

OS Lab 2



Session: 2021 – 2025

Submitted by:

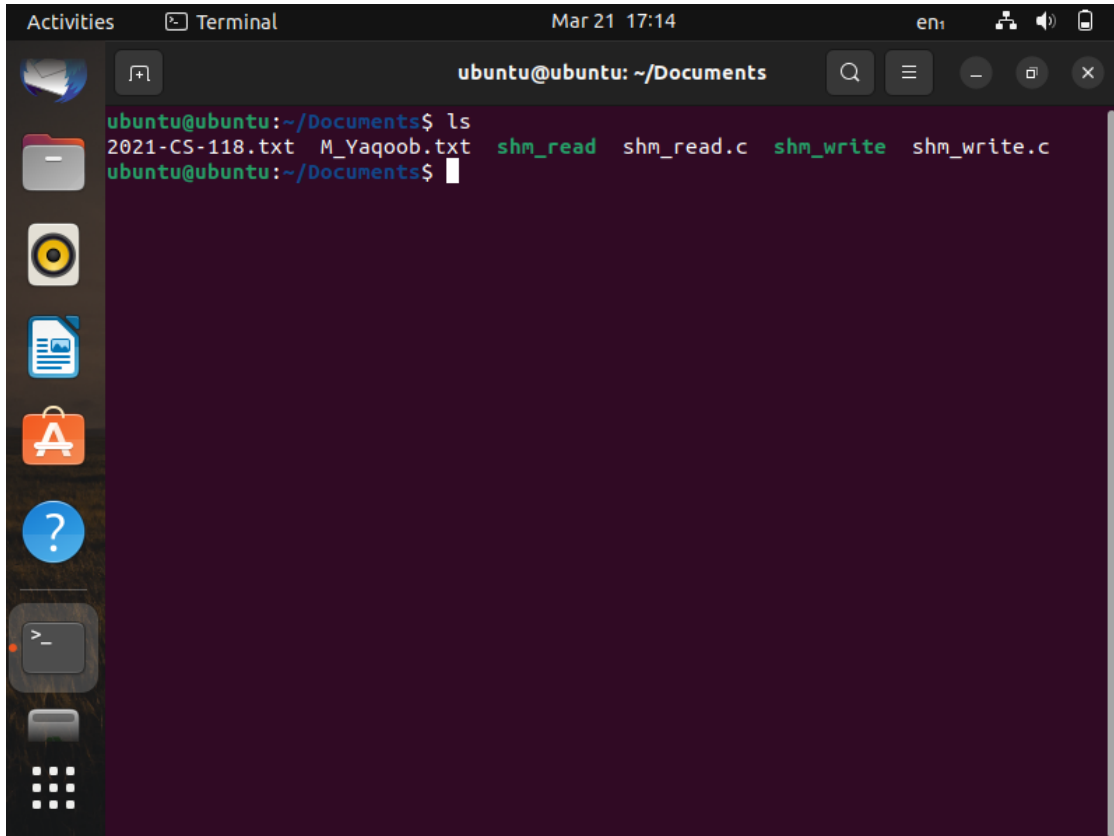
Muhammad Yaqoob 2021-CS-118

Supervised by:

Ms. Abqa Javed

Department of Computer Science
University of Engineering and Technology
Lahore Pakistan

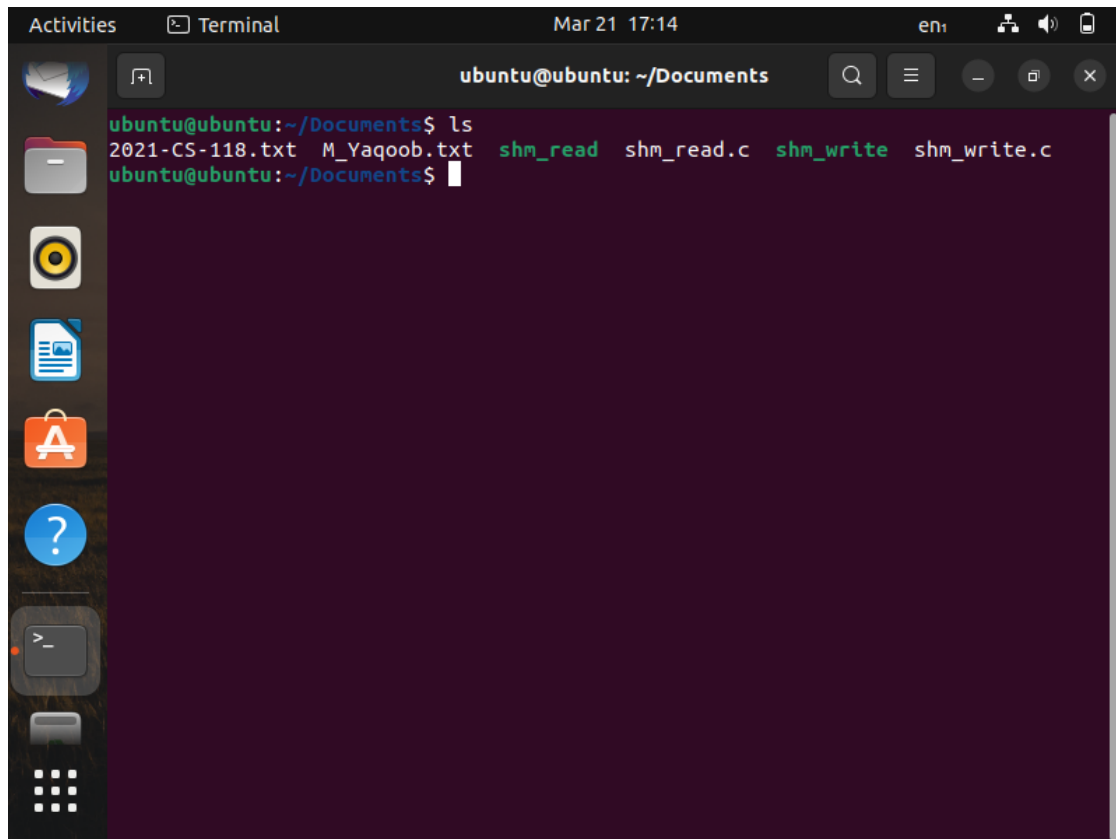
1. Create a file named “2021-CS-118.txt”. File must contain at least 10 lines.

