

Linux - Hands On Assignment

1.a. Need to update the System

```
sigmoid@sigmoid-IdeaPad-3-15ITL6:~$ sudo apt update
[sudo] password for sigmoid:
Hit:1 http://archive.ubuntu.com/ubuntu noble InRelease [126 kB]
Get:2 http://security.ubuntu.com/ubuntu noble-security InRelease [126 kB]
Get:3 http://archive.ubuntu.com/ubuntu noble-updates InRelease [126 kB]
Get:4 https://dl.google.com/linux/chrome/deb stable InRelease [1,825 B]
Get:5 https://dl.google.com/linux/chrome/deb/stable/main amd64 Packages [1,215 B]
Get:6 http://security.ubuntu.com/ubuntu noble-security/main amd64 Packages [1,393 kB]
Get:7 http://archive.ubuntu.com/ubuntu noble-backports InRelease [126 kB]
Get:8 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 Packages [1,685 kB]
Get:9 http://security.ubuntu.com/ubuntu noble-security/main Translation-en [226 kB]
Get:10 http://security.ubuntu.com/ubuntu noble-security/main amd64 Components [21.5 kB]
Get:11 http://security.ubuntu.com/ubuntu noble-security/main amd64 c-n-f Metadata [9,660 B]
Get:12 http://security.ubuntu.com/ubuntu noble-security/restricted amd64 Components [212 B]
Get:13 http://security.ubuntu.com/ubuntu noble-security/universe amd64 Packages [917 kB]
Get:14 http://security.ubuntu.com/ubuntu noble-security/universe Translation-en [207 kB]
Get:15 http://security.ubuntu.com/ubuntu noble-security/universe amd64 Components [71.4 kB]
Get:16 http://security.ubuntu.com/ubuntu noble-security/universe amd64 c-n-f Metadata [19.6 kB]
Get:17 http://security.ubuntu.com/ubuntu noble-security/multiverse amd64 Components [208 B]
Get:18 http://archive.ubuntu.com/ubuntu noble-updates/main Translation-en [311 kB]
Get:19 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 Components [175 kB]
Get:20 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 c-n-f Metadata [15.8 kB]
Get:21 http://archive.ubuntu.com/ubuntu noble-updates/restricted amd64 Components [212 B]
Get:22 http://archive.ubuntu.com/ubuntu noble-updates/universe amd64 Packages [1,507 kB]
Get:23 http://archive.ubuntu.com/ubuntu noble-updates/universe Translation-en [306 kB]
Get:24 http://archive.ubuntu.com/ubuntu noble-updates/universe amd64 Components [377 kB]
Get:25 http://archive.ubuntu.com/ubuntu noble-updates/universe amd64 c-n-f Metadata [31.4 kB]
Get:26 http://archive.ubuntu.com/ubuntu noble-updates/multiverse amd64 Components [940 B]
Get:27 http://archive.ubuntu.com/ubuntu noble-backports/main amd64 Components [7,296 B]
Get:28 http://archive.ubuntu.com/ubuntu noble-backports/restricted amd64 Components [216 B]
Get:29 http://archive.ubuntu.com/ubuntu noble-backports/universe amd64 Components [10.5 kB]
Get:30 http://archive.ubuntu.com/ubuntu noble-backports/multiverse amd64 Components [212 B]
Fetched 7,675 kB in 9s (888 kB/s)
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
309 packages can be upgraded. Run 'apt list --upgradable' to see them.
sigmoid@sigmoid-IdeaPad-3-15ITL6:~$
```

1.b. Install postfix and mailutils packages

```
sigmoid@sigmoid-IdeaPad-3-15ITL6:~$ sudo apt install postfix mailutils -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
postfix is already the newest version (3.8.6-1build2).
mailutils is already the newest version (1:3.17-1.1build3).
0 upgraded, 0 newly installed, 0 to remove and 309 not upgraded.
sigmoid@sigmoid-IdeaPad-3-15ITL6:~$
```

