd /home  
[shreesha@localhost:/home$  
[shreesha@localhost:/home$  
[shreesha@localhost:/home$ ls  
shreesha
```

Observed that '`cd /home`' command takes us to the home directory where the user (in my case it is shreesha) directory resides.

- Enter **`cd ..`** and hit **Enter** key [ *Note: here we have space after cd then use double dot*] Check what happen and give screenshot?

```
/home
[shreesha@localhost:~/home$ cd ..
[shreesha@localhost:/$
[shreesha@localhost:/$ pwd
/
```

Observed that 'cd ..' command takes us a step back i.e to the parent directory. In my case it took from /home directory to / .

- Now enter **cd /var/www/html** and then type **cd** and hit **Enter** key. Explain what happen and give screenshot?

```
[shreesha@localhost:/$ cd /var/www/html
bash: cd: /var/www/html: No such file or directory
```

It threw error as there is no /www folder under /var.

- Now type **cd /root** and then hit **Enter** key

```
[shreesha@localhost:/$  
[shreesha@localhost:/$ cd /root  
bash: cd: /root: Permission denied  
[shreesha@localhost:/$
```

It threw error as the normal user doesn't have permission to /root folder

## Assignment-4

## Working with File Listing

- Go to **cd /etc** and type **ls**
  - Take screenshot and explain what files you have seeing?
  - Take screenshot and explain what different output you found compare to previous command you used?

[illegible]

- Then type **ls -al** and hit **Enter** key
  - Take screenshot and explain what new file or directory you found?

```
[shreesha@localhost:~]$ ls -al
total 888
drwxr-xr-x 99 root root      4096 Oct 29 16:31 .
drwxr-xr-x 19 root root      4096 Oct 29 15:25 ..
-rw-r--r--  1 root root    3028 Sep 16 05:41 adduser.conf
-rw-r--r--  1 root root      16 Sep 16 05:45 adjtime
drwxr-xr-x  2 root root     4096 Sep 16 05:44 alternatives
drwxr-xr-x  3 root root     4096 Sep 16 05:43 apparmor
drwxr-xr-x  8 root root     4096 Sep 16 05:44 apparmor.d
drwxr-xr-x  3 root root     4096 Sep 16 05:44 apport
drwxr-xr-x  8 root root     4096 Sep 16 05:42 apt
-rw-r--r--  1 root root    2319 Jan  6 2022 bash.bashrc
-rw-r--r--  1 root root      45 Nov 11 2021 bash_completion
drwxr-xr-x  2 root root     4096 Sep 16 05:44 bash_completion.d
-rw-r--r--  1 root root     367 Dec 16 2020 bindresvport.blacklist
drwxr-xr-x  2 root root     4096 Apr  7 2022 binfmt.d
drwxr-xr-x  2 root root     4096 Sep 16 05:43 byobu
drwxr-xr-x  3 root root     4096 Sep 16 05:42 ca-certificates
-rw-r--r--  1 root root    5529 Sep 16 05:42 ca-certificates.conf
drwxr-xr-x  4 root root     4096 Sep 16 05:46 cloud
drwxr-xr-x  2 root root     4096 Sep 16 05:45 console-setup
drwxr-xr-x  2 root root     4096 Sep 16 05:43 cron.d
drwxr-xr-x  2 root root     4096 Sep 16 05:44 cron.daily
drwxr-xr-x  2 root root     4096 Sep 16 05:42 cron.hourly
drwxr-xr-x  2 root root     4096 Sep 16 05:42 cron.monthly
-rw-r--r--  1 root root    1136 Mar 23 2022 crontab
drwxr-xr-x  2 root root     4096 Sep 16 05:44 cron.weekly
drwxr-xr-x  2 root root     4096 Sep 16 05:44 cryptsetup-initramfs
-rw-r--r--  1 root root      54 Sep 16 05:43 crypttab
drwxr-xr-x  4 root root     4096 Sep 16 05:42 dbus-1
-rw-r--r--  1 root root    2969 Feb 20 2022 debconf.conf
-rw-r--r--  1 root root     13 Aug 22 2021 debian_version
drwxr-xr-x  3 root root     4096 Sep 16 05:45 default
-rw-r--r--  1 root root     604 Sep 15 2018 deluser.conf
drwxr-xr-x  2 root root     4096 Sep 16 05:42 depmod.d
drwxr-xr-x  4 root root     4096 Sep 16 05:42 dhcp
drwxr-xr-x  4 root root     4096 Sep 16 05:42 dpkg
-rw-r--r--  1 root root     685 Jan  8 2022 e2scrub.conf
-rw-r--r--  1 root root     106 Sep 16 05:41 environment
-rw-r--r--  1 root root    1816 Dec 27 2019 ethertypes
-rw-r--r--  1 root root     426 Oct 29 15:25 fstab
-rw-r--r--  1 root root     694 Mar 23 2022 fuse.conf
drwxr-xr-x  3 root root     4096 Sep 16 05:46 fwupd
-rw-r--r--  1 root root    2584 Feb  3 2022 gai.conf
drwxr-xr-x  2 root root     4096 Sep 16 05:43 groff
-rw-r--r--  1 root root     726 Oct 29 16:31 group
-rw-r--r--  1 root root     709 Sep 16 05:44 group-
drwxr-xr-x  2 root root     4096 Sep 16 05:44 grub.d
-rw-r--r--  1 root shadow   602 Oct 29 16:31 gshadow
-rw-r--r--  1 root shadow   589 Sep 16 05:44 gshadow-
drwxr-xr-x  3 root root     4096 Feb 21 2022 gss
-rw-r--r--  1 root root    4436 Dec 15 2020 hdparm.conf
-rw-r--r--  1 root root      92 Oct 15 2021 host.conf
-rw-r--r--  1 root root      10 Oct 29 15:25 hostname
-rw-r--r--  1 root root     181 Sep 16 05:45 hosts
-rw-r--r--  1 root root     411 Sep 16 05:43 hosts.allow
-rw-r--r--  1 root root     711 Sep 16 05:43 hosts.deny
drwxr-xr-x  2 root root     4096 Sep 16 05:44 init.d
drwxr-xr-x  5 root root     4096 Sep 16 05:44 initramfs-tools
-rw-r--r--  1 root root    1748 Jan  6 2022 inputrc
drwxr-xr-x  4 root root     4096 Sep 16 05:42 iproute2
drwxr-xr-x  2 root root     4096 Sep 16 05:43 iscsi
-rw-r--r--  1 root root      26 Jul 28 15:29 issue
-rw-r--r--  1 root root      19 Jul 28 15:29 issue.net
drwxr-xr-x  6 root root     4096 Sep 16 05:43 kernel
-rw-r--r--  1 root root     145 Sep 16 05:45 kernel-img.conf
drwxrwxr-x  2 root landscape 4096 Mar 30 2022 landscape
drwxr-xr-x  2 root root     4096 Sep 16 05:43 ldap
-rw-r--r--  1 root root   20515 Sep 16 05:44 ld.so.cache
-rw-r--r--  1 root root      34 Dec 16 2020 ld.so.conf
drwxr-xr-x  2 root root     4096 Sep 16 05:42 ld.so.conf.d
-rw-r--r--  1 root root      267 Oct 15 2021 legal
```

- Then use **ls -i** and hit **Enter** key
  - Now see what different output its shows and take screenshot?

