Module Code & Module Title

Level 5 – Network Operating System

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I confirm that I understand my coursework needs to be submitted online via Google Classroom under the relevant module page before the deadline for my assignment to be accepted and marked. I am fully aware that late submissions will be treated as non-submission and a mark of zero will be awarded.

Table of Contents

Table of figures

Introduction

We have some exercises which have tried to hone our command line sharpening and also to bring training on how UNIX operates. UNIX is an operating system providing utility programs for managing files and directories as well as achieving operations on the system. By creating a directory structure, generating files, and running different commands, we come across ordinary to even advanced features from cat, grep, alias, and history. These utilities are among the most important tools for performing everyday tasks and processes in UNIX.

Exercises are made to hone the command line and training on how UNIX works. UNIX is an operating system which provides utility programs for managing files, directories, and performing work on systems. We created a directory structure, created files, and ran a range of commands. Thus, we experienced through ordinary to advanced features of cat, grep, alias, and history. These utilities are some of the important tools for routine tasks and processes in UNIX.

Objective

The primary objective of this task is to:

1. Familiarize ourselves with common UNIX utilities such as cat and grep.
2. Understand how to create, navigate, and manipulate files and directories using commands.
3. Learn how to define, use, and remove command aliases.
4. Practice accessing and managing command history for efficiency.
5. Compare results with peers to improve understanding of system configurations.

1. **Create the directory structure presented in the figure below.**

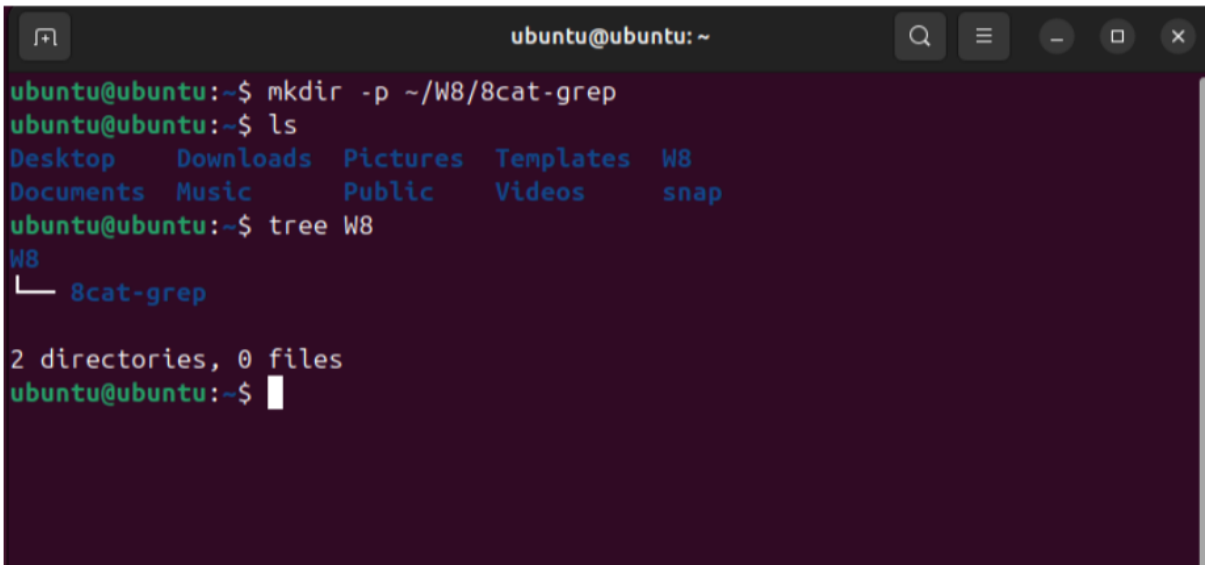

Figure 1: Creating home directory

First, we started by making the directory using mkdir with the option -p.

2. **Change to the 8cat-grep directory by one step using a relative pathname.**

Figure 2:Changing to directory by one step

Then after we were done making the directory we used cd to move to that folder.