1.c Verify Postfix is running

```
Jan 8 11:09 sigmoid@sigmoid-IdeaPad-3-15ITL6:~  
Get:13 http://security.ubuntu.com/ubuntu noble-security/universe amd64 Packages [917 kB]  
Get:14 http://security.ubuntu.com/ubuntu noble-security/universe Translation-en [207 kB]  
Get:15 http://security.ubuntu.com/ubuntu noble-security/universe amd64 Components [71.4 kB]  
Get:16 http://security.ubuntu.com/ubuntu noble-security/universe amd64 c-n-f Metadata [19.6 kB]  
Get:17 http://security.ubuntu.com/ubuntu noble-security/multiverse amd64 Components [208 B]  
Get:18 http://archive.ubuntu.com/ubuntu noble-updates/main Translation-en [311 kB]  
Get:19 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 Components [175 kB]  
Get:20 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 c-n-f Metadata [15.8 kB]  
Get:21 http://archive.ubuntu.com/ubuntu noble-updates/restricted amd64 Components [212 kB]  
Get:22 http://archive.ubuntu.com/ubuntu noble-updates/universe amd64 Packages [1,587 kB]  
Get:23 http://archive.ubuntu.com/ubuntu noble-updates/universe Translation-en [306 kB]  
Get:24 http://archive.ubuntu.com/ubuntu noble-updates/universe amd64 Components [377 kB]  
Get:25 http://archive.ubuntu.com/ubuntu noble-updates/universe amd64 c-n-f Metadata [31.4 kB]  
Get:26 http://archive.ubuntu.com/ubuntu noble-updates/multiverse amd64 Components [940 B]  
Get:27 http://archive.ubuntu.com/ubuntu noble-backports/main amd64 Components [7,296 B]  
Get:28 http://archive.ubuntu.com/ubuntu noble-backports/restricted amd64 Components [216 B]  
Get:29 http://archive.ubuntu.com/ubuntu noble-backports/universe amd64 Components [10.5 kB]  
Get:30 http://archive.ubuntu.com/ubuntu noble-backports/multiverse amd64 Components [212 B]  
Fetched 7,675 kB in 9s (888 kB/s)  
Reading package lists... Done  
Building dependency tree... Done  
Reading state information... Done  
309 packages can be upgraded. Run 'apt list --upgradable' to see them.  
sigmoid@sigmoid-IdeaPad-3-15ITL6:~$ sudo apt install postfix mailutils -y  
Reading package lists... Done  
Building dependency tree... Done  
Reading state information... Done  
postfix is already the newest version (3.8.6-1build2).  
mailutils is already the newest version (1:3.17-1.1build3).  
0 upgraded, 0 newly installed, 0 to remove and 309 not upgraded.  
sigmoid@sigmoid-IdeaPad-3-15ITL6:~$ sudo systemctl status postfix  
● postfix.service - Postfix Mail Transport Agent  
   Loaded: loaded (/usr/lib/systemd/system/postfix.service; enabled; preset: enabled)  
   Active: active (exited) since Thu 2026-01-08 10:47:54 IST; 2min ago  
     Docs: man:postfix(1)  
   Process: 2642 ExecStart=/bin/true (code=exited, status=0/SUCCESS)  
 Main PID: 2642 (code=exited, status=0/SUCCESS)  
    CPU: 0ms  
  
Jan 08 10:47:54 sigmoid-IdeaPad-3-15ITL6 systemd[1]: Starting postfix.service - Postfix Mail Transport Agent...  
Jan 08 10:47:54 sigmoid-IdeaPad-3-15ITL6 systemd[1]: Finished postfix.service - Postfix Mail Transport Agent.  
sigmoid@sigmoid-IdeaPad-3-15ITL6:~$  

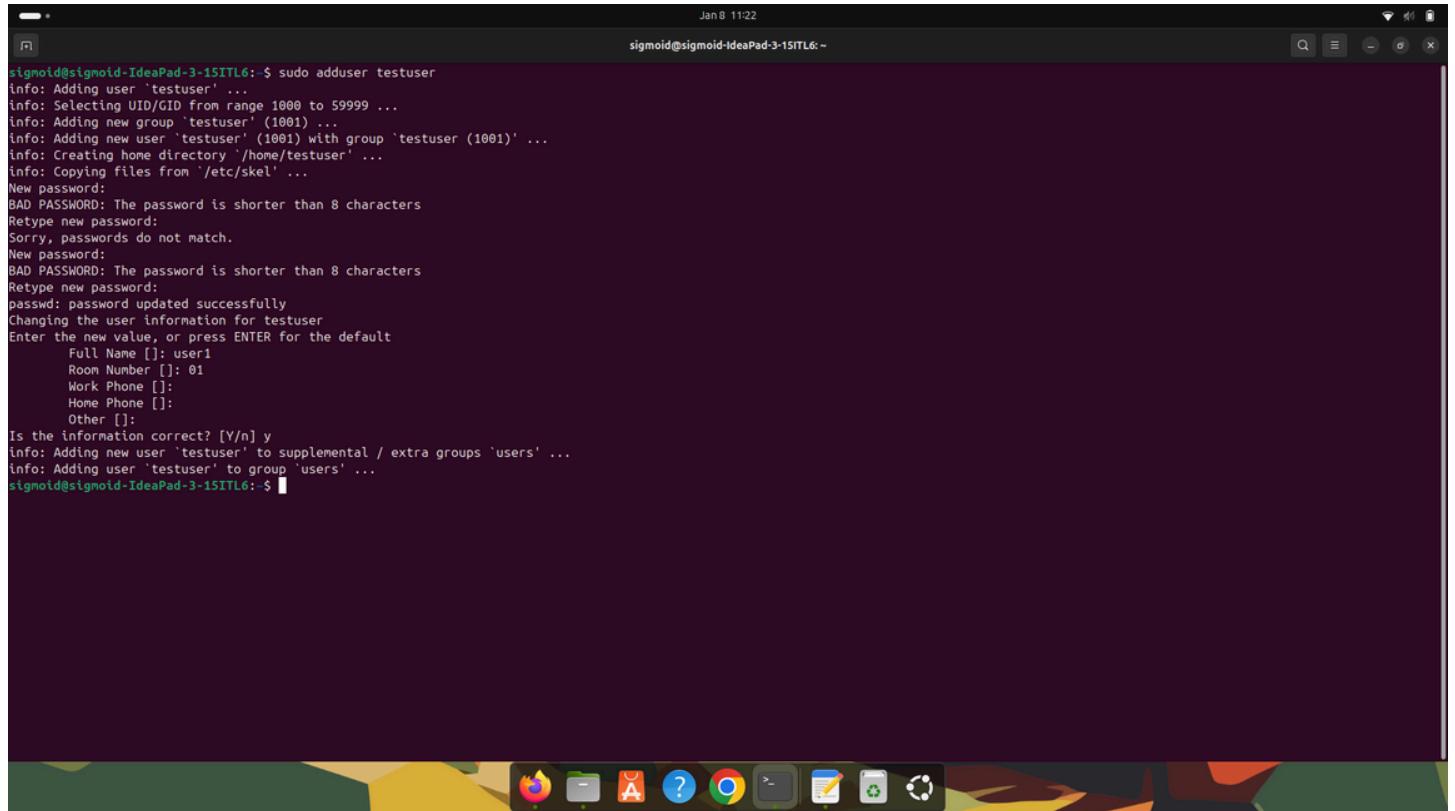
```

