18 September 2020
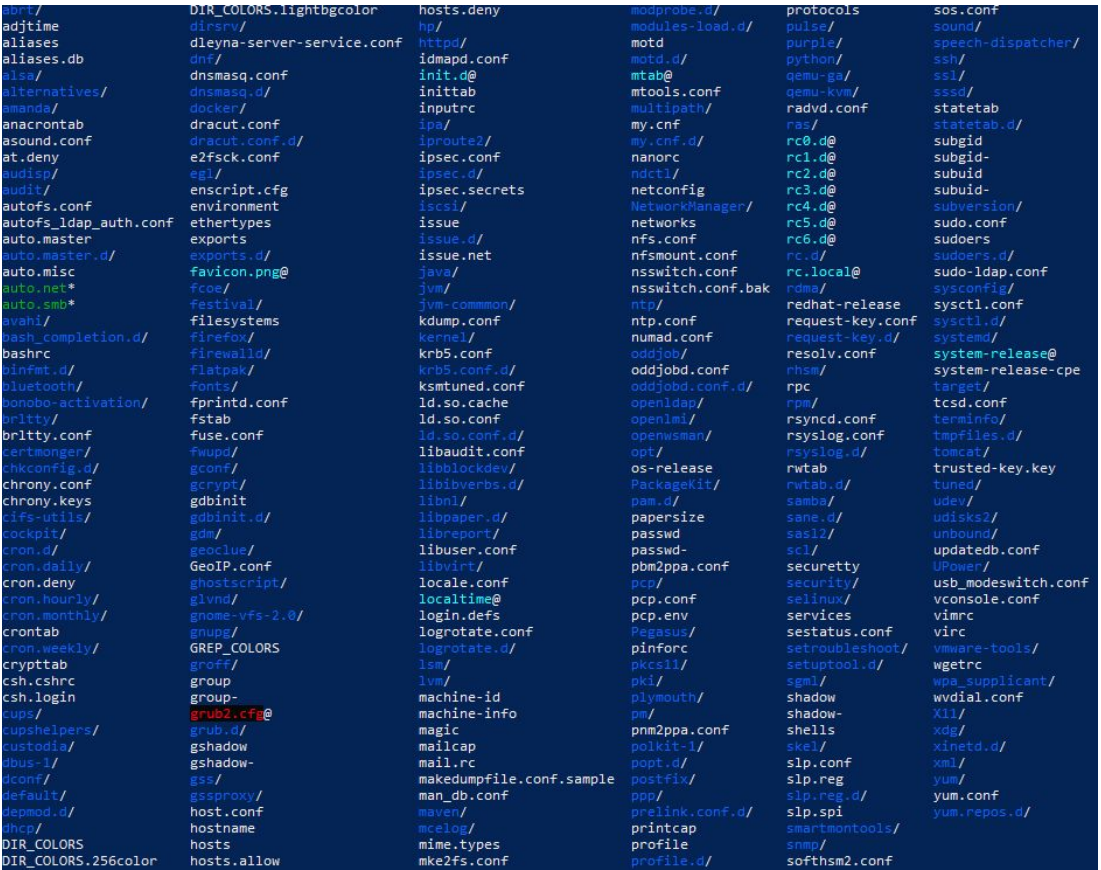
Lab 2

1. Navigating the file system

    a. $cd /; ls -F;

        i.

    b. $ cd /etc; ls -F

        i.

2. $ ls -F | more

```
abrt/
adjtime
aliases
aliases.db
alsa/
alternatives/
amanda/
anacrontab
asound.conf
at.deny
audisp/
audit/
autofs.conf
autofs_ldap_auth.conf
auto.master
auto.master.d/
auto.misc
auto.net*
auto.smb*
avahi/
bash_completion.d/
bashrc
binfmt.d/
bluetooth/
bonobo-activation/
brltty/
brltty.conf
certmonger/
chkconfig.d/
chrony.conf
chrony.keys
cifs-utils/
cockpit/
cron.d/
cron.daily/
cron.deny
cron.hourly/
cron.monthly/
crontab
cron.weekly/
--More--
```
a.

