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SE202L – Development Operations Lab

Lab 01 – Report

Part 6: Practical Exercises

Exercise 1: Exploring the Filesystem

```
sheikh@Ubuntu:~$ pwd
/home/sheikh
sheikh@Ubuntu:~$ ls
Desktop Documents Downloads Music Pictures Public snap Templates Videos
sheikh@Ubuntu:~$ cd /
bin          boot  dev  home  lib64      lost+found  mnt  proc  run  sbin.usr-is-merged  srv  tmp  var
bin.usr-is-merged  cdrom  etc  lib  lib.usr-is-merged  media      opt  root  sbin  snap      sys  usr
sheikh@Ubuntu:/etc$ ls -l
total 1124
-rw-r--r--  1 root      root      3444 Jul  5 2023 adduser.conf
drwxr-xr-x  3 root      root      4895 Aug  5 16:50 bin
drwxr-xr-x  2 root      root      4896 Jan 29 18:16 alternatives
drwxr-xr-x  1 root      root      335 Aug  8 2024 acroncab
-rw-r--r--  1 root      root      433 Apr  8 2024 apt.conf
drwxr-xr-x  5 root      root      4895 Aug  5 16:50 apt
drwxr-xr-x  2 root      root      4896 Aug  5 16:50 apparmor
drwxr-xr-x  9 root      root      4895 Jan 29 18:38 apparmor.d
drwxr-xr-x  3 root      root      4895 Aug  5 16:51 aptapt
drwxr-xr-x  9 root      root      4895 Jan 28 17:38 apt
drwxr-xr-x  3 root      root      4895 Jan 28 18:38 apt
drwxr-xr-x  1 root      root      2319 Mar 31 2024 bash.bashrc
-rw-r--r--  1 root      root      45 Jan 24 2020 bash_completion
-rw-r--r--  1 root      root      367 Aug  2 2022 bindresport.blacklist
drwxr-xr-x  2 root      root      4896 Apr 19 2024 bluetooth.d
drwxr-xr-x  2 root      root      4895 Aug  5 16:51 bluetooth
drwxr----- 1 root      root      33 Aug  5 16:53 brlapl.key
drwxr-xr-x  7 root      root      4896 Aug  5 16:51 brltty
drwxr-xr-x  1 root      root      30571 Mar 31 2024 brltty.conf
drwxr-xr-x  3 root      root      4896 Aug  5 16:48 ca-certificates
-rw-r--r--  1 root      root      628B Aug  5 16:48 ca-certificates.conf
drwxr-s---  2 root      dip       4895 Aug  5 16:51 chatscripts
drwxr-xr-x  5 root      root      4896 Jan 28 19:12 cloud
drwxr-xr-x  2 colorad  colorad   4896 Jan 28 19:12 colord
drwxr-xr-x  2 root      root      4896 Jan 28 17:46 console-setup
drwxr-xr-x  2 root      root      4896 Aug  5 16:51 cracklib
drwxr----- 2 root      root      4896 Apr 19 2024 credstore

-r-----  1 root      root      1800 Jan 29 2024 sudoers
drwxr-xr-x  2 root      root      4896 Aug  5 16:49 sudoers.d
-rw-r--r--  1 root      root      9804 Apr  8 2024 sudo_logsrvd.conf
drwxr-xr-x  2 root      root      4896 Aug  5 16:48 supercat
-rw-r--r--  1 root      root      2209 Mar 24 2024 sysctl.conf
drwxr-xr-x  2 root      root      4896 Aug  5 16:49 sysctl.d
drwxr-xr-x  2 root      root      4896 Aug  5 16:51 sysstat
drwxr-xr-x  6 root      root      4896 Aug  5 16:51 systemd
drwxr-xr-x  2 root      root      4896 Aug  5 16:48 terminal
drwxr-xr-x  2 root      root      4896 Jan 29 18:11 thermald
-rw-r--r--  1 root      root      8 Jan 29 19:09 timezone
drwxr-xr-x  2 root      root      4896 Apr 19 2024 tmppfiles.d
drwxr-xr-x  2 root      root      4896 Aug  5 16:49 ubuntu-adantage
-rw-r--r--  1 root      root      1260 Jan 27 2023 ucf.conf
drwxr-xr-x  4 root      root      4896 Aug  5 16:49 udev
drwxr-xr-x  2 root      root      4896 Jan 29 18:38 udisks2
drwxr-xr-x  3 root      root      4896 Aug  5 16:51 ufw
drwxr-xr-x  3 root      root      4896 Aug  5 16:52 update-manager
drwxr-xr-x  2 root      root      4896 Aug  5 16:53 update-notd.d
drwxr-xr-x  2 root      root      4896 Apr  2 2025 update-notifier
drwxr-xr-x  2 root      root      4896 Aug  5 16:51 UPower
-rw-r--r--  1 root      root      1523 Apr  8 2024 usb_modeswitch.conf
drwxr-xr-x  2 root      root      4896 Dec 16 2023 usb_modeswitch.d
lnwxrwxrwx  1 root      root      16 Aug  5 16:48 vconsole.conf -> default/keyboard
drwxr-xr-x  2 root      root      4896 Jan 29 18:38 vIm
drwxr-xr-x  1 root      root      23 Feb 29 2024 vtrgb -> /etc/alternatives/vtrgb
drwxr-xr-x  5 root      root      4896 Aug  5 16:50 vulkan
-rw-r--r--  1 root      root      4942 Jun 19 2020 wgetrc
drwxr-xr-x  2 root      root      4896 Aug  5 16:51 wpa_supplicant
drwxr-xr-x 12 root      root      4896 Aug  5 16:53 zil
-rw-r--r--  1 root      root      681 Apr  8 2024 xattr.conf
drwxr-xr-x  6 root      root      4896 Aug  5 16:50 xdg
drwxr-xr-x  1 root      root      4896 Aug  5 16:53 xnt
-rw-r--r--  1 root      root      460 Jan 20 2023 zsh_command_not_found
sheikh@Ubuntu:/etc$ cd -
sheikh@Ubuntu:~$ pwd
/home/sheikh
sheikh@Ubuntu:$ []
```