1.d Testing local email

```
Jan 8 11:20 sigmoid@sigmoid-IdeaPad-3-15ITL6:~  
sigmoid@sigmoid-IdeaPad-3-15ITL6:~$ echo "SMTP working" | mail -s "Test Mail" sigmoid  
sigmoid@sigmoid-IdeaPad-3-15ITL6:~$ mail  
"/var/mail/sigmoid": 1 message 1 new  
>N 1 Sigmoid Thu Jan 8 11:12 13/442 Test Mail  
? mail  
To: kishore.k@sigmoidanalyticscom  
Cc:  
Subject: Sample mail for Assignment  
Hey,  

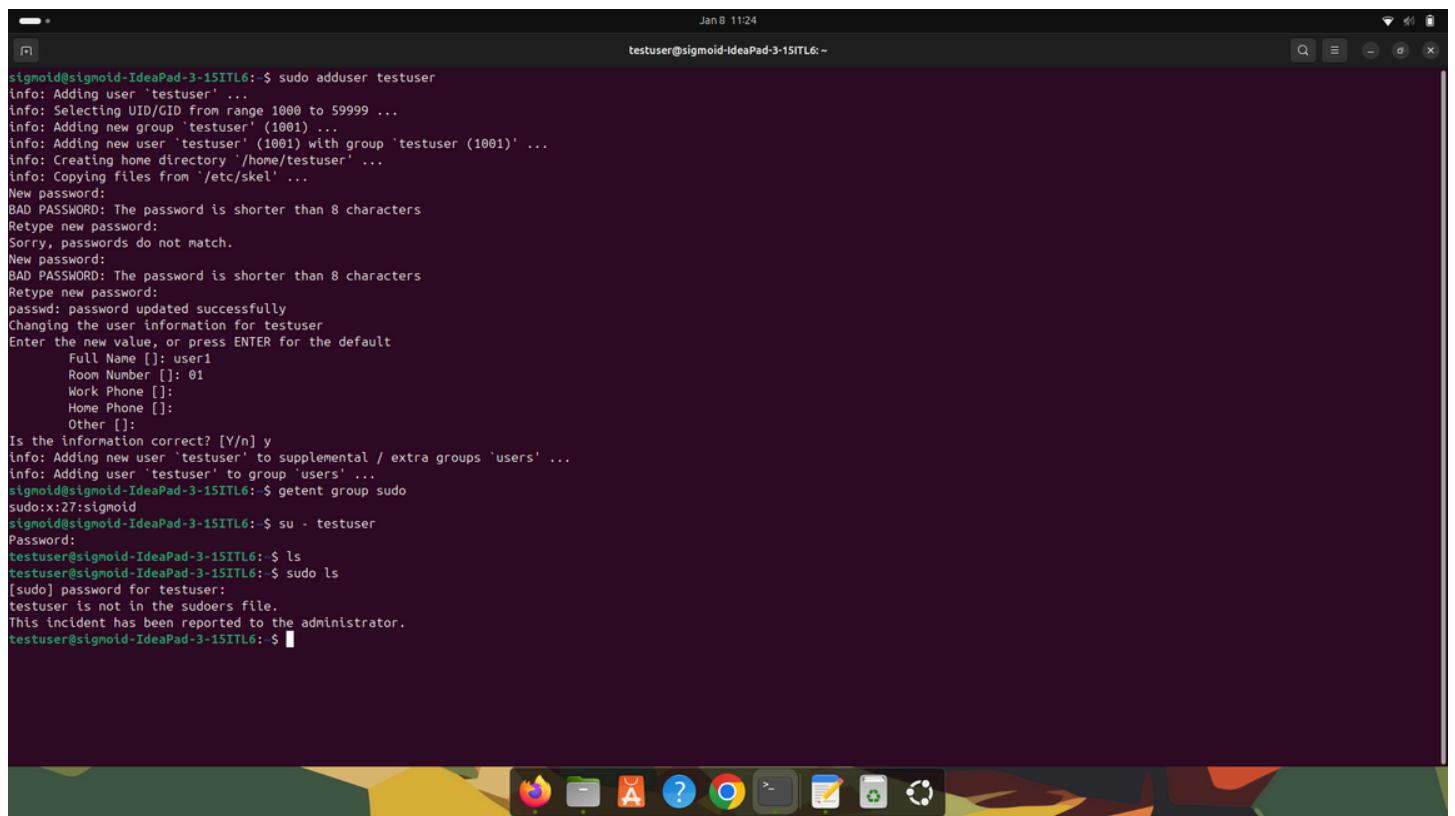
```