A screenshot of a Linux terminal window. The title bar shows 'Activities', 'Terminal', and the date 'Mar 21 17:14'. The terminal prompt is 'ubuntu@ubuntu: ~/Documents'. The user has entered the command 'ls', and the output shows a list of files: '2021-CS-118.txt', 'M_Yaqoob.txt', 'shm_read', 'shm_read.c', 'shm_write', and 'shm_write.c'. The terminal has a dark purple background and a light-colored cursor.

```
ubuntu@ubuntu: ~/Documents$ ls
2021-CS-118.txt  M_Yaqoob.txt  shm_read  shm_read.c  shm_write  shm_write.c
ubuntu@ubuntu: ~/Documents$
```

FIGURE 1: Task1

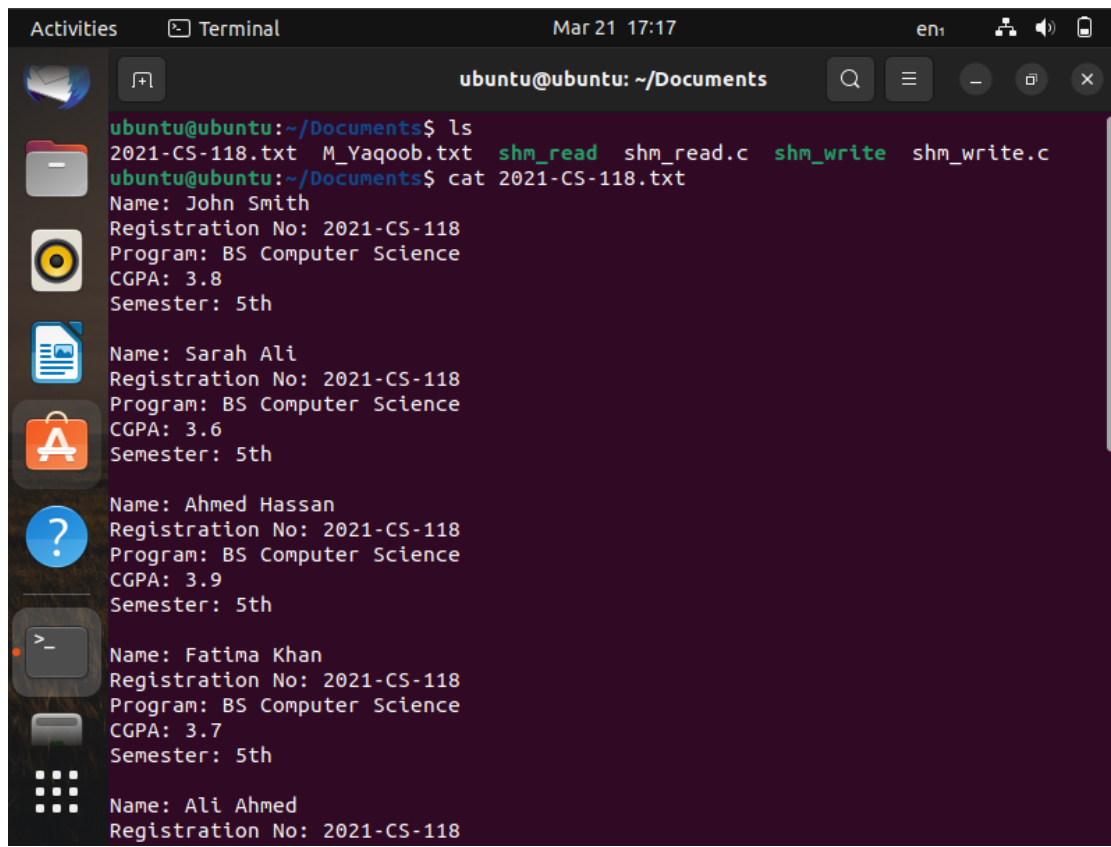
2. Create another file named “your name.txt”. File must contain at least 10 lines.

A screenshot of a Linux terminal window. The window title is "Terminal" and it shows the date and time "Mar 21 17:14". The terminal prompt is "ubuntu@ubuntu: ~/Documents". The user has entered the command "ls" and the output is "2021-CS-118.txt M_Yaqoob.txt shm_read shm_read.c shm_write shm_write.c". The terminal window is part of a desktop environment with a sidebar on the left containing icons for Activities, Files, Home, Applications, and a Dash icon. The terminal window has a search bar and window control buttons (minimize, maximize, close) on the right.

```
ubuntu@ubuntu: ~/Documents
ls
2021-CS-118.txt M_Yaqoob.txt shm_read shm_read.c shm_write shm_write.c
ubuntu@ubuntu: ~/Documents$
```