3. $ cd /var/log; ls -a

```
[cs45aa06@mc-redhat01 ~]$ cd /var/log; ls -a
.                    cron-20200913    httpd                pcp            speech-dispatcher     vmware-vmsvc.log
..                   cups             lastlog              pki            spooler               wpa_supplicant.log
amanda               custodia         libvirt              pluto          spooler-20200906      wtmp
anaconda             dirsrv           maillog              ppp            spooler-20200913      Xorg.0.log
audit                dmesg            maillog-20200906     qemu-ga        sssd                  Xorg.0.log.old
boot.log             dmesg.old        maillog-20200913     rhsm           swtpm                 Xorg.9.log
boot.log-20200905    firewalld        messages             sa             tallylog              yum.log
btmp                 gdm              messages-20200906    samba          tomcat
chrony               glusterfs        messages-20200913    secure         tuned
cron                 grubby           ntpstats             secure-20200906  vmware-network.log
cron-20200906        grubby_prune_debug openlmi-install.log secure-20200913  vmware-vgauthsvc.log.0
```
a.

4. $ ls -al

   a. $ ls -al

```
total 201932
drwxr-xr-x. 27 root          root         4096 Sep 13 03:21 .
drwxr-xr-x. 23 root          root         4096 Sep  3 23:10 ..
drwx--S---.  2 amandabackup disk            6 Jun 19  2018 amanda
drwxr-xr-x.  2 root          root          232 Sep  3 22:34 anaconda
drwx------.  2 root          root           99 Sep 18 01:45 audit
-rw-------.  1 root          root            0 Sep  5 03:12 boot.log
-rw-------.  1 root          root        95558 Sep  5 03:12 boot.log-20200905
-rw-------.  1 root          utmp     90232704 Sep 18 02:18 btmp
drwxr-xr-x.  2 chrony        chrony          6 Jan 10  2019 chrony
-rw-------.  1 root          root       111552 Sep 18 02:10 cron
-rw-------.  1 root          root        48913 Sep  6 03:38 cron-20200906
-rw-------.  1 root          root       158261 Sep 13 03:21 cron-20200913
drwxr-xr-x.  2 lp            sys            84 Sep  6 03:38 cups
drwx------.  2 root          root            6 Jun 21  2017 custodia
drwxr-xr-x.  2 root          root            6 Jun 15 10:06 dirsrv
-rw-r--r--.  1 root          root       105292 Sep  3 23:53 dmesg
-rw-r--r--.  1 root          root       104770 Sep  3 23:50 dmesg.old
-rw-r-----.  1 root          root          186 Sep  3 23:53 firewalld
drwx--x--x.  2 root          gdm           122 Sep  4 03:44 gdm
drwxr-xr-x.  2 root          root            6 Jan 23  2020 glusterfs
-rw-------.  1 root          root         1360 Sep  3 23:51 grubby
-rw-r--r--.  1 root          root          193 Sep  3 22:27 grubby_prune_debug
drwx------.  2 root          root            6 Oct  8  2019 httpd
-rw-r--r--.  1 root          root       305724 Sep 18 02:16 lastlog
drwx------.  3 root          root           18 Mar 23 10:24 libvirt
-rw-------.  1 root          root         1236 Sep 17 03:02 maillog
-rw-------.  1 root          root         3412 Sep  5 14:09 maillog-20200906
-rw-------.  1 root          root         8013 Sep 12 15:39 maillog-20200913
-rw-------.  1 root          root       216028 Sep 18 02:16 messages
-rw-------.  1 root          root       518233 Sep  6 03:38 messages-20200906
-rw-------.  1 root          root       362439 Sep 13 03:20 messages-20200913
drwxr-xr-x.  2 ntp           ntp             6 Jun  1 07:18 ntpstats
-rw-r--r--.  1 root          root        25848 Sep  3 22:30 openlmi-install.log
drwxrwxr-x.  6 pcp           pcp            61 Sep  3 23:51 pcp
drwxr-xr-x.  2 root          root           44 Sep  3 22:28 pki
drwxr-xr-x.  3 root          root           18 Sep  3 22:28 pluto
drwx------.  2 root          root            6 Feb 25  2020 ppp
drwxr-xr-x.  2 root          root            6 Dec 12  2018 qemu-ga
drwxr-xr-x.  2 root          root          153 Sep 13 03:21 rhsm
drwxr-xr-x.  2 root          root         4096 Sep 18 00:00 sa
drwx------.  3 root          root           17 Apr  1 03:15 samba
-rw-------.  1 root          root     43984825 Sep 18 02:18 secure
-rw-------.  1 root          root     14396729 Sep  6 03:37 secure-20200906
-rw-------.  1 root          root     55232569 Sep 13 03:20 secure-20200913
drwx------.  2 root          root            6 Jan 27  2014 speech-dispatcher
-rw-------.  1 root          root            0 Sep 13 03:21 spooler
-rw-------.  1 root          root            0 Sep  3 22:30 spooler-20200906
-rw-------.  1 root          root            0 Sep  6 03:38 spooler-20200913
drwxr-x----.  2 sssd         sssd           47 Sep  6 03:38 sssd
drwxr-xr-x.  3 root          root           21 Sep  3 22:29 swtpm
-rw-------.  1 root          root        67008 Sep 12 15:27 tallylog
drwxrwx---.  2 tomcat        root           90 Sep 13 03:21 tomcat
drwxr-xr-x.  2 root          root           23 Sep  3 23:10 tuned
-rw-------.  1 root          root         4606 Sep  3 23:10 vmware-network.log
-rw-------.  1 root          root         3064 Sep  3 23:53 vmware-vgauthsvc.log.0
-rw-------.  1 root          root         4047 Sep  4 03:53 vmware-vmsvc.log
-rw-r--r--.  1 root          root           80 Sep  3 23:54 wpa_supplicant.log
-rw-rw-r--.  1 root          utmp       218112 Sep 18 02:16 wtmp
-rw-r--r--.  1 root          root        27573 Sep  4 03:44 Xorg.0.log
-rw-r--r--.  1 root          root        46310 Sep  4 03:44 Xorg.0.log.old
-rw-r--r--.  1 root          root        19698 Sep  3 23:22 Xorg.9.log
-rw-------.  1 root          root        11946 Sep 12 02:28 yum.log
```