2.a Creating new user



```
sigmoid@sigmoid-IdeaPad-3-15ITL6:~$ sudo adduser testuser
info: Adding user 'testuser' ...
info: Selecting UID/GID from range 1000 to 59999 ...
info: Adding new group 'testuser' (1001) ...
info: Adding new user 'testuser' (1001) with group 'testuser (1001)' ...
info: Creating home directory '/home/testuser' ...
info: Copying files from '/etc/skel' ...
New password:
BAD PASSWORD: The password is shorter than 8 characters
Retype new password:
Sorry, passwords do not match.
New password:
BAD PASSWORD: The password is shorter than 8 characters
Retype new password:
passwd: password updated successfully
Changing the user information for testuser
Enter the new value, or press ENTER for the default
    Full Name []: user1
    Room Number []: 01
    Work Phone []:
    Home Phone []:
    Other []:
Is the information correct? [Y/n] y
info: Adding new user 'testuser' to supplemental / extra groups 'users' ...
info: Adding user 'testuser' to group 'users' ...
sigmoid@sigmoid-IdeaPad-3-15ITL6:~$
```

2.b. Ensure user has No sudo access and Testing



```
sigmoid@sigmoid-IdeaPad-3-15ITL6:~$ sudo adduser testuser
info: Adding user 'testuser' ...
info: Selecting UID/GID from range 1000 to 59999 ...
info: Adding new group 'testuser' (1001) ...
info: Adding new user 'testuser' (1001) with group 'testuser (1001)' ...
info: Creating home directory '/home/testuser' ...
info: Copying files from '/etc/skel' ...
New password:
BAD PASSWORD: The password is shorter than 8 characters
Retype new password:
Sorry, passwords do not match.
New password:
BAD PASSWORD: The password is shorter than 8 characters
Retype new password:
passwd: password updated successfully
Changing the user information for testuser
Enter the new value, or press ENTER for the default
    Full Name []: user1
    Room Number []: 01
    Work Phone []:
    Home Phone []:
    Other []:
Is the information correct? [Y/n] y
info: Adding new user 'testuser' to supplemental / extra groups 'users' ...
info: Adding user 'testuser' to group 'users' ...
sigmoid@sigmoid-IdeaPad-3-15ITL6:~$ getent group sudo
sudo:x:27:sigmoid
sigmoid@sigmoid-IdeaPad-3-15ITL6:~$ su - testuser
Password:
testuser@sigmoid-IdeaPad-3-15ITL6:~$ ls
testuser@sigmoid-IdeaPad-3-15ITL6:~$ sudo ls
[sudo] password for testuser:
testuser is not in the sudoers file.
This incident has been reported to the administrator.
testuser@sigmoid-IdeaPad-3-15ITL6:~$
```

3.a Create script

```
Jan 8 11:28
sigmoid@sigmoid-IdeaPad-3-15ITL6:~ /usr/local/bin/describe
GNU nano 7.2
#!/bin/bash
ls
```

Help Write Out Where Is Cut Execute Location Undo Set Mark To Bracket Previous Back
Exit Read File Replace Paste Justify Go To Line Redo Copy Where Was Next Forward