FIGURE 2: Task2

3. Find which command is used to view contents of a file?

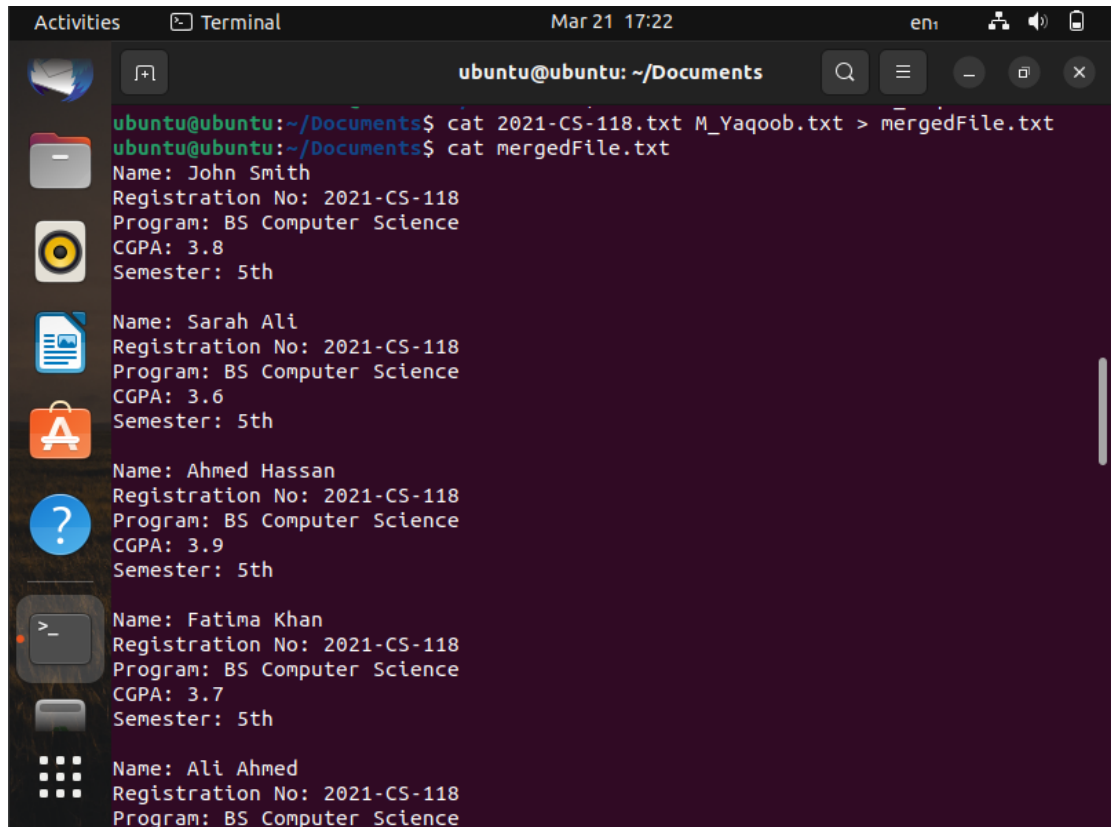


The screenshot shows a terminal window titled "Terminal" with the date and time "Mar 21 17:17". The user is logged in as "ubuntu@ubuntu" and is in the directory "~/Documents". The terminal shows the following commands and output:

```
ubuntu@ubuntu:~/Documents$ ls
2021-CS-118.txt  M_Yaqoob.txt  shm_read  shm_read.c  shm_write  shm_write.c
ubuntu@ubuntu:~/Documents$ cat 2021-CS-118.txt
Name: John Smith
Registration No: 2021-CS-118
Program: BS Computer Science
CGPA: 3.8
Semester: 5th
Name: Sarah Ali
Registration No: 2021-CS-118
Program: BS Computer Science
CGPA: 3.6
Semester: 5th
Name: Ahmed Hassan
Registration No: 2021-CS-118
Program: BS Computer Science
CGPA: 3.9
Semester: 5th
Name: Fatima Khan
Registration No: 2021-CS-118
Program: BS Computer Science
CGPA: 3.7
Semester: 5th
Name: Ali Ahmed
Registration No: 2021-CS-118
```

FIGURE 3: Task 3

4. Merge the data of both files.

A screenshot of a Linux terminal window titled 'Terminal' with a timestamp of 'Mar 21 17:22'. The terminal shows the user 'ubuntu@ubuntu' in the directory '~/Documents'. The user enters the command 'cat 2021-CS-118.txt M_Yaqoob.txt > mergedFile.txt' to merge two files. Then, they enter 'cat mergedFile.txt' to display the contents of the merged file. The output lists student information for John Smith, Sarah Ali, Ahmed Hassan, Fatima Khan, and Ali Ahmed, including their registration numbers, programs, CGPAs, and semesters.

```
ubuntu@ubuntu: ~/Documents
ubuntu@ubuntu:~/Documents$ cat 2021-CS-118.txt M_Yaqoob.txt > mergedFile.txt
ubuntu@ubuntu:~/Documents$ cat mergedFile.txt
Name: John Smith
Registration No: 2021-CS-118
Program: BS Computer Science
CGPA: 3.8
Semester: 5th

Name: Sarah Ali
Registration No: 2021-CS-118
Program: BS Computer Science
CGPA: 3.6
Semester: 5th

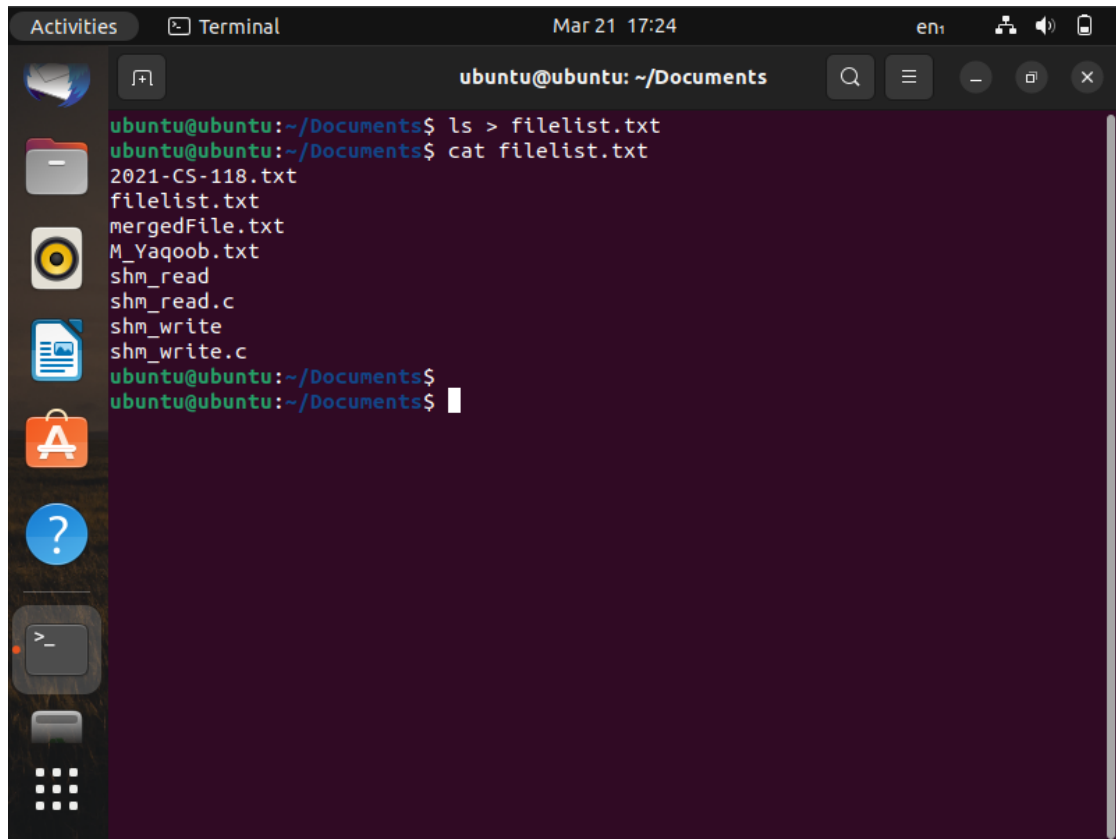
Name: Ahmed Hassan
Registration No: 2021-CS-118
Program: BS Computer Science
CGPA: 3.9
Semester: 5th

Name: Fatima Khan
Registration No: 2021-CS-118
Program: BS Computer Science
CGPA: 3.7
Semester: 5th

Name: Ali Ahmed
Registration No: 2021-CS-118
Program: BS Computer Science
```

