RV UNIVERSITY
School of Computer Science and Engineering
Bengaluru – 560059

Linux Administration
Course Code: CS1106

II Semester SoCSE
Laboratory Record

Name	**Riyan Shrestha**
USN	**1RUA24BCA0075**
Academic Year	**2024 - 2025**

RV UNIVERSITY

School of Computer Science and Engineering

Bengaluru – 560 059

LABORATORY CERTIFICATE

This is to certify that **Mr./Ms. Riyan Shrestha** has satisfactorily completed the course of activities in **Linux Administration (CS)** prescribed by the **School of Computer Science and Engineering** during the year **2024-25.**

Name of the Candidate: Riyan Shrestha

USN: 1RUA24BCA0075 **Semester: 2**

Marks	
Maximum	**Obtained**
5	

Signature of Faculty in-charge **Program Director**

Date:

Vision and Mission of the School of Computer Science and Engineering

Vision

To be a pioneering school of Computer Science and Engineering committed to fostering liberal education and empowering the next generation of technologists to make a positive global socio-economic impact.

Mission

- To be a pioneer in computer science education and benchmark ourselves with the world's top computer science and engineering institutions.
- To provide state-of-the-art facilities that enable exemplary pedagogy, advanced research, innovation and entrepreneurship in emerging technologies of computer science.
- To promote a culture of cooperation and inclusiveness among students and faculty from diverse communities enabling them to take part in interdisciplinary and multidisciplinary research, contributing to institution-building.
- To foster excellence through national and international academic, industry collaborations, bringing in diverse perspectives to drive innovation.
- To nurture a talented pool of ethical, self-driven and empathetic problem solvers to achieve sustainable development goals.

INDEX

Lab 1: Basic Linux Navigation

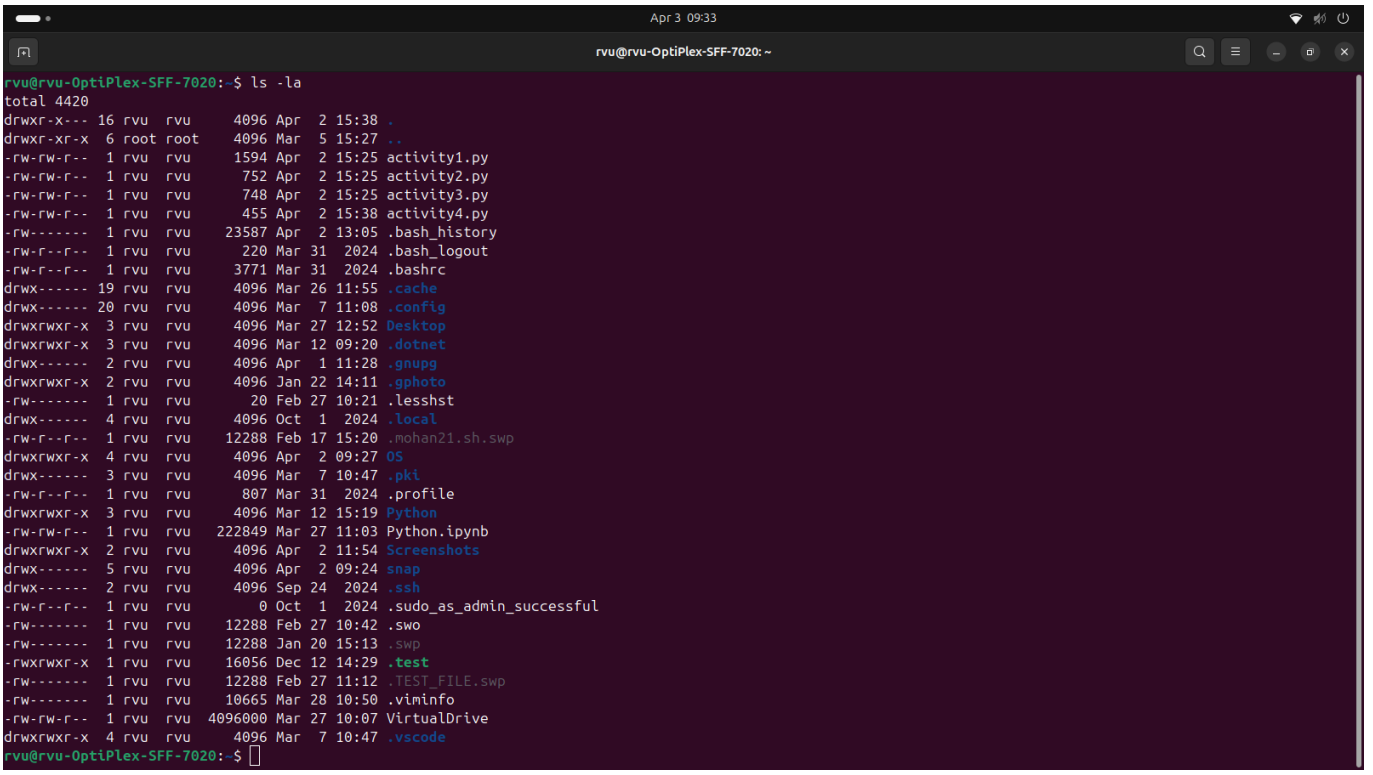
Aim: Learn to use the command line programs to navigate and manage a linux system

Commands used:

- ls
- cd
- pwd
- touch
- mkdir
- rmdir
- rm
- mv
- cp

Usage:

1. ls – list directory contents
   Syntax: ls [options] [directory]
   <Insert screenshot(s) here of ls, ls –a, ls –la, etc>

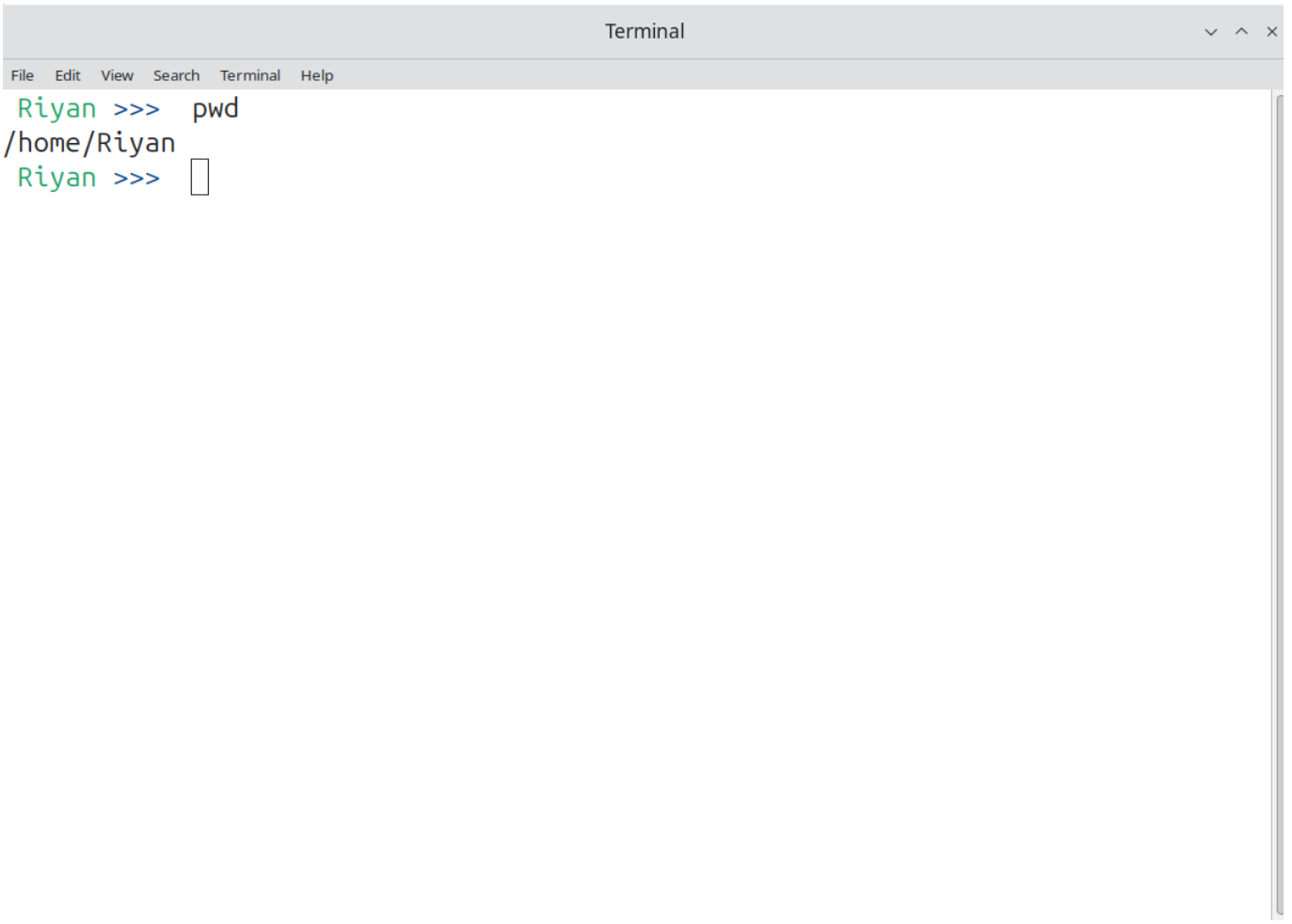


```
rvu@rvu-OptiPlex-SFF-7020:~$ ls /home
rvu
rvu@rvu-OptiPlex-SFF-7020:~$ ls /home/rvu
 a           Downloads   foos           Music               snap         vinayak.txt
 ARCHANA     file1.txt   harshini       Pictures            tanish7a.c   vishnu
 Desktop     filename    harshini.txt  'Programming in C'    Templates    yogi
 Documents   fol1        Jenny_Isec     Public              Videos
rvu@rvu-OptiPlex-SFF-7020:~$ pwd
/home/rvu
```

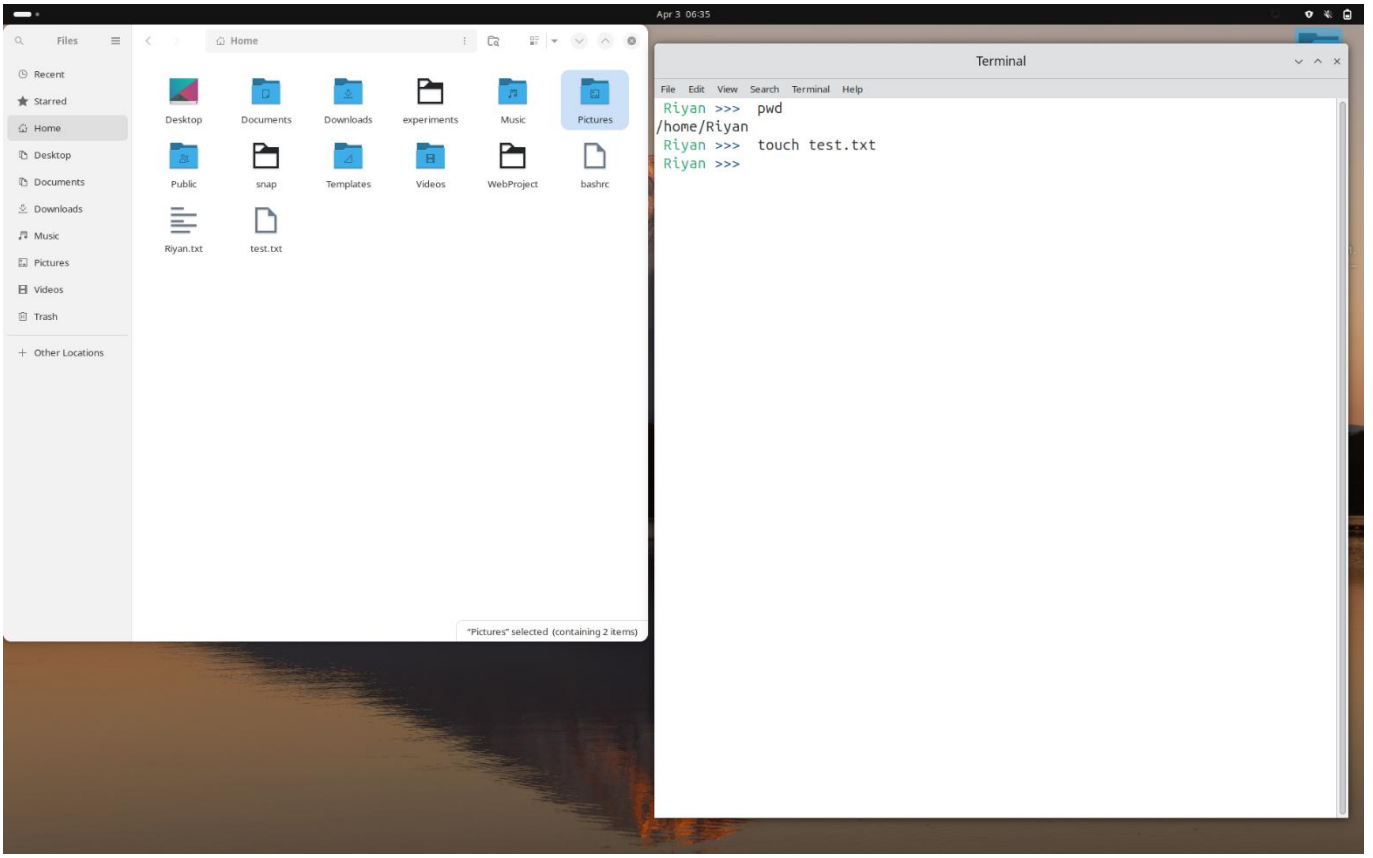
2. cd

```
rvu@rvu-OptiPlex-SFF-7020:~$ cd 123
rvu@rvu-OptiPlex-SFF-7020:~/123$ cd ..
rvu@rvu-OptiPlex-SFF-7020:~$ rmdir 123
rvu@rvu-OptiPlex-SFF-7020:~$ mkdir 456
rvu@rvu-OptiPlex-SFF-7020:~$ cd 456
rvu@rvu-OptiPlex-SFF-7020:~/456$ mkdir 123
rvu@rvu-OptiPlex-SFF-7020:~/456$ cd 123
rvu@rvu-OptiPlex-SFF-7020:~/456/123$ mkdir 789
rvu@rvu-OptiPlex-SFF-7020:~/456/123$ cd 789
rvu@rvu-OptiPlex-SFF-7020:~/456/123/789$
```