3.b changing permission

```
Jan 8 11:31
sigmoid@sigmoid-IdeaPad-3-15ITL6:~ /usr/bin
sigmoid@sigmoid-IdeaPad-3-15ITL6:~ $ sudo nano /usr/local/bin/describe
sigmoid@sigmoid-IdeaPad-3-15ITL6:~ $ cat /usr/local/bin/describe
#!/bin/bash
ls
sigmoid@sigmoid-IdeaPad-3-15ITL6:~ $ sudo chmod +x /usr/local/bin/describe
sigmoid@sigmoid-IdeaPad-3-15ITL6:~ $ cd /usr/local/bin/describe
-bash: cd: /usr/local/bin/describe: Not a directory
sigmoid@sigmoid-IdeaPad-3-15ITL6:~ $ sudo cd /usr/local/bin/describe
sudo: cd: command not found
sudo: "cd" is a shell built-in command, it cannot be run directly.
sudo: the -s option may be used to run a privileged shell.
sudo: the -D option may be used to run a command in a specific directory.
sigmoid@sigmoid-IdeaPad-3-15ITL6:~ $ cd ..
sigmoid@sigmoid-IdeaPad-3-15ITL6:~/home$ cd ..
sigmoid@sigmoid-IdeaPad-3-15ITL6:~/ $ cd /usr/local/bin/describe
-bash: cd: /usr/local/bin/describe: Not a directory
sigmoid@sigmoid-IdeaPad-3-15ITL6:~/ $ ls
bin boot dev home lib64 lost+found mnt proc run sbin usr-is-merged srv sys usr
bin usr-is-merged crom etc lib lib usr-is-merged media opt root sbin snap swap.img tmp var
sigmoid@sigmoid-IdeaPad-3-15ITL6:~/ $ cd usr
sigmoid@sigmoid-IdeaPad-3-15ITL6:~/usr$ ls
bin games include lib lib64 libexec local sbin share src
sigmoid@sigmoid-IdeaPad-3-15ITL6:~/usr $ cd bin
sigmoid@sigmoid-IdeaPad-3-15ITL6:~/usr/bin$ ls
[''
aa-enabled eutp hexdump mv qmi-firmware-update tracker3-help
aa-exec evince hipercdecode namei qmi-network tracker3-import
aa-features-abi evince-previewer host nano qpdecodr trackers-index
aconnect ex hostid nautilus quirks-handler tracker3-info
acpidbg expand hostname nautilus-autorun-software rbash tracker3-reset
add-apt-repository expiry hp-align awk rdma tracker3-search
addpart expr hp-check nc readlink tracker3-sparql
airscan-discover factor hp-clean ncal readmsg tracker3-sql
alsabat fallog hp-colord nc.openbsd readmsg.mailutils tracker3-status
alsaloop fallocate hp-config_usb_printer neqn realpath tracker3-tag
alsanixer false hp-doctor netaddr red transic
alsatplg fc-cache hp-firmware netcat Rename.ul transset
alsaucm fc-cat hp-info netstat rendercheck tree
amidi fc-conflict hp-levels networkctl renice troff
amixer fc-list hp-logcapture networkd-dispatcher reset true
apg fc-match hp-makeuri newaliases resizecons truncate
apgfbn fc-pattern hp-pkservice newgrp resizepart trust
tset
```