i.

b. ls -al |more

```
total 201932
drwxr-xr-x. 27 root         root          4096 Sep 13 03:21 .
drwxr-xr-x. 23 root         root          4096 Sep  3 23:10 ..
drwx--S---.  2 amandabackup disk             6 Jun 19  2018 amanda
drwxr-xr-x.  2 root         root           232 Sep  3 22:34 anaconda
drwx------.  2 root         root            99 Sep 18 01:45 audit
-rw-------.  1 root         root             0 Sep  5 03:12 boot.log
-rw-------.  1 root         root         95558 Sep  5 03:12 boot.log-20200905
-rw-------.  1 root         utmp      90236544 Sep 18 02:18 btmp
drwxr-xr-x.  2 chrony       chrony           6 Jan 10  2019 chrony
-rw-------.  1 root         root        111552 Sep 18 02:10 cron
-rw-------.  1 root         root         48913 Sep  6 03:38 cron-20200906
-rw-------.  1 root         root        158261 Sep 13 03:21 cron-20200913
drwxr-xr-x.  2 lp           sys             84 Sep  6 03:38 cups
drwx------.  2 root         root             6 Jun 21  2017 custodia
drwxr-xr-x.  2 root         root             6 Jun 15 10:06 dirsrv
-rw-r--r--.  1 root         root        105292 Sep  3 23:53 dmesg
-rw-r--r--.  1 root         root        104770 Sep  3 23:50 dmesg.old
-rw-r-----.  1 root         root           186 Sep  3 23:53 firewalld
drwx--x--x.  2 root         gdm            122 Sep  4 03:44 gdm
drwxr-xr-x.  2 root         root             6 Jan 23  2020 glusterfs
-rw-------.  1 root         root          1360 Sep  3 23:51 grubby
-rw-r--r--.  1 root         root           193 Sep  3 22:27 grubby_prune_debug
drwx------.  2 root         root             6 Oct  8  2019 httpd
-rw-r--r--.  1 root         root        305724 Sep 18 02:16 lastlog
drwx------.  3 root         root            18 Mar 23 10:24 libvirt
-rw-------.  1 root         root          1236 Sep 17 03:02 maillog
-rw-------.  1 root         root          3412 Sep  5 14:09 maillog-20200906
-rw-------.  1 root         root          8013 Sep 12 15:39 maillog-20200913
-rw-------.  1 root         root        216028 Sep 18 02:16 messages
-rw-------.  1 root         root        518233 Sep  6 03:38 messages-20200906
-rw-------.  1 root         root        362439 Sep 13 03:20 messages-20200913
drwxr-xr-x.  2 ntp          ntp              6 Jun  1 07:18 ntpstats
-rw-r--r--.  1 root         root         25848 Sep  3 22:30 openlmi-install.log
drwxrwxr-x.  6 pcp          pcp             61 Sep  3 23:51 pcp
drwxr-xr-x.  2 root         root            44 Sep  3 22:28 pki
drwxr-xr-x.  3 root         root            18 Sep  3 22:28 pluto
drwx------.  2 root         root             6 Feb 25  2020 ppp
drwxr-xr-x.  2 root         root             6 Dec 12  2018 qemu-ga
drwxr-xr-x.  2 root         root           153 Sep 13 03:21 rhsm
drwxr-xr-x.  2 root         root          4096 Sep 18 00:00 sa
drwx------.  3 root         root            17 Apr  1 03:15 samba
-rw-------.  1 root         root      43989217 Sep 18 02:18 secure
-rw-------.  1 root         root      14396729 Sep  6 03:37 secure-20200906
-rw-------.  1 root         root      55232569 Sep 13 03:20 secure-20200913
drwx------.  2 root         root             6 Jan 27  2014 speech-dispatcher
-rw-------.  1 root         root             0 Sep 13 03:21 spooler
-rw-------.  1 root         root             0 Sep  3 22:30 spooler-20200906
-rw-------.  1 root         root             0 Sep  6 03:38 spooler-20200913
--More--
```