3. pwd


Terminal
File Edit View Search Terminal Help
Riyan >>> pwd
/home/Riyan
Riyan >>>

4. touch


Apr 3 06:35
Files
Home
Recent
Starred
Home
Desktop
Documents
Downloads
Music
Pictures
Videos
Trash
Other Locations
Desktop
Documents
Downloads
experiments
Music
Pictures
Public
snap
Templates
Videos
WebProject
bashrc
Riyan.txt
test.txt
"Pictures" selected (containing 2 items)
Terminal
File Edit View Search Terminal Help
Riyan >>> pwd
/home/Riyan
Riyan >>> touch test.txt
Riyan >>>

5. mkdir

```
rvu@rvu-OptiPlex-SFF-7020:~$ cd 456
rvu@rvu-OptiPlex-SFF-7020:~/456$ mkdir 123
rvu@rvu-OptiPlex-SFF-7020:~/456$ cd ../123
rvu@rvu-OptiPlex-SFF-7020:~/123$ mkdir 789
rvu@rvu-OptiPlex-SFF-7020:~/123$ cd ..
rvu@rvu-OptiPlex-SFF-7020:~$ ls 456
123
rvu@rvu-OptiPlex-SFF-7020:~$ ls 123
789
```

6. rmdir

```
rvu@rvu-OptiPlex-SFF-7020:~$ rmdir 456/123/789
rvu@rvu-OptiPlex-SFF-7020:~$ rmdir 456/123
rvu@rvu-OptiPlex-SFF-7020:~$ rmdir 456
rvu@rvu-OptiPlex-SFF-7020:~$ cd 456
bash: cd: 456: No such file or directory
```

7. rm

```
rvu@rvu-OptiPlex-SFF-7020:~$ rm 456/123/789/test
rvu@rvu-OptiPlex-SFF-7020:~$ rmdir 456/123/789
rvu@rvu-OptiPlex-SFF-7020:~$ rmdir 456/123
rvu@rvu-OptiPlex-SFF-7020:~$ rmdir 456
rvu@rvu-OptiPlex-SFF-7020:~$ rmdir 456
```

8. mv

```
rvu@rvu-OptiPlex-SFF-7020:~$ touch 12345678
rvu@rvu-OptiPlex-SFF-7020:~$ mv 12345678 abc.txt
rvu@rvu-OptiPlex-SFF-7020:~$ cd 12345678
bash: cd: 12345678: No such file or directory
rvu@rvu-OptiPlex-SFF-7020:~$ cd abc.txt
bash: cd: abc.txt: Not a directory
rvu@rvu-OptiPlex-SFF-7020:~$ ls abc.txt
abc.txt
```

9. cp

```
rvu@rvu-OptiPlex-SFF-7020:~$ touch report.txt
rvu@rvu-OptiPlex-SFF-7020:~$ mkdir backup
mkdir: cannot create directory ‘backup’: File exists
rvu@rvu-OptiPlex-SFF-7020:~$ cp report.txt backup
rvu@rvu-OptiPlex-SFF-7020:~$ ls backup
file.txt  Learning.vim.txt  m.txt  myfile_copied.txt  notes.txt  report.txt
rvu@rvu-OptiPlex-SFF-7020:~$
```

Lab 2: Using the vi/vim editor

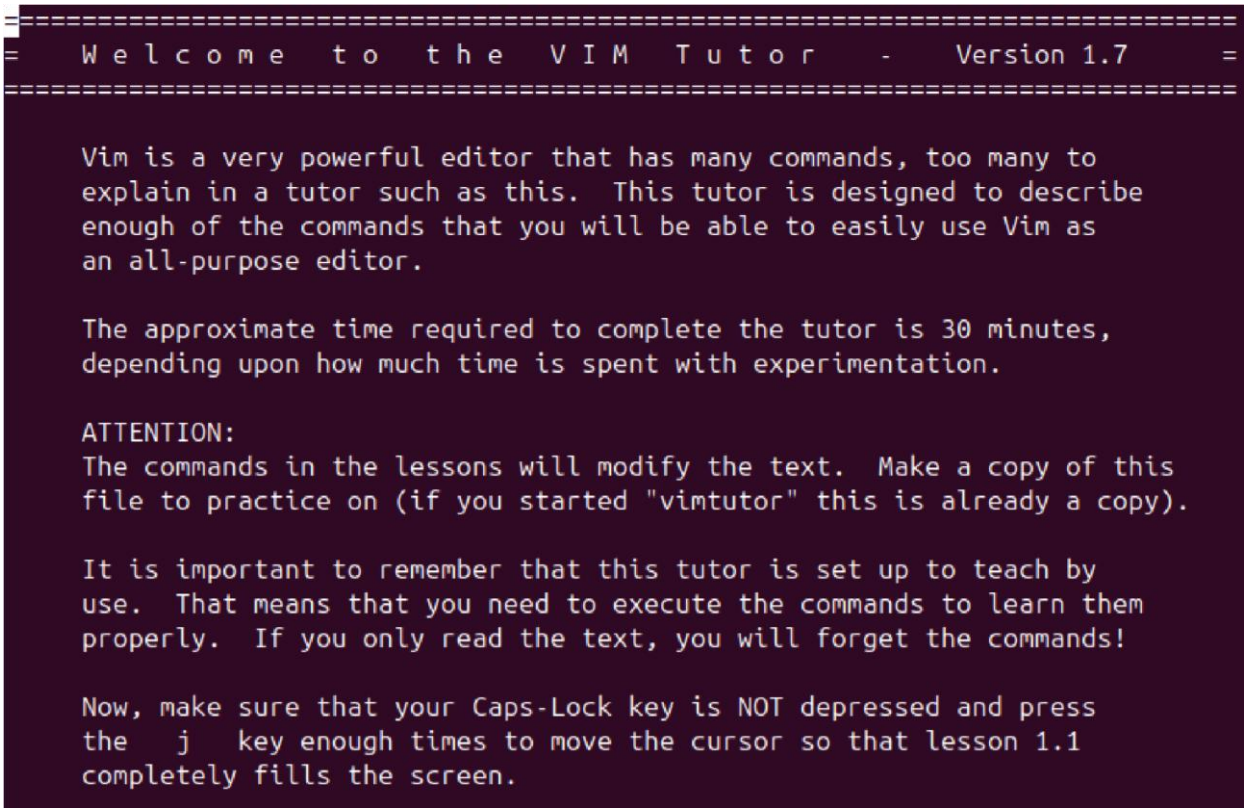
Aim: Learn to use the text-based editor vim.

Commands used:

- vimtutor
- vim

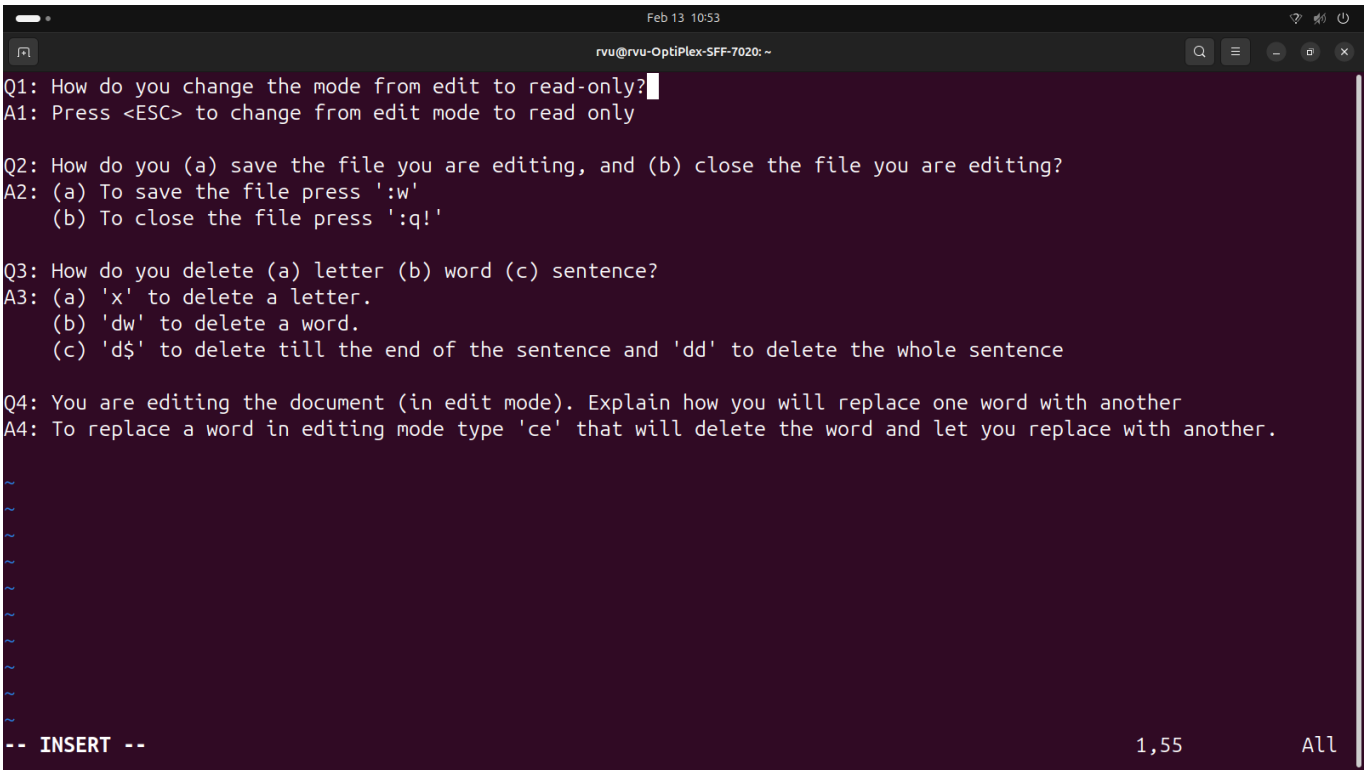
Usage:

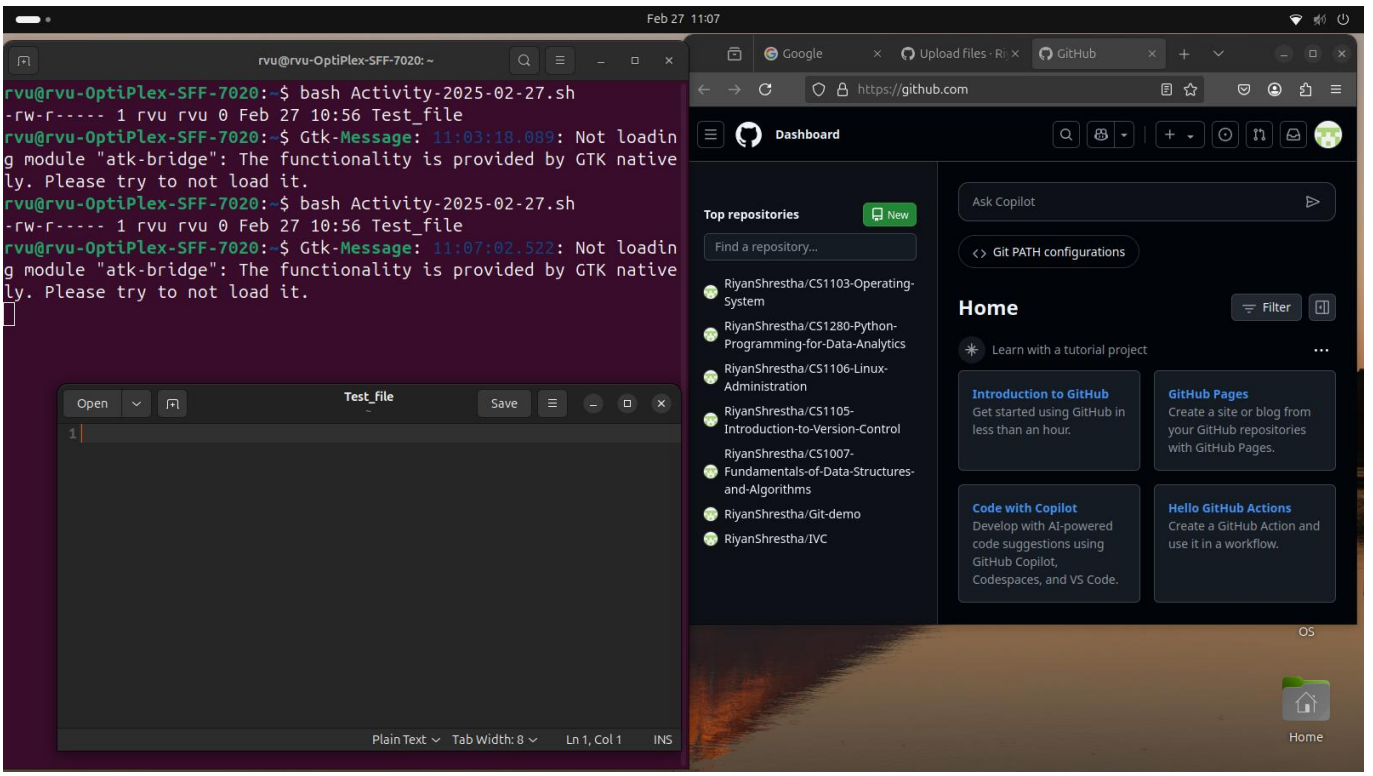
1. vimtutor – learn how to use the vim editor
   <Insert screenshot(s) here of vimtutor>