FIGURE 4: task4

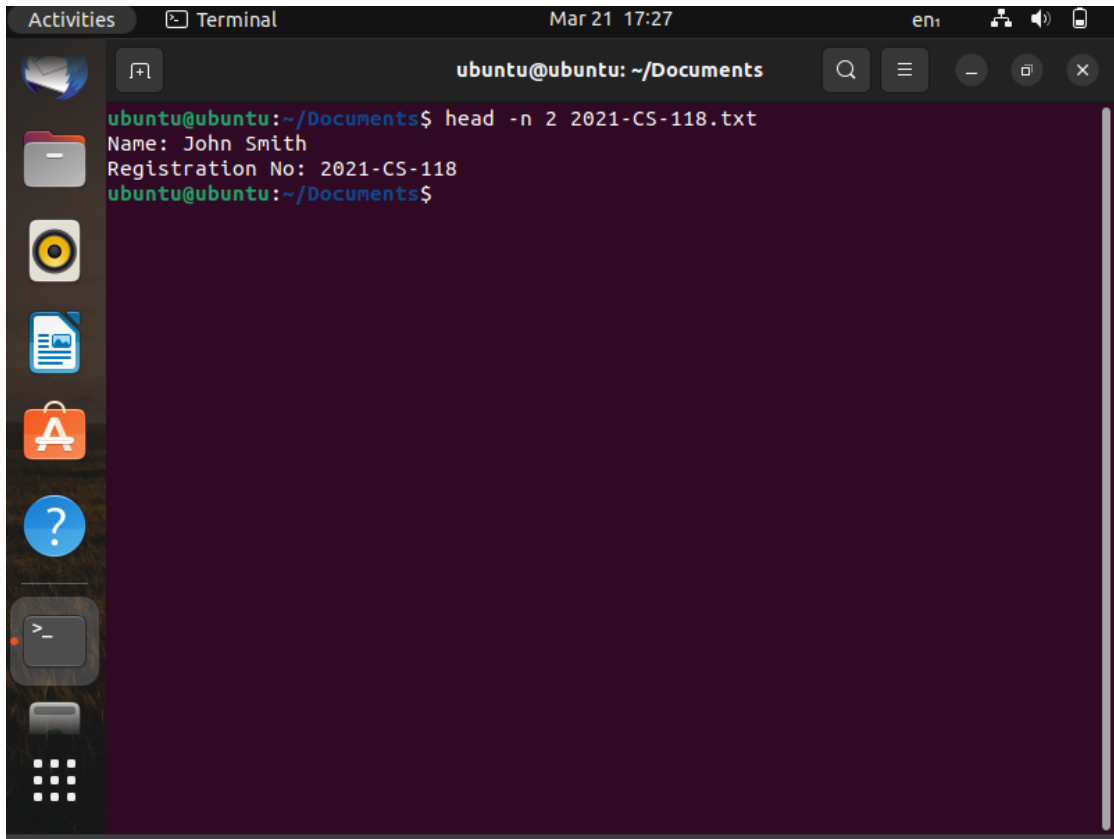
5. Redirect the output to a new file.

A screenshot of a Linux terminal window. The window title is "Terminal" and the current directory is "~/Documents". The user has executed the command "ls > filelist.txt" to redirect the output of the "ls" command to a new file named "filelist.txt". Then, they executed "cat filelist.txt" to display the contents of that file. The output shows a list of files in the directory: "2021-CS-118.txt", "filelist.txt", "mergedFile.txt", "M_Yaqoob.txt", "shm_read", "shm_read.c", "shm_write", and "shm_write.c". The terminal prompt is now ready for the next command.

```
ubuntu@ubuntu: ~/Documents
ubuntu@ubuntu:~/Documents$ ls > filelist.txt
ubuntu@ubuntu:~/Documents$ cat filelist.txt
2021-CS-118.txt
filelist.txt
mergedFile.txt
M_Yaqoob.txt
shm_read
shm_read.c
shm_write
shm_write.c
ubuntu@ubuntu:~/Documents$
ubuntu@ubuntu:~/Documents$
```

FIGURE 5: task5

6. Display the first two lines of first file.



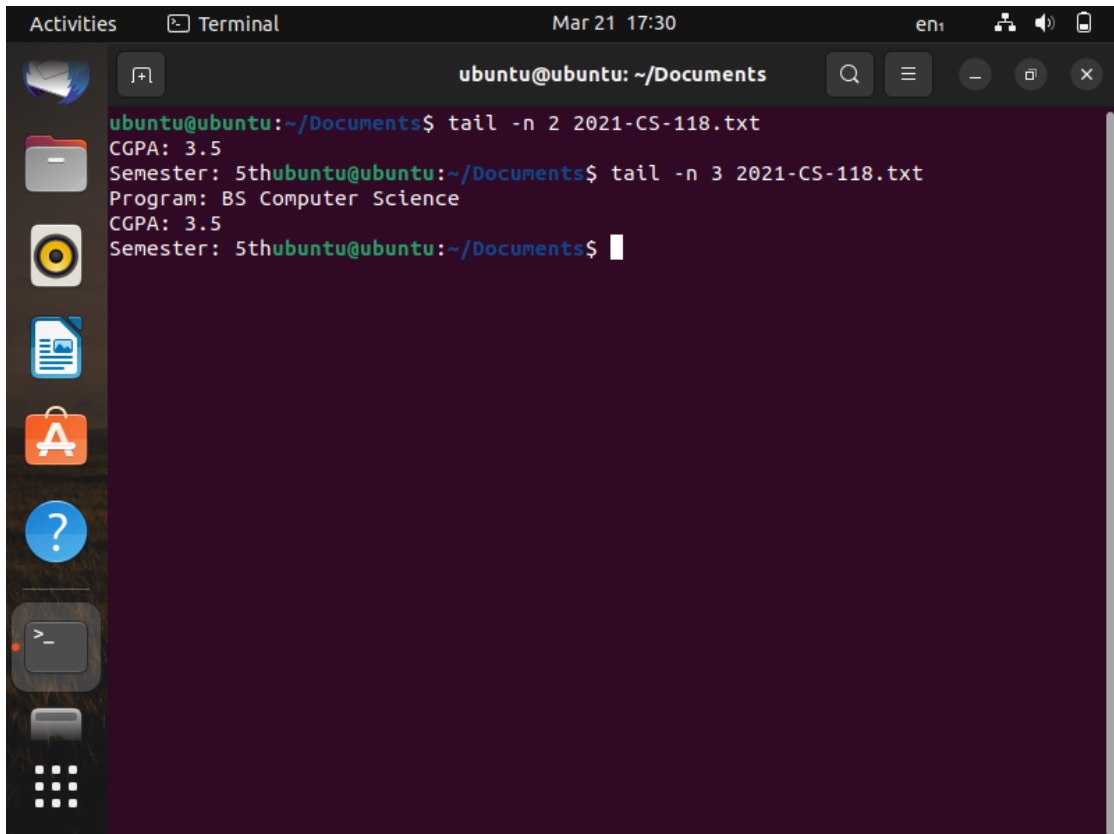
The image shows a terminal window titled "Terminal" with the date and time "Mar 21 17:27" in the top right corner. The terminal is running on an Ubuntu system, as indicated by the prompt "ubuntu@ubuntu: ~/Documents". The user has entered the command `head -n 2 2021-CS-118.txt`, and the output is displayed as follows:

```
ubuntu@ubuntu:~/Documents$ head -n 2 2021-CS-118.txt
Name: John Smith
Registration No: 2021-CS-118
ubuntu@ubuntu:~/Documents$
```