3.c Testing

```
Jan 8 11:33
sigmoid@sigmoid-IdeaPad-3-15ITL6:/usr/bin$ cd /etc
sigmoid@sigmoid-IdeaPad-3-15ITL6:/etc$ ls
adduser.conf      cracklib      environment.d    host.conf      libibverbs.d   network       protocols     shells        udisks2
aliases          credstore     ethertypes      hostname      libnl-3        networkd-dispatcher pulse        skel         ufw
aliases.db        credstore.encrypted fonts        hosts        libpaper.d    NetworkManager python3      snmp        updatedb.conf
alsa            cron.d        fprintd.conf    hosts.allow    locale.alias  newt         python3.12   speech-dispatcher update-manager
alternatives     cron.daily    fstab        hosts.deny     locale.gen     nftables.conf  rc0.d       ssh         update-notifier
anacrontab       cron.deny    ftpusers      ifplugd       localtime    nsswitch.conf  rc1.d       ssl         UPower
apg.conf         cron.hourly fuse.conf      init         logcheck     openvpn       rc2.d       sssd        update-notifier
apm             cron.monthly fwupd        inputrc      login.defs   opt          rc3.d       subgid     UPower
apparmor        cron.weekly gai.conf      intramfs-tools logrotate.conf os-release   rc4.d       subgid-    usb_modeswitch.conf
apparmor.d       cron.weekly gdb         logrotate.d   lsb-release  pam.conf     rc5.d       subuid     vconsole.conf
apport          cron.yearly gdm3        logsize.conf  machine-id   pam.d        rc6.d       sudo        vsftpd.conf
apt             cups          geoclue       issue        magic        papersize   resolv.conf sudoers     vt
aptv            cupshelpers  ghostsript    issue.d      manpath.config passwd      rmt        sudo_logsvrd.conf vulkan
bash.bashrc      dbus-1        gnome        issue.net    mime.types   pcmcia      syslog.conf sysctl.conf whoopsie
bash_completion  dconf         gnome-remote-desktop issue.d      manpage.d    perl        rsyslog.d  sysctl.d   X11
bindresport.blacklist debconf.conf  gnults       issue.net   mime.types   pm          rsyslog.d  sysctl.d   xattr.conf
bluetooth       debuginfod  groff        kernel      mke2fs.conf  modules     rygel.conf  sysstat    xdg
brlapi.key       default      group        kerneloops.conf ModemManager  modules-load.d pnm2ppa.conf security   terminfo  xml
brltty          deluser.conf group        krb5.conf.d modprobe.d  modules-load.d polkit-1   sensors3.conf  timezone  zsh_command_not_found
brltty.conf      depmod.d    grub.d       ld.so.cache  ld.so.conf    motd.d      postfix    sensors.d  tmpfiles.d
ca-certificates  dhcpcd.conf  gshadow      ld.so.cache  ld.so.conf    mtab       printcap   services   tuned
ca-certificates.conf dhcpcd.conf  gshadow-      ld.so.cache  ld.so.conf    netplan   profile    shadow     ubuntu-advantage
chatscripts      dictionaries-common gss        legal       mysql       ppp        sgm        ucf.conf   udev
cloud           dpkg         gssapi_mech.conf  legal       mysql       ppp        sgm        ucf.conf   udev
cockpit          e2scrub.conf gtk-2.0      libaudit.conf netconfig   printcap   profile   shadow     ucf.conf
colord          enacs        gtk-3.0      libaudit.conf netconfig   profile   profile.d shadow     ucf.conf
console-setup    environment  hdparm.conf  libblockdev netplan   profile.d shadow     udev
sigmoid@sigmoid-IdeaPad-3-15ITL6:/etc$ describe
adduser.conf      cracklib      environment.d    host.conf      libibverbs.d   network       protocols     shells        udisks2
aliases          credstore     ethertypes      hostname      libnl-3        networkd-dispatcher pulse        skel         ufw
aliases.db        credstore.encrypted fonts        hosts        libpaper.d    NetworkManager python3      snmp        updatedb.conf
alsa            cron.d        fprintd.conf    hosts.allow    locale.alias  newt         python3.12   speech-dispatcher update-manager
alternatives     cron.daily    fstab        hosts.deny     locale.gen     nftables.conf  rc0.d       ssh         update-notifier
anacrontab       cron.deny    ftpusers      ifplugd       localtime    nsswitch.conf  rc1.d       ssl         UPower
apg.conf         cron.hourly fuse.conf      init         logcheck     openvpn       rc2.d       sssd        update-notifier
apm             cron.monthly fwupd        inputrc      login.defs   opt          rc3.d       subgid     UPower
apparmor        cron.weekly gai.conf      logrotate.conf logrotate.d   os-release   rc4.d       subgid-    usb_modeswitch.conf
apparmor.d       cron.weekly gdb         logrotate.d   lsb-release  pam.conf     rc5.d       subuid     vconsole.conf
apport          cron.yearly gdm3        logsize.conf  machine-id   pam.d        rc6.d       sudo        vsftpd.conf
apt             cups          geoclue       issue.d      magic        papersize   resolv.conf sudoers     vt
aptv            cupshelpers  ghostsript    issue.net   manpage.d    passwd      rmt        sudo_logsvrd.conf vulkan
bash.bashrc      dbus-1        gnome        issue.net   mime.types   pcmcia      syslog.conf sysctl.conf whoopsie
bash_completion  dconf         gnome-remote-desktop issue.d      manpage.d    perl        rsyslog.d  sysctl.d   X11
bindresport.blacklist debconf.conf  gnults       issue.net   mime.types   pm          rsyslog.d  sysctl.d   xattr.conf
bluetooth       debuginfod  groff        kernel      mke2fs.conf  modules     rygel.conf  sysstat    xdg
brlapi.key       default      group        kerneloops.conf ModemManager  modules-load.d pnm2ppa.conf security   terminfo  xml
brltty          deluser.conf group        krb5.conf.d modprobe.d  modules-load.d polkit-1   sensors3.conf  timezone  zsh_command_not_found
brltty.conf      depmod.d    grub.d       ld.so.cache  ld.so.conf    motd.d      postfix    sensors.d  tmpfiles.d
ca-certificates  dhcpcd.conf  gshadow      ld.so.cache  ld.so.conf    mtab       printcap   services   tuned
ca-certificates.conf dhcpcd.conf  gshadow-      ld.so.cache  ld.so.conf    netplan   profile    shadow     ubuntu-advantage
chatscripts      dictionaries-common gss        legal       mysql       ppp        sgm        ucf.conf   udev
cloud           dpkg         gssapi_mech.conf  legal       mysql       ppp        sgm        ucf.conf   udev
cockpit          e2scrub.conf gtk-2.0      libaudit.conf netconfig   printcap   profile   shadow     ucf.conf
colord          enacs        gtk-3.0      libaudit.conf netconfig   profile   profile.d shadow     ucf.conf
console-setup    environment  hdparm.conf  libblockdev netplan   profile.d shadow     udev
```

4.a Creating a research file , compress and find

```
Jan 8 11:57
sigmoid@sigmoid-IdeaPad-3-15ITL6:~/Documents/Exp$ vi research
sigmoid@sigmoid-IdeaPad-3-15ITL6:~/Documents/Exp$ gzip research
sigmoid@sigmoid-IdeaPad-3-15ITL6:~/Documents/Exp$ ls
forscript  lfnhscript  loscript  research.gz  script
sigmoid@sigmoid-IdeaPad-3-15ITL6:~/Documents/Exp$ sudo find / -type f -iname "research.*" 2>/dev/null
/homes/sigmoid/Documents/Exp/research.gz
sigmoid@sigmoid-IdeaPad-3-15ITL6:~/Documents/Exp$
```