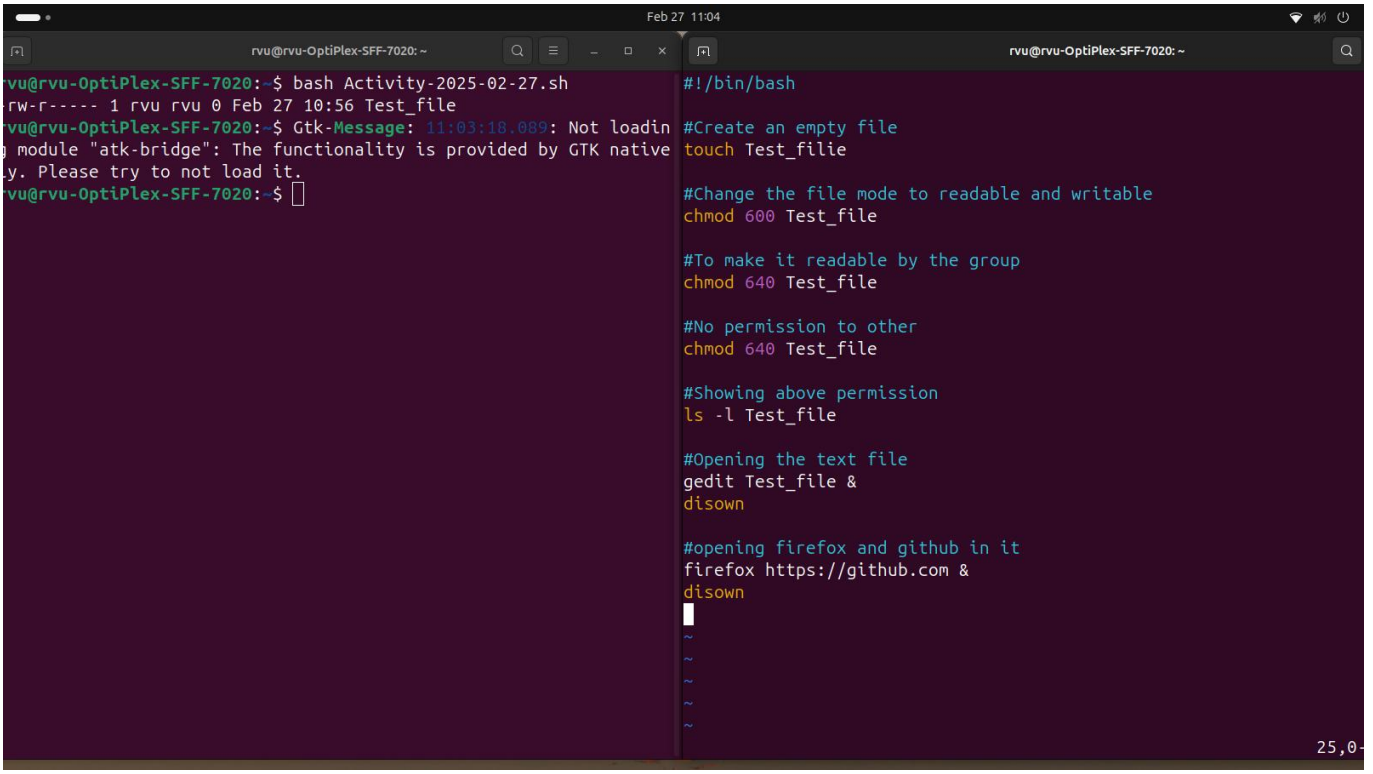


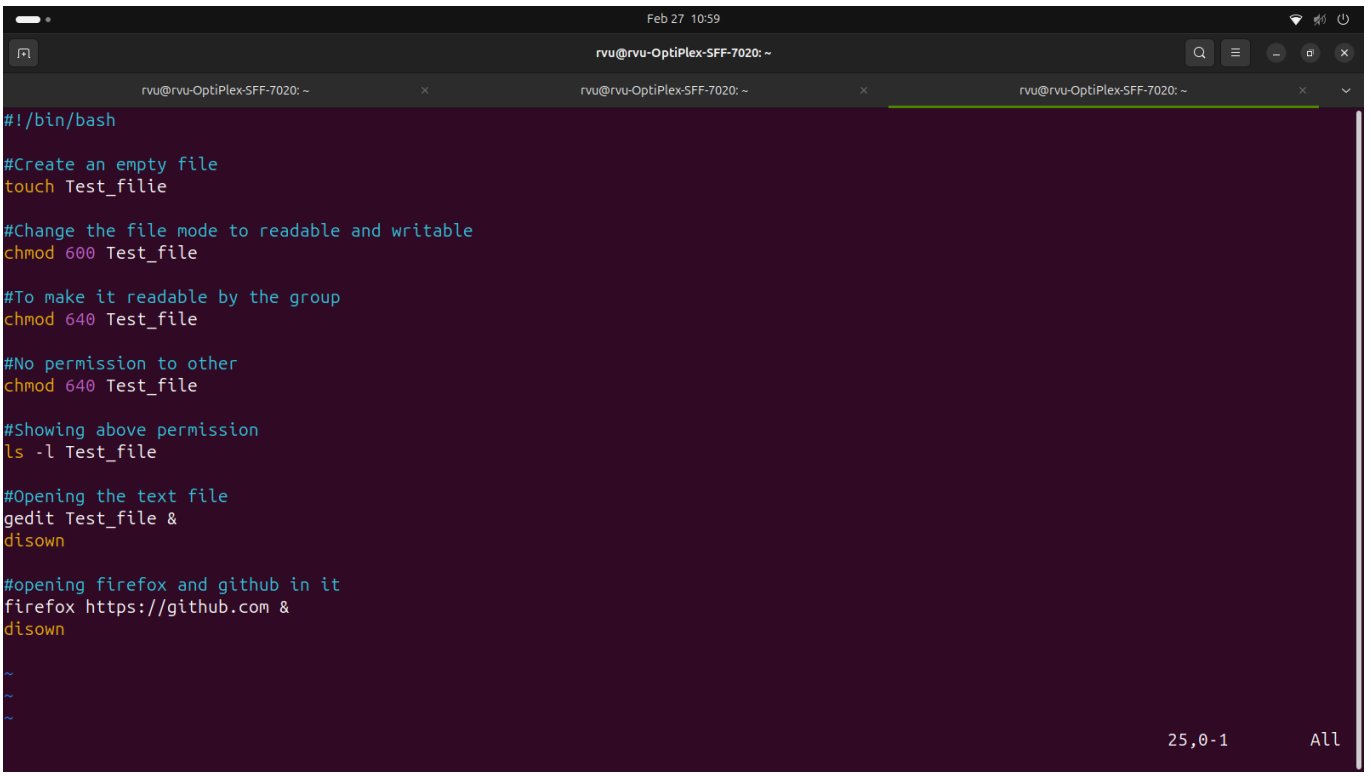
2. vim
   <Insert screenshot(s) here of you using vim>


rvu@rvu-OptiPlex-SFF-7020: ~


Feb 13 10:53
rvu@rvu-OptiPlex-SFF-7020: ~
Q1: How do you change the mode from edit to read-only?
A1: Press <ESC> to change from edit mode to read only
Q2: How do you (a) save the file you are editing, and (b) close the file you are editing?
A2: (a) To save the file press ':w'
(b) To close the file press ':q!'
Q3: How do you delete (a) letter (b) word (c) sentence?
A3: (a) 'x' to delete a letter.
(b) 'dw' to delete a word.
(c) 'd$' to delete till the end of the sentence and 'dd' to delete the whole sentence
Q4: You are editing the document (in edit mode). Explain how you will replace one word with another
A4: To replace a word in editing mode type 'ce' that will delete the word and let you replace with another.
-- INSERT --
1,55
All

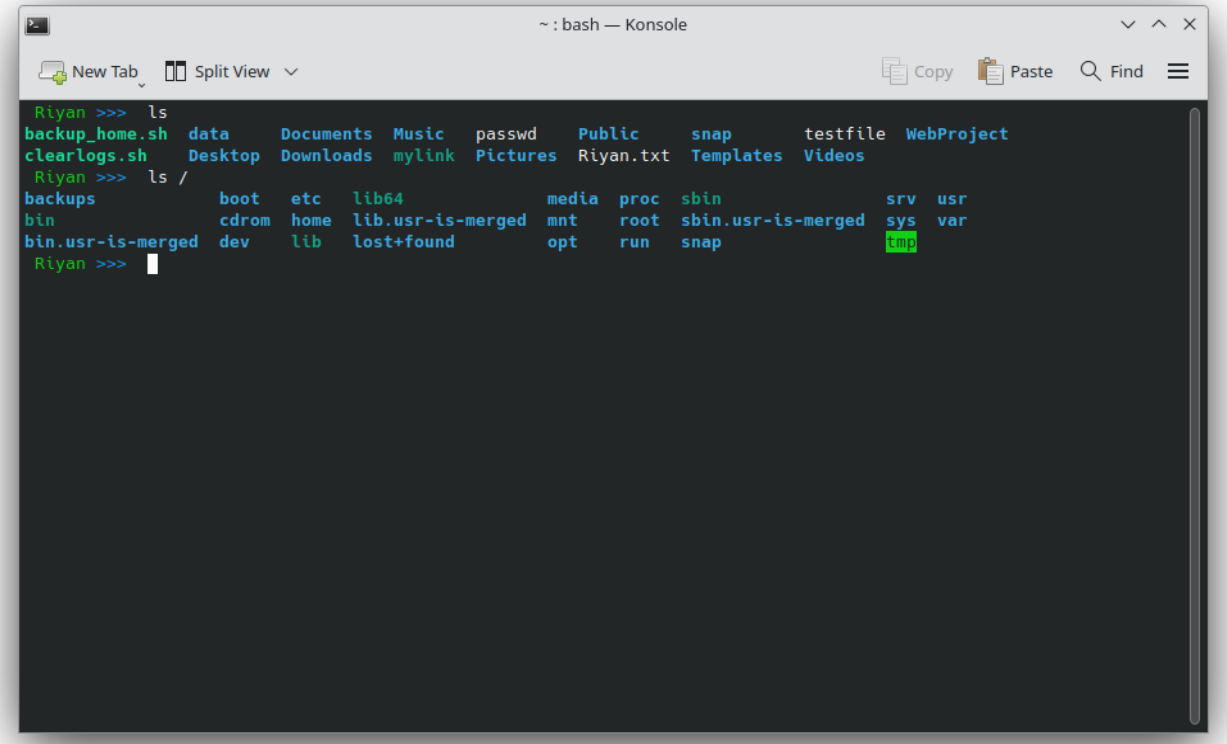

Feb 27 11:07
rvu@rvu-OptiPlex-SFF-7020: ~
rvu@rvu-OptiPlex-SFF-7020:~$ bash Activity-2025-02-27.sh
-rw-r----- 1 rvu rvu 0 Feb 27 10:56 Test_file
rvu@rvu-OptiPlex-SFF-7020:~$ Gtk-Message: 11:03:18.089: Not loadin
g module "atk-bridge": The functionality is provided by GTK native
ly. Please try to not load it.
rvu@rvu-OptiPlex-SFF-7020:~$ bash Activity-2025-02-27.sh
-rw-r----- 1 rvu rvu 0 Feb 27 10:56 Test_file
rvu@rvu-OptiPlex-SFF-7020:~$ Gtk-Message: 11:07:02.522: Not loadin
g module "atk-bridge": The functionality is provided by GTK native
ly. Please try to not load it.
Open
Test_file
Save
1
Plain Text
Tab Width: 8
Ln 1, Col 1
INS
Google
Upload files · Ri
GitHub
https://github.com
Dashboard
Top repositories
New
Find a repository...
RiyanShrestha/CS1103-Operating-System
RiyanShrestha/CS1280-Python-Programming-for-Data-Analytics
RiyanShrestha/CS1106-Linux-Administration
RiyanShrestha/CS1105-Introduction-to-Version-Control
RiyanShrestha/CS1007-Fundamentals-of-Data-Structures-and-Algorithms
RiyanShrestha/Git-demo
RiyanShrestha/IVC
Ask Copilot
Git PATH configurations
Home
Filter
Learn with a tutorial project
Introduction to GitHub
Get started using GitHub in less than an hour.
GitHub Pages
Create a site or blog from your GitHub repositories with GitHub Pages.
Code with Copilot
Develop with AI-powered code suggestions using GitHub Copilot, Codespaces, and VS Code.
Hello GitHub Actions
Create a GitHub Action and use it in a workflow.
OS
Home