3. **Using the cat utility, create two files.**

```
ubuntu@ubuntu:~/W8/8cat-grep$ cat >> testa
Kkkll
llllmm
oo-oo
mmmdd
ddkkk
ubuntu@ubuntu:~/W8/8cat-grep$ ls
testa
ubuntu@ubuntu:~/W8/8cat-grep$ cat testa
Kkkll
llllmm
oo-oo
mmmdd
ddkkk
ubuntu@ubuntu:~/W8/8cat-grep$
```

Figure 3: Creating testa file

```
ubuntu@ubuntu:~/W8/8cat-grep$ cat > testb
KKKKK
LLLLL
MMMMM
DDDDD
ubuntu@ubuntu:~/W8/8cat-grep$ ls
testa  testb
ubuntu@ubuntu:~/W8/8cat-grep$ cat testb
KKKKK
LLLLL
MMMMM
DDDDD
ubuntu@ubuntu:~/W8/8cat-grep$
```

Figure 4: Creating testb file

4. Give the following commands and explain the results for yourself

- **grep ll testa**

```
ubuntu@ubuntu:~/W8/8cat-grep$ grep ll testa
Kkkll
llllmm
ubuntu@ubuntu:~/W8/8cat-grep$
```

Figure 5: Using grep ll testa command

- **grep -v ll testa**

```
ubuntu@ubuntu:~/W8/8cat-grep$ grep -v ll testa
oo-oo
mmmdd
ddkkk
ubuntu@ubuntu:~/W8/8cat-grep$
```

Figure 6: Using grep -v ll testa command

- **grep -n ll testa**

```
ubuntu@ubuntu:~/W8/8cat-grep$ grep -n ll testa
1:Kkkll
2:llllmm
ubuntu@ubuntu:~/W8/8cat-grep$
```

Figure 7: Using grep -n ll testa command

- **grep -l ll ***

```
ubuntu@ubuntu:~/W8/8cat-grep$ grep -l ll *
testa
ubuntu@ubuntu:~/W8/8cat-grep$
```

*Figure 8: Using grep -l ll * command*

- **grep -i ll ***

```
ubuntu@ubuntu:~/W8/8cat-grep$ grep -i ll *
testa:Kkkll
testa:llllmm
testb:LLLLL
ubuntu@ubuntu:~/W8/8cat-grep$
```

*Figure 9: Using grep -i ll * command*

- **grep -c ll ***

```
ubuntu@ubuntu:~/W8/8cat-grep$ grep -c ll *
testa:2
testb:0
ubuntu@ubuntu:~/W8/8cat-grep$
```

*Figure 10: Using grep -c ll * command*

- grep ‘^k’ testa testb

```
ubuntu@ubuntu:~/W8/8cat-grep$ grep '^K' testa testb
testa:Kkkll
testb:KKKKK
ubuntu@ubuntu:~/W8/8cat-grep$
```

Figure 11: Using grep '^K' testa testb command

- grep -n’^’ testa

```
ubuntu@ubuntu:~/W8/8cat-grep$ grep -n '^' testa
1:Kkkll
2:llllmm
3:oo-oo
4:mmmdd
5:ddkkk
ubuntu@ubuntu:~/W8/8cat-grep$
```

Figure 12: Using grep -n'^' testa command

5. **Define the lsal alias for ls -al command. Show that your system stores it giving the alias command (without arguments)**