The terminal window has a dark background and a light-colored text. The output shows the first two lines of the file `2021-CS-118.txt`, which are "Name: John Smith" and "Registration No: 2021-CS-118". The terminal window also has a sidebar on the left with various application icons, including a file manager, a web browser, and a terminal icon.

FIGURE 6: task6

7. Display the last two lines of second file.

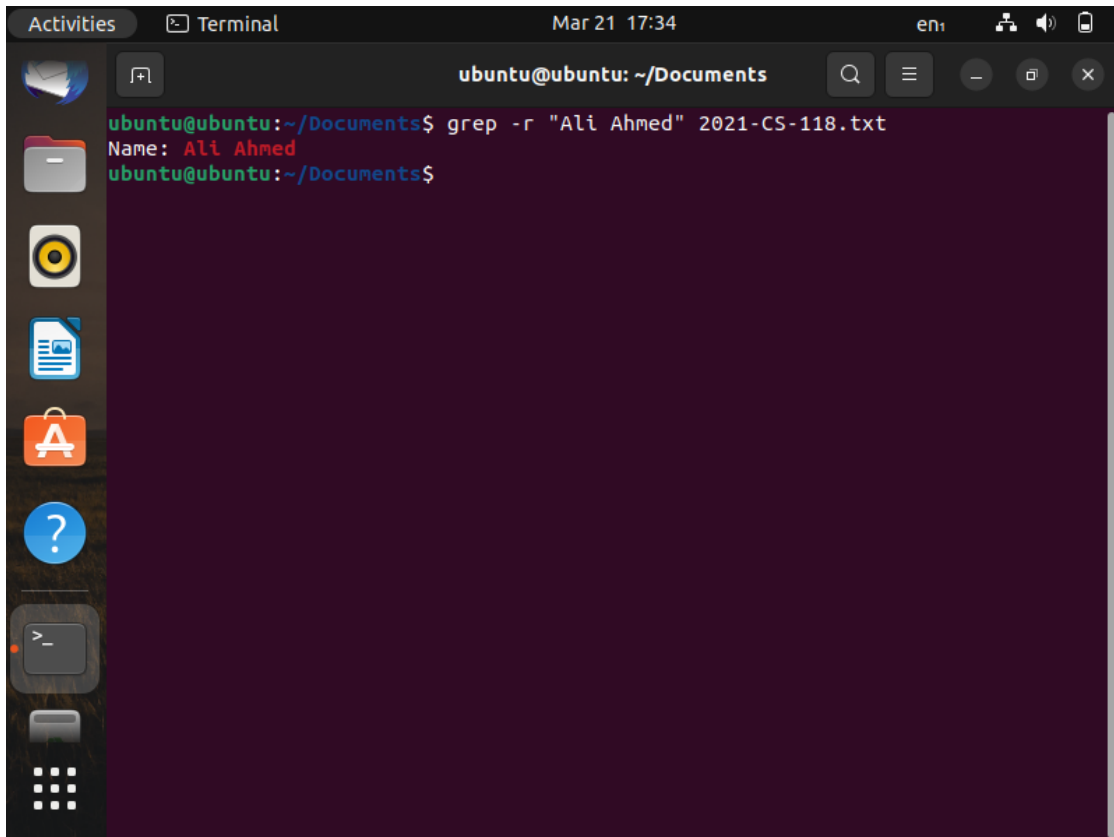


The image shows a terminal window titled "Terminal" with the date and time "Mar 21 17:30" in the top right corner. The window's title bar also includes "Activities", "Terminal", and "ubuntu@ubuntu: ~/Documents". The terminal output shows the user running two commands to view the end of a file named "2021-CS-118.txt". The first command, `tail -n 2 2021-CS-118.txt`, displays the last two lines: "CGPA: 3.5" and "Semester: 5th". The second command, `tail -n 3 2021-CS-118.txt`, displays the last three lines: "CGPA: 3.5", "Semester: 5th", and "Program: BS Computer Science". The prompt `ubuntu@ubuntu:~/Documents$` is visible at the end of each command line.

```
ubuntu@ubuntu:~/Documents$ tail -n 2 2021-CS-118.txt
CGPA: 3.5
Semester: 5th
ubuntu@ubuntu:~/Documents$ tail -n 3 2021-CS-118.txt
CGPA: 3.5
Semester: 5th
Program: BS Computer Science
ubuntu@ubuntu:~/Documents$
```