Feb 27 11:04
rvu@rvu-OptiPlex-SFF-7020: ~
rvu@rvu-OptiPlex-SFF-7020:~$ bash Activity-2025-02-27.sh
-rw-r----- 1 rvu rvu 0 Feb 27 10:56 Test_file
rvu@rvu-OptiPlex-SFF-7020:~$ Gtk-Message: 11:03:18.089: Not loadin
g module "atk-bridge": The functionality is provided by GTK native
ly. Please try to not load it.
rvu@rvu-OptiPlex-SFF-7020:~$
rvu@rvu-OptiPlex-SFF-7020: ~
#!/bin/bash
#Create an empty file
touch Test_filie
#Change the file mode to readable and writable
chmod 600 Test_file
#To make it readable by the group
chmod 640 Test_file
#No permission to other
chmod 640 Test_file
#Showing above permission
ls -l Test_file
#Opening the text file
gedit Test_file &
disown
#opening firefox and github in it
firefox https://github.com &
disown
25,0-


Feb 27 10:59
rvu@rvu-OptiPlex-SFF-7020: ~
rvu@rvu-OptiPlex-SFF-7020: ~
rvu@rvu-OptiPlex-SFF-7020: ~
rvu@rvu-OptiPlex-SFF-7020: ~
#!/bin/bash
#Create an empty file
touch Test_filie
#Change the file mode to readable and writable
chmod 600 Test_file
#To make it readable by the group
chmod 640 Test_file
#No permission to other
chmod 640 Test_file
#Showing above permission
ls -l Test_file
#Opening the text file
gedit Test_file &
disown
#opening firefox and github in it
firefox https://github.com &
disown
~
~
~
25,0-1 All

Lab 3:

Aim: Exploring the Directory Structure and File Types




```
rvu@rvu-OptiPlex-SFF-7020:~$ cd 123
rvu@rvu-OptiPlex-SFF-7020:~/123$ cd ..
rvu@rvu-OptiPlex-SFF-7020:~$ rmdir 123
rvu@rvu-OptiPlex-SFF-7020:~$ mkdir 456
rvu@rvu-OptiPlex-SFF-7020:~$ cd 456
rvu@rvu-OptiPlex-SFF-7020:~/456$ mkdir 123
rvu@rvu-OptiPlex-SFF-7020:~/456$ cd 123
rvu@rvu-OptiPlex-SFF-7020:~/456/123$ mkdir 789
rvu@rvu-OptiPlex-SFF-7020:~/456/123$ cd 789
rvu@rvu-OptiPlex-SFF-7020:~/456/123/789$
```

```
rvu@rvu-OptiPlex-SFF-7020:~/456/123/789$ cd ..
rvu@rvu-OptiPlex-SFF-7020:~/456/123$ cd ..
rvu@rvu-OptiPlex-SFF-7020:~/456$ cd ..
rvu@rvu-OptiPlex-SFF-7020:~$ mkdir -p 456/123/789
rvu@rvu-OptiPlex-SFF-7020:~$ cd 456
rvu@rvu-OptiPlex-SFF-7020:~/456$ cd 123
rvu@rvu-OptiPlex-SFF-7020:~/456/123$ cd 789
rvu@rvu-OptiPlex-SFF-7020:~/456/123/789$ touch test
rvu@rvu-OptiPlex-SFF-7020:~/456/123/789$ ls
test
rvu@rvu-OptiPlex-SFF-7020:~/456/123/789$ ls -l
total 0
-rw-rw-r-- 1 rvu rvu 0 Jan 30 11:33 test
rvu@rvu-OptiPlex-SFF-7020:~/456/123/789$
```

Lab 4:

Aim: Creating and Managing User Accounts

Commands used:

- **sudo adduser username**
- **sudo passwd username**
- **cat /etc/passwd**
- **sudo deluser username**

Usage:

1. sudo adduser username -creates a new user

```
rvu@rvu-OptiPlex-SFF-7020:~$ sudo adduser rvu7
[sudo] password for rvu:
info: Adding user `rvu7' ...
info: Selecting UID/GID from range 1000 to 59999 ...
info: Adding new group `rvu7' (1001) ...
info: Adding new user `rvu7' (1001) with group `rvu7 (1001)' ...
info: Creating home directory `/home/rvu7' ...
info: Copying files from `/etc/skel' ...
New password:
BAD PASSWORD: The password is shorter than 8 characters
Retype new password:
passwd: password updated successfully
Changing the user information for rvu7
Enter the new value, or press ENTER for the default
        Full Name []: Rv_university
        Room Number []: 504
        Work Phone []: 080
        Home Phone []: 12345678
        Other []: --
Is the information correct? [Y/n] y
info: Adding new user `rvu7' to supplemental / extra groups `users' ...
info: Adding user `rvu7' to group `users' ...
rvu@rvu-OptiPlex-SFF-7020:~$
```

1. sudo passwd username - set or change the password

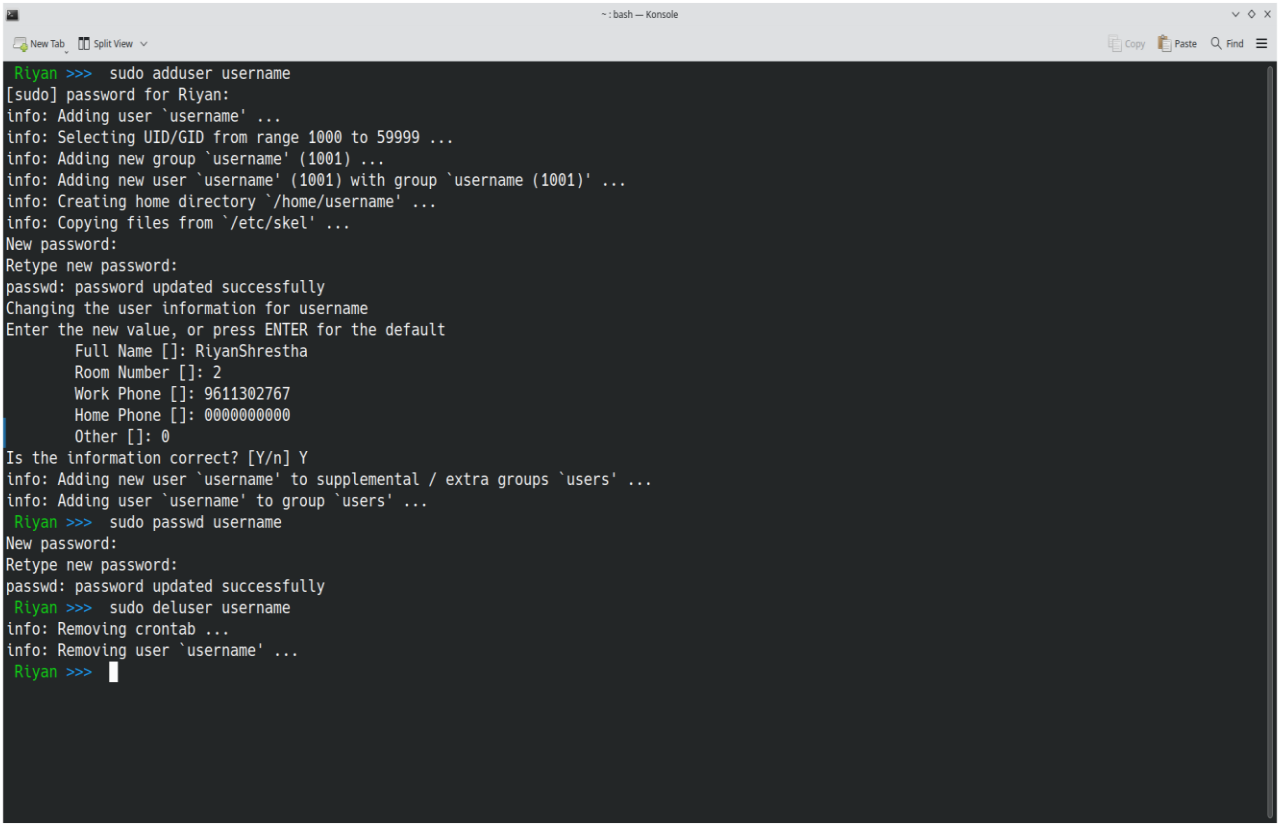
```
rvu@rvu-OptiPlex-SFF-7020:~$ sudo passwd rvu7
New password:
BAD PASSWORD: The password is shorter than 8 characters
Retype new password:
passwd: password updated successfully
rvu@rvu-OptiPlex-SFF-7020:~$
```

2. cat /etc/passwd –displays content of all users present on the system

```
rvu@rvu-OptiPlex-SFF-7020:~$ cat /etc/passwd
root:x:0:0:root:/root:/bin/bash
daemon:x:1:1:daemon:/usr/sbin:/usr/sbin/nologin
bin:x:2:2:bin:/bin:/usr/sbin/nologin
sys:x:3:3:sys:/dev:/usr/sbin/nologin
sync:x:4:65534:sync:/bin:/bin/sync
games:x:5:60:games:/usr/games:/usr/sbin/nologin
man:x:6:12:man:/var/cache/man:/usr/sbin/nologin
lp:x:7:7:lp:/var/spool/lpd:/usr/sbin/nologin
mail:x:8:8:mail:/var/mail:/usr/sbin/nologin
news:x:9:9:news:/var/spool/news:/usr/sbin/nologin
uucp:x:10:10:uucp:/var/spool/uucp:/usr/sbin/nologin
proxy:x:13:13:proxy:/bin:/usr/sbin/nologin
www-data:x:33:33:www-data:/var/www:/usr/sbin/nologin
backup:x:34:34:backup:/var/backups:/usr/sbin/nologin
list:x:38:38:Mailing List Manager:/var/list:/usr/sbin/nologin
irc:x:39:39:ircd:/run/ircd:/usr/sbin/nologin
_apt:x:42:65534::/nonexistent:/usr/sbin/nologin
nobody:x:65534:65534:nobody:/nonexistent:/usr/sbin/nologin
systemd-network:x:998:998:systemd Network Management:/:/usr/sbin/nologin
systemd-timesync:x:996:996:systemd Time Synchronization:/:/usr/sbin/nologin
dhcpcd:x:100:65534:DHCP Client Daemon,,,:/usr/lib/dhcpcd:/bin/false
messagebus:x:101:101::/nonexistent:/usr/sbin/nologin
syslog:x:102:102::/nonexistent:/usr/sbin/nologin
systemd-resolve:x:991:991:systemd Resolver:/:/usr/sbin/nologin
uuidd:x:103:103::/run/uuidd:/usr/sbin/nologin
usbmux:x:104:46:usbmux daemon,,,:/var/lib/usbmux:/usr/sbin/nologin
tss:x:105:105:TPM software stack,,,:/var/lib/tpm:/bin/false
systemd-oom:x:990:990:systemd Userspace OOM Killer:/:/usr/sbin/nologin
kernoops:x:106:65534:Kernel Oops Tracking Daemon,,,:/:/usr/sbin/nologin
whoopsie:x:107:109::/nonexistent:/bin/false
dnsmasq:x:999:65534:dnsmasq:/var/lib/misc:/usr/sbin/nologin
avahi:x:108:111:Avahi mDNS daemon,,,:/run/avahi-daemon:/usr/sbin/nologin
tcpdump:x:109:112::/nonexistent:/usr/sbin/nologin
sssd:x:110:113:SSSD system user,,,:/var/lib/sss:/usr/sbin/nologin
speech-dispatcher:x:111:29:Speech Dispatcher,,,:/run/speech-dispatcher:/bin/false
cups-pk-helper:x:112:114:user for cups-pk-helper service,,,:/nonexistent:/usr/sbin/nologin
```

3. sudo deluser username –deletes the user

```
rvu@rvu-OptiPlex-SFF-7020:~$ sudo deluser rvu7
info: Removing crontab ...
info: Removing user `rvu7' ...
rvu@rvu-OptiPlex-SFF-7020:~$ ls /home/rvu7
ls: cannot open directory '/home/rvu7': Permission denied
rvu@rvu-OptiPlex-SFF-7020:~$ sudo deluser --remove-home rvu7
fatal: The user `rvu7' does not exist.
rvu@rvu-OptiPlex-SFF-7020:~$
```


