

## Task 1:

### Configure smtp in localhost.

```
root@sigmoid-ThinkPad-T470:~# systemctl status sendmail
● sendmail.service - LSB: powerful, efficient, and scalable Mail Transport Agent
   Loaded: loaded (/etc/init.d/sendmail; generated)
   Active: active (running) since Fri 2024-10-11 16:36:31 IST; 5min ago
     Docs: man:systemd-sysv-generator(8)
  Process: 1723 ExecStart=/etc/init.d/sendmail start (code=exited, status=0/SUCCESS)
    Tasks: 1 (limit: 9112)
   Memory: 5.0M
    CGroup: /system.slice/sendmail.service
            └─3909 sendmail: MTA: accepting connections

Oct 11 16:35:28 sigmoid-ThinkPad-T470 su[1778]: (to smmsp) root on none
Oct 11 16:35:28 sigmoid-ThinkPad-T470 su[1778]: pam_unix(su:session): session opened for user smmsp by (uid=0)
Oct 11 16:35:29 sigmoid-ThinkPad-T470 su[1778]: pam_unix(su:session): session closed for user smmsp
Oct 11 16:35:29 sigmoid-ThinkPad-T470 sm-mta[1811]: My unqualified host name (sigmoid-ThinkPad-T470) unknown; sleeping for retry
Oct 11 16:35:31 sigmoid-ThinkPad-T470 sm-msp-queue[1911]: My unqualified host name (sigmoid-ThinkPad-T470) unknown; sleeping for retry
Oct 11 16:36:29 sigmoid-ThinkPad-T470 sm-mta[1811]: unable to qualify my own domain name (sigmoid-ThinkPad-T470) -- using short name
Oct 11 16:36:30 sigmoid-ThinkPad-T470 sm-mta[3909]: starting daemon (8.15.2): SMTP+queueing@00:10:00
Oct 11 16:36:31 sigmoid-ThinkPad-T470 sm-msp-queue[1911]: unable to qualify my own domain name (sigmoid-ThinkPad-T470) -- using short name
Oct 11 16:36:31 sigmoid-ThinkPad-T470 sendmail[1723]: ...done.
Oct 11 16:36:31 sigmoid-ThinkPad-T470 systemd[1]: Started LSB: powerful, efficient, and scalable Mail Transport Agent.
root@sigmoid-ThinkPad-T470:~# nano email.txt
root@sigmoid-ThinkPad-T470:~# sendmail -t <email.txt
root@sigmoid-ThinkPad-T470:~# cat email.txt
To:nandeesh.kv@sigmoidanalytics.com

Subject: testing mail

hello world

welcome to sigmoid
```

```
root@sigmoid-ThinkPad-T470:~# sudo tail -f /var/log/mail.log
Oct 11 16:41:01 sigmoid-ThinkPad-T470 sm-msp-queue[4247]: unable to qualify my own domain name (sigmoid-ThinkPad-T470) -- using short name
Oct 11 16:43:03 sigmoid-ThinkPad-T470 sendmail[4343]: My unqualified host name (sigmoid-ThinkPad-T470) unknown; sleeping for retry
Oct 11 16:44:03 sigmoid-ThinkPad-T470 sendmail[4343]: unable to qualify my own domain name (sigmoid-ThinkPad-T470) -- using short name
Oct 11 16:44:03 sigmoid-ThinkPad-T470 sendmail[4343]: 49BBE3tm004343: from=sigmoid, size=95, class=0, nrcpts=1, msgid=<202410111114.49BBE3tm004343@sigmoid-ThinkPad-T470>, relay=root@localhost
Oct 11 16:44:03 sigmoid-ThinkPad-T470 sm-mta[4348]: 49BBE3ar004348: from=<sigmoid@sigmoid-ThinkPad-T470>, size=376, class=0, nrcpts=1, msgid=<202410111114.49BBE3tm004343@sigmoid-ThinkPad-T470>, proto=ESMTP, daemon=MTA-v4, relay=localhost [127.0.0.1]
Oct 11 16:44:03 sigmoid-ThinkPad-T470 sendmail[4343]: 49BBE3tm004343: to=nandeesh.kv@sigmoidanalytics.com, ctladdr=sigmoid (1000/1000), delay=00:00:00, xdelay=00:00:00, mailer=relay, pri=30095, relay=[127.0.0.1] [127.0.0.1], dsn=2.0.0, stat=Sent (49BBE3ar004348 Message accepted for delivery)
Oct 11 16:44:05 sigmoid-ThinkPad-T470 sm-mta[4350]: STARTTLS=client, relay=aspmx.l.google.com., version=TLSv1.3, verify=FAIL, cipher=TLS_AES_256_GCM_SHA384, bits=256/256
Oct 11 16:44:06 sigmoid-ThinkPad-T470 sm-mta[4350]: 49BBE3ar004348: to=<nandeesh.kv@sigmoidanalytics.com>, ctladdr=<sigmoid@sigmoid-ThinkPad-T470> (1000/1000), delay=00:00:03, xdelay=00:00:03, mailer=esmtpl, pri=120376, relay=aspmx.l.google.com. [74.125.200.26], dsn=5.0.0, stat=Service unavailable
Oct 11 16:44:06 sigmoid-ThinkPad-T470 sm-mta[4350]: 49BBE3ar004348: 49BBE6ar004350: DSN: Service unavailable
Oct 11 16:44:07 sigmoid-ThinkPad-T470 sm-mta[4350]: 49BBE6ar004350: to=<sigmoid@sigmoid-ThinkPad-T470>, delay=00:00:01, xdelay=00:00:01, mailer=local, pri=30000, dsn=2.0.0, stat=Sent
```