Exercise 2: Creating a Directory Structure

```
sheikh@Ubuntu:~$ pwd
/home/sheikh
sheikh@Ubuntu:~$ mkdir devops_lab
sheikh@Ubuntu:~$ cd devops_lab
sheikh@Ubuntu:~/devops_lab$ mkdir week1 week2 week3
sheikh@Ubuntu:~/devops_lab$ ls
week1 week2 week3
sheikh@Ubuntu:~/devops_lab$ cd week1
sheikh@Ubuntu:~/devops_lab/week1$ mkdir notes
sheikh@Ubuntu:~/devops_lab/week1$ pwd
/home/sheikh/devops_lab/week1
sheikh@Ubuntu:~/devops_lab/week1$ cd ..
sheikh@Ubuntu:~/devops_lab$ 
```

Exercise 3: Working with Files

```
sheikh@Ubuntu:~$ cd devops_lab
sheikh@Ubuntu:~/devops_lab$ cd week1
sheikh@Ubuntu:~/devops_lab/week1$ touch intro.txt
sheikh@Ubuntu:~/devops_lab/week1$ touch commands.txt filesystem.txt practice.txt
sheikh@Ubuntu:~/devops_lab/week1$ ls
commands.txt filesystem.txt intro.txt notes practice.txt
sheikh@Ubuntu:~/devops_lab/week1$ cp intro.txt intro_backup.txt
sheikh@Ubuntu:~/devops_lab/week1$ mv practice.txt
mv: missing destination file operand after 'practice.txt'
Try 'mv --help' for more information.
sheikh@Ubuntu:~/devops_lab/week1$ mv practice.txt exercises.txt
sheikh@Ubuntu:~/devops_lab/week1$ ls
commands.txt exercises.txt filesystem.txt intro_backup.txt intro.txt notes
sheikh@Ubuntu:~/devops_lab/week1$ rm intro_backup.txt
sheikh@Ubuntu:~/devops_lab/week1$ ls
commands.txt exercises.txt filesystem.txt intro.txt notes
sheikh@Ubuntu:~/devops_lab/week1$ 
```