i.

5. $ ls /usr/sbin

a. $ ls /usr/sbin

```
abrt-auto-reporting        exportfs                    lvm                       rpc.rquotad
abrt-configuration         faillock                    lvmconf                   rpc.statd
abrtd                      fatlabel                    lvmconfig                 rsyslogd
abrt-dbus                  fcgistarter                 lvmdiskscan               rtacct
abrt-harvest-pstoreoops    fcnsq                       lvmdump                   rtcwake
abrt-harvest-vmcore        fcoeadm                     lvmetad                   rtkitctl
abrt-install-ccpp-hook     fcoemon                     lvmpolld                  rtmon
abrt-server                fcping                      lvmsadc                   rtpr
accept                     fcrls                       lvmsar                    rtstat
accessdb                   fdformat                    lvreduce                  runlevel
accton                     fdisk                       lvremove                  runuser
activate-devpay            filefrag                    lvrename                  sa
addgnupghome               findfs                      lvresize                  safe_finger
addpart                    fipvlan                     lvs                       saned
adduser                    firewalld                   lvscan                    saslauthd
agetty                     firstboot                   makedumpfile              sasldblistusers2
alsabat-test.sh            fixfiles                    matchpathcon              saslpasswd2
alsactl                    fixparts                    mcelog                    saveconfig
alsa-info                  fixup-linkedattrs.pl        mdadm                     schema-reload.pl
alsa-info.sh               fixup-memberof.pl           mdmon                     scsieject
alternatives               fsadm                       migrate-ds.pl             scsitape
amaddclient                fsck                        mii-diag                  sedispatch
amadmin                    fsck.btrfs                  mii-tool                  sefcontext_compile
amaespipe                  fsck.cramfs                 mkdict                    selabel_digest
amandad                    fsck.ext2                   mkdosfs                   selabel_lookup
amarchiver                 fsck.ext3                   mkdumprd                  selabel_lookup_best_match
amcheck                    fsck.ext4                   mke2fs                    selabel_partial_match
amcheckdb                  fsck.fat                    mkfs                      selinuxconlist
amcheckdump                fsck.minix                  mkfs.btrfs                selinuxdefcon
amcleanup                  fsck.msdos                  mkfs.cramfs               selinuxenabled
amcleanupdisk              fsck.vfat                   mkfs.ext2                 selinuxexeccon
amcrypt                    fsck.xfs                    mkfs.ext3                 selinux_restorecon
amcrypt-ossl               fsfreeze                    mkfs.ext4                 semanage
amcrypt-ossl-asym          fstrim                      mkfs.fat                  semodule
amcryptsimple              fuser                       mkfs.minix                sendmail
amdevcheck                 fxload                      mkfs.msdos                sendmail.postfix
amdump                     gdisk                       mkfs.vfat                 service
amfetchdump                gdm                         mkfs.xfs                  sestatus
amflush                    gencert                     mkhomedir_helper          setcap
amgetconf                  genhomedircon               mklost+found              setenforce
amgpgcrypt                 genhostid                   mkswap                    setfiles
amlabel                    gen1                        ModemManager              setpci
amoverview                 gen1-ctrl-list              modinfo                   setquota
amplot                     getcap                      modprobe                  setregdomain
amreport                   getenforce                  monitor                   setroubleshootd
amrestore                  getpcaps                    mount.cifs                setsebool
amrmtape                   getsebool                   mount.fuse                setup
amserverconfig             glibc_post_upgrade.x86_64   mount.nfs                 setup-ds.pl
amservice                  gluster                     mount.nfs4                sfdisk
amstatus                   groupadd                    mountstats                sgdisk
amtape                     groupdel                    mpathconf                 sgpio
```
i.