## Task 2 :

Create a user in your localhost, which should not be able to execute the sudo command.

```
root@sigmoid-ThinkPad-T470:~# adduser localuser
Adding user 'localuser' ...
Adding new group 'localuser' (1004) ...
Adding new user 'localuser' (1003) with group 'localuser' ...
The home directory '/home/localuser' already exists. Not copying from '/etc/skel'.
adduser: Warning: The home directory '/home/localuser' does not belong to the user you are currently creating.
New password:
Retype new password:
passwd: password updated successfully
Changing the user information for localuser
Enter the new value, or press ENTER for the default
  Full Name []:
  Room Number []:
  Work Phone []:
  Home Phone []:
  Other []:
Is the information correct? [Y/n] y
root@sigmoid-ThinkPad-T470:~# su nandeesh
nandeesh@sigmoid-ThinkPad-T470:/root$ su -
Password:
su: Authentication failure
nandeesh@sigmoid-ThinkPad-T470:/root$ sudo su -
[sudo] password for nandeesh:
nandeesh is not in the sudoers file. This incident will be reported.
nandeesh@sigmoid-ThinkPad-T470:/root$ cat /etc/group | grep sudo
sudo:x:27:sigmoid
nandeesh@sigmoid-ThinkPad-T470:/root$
```

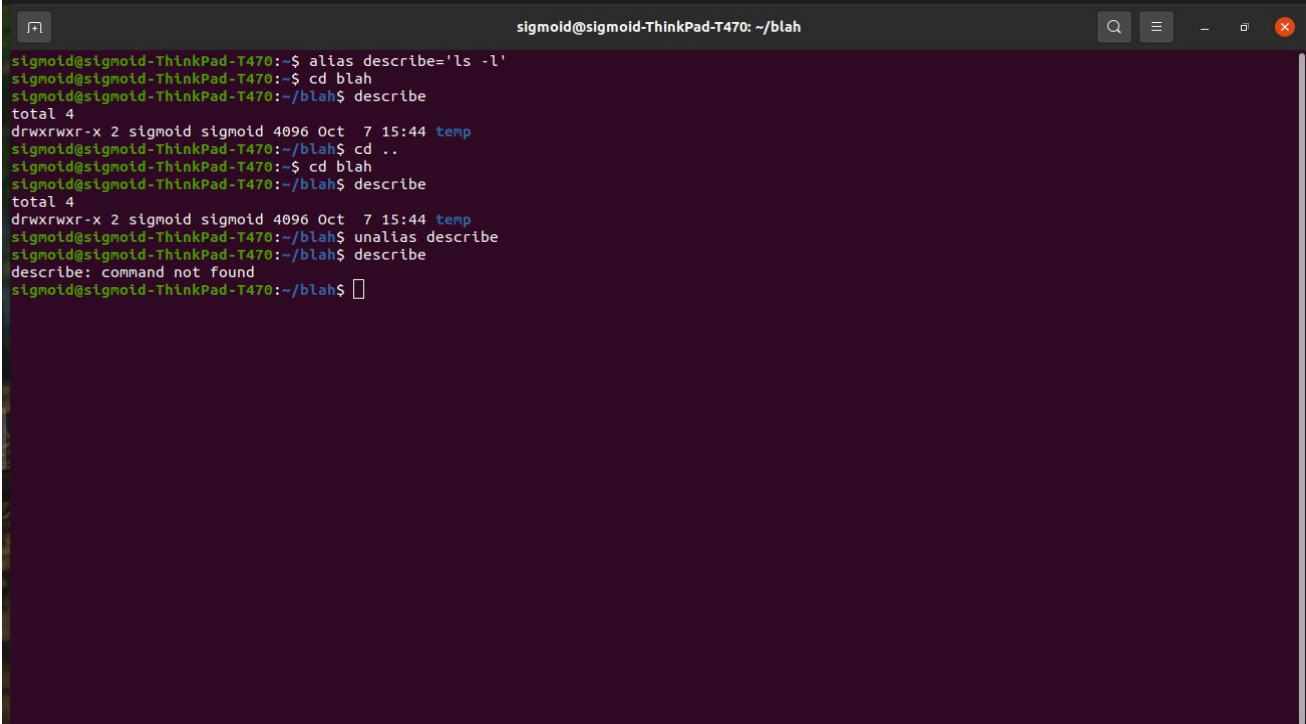
### Task 3:

**Configure your system in such a way that when a user type and executes a **describe** command from anywhere of the system it must list all the files and folders of the user's current directory.**

Ex:- \$ **describe**

\$ content1 content2

Content3 content 4



```
sigmoid@sigmoid-ThinkPad-T470: ~/blah
sigmoid@sigmoid-ThinkPad-T470:~$ alias describe='ls -l'
sigmoid@sigmoid-ThinkPad-T470:~$ cd blah
sigmoid@sigmoid-ThinkPad-T470:~/blah$ describe
total 4
drwxrwxr-x 2 sigmoid sigmoid 4096 Oct  7 15:44 temp
sigmoid@sigmoid-ThinkPad-T470:~/blah$ cd ..
sigmoid@sigmoid-ThinkPad-T470:~$ cd blah