~ : bash — Konsole
New Tab
Split View
Copy
Paste
Find
Riyan >>> sudo adduser username
[sudo] password for Riyan:
info: Adding user `username' ...
info: Selecting UID/GID from range 1000 to 59999 ...
info: Adding new group `username' (1001) ...
info: Adding new user `username' (1001) with group `username (1001)' ...
info: Creating home directory `/home/username' ...
info: Copying files from `/etc/skel' ...
New password:
Retype new password:
passwd: password updated successfully
Changing the user information for username
Enter the new value, or press ENTER for the default
Full Name []: RiyanShrestha
Room Number []: 2
Work Phone []: 9611302767
Home Phone []: 0000000000
Other []: 0
Is the information correct? [Y/n] Y
info: Adding new user `username' to supplemental / extra groups `users' ...
info: Adding user `username' to group `users' ...
Riyan >>> sudo passwd username
New password:
Retype new password:
passwd: password updated successfully
Riyan >>> sudo deluser username
info: Removing crontab ...
info: Removing user `username' ...
Riyan >>>

Lab 5:

Aim: Writing Basic Shell Scripts

Commands used:

- vim script_name.sh
- nano script_name.sh

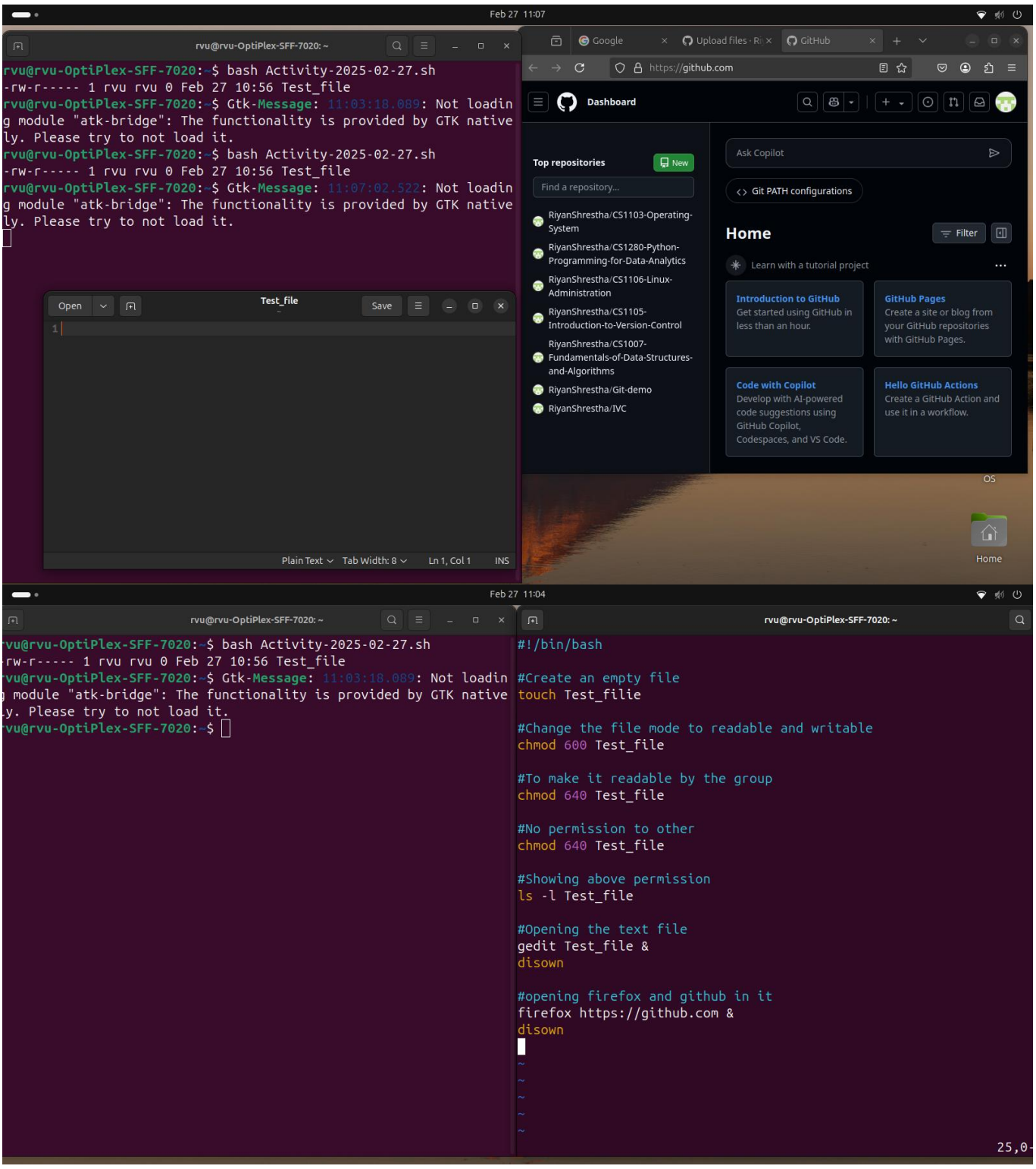
Usage:

1. vim Backup.sh –copies all .c files into a zipped Backup folder

```
#!/bin/bash

#Create a directory called "Backup" in Documents folder
mkdir ~/Documents/Backup

#Copy all .c files into the folder
cp *.c ~/Documents/Backup/

#'cd' into Documents folder
cd ~/Documents

#Create a tar.gz file using tar command
tar -czf Backup.tar.gz Backup/

#Delete the "Backup" folderi
rm -rf ~/Documents/Backup
```

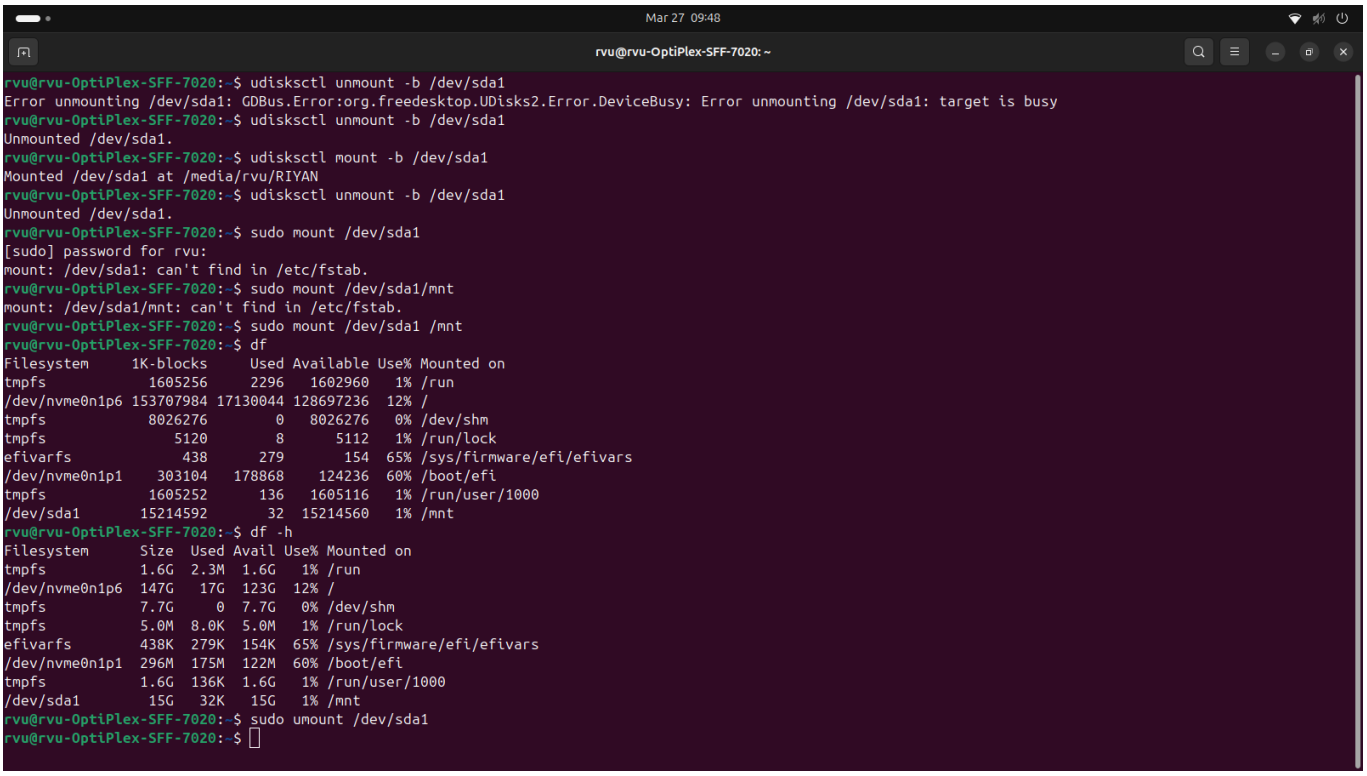
2. nano sysinfo.sh –displays basic information

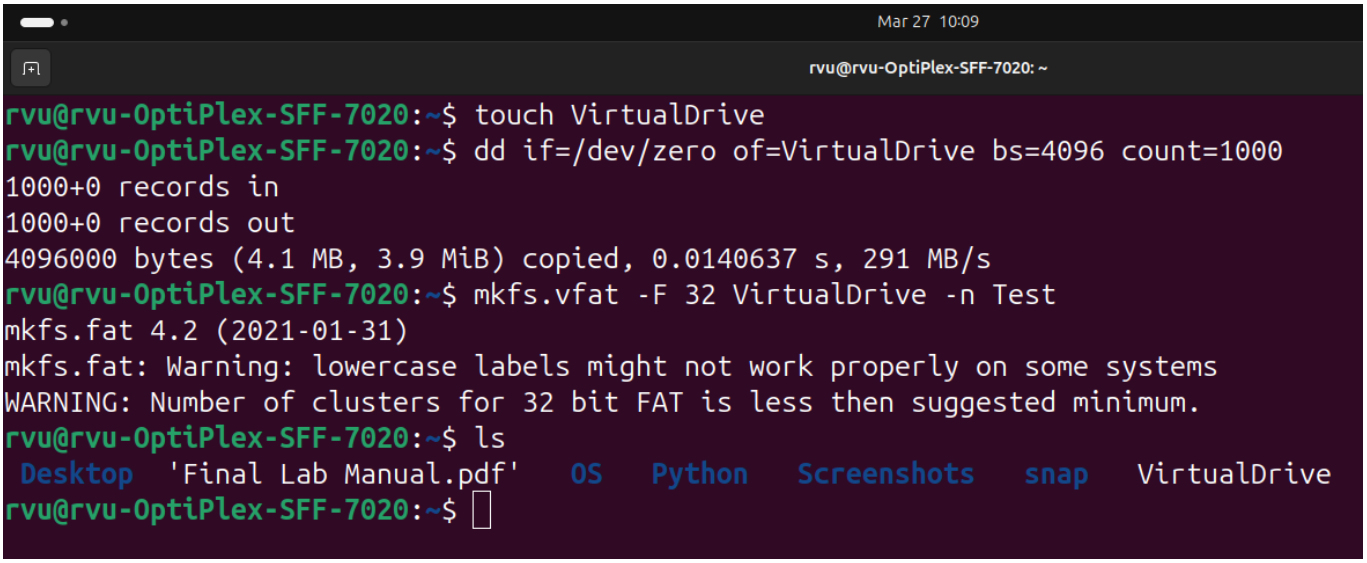
```
#!/bin/bash

date
who
uptime
free -h
```