Exercise 4: File Content Operations

```
sheikh@Ubuntu:~/devops_lab/week1$ touch my_notes.txt
sheikh@Ubuntu:~/devops_lab/week1$ nano my_notes.txt
sheikh@Ubuntu:~/devops_lab/week1$ cat my_notes.txt
DevOps is a set of practices that combines software development and IT operations.
sheikh@Ubuntu:~/devops_lab/week1$ nano my_notes.txt
sheikh@Ubuntu:~/devops_lab/week1$ cat my_notes.txt
DevOps is a set of practices that combines software development and IT operations.
I have learned a lot of things regarding linux commands, which will help me in my DevOps journey.

sheikh@Ubuntu:~/devops_lab/week1$ wc -l my_notes.txt
3 my_notes.txt
sheikh@Ubuntu:~/devops_lab/week1$ head -n 3 my_notes.txt
DevOps is a set of practices that combines software development and IT operations.
I have learned a lot of things regarding linux commands, which will help me in my DevOps journey.

sheikh@Ubuntu:~/devops_lab/week1$ 
```

Exercise 5: Advanced Navigation

```
sheikh@Ubuntu:~$ cd /usr/bin
sheikh@Ubuntu:/usr/bin$ ls
'-'                                     file          json_pp          pmap          time
aa-enabled                               file2brl      jsonschema       pnn2ppa       timedatectl
aa-exec                                  find          kbdinfo         pod2html      timeout
aa-features-abi                           findmnt     kbd_mode        pod2man       tload
aconnect                                firefox     kernel-install  pod2text      tnftp
acpidbg                                 flock        kerneloops-submit  podusage      toe
add-apt-repository                         fmt          kill           podchecker   top
addpart                                 fold        killall        podchecker
addr2line                                fonttosfnt  knod           poff          touch
airscan-discover                          foo2ddst    knodsign       pon           tput
alsabat                                foo2ddst-wrapper  knodsign      POST          tr
alsaloop                                foo2hbpl2    lzping         powerprofilesctl  trace-cmd
alsamixer                                foo2hbpl2-wrapper  lzping        ppdc          tracepath
alsatpxr                                foo2hiperc   littest        ppdhtml      tracker3
alsaucm                                foo2hiperc-wrapper  laptop-detect  ppdmerge     tracker3-daemon
amidi                                    foo2hp      killall        ppdpo         tracker3-export
amixer                                 foo2hp2600    knod          ppdh          tracker3-extract
app                                     foo2lava    knodsign       ppdmerge     tracker3-help
apgbfm                                 foo2lava-wrapper  lavadecode   ppdh          tracker3-import
aplay                                   foo2oak     lcf            ppdpo         tracker3-index
aplaymidi                               foo2oak-wrapper  ld            precat        tracker3-info
apport-bug                               foo2qndl    ldapadd        preconv       tracker3-reset
apport-cli                               foo2qndl-wrapper  ldapcompare  preunzip     tracker3-search
apport-collect                            foo2sxl     ldapdelete    prezip-bin   tracker3-sparql
apport-unpack                            foo2sxl-wrapper  ldapexpox    printafm    tracker3-sql
apport-upack                            foo2zjs     ldapmodify   printenv     tracker3-status
appress                                foo2zqxd    ldapmodrdn  printer-profile  tracker3-tag
appstreamcli                            foo2zqxx    ldapasswd    printf        transicc
apropos                                foo2zjs     ldapsearch    primit       transset
apt                                     foo2zjs-icc2ps  ldapurl      prove        troff
apt-add-repository                      foo2zjs-pstop  ldapwhoami   prtstat      true