FIGURE 7: task7

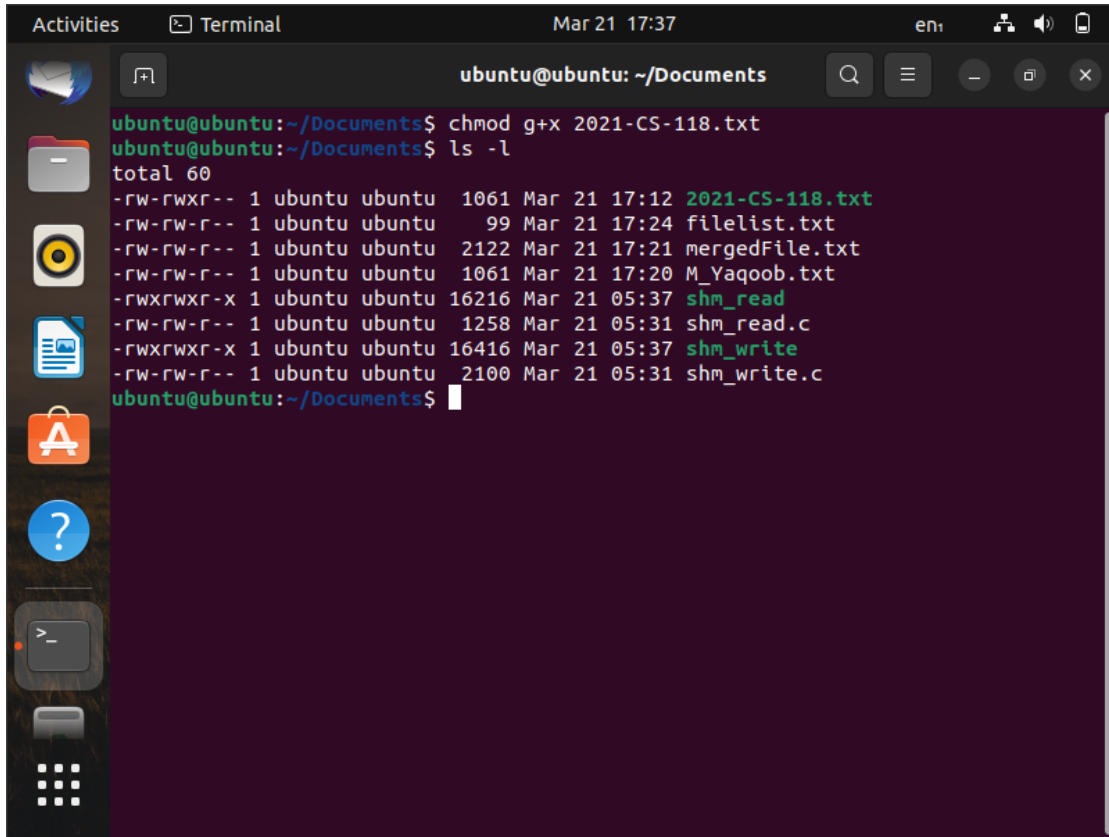
8. Finds the string (your roll) from the first file.

A screenshot of a Linux terminal window. The window title is "Terminal" and it shows the date and time "Mar 21 17:34". The terminal prompt is "ubuntu@ubuntu: ~/Documents". The user has entered the command "grep -r 'Ali Ahmed' 2021-CS-118.txt". The output of the command is "Name: Ali Ahmed". The terminal window has a dark background and a sidebar on the left with various application icons.

```
ubuntu@ubuntu: ~/Documents
ubuntu@ubuntu:~/Documents$ grep -r "Ali Ahmed" 2021-CS-118.txt
Name: Ali Ahmed
ubuntu@ubuntu:~/Documents$
```

FIGURE 8: task8

9. Grant the execute permission of the second file to the group.



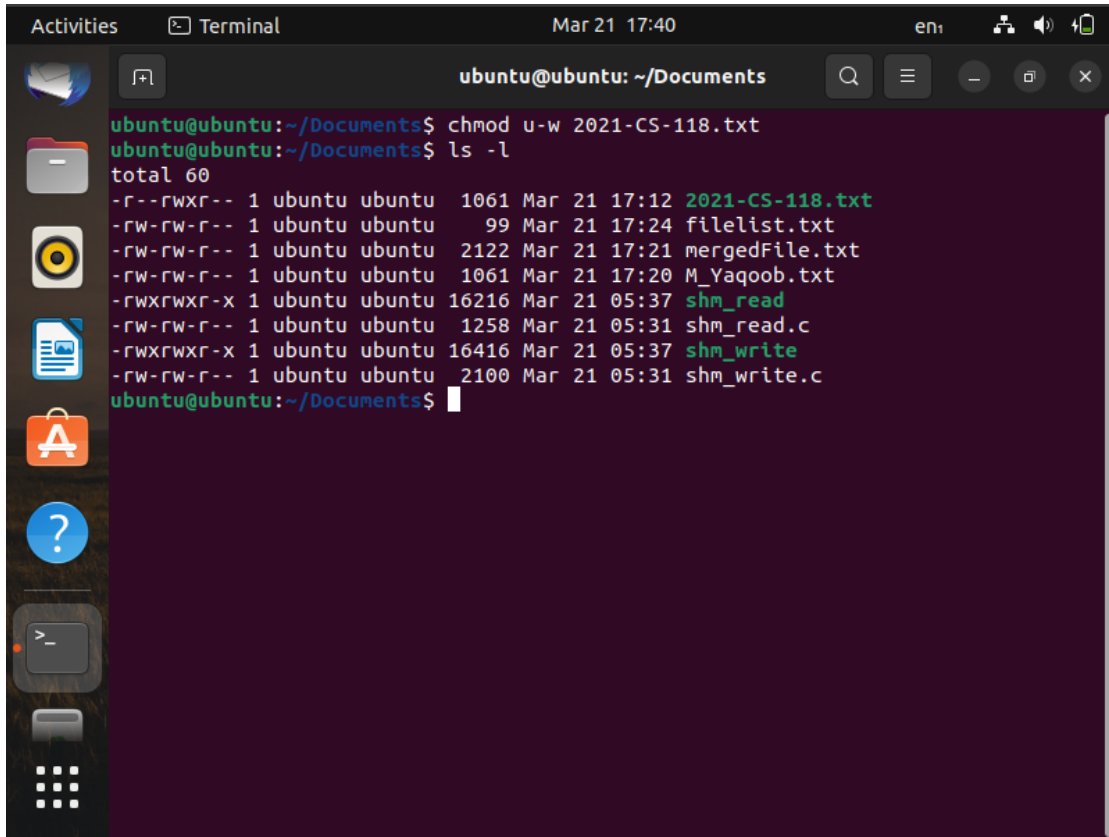
A terminal window titled 'Terminal' with the date 'Mar 21 17:37' and the user 'ubuntu@ubuntu: ~/Documents'. The terminal shows the following commands and output:

```
ubuntu@ubuntu:~/Documents$ chmod g+x 2021-CS-118.txt
ubuntu@ubuntu:~/Documents$ ls -l
total 60
-rw-rwxr-- 1 ubuntu ubuntu 1061 Mar 21 17:12 2021-CS-118.txt
-rw-rw-r-- 1 ubuntu ubuntu 99 Mar 21 17:24 filelist.txt
-rw-rw-r-- 1 ubuntu ubuntu 2122 Mar 21 17:21 mergedFile.txt
-rw-rw-r-- 1 ubuntu ubuntu 1061 Mar 21 17:20 M_Yaqoob.txt
-rwxrwxr-X 1 ubuntu ubuntu 16216 Mar 21 05:37 shm_read
-rw-rw-r-- 1 ubuntu ubuntu 1258 Mar 21 05:31 shm_read.c
-rwxrwxr-X 1 ubuntu ubuntu 16416 Mar 21 05:37 shm_write
-rw-rw-r-- 1 ubuntu ubuntu 2100 Mar 21 05:31 shm_write.c
ubuntu@ubuntu:~/Documents$
```

The terminal window has a sidebar on the left with icons for Activities, Terminal, and a file manager. The main area shows the terminal output. The file '2021-CS-118.txt' is highlighted in green in the output. The file 'shm_read' has permissions 'rwxrwxr-X' and is highlighted in green. The file 'shm_write' has permissions 'rwxrwxr-X' and is highlighted in green.