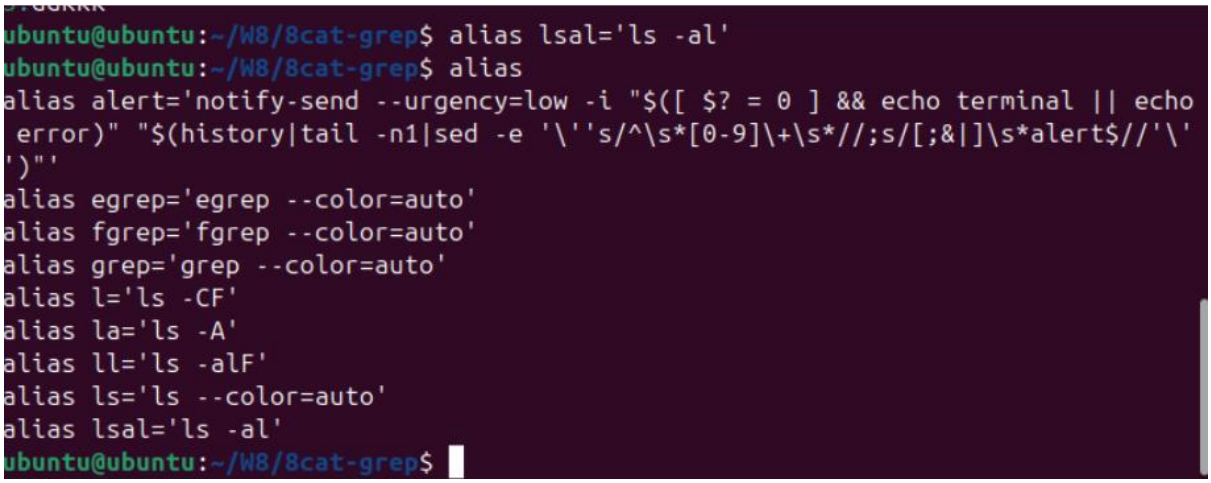

Figure 13: Defining the lsal alias for ls -al

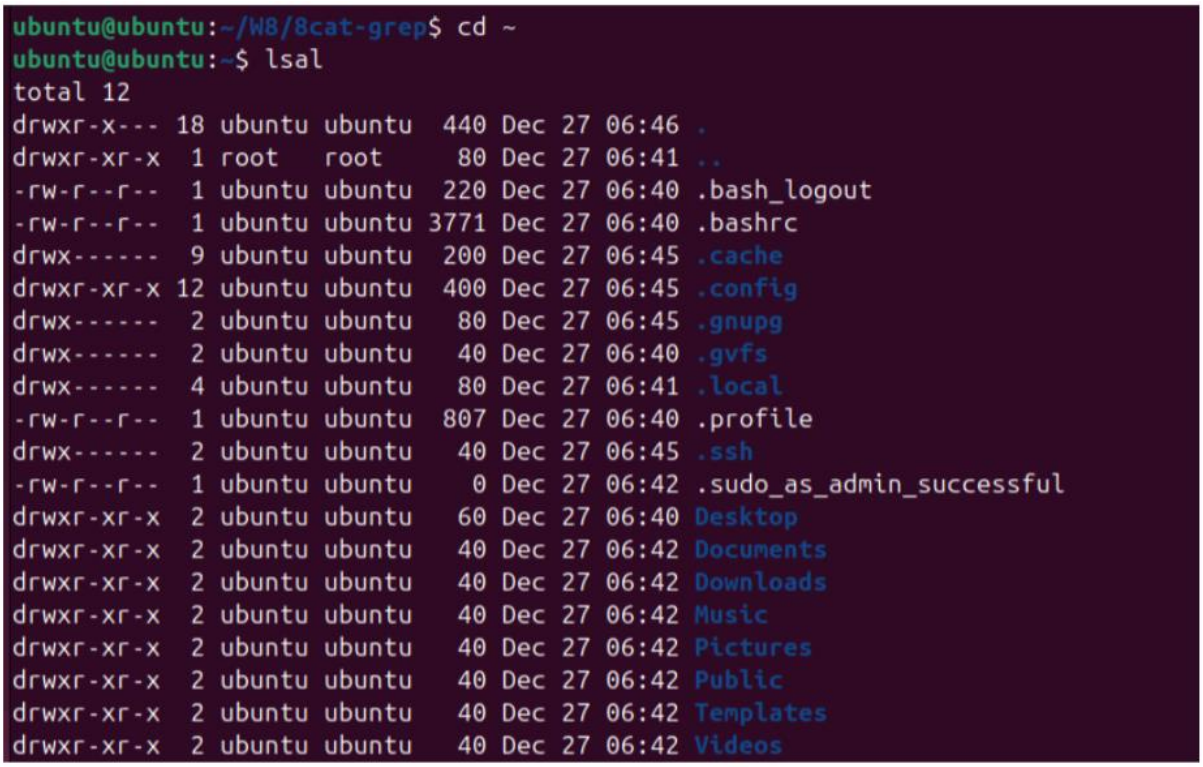

Figure 14: Using the lsal command

6. Remove the alias.

```
ubuntu@ubuntu:~$ unalias lsal
ubuntu@ubuntu:~$ alias
alias alert='notify-send --urgency=low -i "$([ $? = 0 ] && echo terminal || echo
 error)" "$(history|tail -n1|sed -e '\''s/^\s*[0-9]\+\s*//;s/[;&|]\s*alert$//'\'
')"'
alias egrep='egrep --color=auto'
alias fgrep='fgrep --color=auto'
alias grep='grep --color=auto'
alias l='ls -CF'
alias la='ls -A'
alias ll='ls -alF'
alias ls='ls --color=auto'
ubuntu@ubuntu:~$
```