b. $ ls -F /usr/sbin

```
abrt-auto-reporting      exportfs                lvm                     rpc.rquotad
abrt-configuration       faillock                lvmconf                 rpc.statd
abrtd                    fatlabel                lvmconfig               rsyslogd
abrt-dbus                fcgistarter             lvmdiskscan             rtacct
abrt-harvest-pstoreoops  fcnsq                   lvmdump                 rtcwake
abrt-harvest-vmcore      fcoeadm                 lvmetad                 rtkitctl
abrt-install-ccpp-hook   fcoemon                 lvmpolld                rtmon
abrt-server              fcping                  lvmsadc                 rtpr
accept                   fcrls                   lvmsar                  rtstat
accessdb                 fdformat                lvreduce                runlevel
accton                   fdisk                   lvremove                runuser
activate-devpay          filefrag                lvrename                sa
addgnupghome             findfs                  lvresize                safe_finger
addpart                  fipvlan                 lvs                     saned
adduser                  firewalld               lvscan                  saslauthd
agetty                   firstboot               makedumpfile            sasldblistusers2
alsabat-test.sh          fixfiles                matchpathcon            saslpasswd2
alsactl                  fixparts                mcelog                  saveconfig
alsa-info                fixup-linkedattrs.pl    mdadm                   schema-reload.pl
alsa-info.sh             fixup-memberof.pl       mdmon                   scsieject
alternatives             fsadm                   migrate-ds.pl           scsitape
amaddclient              fsck                    mii-diag                sedispatch
amadmin                  fsck.btrfs              mii-tool                sefcontext_compile
amaespipe                fsck.cramfs             mkdict                  selabel_digest
amandad                  fsck.ext2               mkdosfs                 selabel_lookup
amarchiver               fsck.ext3               mkdumprd                selabel_lookup_best_match
amcheck                  fsck.ext4               mke2fs                  selabel_partial_match
amcheckdb                fsck.fat                mkfs                    selinuxconlist
amcheckdump              fsck.minix              mkfs.btrfs              selinuxdefcon
amcleanup                fsck.msdos              mkfs.cramfs             selinuxenabled
amcleanupdisk            fsck.vfat               mkfs.ext2               selinuxexeccon
amcrypt                  fsck.xfs                mkfs.ext3               selinux_restorecon
amcrypt-ossl             fsfreeze                mkfs.ext4               semanage
amcrypt-ossl-asym        fstrim                  mkfs.fat                semodule
amcryptsimple            fuser                   mkfs.minix              sendmail
amdevcheck               fxload                  mkfs.msdos              sendmail.postfix
amdump                   gdisk                   mkfs.vfat               service
amfetchdump              gdm                     mkfs.xfs                sestatus
amflush                  gencert                 mkhomedir_helper        setcap
amgetconf                genhomedircon           mklost+found            setenforce
amgpgcrypt               genhostid               mkswap                  setfiles
amlabel                  genl                    ModemManager            setpci
amoverview               genl-ctrl-list          modinfo                 setquota
amplot                   getcap                  modprobe                setregdomain
amreport                 getenforce              monitor                 setroubleshootd
amrestore                getpcaps                mount.cifs              setsebool
amrmtape                 getsebool               mount.fuse              setup
amserverconfig           glibc_post_upgrade.x86_64  mount.nfs            setup-ds.pl
amservice                gluster                 mount.nfs4              sfdisk
amstatus                 groupadd                mountstats              sgdisk
amtape                   groupdel                mpathconf               sgpio
amtapetype               groupmems               mpathpersist            showmount
```

i.