apt-cache                               foo2zjs-wrapper  ld.bdf      ps           truncate
apt-cdrom                               fomatic-rip   ldapmodrdn  ps2ascii    trust
apt-config                             fprintd-delete  ld.gold     ps2epsil    tset
aptcdcon                               fprintd-enroll  ld.so       ps2pdf     tsort
apt-extracttemplates                   fprintd-list   less        ps2pdf12   tty
apt-ftparchive                          fprintd-verify  lessecho    ps2pdf12

expr                                     ionice      pinentry-gnome3  systemd-sysusers  zenity
factor                                 iostat      pinentry-x11    systemd-tmpfiles  zgrep
faillog                                ip          ping          systemd-tty-ask-password-agent  zforce
faked-sysv                            ipcblk     ping4         systemd-umount   zgrep
faked-tcp                             ipcmk      ping6         tabs
fakeroot                               ipcrm      pinky        tac
fakeroot-sysv                          ipcs       pipewire     tail
fakeroot-tcp                           ipfbind    pipewire-aes7  tapestat    zipcloak
falllocate                            iptables-xml  pipewire-avb  tar
false                                  ischroot   pipewire-pulse  taskset    zipdetails
fc-cache                               isdvr4-serial-debugger  pkaction   tbl
fc-cat                                 isdvr4-serial-inputattach  pkcheck    tclsh
fc-conflist                            ispell-wrapp  pkcon      tclsh8.6
fc-list                                join       pkexec      tcpdump
fc-match                               journalctl  pkkill     tecla
fc-pattern                            jpgtcc     pkmon      tee
fc-query                               jq         pkptyagent  telnet
fc-scan                                jsondiff   pl2pm      tempfile
fc-validate                            jsonpatch   pldd      test
fgconsole                             json-patch-jsondiff  plog      tic
fgrep                                 jsonpointer  Plymouth   tificc
sheikh@Ubuntu:/usr/bin$ cd /var/log
sheikh@Ubuntu:/var/log$ ls
alternatives.log  boot.log    cloud-init-output.log  dmesg    dmesg.3.gz  fontconfig.log  installer  openvpn  sssd      vboxadd-install.log  wtmp
apport.log        bootstrap.log  cups          dmesg.0    dmesg.4.gz  gdm3        journal   private  syslog  sysstat  vboxadd-setup.log  log.1
apt              btmp        cups-browsed   dmesg.1.gz  dpkg.log   gpu-manager.log kern.log  README  lastlog speech-dispatcher unattended-upgrades  vboxpostinstall.log
auth.log          cloud-init.log  dist-upgrade  dmesg.2.gz  faillog   hp          kern.log  README  lastlog speech-dispatcher unattended-upgrades  vboxpostinstall.log
sheikh@Ubuntu:/var/log$ cd -
sheikh@Ubuntu:~$ mkdir projects/web/frontend
mkkdir: cannot create directory 'projects/web/frontend': No such file or directory
sheikh@Ubuntu:~$ mkdir -p projects/web/frontend
sheikh@Ubuntu:~$ cd projects/web/frontend
sheikh@Ubuntu:~/projects/web/frontend$ pwd
/home/sheikh/projects/web/frontend
sheikh@Ubuntu:~/projects/web/frontend$ cd ~
sheikh@Ubuntu:~$ pwd
/home/sheikh
sheikh@Ubuntu:~$
```

Lab Assessment Tasks

Task 1:

```
sheikh@Ubuntu:~$ mkdir devops_course
sheikh@Ubuntu:~$ cd devops_course
sheikh@Ubuntu:~/devops_course$ mkdir labs assignments
sheikh@Ubuntu:~/devops_course$ pwd
/home/sheikh/devops_course
sheikh@Ubuntu:~/devops_course$ ls
assignments labs
sheikh@Ubuntu:~/devops_course$ cd labs
sheikh@Ubuntu:~/devops_course/labs$ mkdir lab1 lab2 lab3
sheikh@Ubuntu:~/devops_course/labs$ ls
lab1 lab2 lab3
sheikh@Ubuntu:~/devops_course/labs$ cd ..
sheikh@Ubuntu:~/devops_course$ cd assignments
sheikh@Ubuntu:~/devops_course/assignments$ mkdir assignment1 assignment2
sheikh@Ubuntu:~/devops_course/assignments$ ls
assignment1 assignment2
sheikh@Ubuntu:~/devops_course/assignments$ 
```