Figure 15: Removing the alias

7. Define this alias again preserving it for the next session.

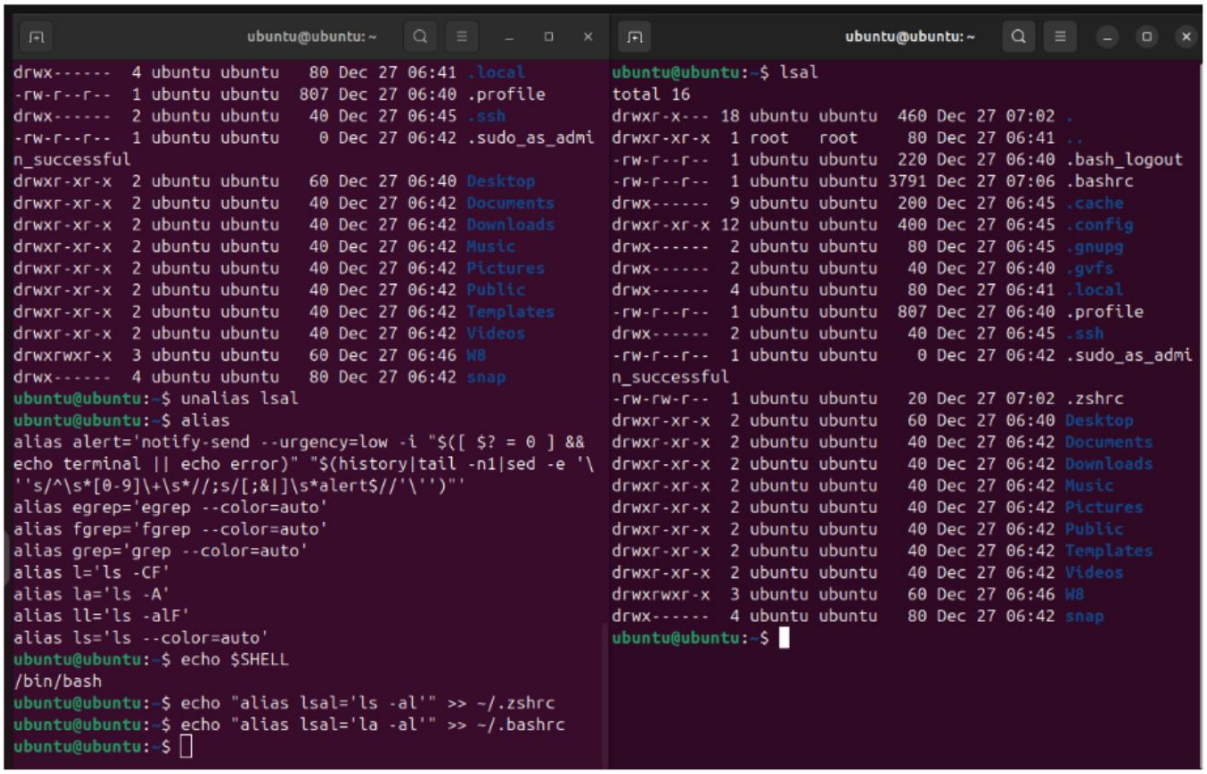

Figure 16: Saving the command and using it in next session

8. **Define the nwho alias for the number of system file at UNIX computers.**

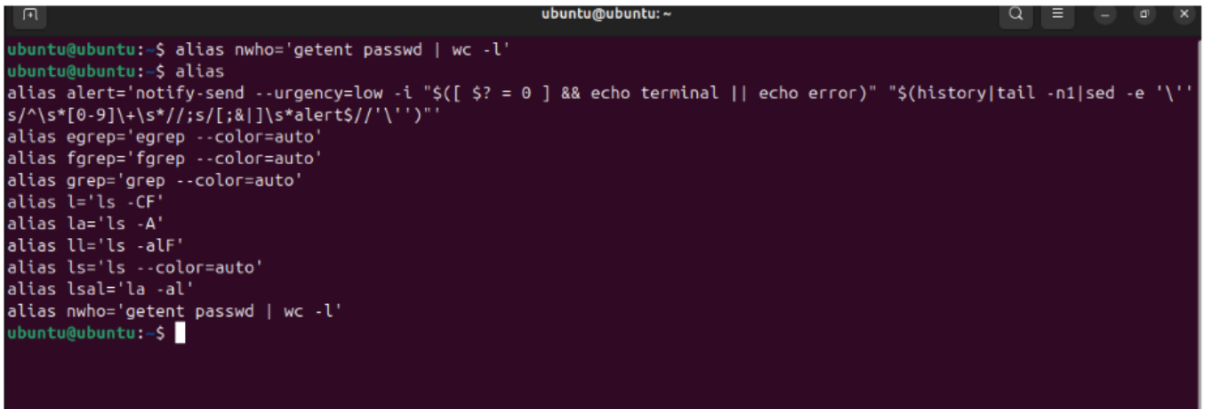

Figure 17: Defining the nwho

9. **Give the command nwho. Compare the figure displayed with ones got by you UNIX-mates.**