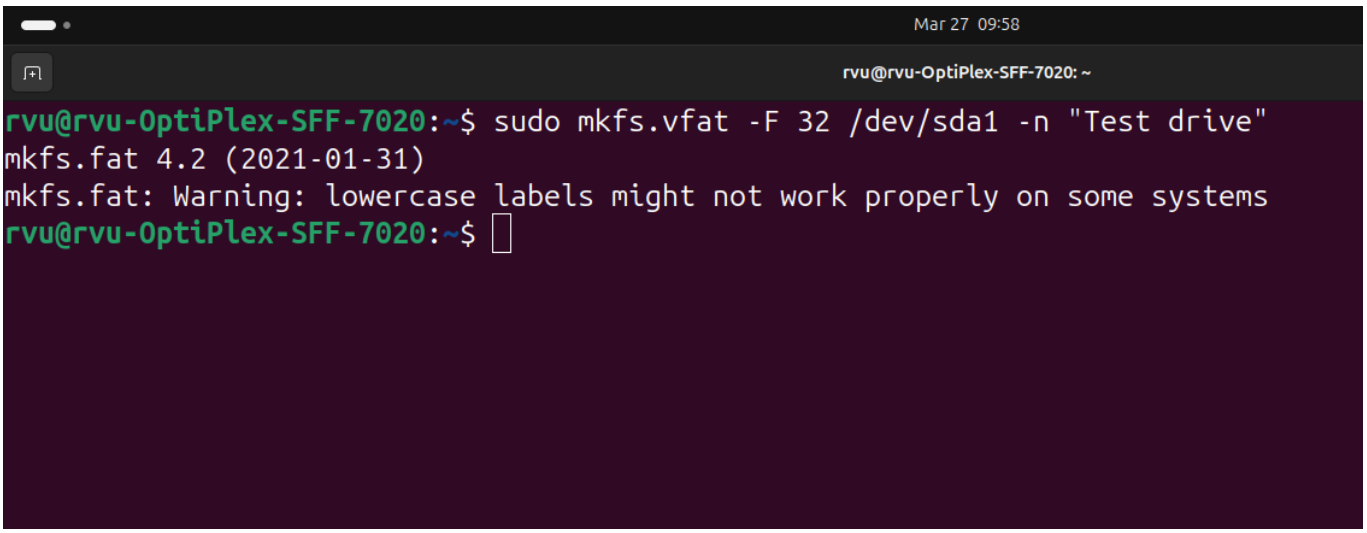

Feb 27 11:07
rvu@rvu-OptiPlex-SFF-7020: ~
rvu@rvu-OptiPlex-SFF-7020:~$ bash Activity-2025-02-27.sh
-rw-r----- 1 rvu rvu 0 Feb 27 10:56 Test_file
rvu@rvu-OptiPlex-SFF-7020:~$ Gtk-Message: 11:03:18.089: Not loading module "atk-bridge": The functionality is provided by GTK natively. Please try to not load it.
rvu@rvu-OptiPlex-SFF-7020:~$ bash Activity-2025-02-27.sh
-rw-r----- 1 rvu rvu 0 Feb 27 10:56 Test_file
rvu@rvu-OptiPlex-SFF-7020:~$ Gtk-Message: 11:07:02.522: Not loading module "atk-bridge": The functionality is provided by GTK natively. Please try to not load it.
Open
Test_file
Save
Plain Text
Tab Width: 8
Ln 1, Col 1
INS
Google
Upload files · Ri
GitHub
https://github.com
Dashboard
Top repositories
New
Find a repository...
RiyanShrestha/CS1103-Operating-System
RiyanShrestha/CS1280-Python-Programming-for-Data-Analytics
RiyanShrestha/CS1106-Linux-Administration
RiyanShrestha/CS1105-Introduction-to-Version-Control
RiyanShrestha/CS1007-Fundamentals-of-Data-Structures-and-Algorithms
RiyanShrestha/Git-demo
RiyanShrestha/IVC
Ask Copilot
Git PATH configurations
Home
Filter
Learn with a tutorial project
Introduction to GitHub
Get started using GitHub in less than an hour.
GitHub Pages
Create a site or blog from your GitHub repositories with GitHub Pages.
Code with Copilot
Develop with AI-powered code suggestions using GitHub Copilot, Codespaces, and VS Code.
Hello GitHub Actions
Create a GitHub Action and use it in a workflow.
OS
Home
Feb 27 11:04
rvu@rvu-OptiPlex-SFF-7020: ~
rvu@rvu-OptiPlex-SFF-7020:~$ bash Activity-2025-02-27.sh
-rw-r----- 1 rvu rvu 0 Feb 27 10:56 Test_file
rvu@rvu-OptiPlex-SFF-7020:~$ Gtk-Message: 11:03:18.089: Not loading module "atk-bridge": The functionality is provided by GTK natively. Please try to not load it.
rvu@rvu-OptiPlex-SFF-7020:~$
rvu@rvu-OptiPlex-SFF-7020: ~
#!/bin/bash
#Create an empty file
touch Test_filie
#Change the file mode to readable and writable
chmod 600 Test_file
#To make it readable by the group
chmod 640 Test_file
#No permission to other
chmod 640 Test_file
#Showing above permission
ls -l Test_file
#Opening the text file
gedit Test_file &
disown
#opening firefox and github in it
firefox https://github.com &
disown
25,0-

Lab 6:

Aim: Mounting and Formatting USB Drives

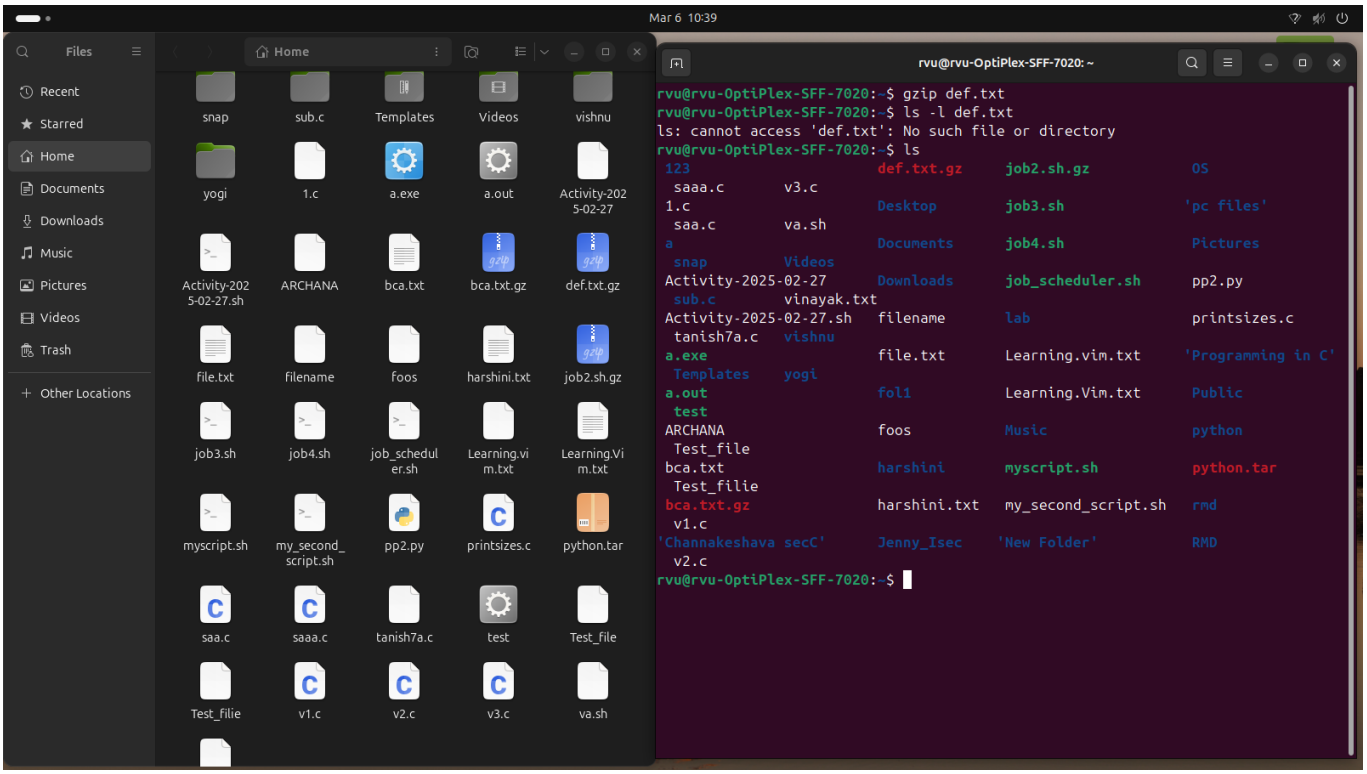


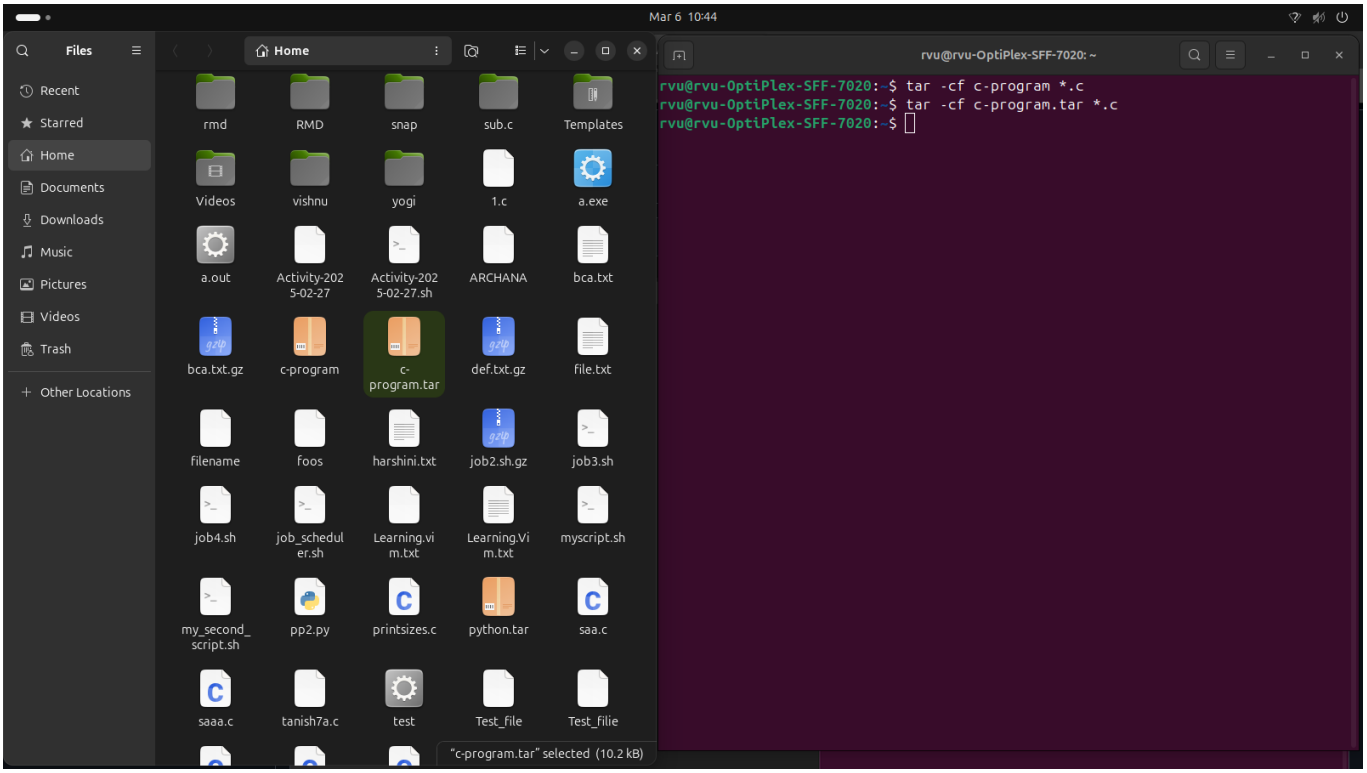


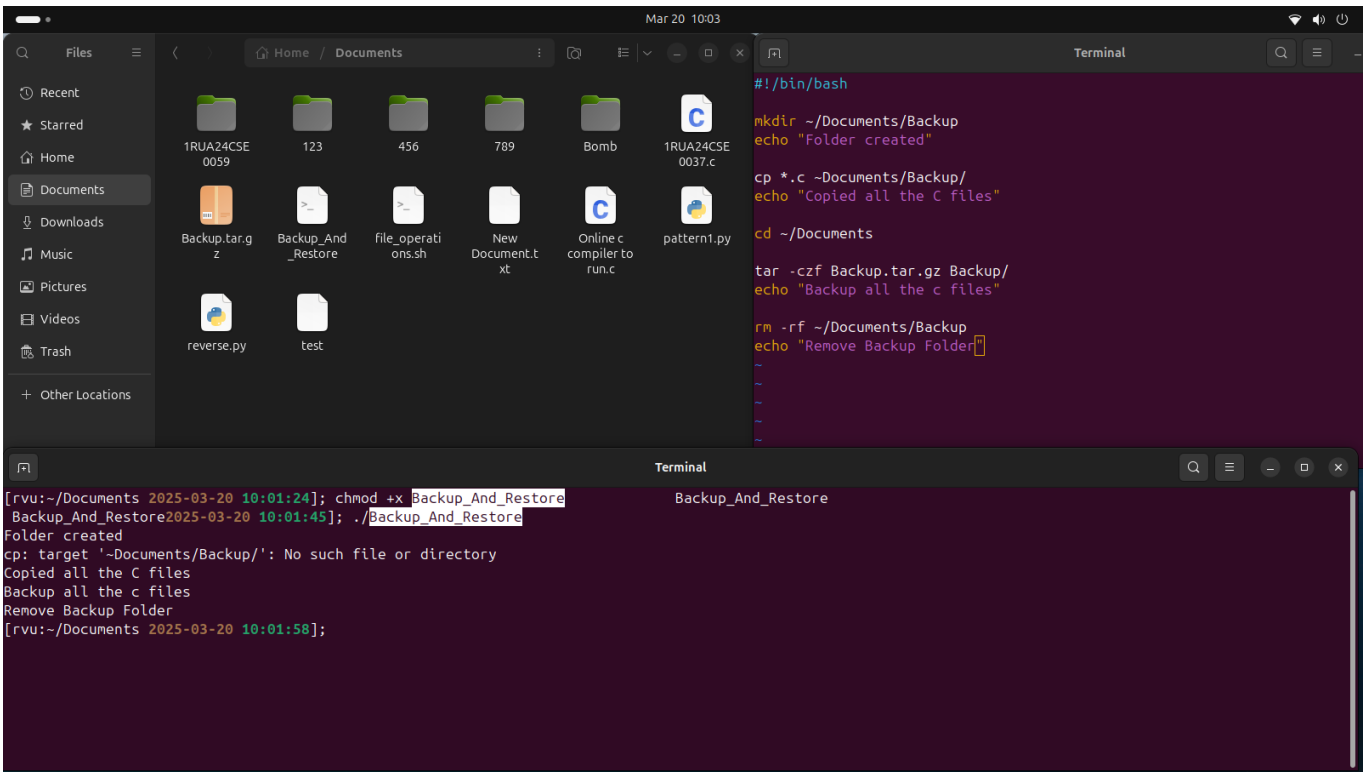

Mar 27 09:58
rvu@rvu-OptiPlex-SFF-7020: ~
rvu@rvu-OptiPlex-SFF-7020:~$ sudo mkfs.vfat -F 32 /dev/sda1 -n "Test drive"
mkfs.fat 4.2 (2021-01-31)
mkfs.fat: Warning: lowercase labels might not work properly on some systems
rvu@rvu-OptiPlex-SFF-7020:~$