```

crontab:crontab$ls -l
132049 adduser.conf      132223 cron-hourly      9791  found      148801 local      134834 logrotate.conf  152946 multipath.conf  131132 passwd-      131873 resolv.conf      131139 subgid      59500 uidisks2
131719 adjtime            132226 cron-monthly     131377 gal.conf      145913 issue      131351 logrotate.d      136837 nanorc      148855 vfe
131345 alternatives          132229 cronboot        148380 prof      145914 issue.net    145911 lib-release    148284 xsl      134885 rps      136259 update-manager
132392 apparmor            132227 cron-weekly      131325 group      131982 kernel      148847 lv      131402 netconf     148289 tm      131130 subuid-      131321 update-notif.d
132336 apparmor.d          148281 cryptsetup-initramfs 131224 group-      131974 machine-id    131221 netplan      134549 rsyslog.conf  131136 subuid-      131319 update-notifier
148358 apt                143919 crypttab        148283 grub.d      148393 lmdnsage     136513 magic      9809 networks     156761 ufw.conf      148379 update-notifier
131348 apt               132346 ducc1            131326 shadow      148394 mke2fs.conf  136192 networkd-dispatcher 131466 profile      132785 ufw.rules      59546 ufw.conf
131336 bash-bashrc        131343 debconf.conf     131312 shadow-      157821 ld.so.cache  157848 malice     131492 networkd-manager 131384 security     132778 sudo_logsrc.conf  136914 ufw_mode-switch.conf
135849 bash_completion    131367 debian_version  131382 nss      131378 ld.so.conf     152164 mailcap-order  131487 networks     134884 protocols     131488 ufw.conf
148352 bash_completion.d  131388 default          135879 mdadm.conf   131379 ld.so.conf.d  156817 mangoth.conf  133268 nmi      131412 python3      145837 sensors3.conf  131416 sysctl.conf  148833 ufw-mode-switch.conf
131376 bindresvport.blacklist 131484 deluser.conf    131313 host.conf     131316 legal      58484 nmap      136846 nftables.conf  131633 python3.10    148399 sensors.d      58779 sysstat      138438 vtop
131388 bind.d               138075 dhcpd.conf      131336 hostname     131375 libaudit.conf  136405 nixos-types  136846 nsswitch.conf  131362 rc.d      134886 services     131376 systemd      136138 wgetrc
148484 bindw                132337 dhcp            137211 hosts      148396 libblockdev    131361 nmap2fs.conf   131491 rpm      131363 rc.d      131123 shadow     131488 terminfo      148486 x11
132879 bindw               148315 hosts.allow      142924 libio-3      52417 nmapmanager    142923 rc-nelapse     131364 rc.d      131378 shadow     58339 thornaid
136851 ca-certificates.conf 131368 #2scrub.conf      148323 hosts.deny  133416 locale.alias  138877 noderb.d      152951 ufw-layout.conf  131365 rc.d      154837 shells     137803 timezone
59588 cifs                131682 environment      131415 init.d      131472 locale.gen     136981 modules     156757 PackageKit    131366 rc.d      131328 skel      132811 tmprules.d      130779 zsh_command_not_found
132144 console-setup        148483 ethtypes        148266 initramfs-tools 132328 localtime  131368 pam.conf     131367 rc.d      58721 sos      134876 ubuntu-advantage  134880 ucf.conf
131368 cron.d              131436 fstab          137135 inputrc     134845 logcheck     132197 mtab      131397 pam.d     131368 rc.d      148861 ssh      134880 ucf.conf
131367 cron.daily          131473 fuse.conf      132384 iptables     131460 login.defs  242174 multipath  131128 passwd     131369 rc.d      132885 xsl      134547 ufw

```

- Then use **ls -help** and see other options about **ls** command
  - Explore it and try with other attribute we can use with **ls** command