sigmoid@sigmoid-ThinkPad-T470:~/blah$ describe
total 4
drwxrwxr-x 2 sigmoid sigmoid 4096 Oct  7 15:44 temp
sigmoid@sigmoid-ThinkPad-T470:~/blah$ unalias describe
sigmoid@sigmoid-ThinkPad-T470:~/blah$ describe
describe: command not found
sigmoid@sigmoid-ThinkPad-T470:~/blah$
```

#### Task 4:

Users can put a compressed file at any path of the linux file system. The name of the file will be **research** and the extension will be of compression type, example for gzip type extension will be .gz. You have to find the file and check the compression type and uncompress it.

```
root@sigmoid-ThinkPad-T470:~# ls -l > research
root@sigmoid-ThinkPad-T470:~# ls -l | grep research
-rw-r--r-- 1 root root 207 Oct 12 08:17 research
root@sigmoid-ThinkPad-T470:~# gzip research
root@sigmoid-ThinkPad-T470:~# ls -l | grep decompress.gz
root@sigmoid-ThinkPad-T470:~# ls -l | grep research.gz
-rw-r--r-- 1 root root 151 Oct 12 08:17 research.gz
root@sigmoid-ThinkPad-T470:~# vi decompress
root@sigmoid-ThinkPad-T470:~# cat decompress
#!/bin/bash
# Find the file with name 'research' and decompress it based on its extension

research_file=$(find / -name "research.*" 2>/dev/null)

if [[ -z "$research_file" ]]; then
    echo "No file found with the name 'research'."
    exit 1
fi

echo "Found file: $research_file"

# Get the file type
file_type=$(file -b "$research_file")

if [[ $file_type == *"gzip compressed data"* ]]; then
    echo "Decompressing gzip file..."
    gzip -d "$research_file"
else
    echo "Unknown compression type or not a compressed file."
fi

root@sigmoid-ThinkPad-T470:~# chmod a+x decompress
root@sigmoid-ThinkPad-T470:~# ./decompress
Found file: /root/research.gz
Decompressing gzip file...
root@sigmoid-ThinkPad-T470:~# ls -l | grep research
-rw-r--r-- 1 root root 207 Oct 12 08:17 research
root@sigmoid-ThinkPad-T470:~#
```