Lab 7:

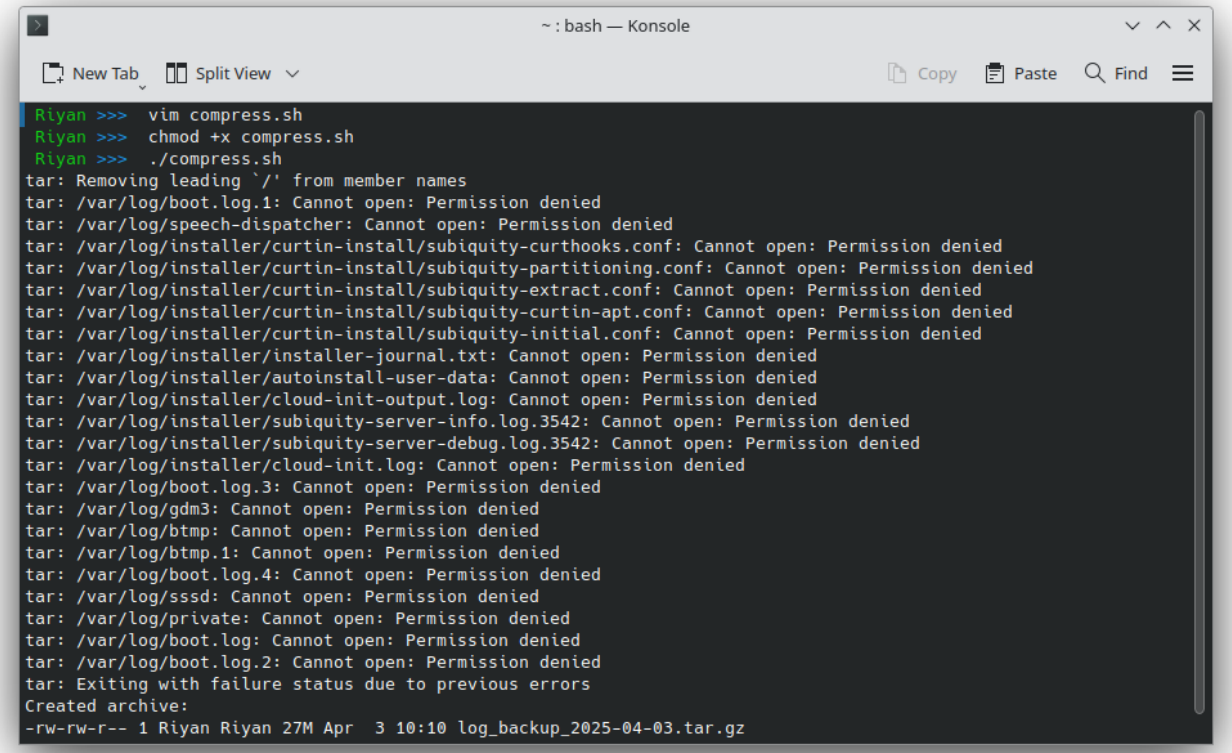
Aim: Backing Up and Compressing Files





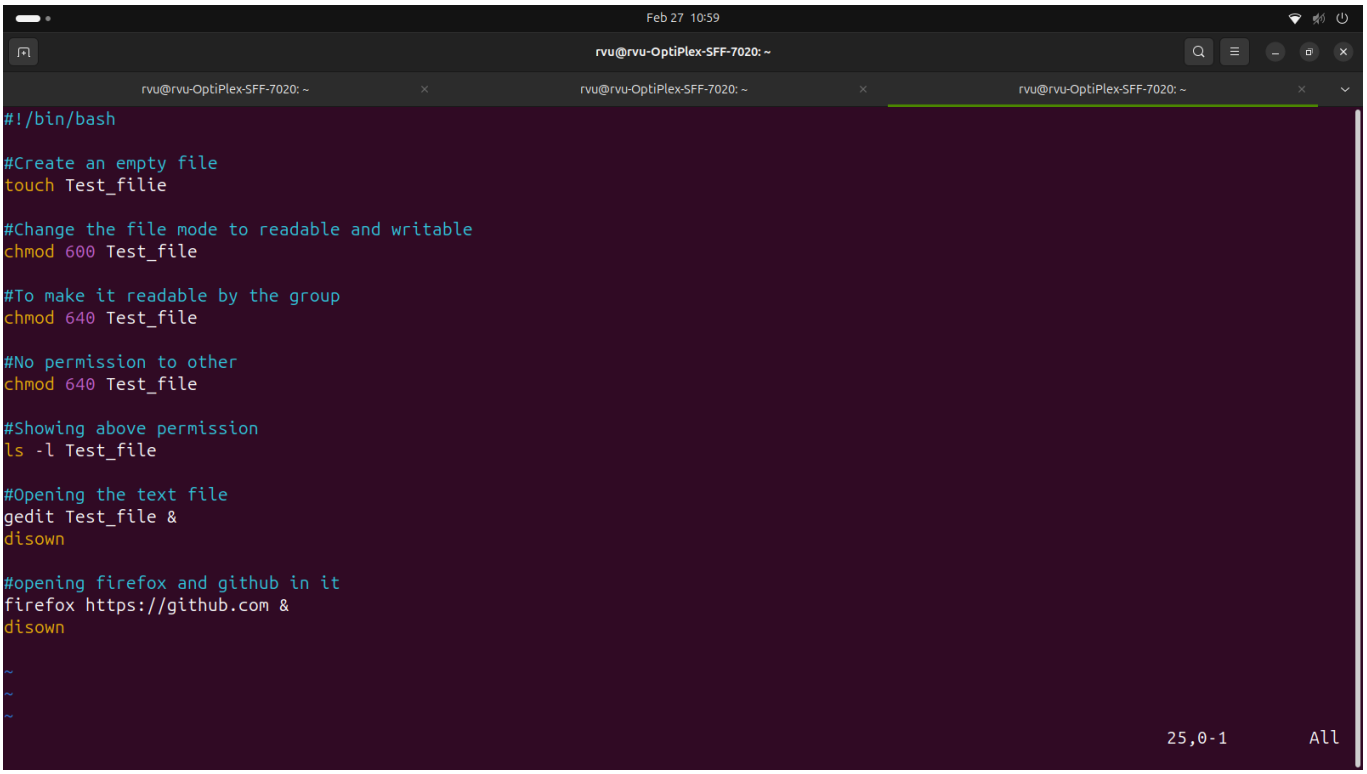


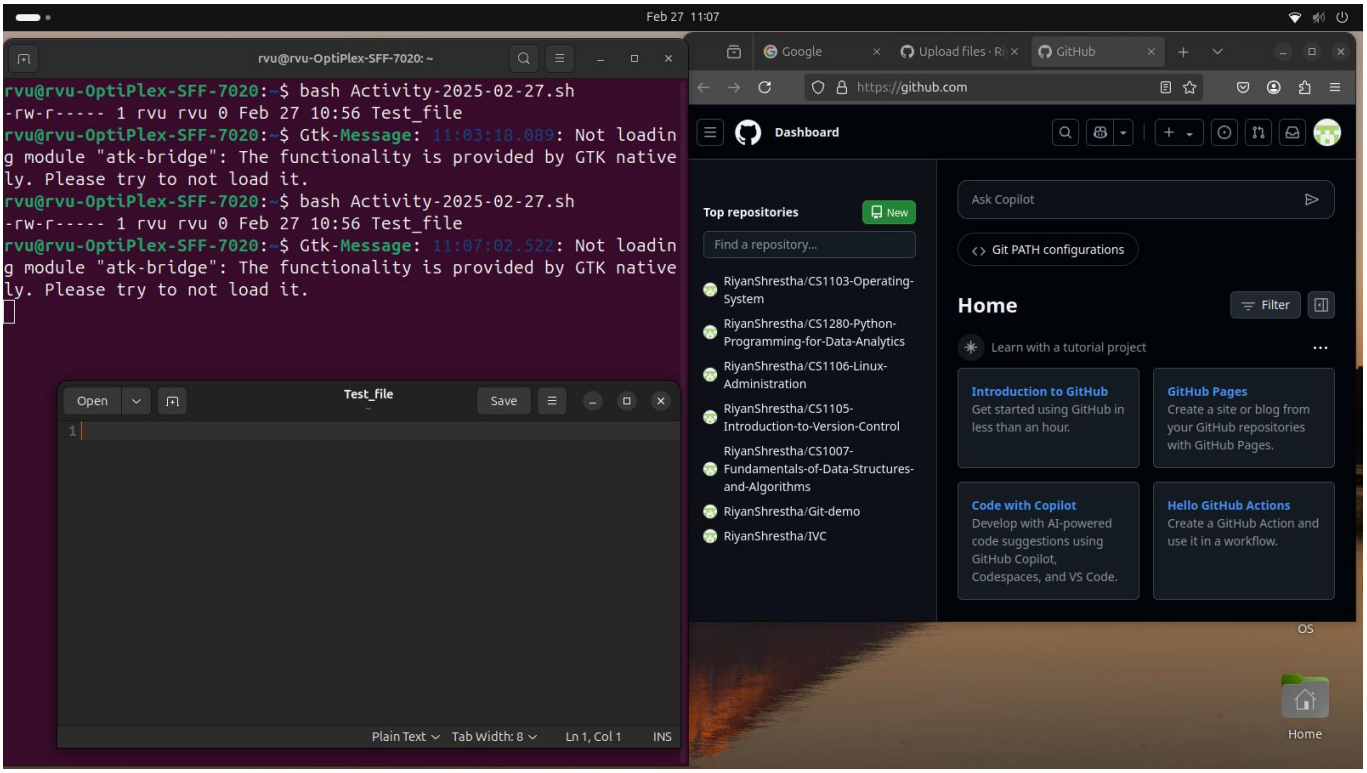

```bash
#!/bin/bash

# Define the archive name
ARCHIVE_NAME="log_backup_$(date +%F).tar.gz"

# Create and compress the tar archive
tar -czf $ARCHIVE_NAME /var/log

# List the created archive
echo "Created archive:"
ls -lh $ARCHIVE_NAME
```