Task 2:

```
sheikh@Ubuntu:~/devops_course$ cd labs/lab1
sheikh@Ubuntu:~/devops_course/labs/lab1$ touch intro.txt commands.txt filesystem.txt notes.txt summary.txt
sheikh@Ubuntu:~/devops_course/labs/lab1$ ls
commands.txt filesystem.txt intro.txt notes.txt summary.txt
sheikh@Ubuntu:~/devops_course/labs/lab1$ 
```

Task 3:

```
sheikh@Ubuntu:~/devops_course/labs/lab1$ nano summary.txt
sheikh@Ubuntu:~/devops_course/labs/lab1$ cat summary.txt
DevOps is a set of practices that combines software development (Dev) and IT operations (Ops). It aims to shorten the development lifecycle and deliver high-quality software continuously. DevOps emphasizes collaboration, automation, and monitoring throughout the software lifecycle. It helps teams release updates faster and more reliably.
```

Task 4:

```
sheikh@Ubuntu:~/devops_course/labs/lab1$ ls
commands.txt filesystem.txt intro.txt notes.txt summary.txt
sheikh@Ubuntu:~/devops_course/labs/lab1$ cp lab1/*.txt lab2/
cp: cannot stat 'lab1/*.txt': No such file or directory
sheikh@Ubuntu:~/devops_course/labs/lab1$ cd ..
sheikh@Ubuntu:~/devops_course/labs$ cp lab1/*.txt lab2/
sheikh@Ubuntu:~/devops_course/labs$ cd lab2
sheikh@Ubuntu:~/devops_course/labs/lab2$ ls
commands.txt filesystem.txt intro.txt notes.txt summary.txt
sheikh@Ubuntu:~/devops_course/labs/lab2$ 
```

Task 5:

```
sheikh@Ubuntu:~/devops_course/labs/lab2$ mv summary.txt devops_summary.txt
sheikh@Ubuntu:~/devops_course/labs/lab2$ ls
commands.txt devops_summary.txt filesystem.txt intro.txt notes.txt
sheikh@Ubuntu:~/devops_course/labs/lab2$ 
```

Task 6:

```
sheikh@Ubuntu:~/devops_course/labs$ rm -r lab3/
sheikh@Ubuntu:~/devops_course/labs$ ls
lab1  lab2
```

Task 7:

```
sheikh@Ubuntu: ~$ pwd  
/home/sheikh  
sheikh@Ubuntu: ~$ touch evidence.txt  
sheikh@Ubuntu: ~$ pwd > evidence.txt  
sheikh@Ubuntu: ~$ ls -la devops_course >> evidence.txt  
sheikh@Ubuntu: ~$ cat devops_course/labs/lab1/summary.txt >> evidence.txt  
sheikh@Ubuntu: ~$ cat evidence.txt  
/home/sheikh  
total 16  
drwxrwxr-x  4 sheikh sheikh 4096 Jan 31 12:34 .  
drwxr-x--- 18 sheikh sheikh 4096 Jan 31 12:47 ..  
drwxrwxr-x  4 sheikh sheikh 4096 Jan 31 12:35 assignments  
drwxrwxr-x  4 sheikh sheikh 4096 Jan 31 12:46 labs  
DevOps is a set of practices that combines software development (Dev) and IT operations (Ops). It aims to shorten the development lifecycle and deliver high-quality software continuously. DevOps emphasizes collaboration, automation, and monitoring throughout the software lifecycle. It helps teams release updates faster and more reliably.
```

== THE END ==