FIGURE 9: task9

10. Remove the write permission for the owner.



A terminal window titled 'Terminal' with the address bar showing 'ubuntu@ubuntu: ~/Documents'. The terminal displays the following commands and output:

```
ubuntu@ubuntu:~/Documents$ chmod u-w 2021-CS-118.txt
ubuntu@ubuntu:~/Documents$ ls -l
total 60
-r--rwxr-- 1 ubuntu ubuntu 1061 Mar 21 17:12 2021-CS-118.txt
-rw-rw-r-- 1 ubuntu ubuntu 99 Mar 21 17:24 filelist.txt
-rw-rw-r-- 1 ubuntu ubuntu 2122 Mar 21 17:21 mergedFile.txt
-rw-rw-r-- 1 ubuntu ubuntu 1061 Mar 21 17:20 M_Yaqoob.txt
-rwxrwxr-x 1 ubuntu ubuntu 16216 Mar 21 05:37 shm_read
-rw-rw-r-- 1 ubuntu ubuntu 1258 Mar 21 05:31 shm_read.c
-rwxrwxr-x 1 ubuntu ubuntu 16416 Mar 21 05:37 shm_write
-rw-rw-r-- 1 ubuntu ubuntu 2100 Mar 21 05:31 shm_write.c
ubuntu@ubuntu:~/Documents$
```

FIGURE 10: task10

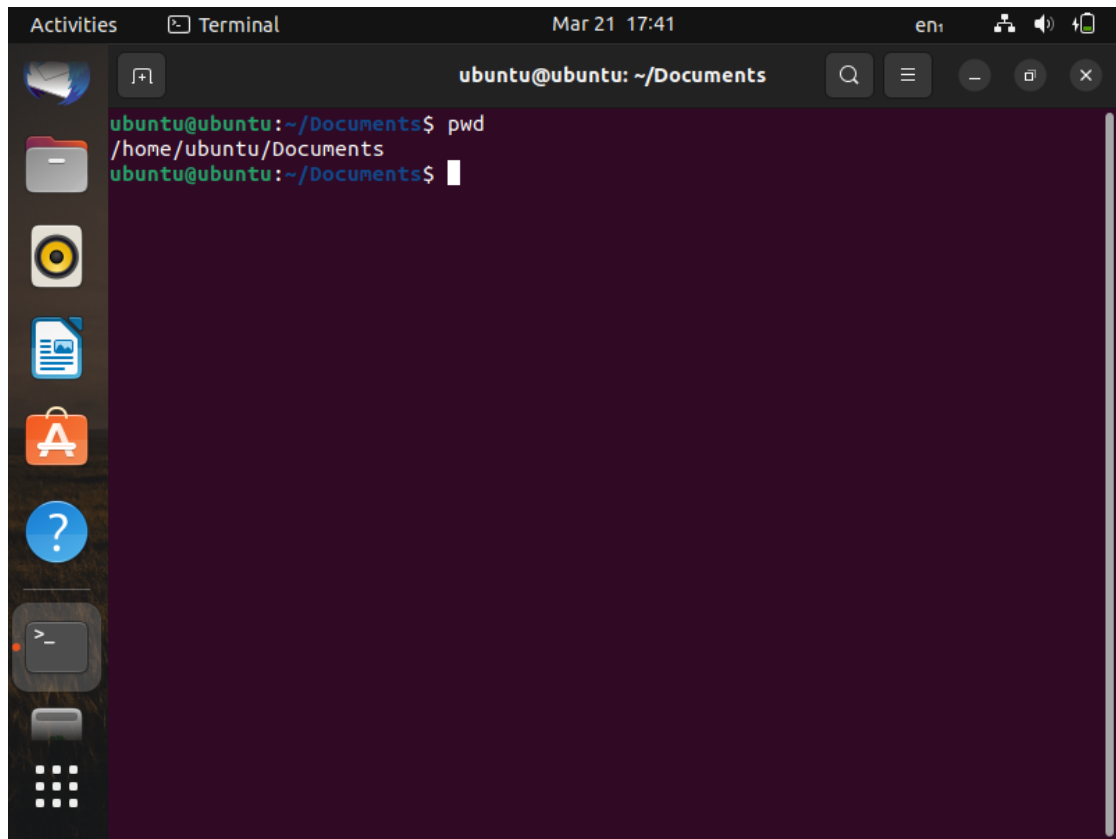
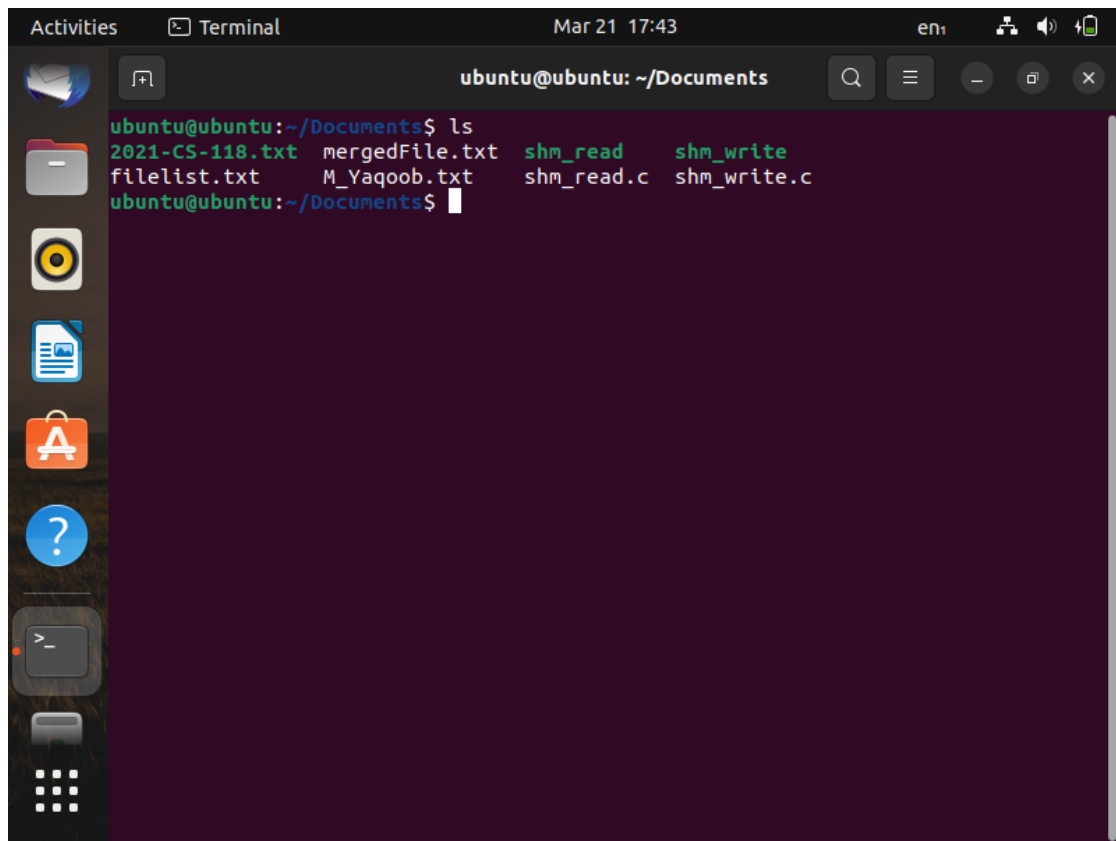