4.b Identified compression type and uncompressed the file

```
Jan 8 12:00 sigmoid@sigmoid-IdeaPad-3-15ITL6:~/Documents/Exp$ vi research
sigmoid@sigmoid-IdeaPad-3-15ITL6:~/Documents/Exp$ gzip research
sigmoid@sigmoid-IdeaPad-3-15ITL6:~/Documents/Exp$ ls
forscript ifthnscript ioscript research.gz script
sigmoid@sigmoid-IdeaPad-3-15ITL6:~/Documents/Exp$ sudo find / -type f -iname "research.*" 2>/dev/null
/home/sigmoid/Documents/Exp/research.gz
sigmoid@sigmoid-IdeaPad-3-15ITL6:~/Documents/Exp$ file research.*
research.gz: gzip compressed data, was "research", last modified: Thu Jan  8 06:23:36 2026, from Unix, original size modulo 2^32 74
sigmoid@sigmoid-IdeaPad-3-15ITL6:~/Documents/Exp$ gunzip research.gz
sigmoid@sigmoid-IdeaPad-3-15ITL6:~/Documents/Exp$ ls
forscript ifthnscript ioscript research script
sigmoid@sigmoid-IdeaPad-3-15ITL6:~/Documents/Exp$
```

5.a Files created will have NO permissions

```
Jan 8 12:13 sigmoid@sigmoid-IdeaPad-3-15ITL6:~/Documents/Exp$ vi file1
sigmoid@sigmoid-IdeaPad-3-15ITL6:~/Documents/Exp$ ls
file1 forscript ifthnscript ioscript research script
sigmoid@sigmoid-IdeaPad-3-15ITL6:~/Documents/Exp$ umask 666
sigmoid@sigmoid-IdeaPad-3-15ITL6:~/Documents/Exp$ ls
file1 forscript ifthnscript ioscript research script
sigmoid@sigmoid-IdeaPad-3-15ITL6:~/Documents/Exp$ ls -ltr
total 24
-rwxrwxr-x 1 sigmoid sigmoid 71 Dec 31 11:11 script
-rwxrwxr-x 1 sigmoid sigmoid 158 Dec 31 11:30 loscript
-rwxrwxr-x 1 sigmoid sigmoid 111 Dec 31 11:38 ifthnscript
-rwxrwxr-x 1 sigmoid sigmoid 66 Dec 31 11:49 forscript
-rw-rw-r-- 1 sigmoid sigmoid 74 Jan  8 11:53 research
-rw-rw-r-- 1 sigmoid sigmoid 46 Jan  8 12:08 file1
sigmoid@sigmoid-IdeaPad-3-15ITL6:~/Documents/Exp$ umask
0666
sigmoid@sigmoid-IdeaPad-3-15ITL6:~/Documents/Exp$ touch testfile
sigmoid@sigmoid-IdeaPad-3-15ITL6:~/Documents/Exp$ ls -l testfile
----- 1 sigmoid sigmoid 0 Jan  8 12:12 testfile
sigmoid@sigmoid-IdeaPad-3-15ITL6:~/Documents/Exp$
```

5.b Test

A screenshot of a terminal window titled "sigmoid@sigmoid-IdeaPad-3-15ITL6: ~/Documents/Exp". The window shows a command-line interface with a dark background. At the bottom of the screen, there is a decorative footer bar with various icons. The terminal output is as follows:

```
"testfile"
E504: "testfile" is read-only (cannot override: "W" in 'coptions')
Press ENTER or type command to continue
```