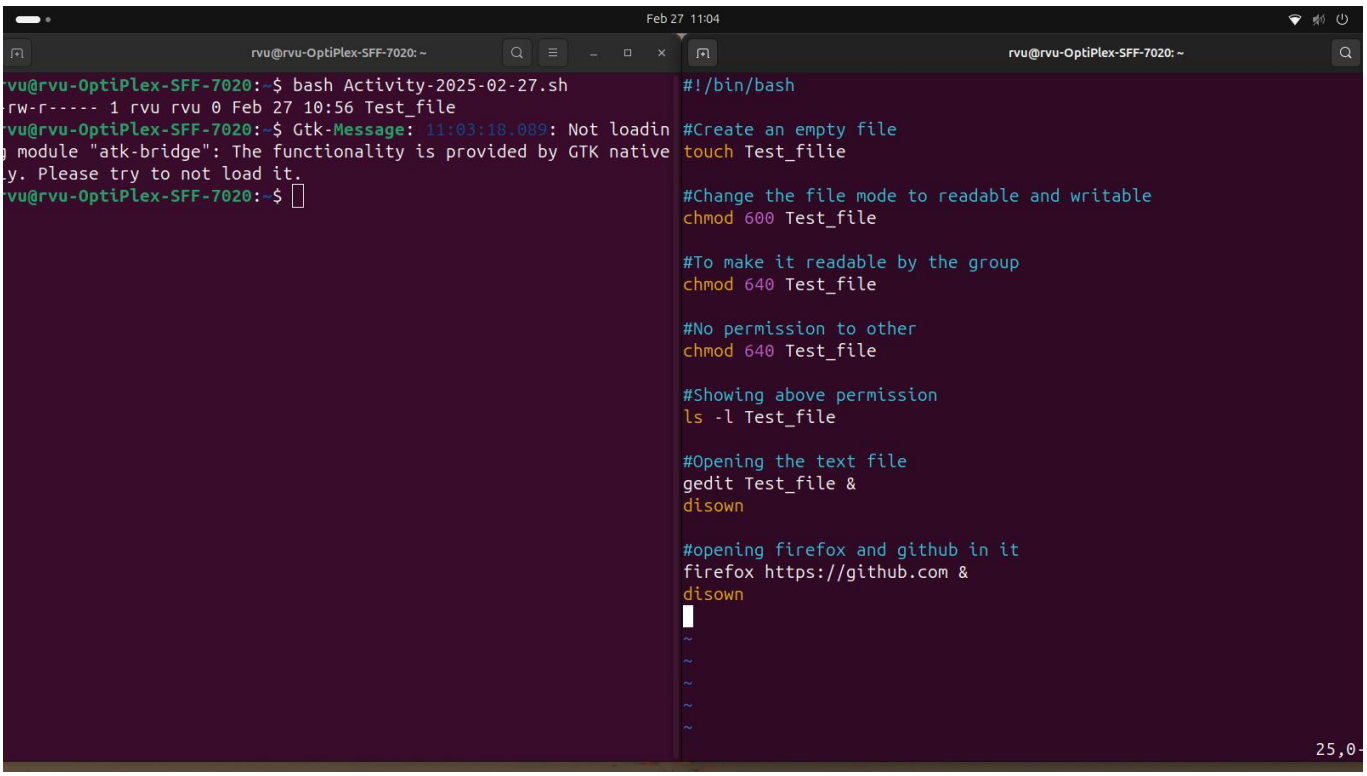

~ : bash — Konsole
New Tab
Split View
Copy
Paste
Find
Riyan >>> vim compress.sh
Riyan >>> chmod +x compress.sh
Riyan >>> ./compress.sh
tar: Removing leading `/' from member names
tar: /var/log/boot.log.1: Cannot open: Permission denied
tar: /var/log/speech-dispatcher: Cannot open: Permission denied
tar: /var/log/installer/curtin-install/subiquity-curthooks.conf: Cannot open: Permission denied
tar: /var/log/installer/curtin-install/subiquity-partitioning.conf: Cannot open: Permission denied
tar: /var/log/installer/curtin-install/subiquity-extract.conf: Cannot open: Permission denied
tar: /var/log/installer/curtin-install/subiquity-curtin-apt.conf: Cannot open: Permission denied
tar: /var/log/installer/curtin-install/subiquity-initial.conf: Cannot open: Permission denied
tar: /var/log/installer/installer-journal.txt: Cannot open: Permission denied
tar: /var/log/installer/autoinstall-user-data: Cannot open: Permission denied
tar: /var/log/installer/cloud-init-output.log: Cannot open: Permission denied
tar: /var/log/installer/subiquity-server-info.log.3542: Cannot open: Permission denied
tar: /var/log/installer/subiquity-server-debug.log.3542: Cannot open: Permission denied
tar: /var/log/installer/cloud-init.log: Cannot open: Permission denied
tar: /var/log/boot.log.3: Cannot open: Permission denied
tar: /var/log/gdm3: Cannot open: Permission denied
tar: /var/log/btmp: Cannot open: Permission denied
tar: /var/log/btmp.1: Cannot open: Permission denied
tar: /var/log/boot.log.4: Cannot open: Permission denied
tar: /var/log/sssd: Cannot open: Permission denied
tar: /var/log/private: Cannot open: Permission denied
tar: /var/log/boot.log: Cannot open: Permission denied
tar: /var/log/boot.log.2: Cannot open: Permission denied
tar: Exiting with failure status due to previous errors
Created archive:
-rw-rw-r-- 1 Riyan Riyan 27M Apr 3 10:10 log_backup_2025-04-03.tar.gz

Lab 8:

Aim: Managing User and Group Permissions and Communication Utilities






Feb 27 11:04
rvu@rvu-OptiPlex-SFF-7020: ~
vu@rvu-OptiPlex-SFF-7020:~$ bash Activity-2025-02-27.sh
rw-r----- 1 rvu rvu 0 Feb 27 10:56 Test_file
vu@rvu-OptiPlex-SFF-7020:~$ Gtk-Message: 11:03:18.089: Not loadin
module "atk-bridge": The functionality is provided by GTK native
y. Please try to not load it.
vu@rvu-OptiPlex-SFF-7020:~$
rvu@rvu-OptiPlex-SFF-7020: ~
#!/bin/bash
#Create an empty file
touch Test_filie
#Change the file mode to readable and writable
chmod 600 Test_file
#To make it readable by the group
chmod 640 Test_file
#No permission to other
chmod 640 Test_file
#Showing above permission
ls -l Test_file
#Opening the text file
gedit Test_file &
disown
#opening firefox and github in it
firefox https://github.com &
disown
25,0-

Lab 9:

Aim: Process Management

Commands used:

- ps aux
- top
- pidof
- pkill

Usage:

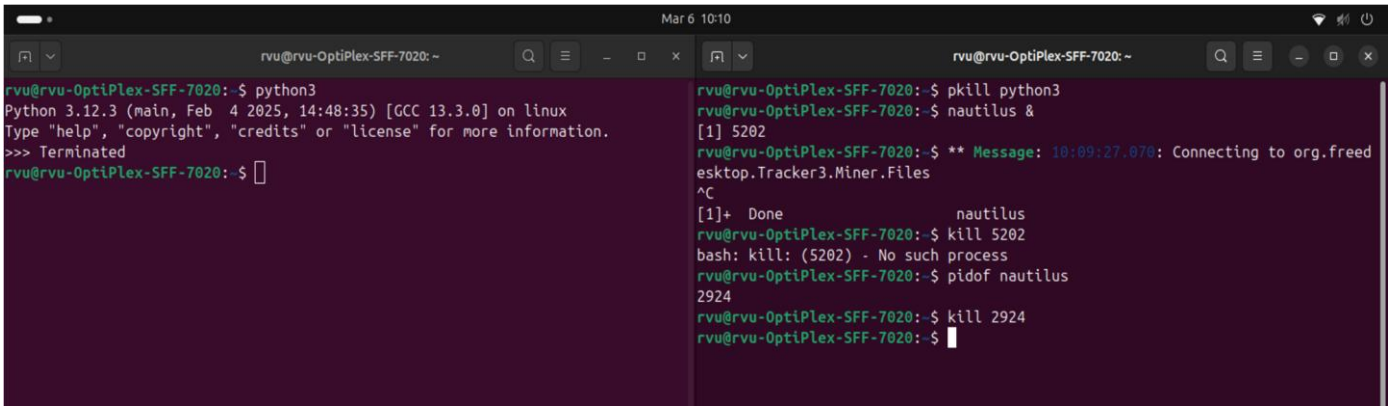
1. ps aux –displays detailed information of all running processes

```
rvu@rvu-OptiPlex-SFF-7020:~$ ps aux
USER         PID %CPU %MEM    VSZ   RSS TTY      STAT START   TIME COMMAND
root           1  0.0  0.0  23548 13956 ?        Ss   09:40   0:01 /sbin/init splash
root           2  0.0  0.0      0     0 ?        S    09:40   0:00 [kthreadd]
root           3  0.0  0.0      0     0 ?        S    09:40   0:00 [pool_workqueue_release]
root           4  0.0  0.0      0     0 ?        I<   09:40   0:00 [kworker/R-rcu_gp]
root           5  0.0  0.0      0     0 ?        I<   09:40   0:00 [kworker/R-sync_wq]
root           6  0.0  0.0      0     0 ?        I<   09:40   0:00 [kworker/R-slub_flushwq]
root           7  0.0  0.0      0     0 ?        I<   09:40   0:00 [kworker/R-netns]
root           9  0.0  0.0      0     0 ?        I<   09:40   0:00 [kworker/0:0H-events_highpri]
root          10  0.0  0.0      0     0 ?        I    09:40   0:00 [kworker/0:1-events]
root          12  0.0  0.0      0     0 ?        I<   09:40   0:00 [kworker/R-mm_percpu_wq]
root          13  0.0  0.0      0     0 ?        I    09:40   0:00 [rcu_tasks_kthread]
root          14  0.0  0.0      0     0 ?        I    09:40   0:00 [rcu_tasks_rude_kthread]
root          15  0.0  0.0      0     0 ?        I    09:40   0:00 [rcu_tasks_trace_kthread]
root          16  0.0  0.0      0     0 ?        S    09:40   0:00 [ksoftirqd/0]
root          17  0.1  0.0      0     0 ?        I    09:40   0:05 [rcu_preempt]
root          18  0.0  0.0      0     0 ?        S    09:40   0:00 [rcu_exp_par_gp_kthread_worker/1]
root          19  0.0  0.0      0     0 ?        S    09:40   0:00 [rcu_exp_gp_kthread_worker]
root          20  0.0  0.0      0     0 ?        S    09:40   0:00 [migration/0]
root          21  0.0  0.0      0     0 ?        S    09:40   0:00 [idle_inject/0]
root          22  0.0  0.0      0     0 ?        S    09:40   0:00 [cpuhp/0]
root          23  0.0  0.0      0     0 ?        S    09:40   0:00 [cpuhp/2]
root          24  0.0  0.0      0     0 ?        S    09:40   0:00 [idle_inject/2]
root          25  0.0  0.0      0     0 ?        S    09:40   0:00 [migration/2]
root          26  0.0  0.0      0     0 ?        S    09:40   0:00 [ksoftirqd/2]
root          28  0.0  0.0      0     0 ?        I<   09:40   0:00 [kworker/2:0H-events_highpri]
root          29  0.0  0.0      0     0 ?        S    09:40   0:00 [cpuhp/4]
root          30  0.0  0.0      0     0 ?        S    09:40   0:00 [idle_inject/4]
root          31  0.0  0.0      0     0 ?        S    09:40   0:00 [migration/4]
root          32  0.0  0.0      0     0 ?        S    09:40   0:00 [ksoftirqd/4]
root          34  0.0  0.0      0     0 ?        I<   09:40   0:00 [kworker/4:0H-events_highpri]
root          35  0.0  0.0      0     0 ?        S    09:40   0:00 [cpuhp/6]
root          36  0.0  0.0      0     0 ?        S    09:40   0:00 [idle_inject/6]
root          37  0.0  0.0      0     0 ?        S    09:40   0:00 [migration/6]
root          38  0.0  0.0      0     0 ?        S    09:40   0:00 [ksoftirqd/6]
root          40  0.0  0.0      0     0 ?        I<   09:40   0:00 [kworker/6:0H-events_highpri]
```

2. top –provides real-time, dynamic view of system’s processes & resource usage

```
top - 10:45:55 up  1:04,  1 user,  load average: 0.18, 0.28, 0.22
Tasks: 382 total,   1 running, 381 sleeping,   0 stopped,   0 zombie
%Cpu(s):  0.2 us,  0.2 sy,  0.0 ni, 99.6 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :  15676.3 total,  10369.4 free,   3779.4 used,   2626.5 buff/cache
MiB Swap:   4096.0 total,   4096.0 free,      0.0 used.  11896.9 avail Mem

    PID USER      PR  NI    VIRT    RES    SHR S  %CPU  %MEM     TIME+ COMMAND
    864 root     -51   0       0      0      0 S   3.3   0.0   1:59.89 irq/172-rtw89_pci
   2378 rvu       20   0 4993800 312952 131164 S   1.7   1.9   1:30.68 gnome-shell
    967 avahi     20   0   13804   8404   3604 S   1.0   0.1   0:37.51 avahi-daemon
   8461 rvu       20   0  559004  57208  45280 S   1.0   0.4   0:01.39 gnome-terminal-
   5610 rvu       20   0 3268956 763192 123992 S   0.7   4.8   0:45.56 Isolated Web Co
     17 root      20   0       0      0      0 I   0.3   0.0   0:05.84 rcu_preempt
   1179 root      20   0  336712  18212  15812 S   0.3   0.1   0:21.79 NetworkManager
   4649 rvu       20   0   12.2g 572804 279856 S   0.3   3.6   2:12.12 firefox
   6333 rvu       20   0 2681272 274360 118500 S   0.3   1.7   0:20.67 Isolated Web Co
   7039 root      20   0       0      0      0 I   0.3   0.0   0:01.01 kworker/u80:3-phy0
   7449 rvu       20   0 2109316 165576 101484 S   0.3   1.0   0:04.87 nautilus
      1 root      20   0   23548  13956   9316 S   0.0   0.1   0:01.57 systemd
      2 root      20   0       0      0      0 S   0.0   0.0   0:00.00 kthreadd
      3 root      20   0       0      0      0 S   0.0   0.0   0:00.00 pool_workqueue_release
      4 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 kworker/R-rcu_gp
      5 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 kworker/R-sync_wq
      6 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 kworker/R-slub_flushwq
      7 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 kworker/R-netns
      9 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 kworker/0:0H-events_highpri
     10 root      20   0       0      0      0 I   0.0   0.0   0:00.39 kworker/0:1-mm_percpu_wq
     12 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 kworker/R-mm_percpu_wq
     13 root      20   0       0      0      0 I   0.0   0.0   0:00.00 rcu_tasks_kthread
     14 root      20   0       0      0      0 I   0.0   0.0   0:00.00 rcu_tasks_rude_kthread
     15 root      20   0       0      0      0 I   0.0   0.0   0:00.00 rcu_tasks_trace_kthread
     16 root      20   0       0      0      0 S   0.0   0.0   0:00.06 ksoftirqd/0
     18 root      20   0       0      0      0 S   0.0   0.0   0:00.00 rcu_exp_par_gp_kthread_worker/1
     19 root      20   0       0      0      0 S   0.0   0.0   0:00.00 rcu_exp_gp_kthread_worker
     20 root      rt   0       0      0      0 S   0.0   0.0   0:00.03 migration/0
     21 root     -51   0       0      0      0 S   0.0   0.0   0:00.00 idle_inject/0
     22 root      20   0       0      0      0 S   0.0   0.0   0:00.00 cpuhp/0
```

3. pidof –find the process ID
   pkill –kill processes by name



Lab 10:

Aim: Disk Space Management

Commands used:

- df -h

Usage:

df -h –shows how much disk space is used and available