FIGURE 11: task11

12. He wants the list of all files present on Desktop directory.

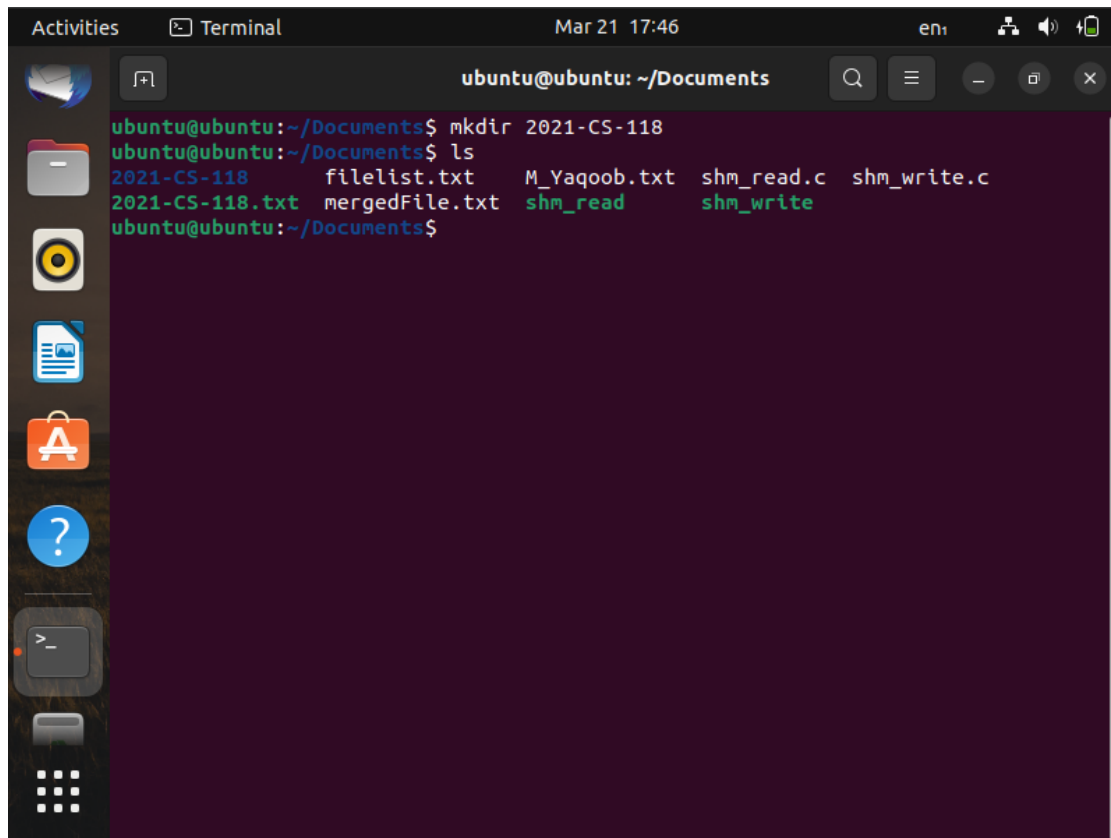


The image shows a terminal window titled "Terminal" with the date and time "Mar 21 17:43". The terminal is running the command `ls` in the directory `~/Documents`. The output lists the following files: `2021-CS-118.txt`, `mergedFile.txt`, `shm_read`, `shm_write`, `filelist.txt`, `M_Yaqoob.txt`, `shm_read.c`, and `shm_write.c`. The terminal prompt is `ubuntu@ubuntu: ~/Documents$`.

```
ubuntu@ubuntu: ~/Documents$ ls
2021-CS-118.txt  mergedFile.txt  shm_read  shm_write
filelist.txt    M_Yaqoob.txt   shm_read.c shm_write.c
ubuntu@ubuntu: ~/Documents$
```

FIGURE 12: task12

13. Now he wanted to create a folder of his personal files and pictures named as your roll.

A screenshot of a Linux terminal window. The title bar shows 'Activities', 'Terminal', and the date 'Mar 21 17:46'. The terminal prompt is 'ubuntu@ubuntu: ~/Documents'. The user has entered 'mkdir 2021-CS-118' and 'ls'. The output of 'ls' shows a directory '2021-CS-118' and several files: 'filelist.txt', 'M_Yaqoob.txt', 'shm_read.c', 'shm_write.c', '2021-CS-118.txt', and 'mergedFile.txt'. The 'shm_read' and 'shm_write' files are highlighted in green. The terminal window has a dark background and a sidebar with various application icons on the left.

```
ubuntu@ubuntu: ~/Documents
ubuntu@ubuntu:~/Documents$ mkdir 2021-CS-118
ubuntu@ubuntu:~/Documents$ ls
2021-CS-118      filelist.txt    M_Yaqoob.txt   shm_read.c     shm_write.c
2021-CS-118.txt mergedFile.txt  shm_read       shm_write
ubuntu@ubuntu:~/Documents$
```

FIGURE 13: task13