6.a Create Bash Script for showtime service

A screenshot of a terminal window titled "sigmoid@sigmoid-IdeaPad-3-15ITL6: ~". The window shows a command-line interface with a dark background. At the bottom of the screen, there is a decorative footer bar with various icons. The terminal output is as follows:

```
GNU nano 7.2
#!/bin/bash

OUTPUT_FILE="$HOME/showtime.log"

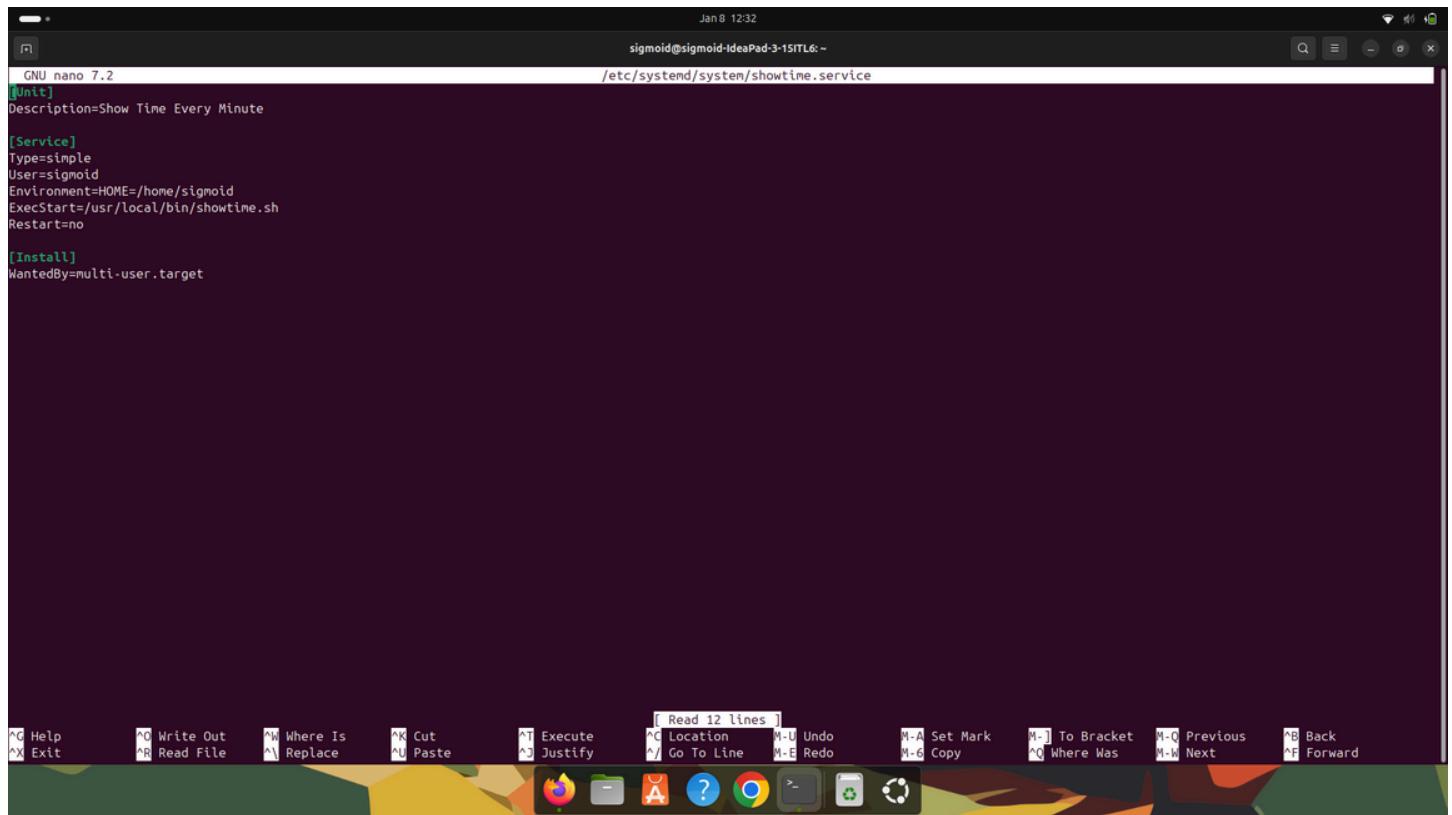
while true
do
    date >> "$OUTPUT_FILE"
    sleep 60
done
```

6.b Create systemd service

```
Jan 8 12:32
sigmoid@sigmoid-IdeaPad-3-15ITL6:~ /etc/systemd/system/showtime.service
GNU nano 7.2
[Unit]
Description>Show Time Every Minute

[Service]
Type=simple
User=igmoid
Environment=HOME=/home/igmoid
ExecStart=/usr/local/bin/showtime.sh
Restart=no

[Install]
WantedBy=multi-user.target
```



6.c Verifying Output

```
Jan 8 12:33
sigmoid@sigmoid-IdeaPad-3-15ITL6:~ /etc/systemd/system/showtime.service
sigmoid@sigmoid-IdeaPad-3-15ITL6:~ $ sudo nano /usr/local/bin/showtime.sh
sigmoid@sigmoid-IdeaPad-3-15ITL6:~ $ sudo nano /usr/local/bin/showtime.sh
sigmoid@sigmoid-IdeaPad-3-15ITL6:~ $ sudo chmod +x /usr/local/bin/showtime.sh
sigmoid@sigmoid-IdeaPad-3-15ITL6:~ $ sudo nano /etc/systemd/system/showtime.service
sigmoid@sigmoid-IdeaPad-3-15ITL6:~ $ sudo nano /etc/systemd/system/showtime.service
sigmoid@sigmoid-IdeaPad-3-15ITL6:~ $ whoami
sigmoid
sigmoid@sigmoid-IdeaPad-3-15ITL6:~ $ sudo systemctl daemon-reload
sigmoid@sigmoid-IdeaPad-3-15ITL6:~ $ sudo service showtime start
sigmoid@sigmoid-IdeaPad-3-15ITL6:~ $ sudo service showtime status
● showtime.service - Show Time Every Minute
   Loaded: loaded (/etc/systemd/system/showtime.service; disabled; preset: enabled)
     Active: active (running) since Thu 2026-01-08 12:33:10 IST; 15s ago
       Main PID: 12334 (showtime.sh)
          Tasks: 2 (limit: 9106)
        Memory: 584.0K (peak: 1.1M)
         CPU: 2ms
      CGroup: /system.slice/showtime.service
              └─12334 /bin/bash /usr/local/bin/showtime.sh
                  ├─12336 sleep 60
                  └─12336 sleep 60

Jan 08 12:33:10 sigmoid-IdeaPad-3-15ITL6 systemd[1]: Started showtime.service - Show Time Every Minute.
sigmoid@sigmoid-IdeaPad-3-15ITL6:~ $ cat ~/showtime.log
Thu Jan  8 12:33:10 PM IST 2026
sigmoid@sigmoid-IdeaPad-3-15ITL6:~ $
```