   c. System files

6. $ touch .mydatafile

   a. $ ls -l

     i. No

   b. $ ls -a

     i. Yes

   c. $ ls -al

     i. Me

     ii. 0

   d. $ pwd; cal > .mydatafile

     i. $ cat .mydatafile

7. $ cd $HOME; pwd; ls -a

```
[cs45aa06@mc-redhat01 ~]$ cd $HOME; pwd; ls -a
/home/cs45aa06
.   ..  .bash_history  .bash_logout  .bash_profile  .bashrc  .cache  .config  .lesshst  .mozilla  .mydatafile
[cs45aa06@mc-redhat01 ~]$ cd ..
[cs45aa06@mc-redhat01 home]$ pwd
/home
[cs45aa06@mc-redhat01 home]$ cd ..
[cs45aa06@mc-redhat01 /]$ pwd
/
```
   a.

8. $ cd -

```
[cs45aa06@mc-redhat01 /]$ cd -
/home
[cs45aa06@mc-redhat01 home]$ pwd
/home
```
   a.

9. Relative/Absolute

   a. $ cd /home/cs45aa06

      i. $ pwd

         1. /home/cs45aa06

   b. $ cd /var/log

      i. $ pwd

         1. /var/log

   c. $ cd . .

      i. $ pwd

         1. /var

   d. $ cd ~mr-tester

      i. $ pwd

         1. /home/mr-tester

   e. $ cd -

      i. $ pwd

         1. /var

10. $ mkdir $HOME/globbers

    a. $ ls -d $HOME/globbers

       i. /home/cs45aa06/globbers

11. $ touch filex filey filez file55 file60 file70 file100 file200 foo fox

12. 'f'

    a. $ ls f??

       i. foo fox

    b. $ ls f*x

           i.   filex fox

    c. $ ls f*[2]*

           i.   file200

    d. $ ls f*2*

           i.   file200

    e. $ ls f*[0-9][0-9]

           i.   file100 file200 file55 file60 file70

    f. $ ls f*[0-9][0-9]*

           i.   file100 file200 file55 file60 file70

    g. $ ls f[!i]*

           i.   foo fox

13. $ touch file_one file_two

14. $ ls -a

    a.

```
.  .bash_history  .bash_profile  .cache   file100  file55  file70   file_two  filey  foo  globbers  .mozilla
.. .bash_logout   .bashrc        .config  file200  file60  file_one  filex     filez  fox  .lesshst  .mydatafile
```

15. $ cat > tester_file

    a.

```
I am the first line in this file
I am the second line in this file
This is the last line in this file
```

16. $ cat tester_file

    a.

```
[cs45aa06@mc-redhat01 ~]$ cat tester_file
I am the first line in this file
I am the second line in this file
This is the last line in this file
```

17. $ nano tester_file_2

    a.

```
  GNU nano 2.3.1

I am first line in tester_file_2
I am second line in tester_file_2
```

18. $ vi tester-v

    a.

```
I am tester line one
I am tester line 2
This is line 3
```

19. $ mkdir /home/cs45aa06/dirx

    a.   cd $HOME/dirx

20. dirx

     a. $ pwd

          i. /home/cs45aa06/dirx

     b. $ mkdir ../diry

21. $ mkdir ../../../cs45aa06-tester

22. $ mkdir /tmp/cs45aa06-tester2

23. $ touch /tmp/cs45aa06-tester/data-file

24. $ mkdir /tmp/dirz/dirz

     a. mkdir: cannot create directory '/tmp/dirz/dirz': File exists

25. $ mkdir -p /tmp/dirR/dirS

     a. It works because the directory you're trying to create doesn't already exist

26. $ rm /tmp/cs45aa06-tester

27. $ rm /tmp/cs45aa06-tester2

     a. rm: cannot remove '/tmp/cs45aa06-tester2': Is a directory

28. $ rm -r /tmp/cs45aa06-tester2

     a. $ ls /tmp/cs45aa06-tester2

          i. ls: cannot access /tmp/cs45aa06-tester2: No such file or directory

29. $ touch Afile Bfile Cfile

     a. $ ls

          i. Afile Bfile Cfile

     b. $ rm Afile

     c. $ ls

          i. Bfile Cfile

     d. $ rm Bfile

     e. $ ls

          i. Cfile