```

shreeha@localhost:/etc$ ls --help
Usage: ls [OPTION]... [FILE]...
List information about the FILES (the current directory by default).
Sort entries alphabetically if none of -cftuvSUX nor --sort is specified.

Mandatory arguments to long options are mandatory for short options too.
-a, --all                do not ignore entries starting with .
-A, --almost-all        do not list implied . and ..
--author                 with -l, print the author of each file
-b, --escape             print C-style escapes for nongraphic characters
--block-size=SIZE        with -l, scale sizes by SIZE when printing them;
                        e.g., '--block-size=M'; see SIZE format below
-B, --ignore-backups     do not list implied entries ending with ~
-c                        with -lt: sort by, and show, ctime (time of last
                        modification of file status information);
                        with -l: show ctime and sort by name;
                        otherwise: sort by ctime, newest first
-C                        list entries by columns
--color[=WHEN]           colorize the output; WHEN can be 'always' (default
                        if omitted), 'auto', or 'never'; more info below
-d, --directory          list directories themselves, not their contents
-D, --dired              generate output designed for Emacs' dired mode
-f                        do not sort, enable -aU, disable -ls --color
-F, --classify           append indicator (one of */=>@|) to entries
                        likewise, except do not append '*'
--format=WORD            across -x, commas -m, horizontal -x, long -l,
                        single-column -1, verbose -l, vertical -C
--full-time              like -l --time-style=full-iso
-g                        like -l, but do not list owner
--group-directories-first
                        group directories before files;
                        can be augmented with a --sort option, but any
                        use of --sort=none (-U) disables grouping
-G, --no-group           in a long listing, don't print group names
-h, --human-readable     with -l and -s, print sizes like 1K 234M 2G etc.
--si                    likewise, but use powers of 1000 not 1024
-H, --dereference-command-line
                        follow symbolic links listed on the command line
--dereference-command-line-symlink-to-dir
                        follow each command line symbolic link
                        that points to a directory
--hide=PATTERN           do not list implied entries matching shell PATTERN
                        (overridden by -a or -A)
--hyperlink[=WHEN]      hyperlink file names; WHEN can be 'always'
                        (default if omitted), 'auto', or 'never'
--indicator-style=WORD  append indicator with style WORD to entry names:
                        none (default), slash (-p),
                        file-type (--file-type), classify (-F)
-i, --inode              print the index number of each file
-I, --ignore=PATTERN     do not list implied entries matching shell PATTERN
-k, --kibibytes          default to 1024-byte blocks for disk usage;
                        used only with -s and per directory totals
-l                       use a long listing format
-L, --dereference         when showing file information for a symbolic
                        link, show information for the file the link
                        references rather than for the link itself
-m                       fill width with a comma separated list of entries
                        like -l, but list numeric user and group IDs
-n, --numeric-uid-gid    like -l, but list numeric user and group IDs
-N, --literal            print entry names without quoting
-o                       like -l, but do not list group information
-p, --indicator-style=slash
                        append / indicator to directories
-q, --hide-control-chars
                        print ? instead of nongraphic characters
--show-control-chars     show nongraphic characters as-is (the default,
                        unless program is 'ls' and output is a terminal)
-Q, --quote-name         enclose entry names in double quotes
--quoting-style=WORD     use quoting style WORD for entry names:
                        literal, locale, shell, shell-always,
                        shell-escape, shell-escape-always, c, escape
                        (overrides QUOTING_STYLE environment variable)
-r, --reverse            reverse order while sorting
-R, --recursive          list subdirectories recursively

```

## Assignment-5

Know where you are and where you working

Here we use **pwd**, **cd** and **ls** as combine task to understand where you working on terminal and how you can switch from one directory to another one

- Open terminal after restart the linux Check which location you working, type **pwd** and take screenshot