## Task 5 :

1. Configure your system in such a way that any user of your system creates a file then there should not be permission to do any activity in that file.

Note:- Don't use the chmod command.

```
root@sigmoid-ThinkPad-T470:~# nano /etc/profile
root@sigmoid-ThinkPad-T470:~# source /etc/profile
root@sigmoid-ThinkPad-T470:~# umask
0777
root@sigmoid-ThinkPad-T470:~# touch newfile
root@sigmoid-ThinkPad-T470:~# ls -l newfile
----- 1 root root 0 Oct 11 12:48 newfile
root@sigmoid-ThinkPad-T470:~#
```

## Task 6:

Create a service with the name **showtime** , after starting the service, every minute it should print the current time in a file in the user home directory.

Ex:-

sudo service showtime start -> It should start writing in file.

sudo service showtime stop -> It should stop writing in file.

sudo service showtime status -> It should show status.

```
root@sigmoid-ThinkPad-T470:~# nano /usr/local/bin/showtime.sh
root@sigmoid-ThinkPad-T470:~# chmod a+x /usr/local/bin/showtime.sh
root@sigmoid-ThinkPad-T470:~# cat /usr/local/bin/showtime.sh
#!/bin/bash
LOGFILE="showtime.log"

while true; do
    echo "$(date)" >> "$LOGFILE"
    sleep 60
done
root@sigmoid-ThinkPad-T470:~# nano /etc/systemd/system/showtime.service
root@sigmoid-ThinkPad-T470:~# cat /etc/systemd/system/showtime.service
[Unit]
Description=Showtime Service

[Service]
Type=simple
ExecStart=/usr/local/bin/showtime.sh
User=root
Restart=always

[Install]
WantedBy=multi-user.target

root@sigmoid-ThinkPad-T470:~# sudo systemctl daemon-reload
root@sigmoid-ThinkPad-T470:~# sudo systemctl start showtime.service
Failed to start showtime.service: Unit showtime.service not found.
root@sigmoid-ThinkPad-T470:~# nano /etc/systemd/system/showtime.service
root@sigmoid-ThinkPad-T470:~# nano /etc/systemd/system/showtime.service
root@sigmoid-ThinkPad-T470:~# cat /etc/systemd/system/showtime.service
[Unit]
Description=Showtime Service

[Service]
Type=simple
ExecStart=/usr/local/bin/showtime.sh
User=root
Restart=always

[Install]
WantedBy=multi-user.target

root@sigmoid-ThinkPad-T470:~# sudo systemctl daemon-reload
```

```
root@sigmoid-ThinkPad-T470:~# sudo systemctl start showtime.service
root@sigmoid-ThinkPad-T470:~# sudo systemctl status showtime.service
● showtime.service - Showtime Service
   Loaded: loaded (/etc/systemd/system/showtime.service; disabled; vendor preset: enabled)
   Active: active (running) since Thu 2024-10-10 22:07:40 IST; 9s ago
     Main PID: 3545 (showtime.sh)
        Tasks: 2 (limit: 9112)
      Memory: 520.0K
       CGroup: /system.slice/showtime.service
               └─3545 /bin/bash /usr/local/bin/showtime.sh
                 └─3547 sleep 60

Oct 10 22:07:40 sigmoid-ThinkPad-T470 systemd[1]: Started Showtime Service.
root@sigmoid-ThinkPad-T470:~# cd /
root@sigmoid-ThinkPad-T470:/# cat showtime.log
Thursday 10 October 2024 10:07:40 PM IST
Thursday 10 October 2024 10:08:40 PM IST
root@sigmoid-ThinkPad-T470:/#
```