```
[root@localhost:~#  
[root@localhost:~# pwd  
/root  
root@localhost:~#
```

It's in /root directory

- Now use **cd /var** and hit **Enter** key Do **ls**, and see what output comes, give screenshot?

```
[root@localhost:~# cd /var  
[root@localhost:/var#  
[root@localhost:/var# ls  
backups cache crash lib local lock log mail opt run snap spool tmp
```

- Do explore other help options of each command to learn more other things we can do with these commands
-

```

shreeshas@localhost:~/etc$ ls --help
Usage: ls [OPTION]... [FILE]...
List information about the FILES (the current directory by default).
Sort entries alphabetically if none of -cftuvSUX nor --sort is specified.

Mandatory arguments to long options are mandatory for short options too.
-a, --all                do not ignore entries starting with .
-A, --almost-all        do not list implied . and ..
--author                with -l, print the author of each file
-b, --escape             print C-style escapes for nongraphic characters
--block-size=SIZE       with -l, scale sizes by SIZE when printing them;
                        e.g., '--block-size=M'; see SIZE format below
-B, --ignore-backups    do not list implied entries ending with ~
-c                      with -lt: sort by, and show, ctime (time of last
                        modification of file status information);
                        with -l: show ctime and sort by name;
                        otherwise: sort by ctime, newest first
-C                      list entries by columns
--color[=WHEN]          colorize the output; WHEN can be 'always' (default
                        if omitted), 'auto', or 'never'; more info below
-d, --directory          list directories themselves, not their contents
-D, --dired              generate output designed for Emacs' dired mode
-f                      do not sort, enable -aU, disable -ls --color
-F, --classify           append indicator (one of */=>@|) to entries
                        likewise, except do not append '*'
--file-type             likewise, except do not append '*'
--format=WORD            across -x, commas -m, horizontal -x, long -l,
                        single-column -1, verbose -l, vertical -C
--full-time             like -l --time-style=full-iso
-g                      like -l, but do not list owner
--group-directories-first
                        group directories before files;
                        can be augmented with a --sort option, but any
                        use of --sort=none (-U) disables grouping
-G, --no-group           in a long listing, don't print group names
-h, --human-readable    with -l and -s, print sizes like 1K 234M 2G etc.
--si                   likewise, but use powers of 1000 not 1024
-H, --dereference-command-line
                        follow symbolic links listed on the command line
--dereference-command-line-symlink-to-dir
                        follow each command line symbolic link
                        that points to a directory
--hide=PATTERN          do not list implied entries matching shell PATTERN
                        (overrides by -a or -A)
--hyperlink[=WHEN]     hyperlink file names; WHEN can be 'always'
                        (default if omitted), 'auto', or 'never'
--indicator-style=WORD  append indicator with style WORD to entry names:
                        none (default), slash (-p),
                        file-type (--file-type), classify (-F)
-i, --inode             print the index number of each file
-I, --ignore=PATTERN    do not list implied entries matching shell PATTERN
-k, --kibibytes         default to 1024-byte blocks for disk usage;
                        used only with -s and per directory totals
-l                     use a long listing format
-L, --dereference       when showing file information for a symbolic
                        link, show information for the file the link
                        references rather than for the link itself
-m                     fill width with a comma separated list of entries
-n, --numeric-uid-gid   like -l, but list numeric user and group IDs
-N, --literal           print entry names without quoting
-o                     like -l, but do not list group information
-p, --indicator-style=slash
                        append / indicator to directories
-q, --hide-control-chars
                        print ? instead of nongraphic characters
--show-control-chars   show nongraphic characters as-is (the default,
                        unless program is 'ls' and output is a terminal)
-Q, --quote-name        enclose entry names in double quotes
--quoting-style=WORD   use quoting style WORD for entry names:
                        literal, locale, shell, shell-always,
                        shell-escape, shell-escape-always, c, escape
                        (overrides QUOTING_STYLE environment variable)
-r, --reverse           reverse order while sorting
-R, --recursive         list subdirectories recursively

```