Figure 18: Used nwho

10. List your last commands executed giving the history command.

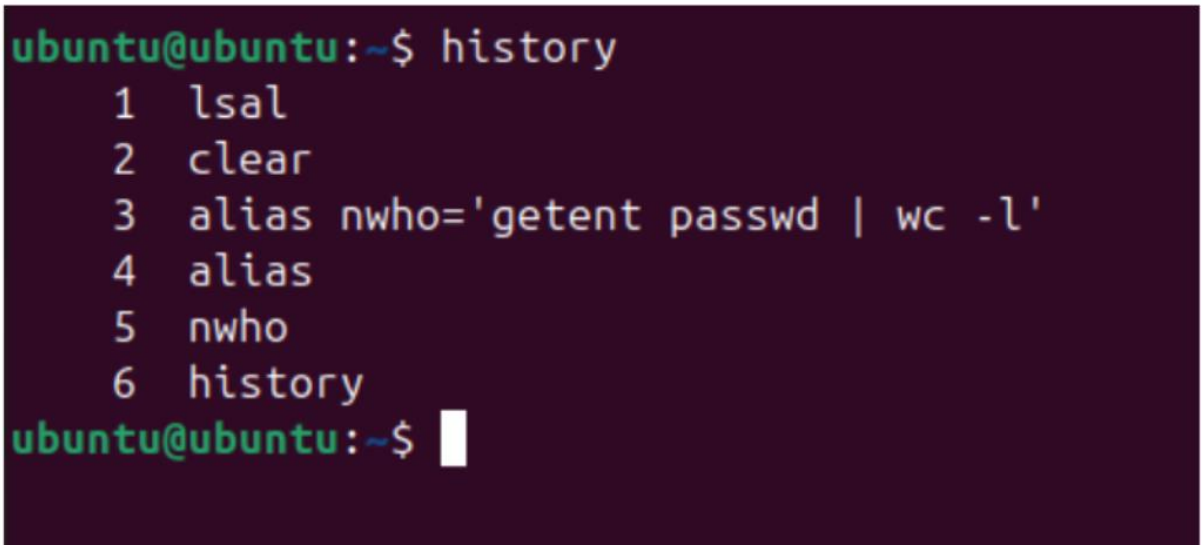

Figure 19: History of commands

11. Re-execute the last but one command using the redo(r) command and the number of the event fc-r.

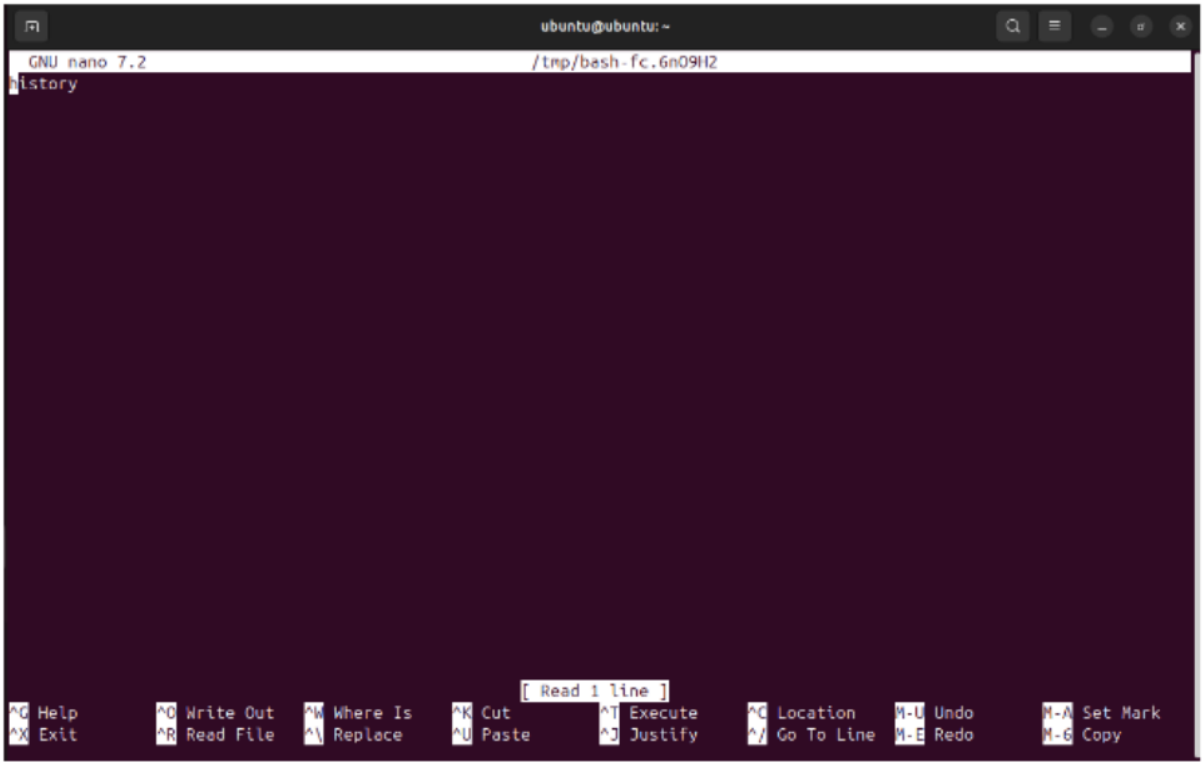

Figure 20: Used to see the most recent command

12. Re-execute the command given three commands ago using the negative integer.

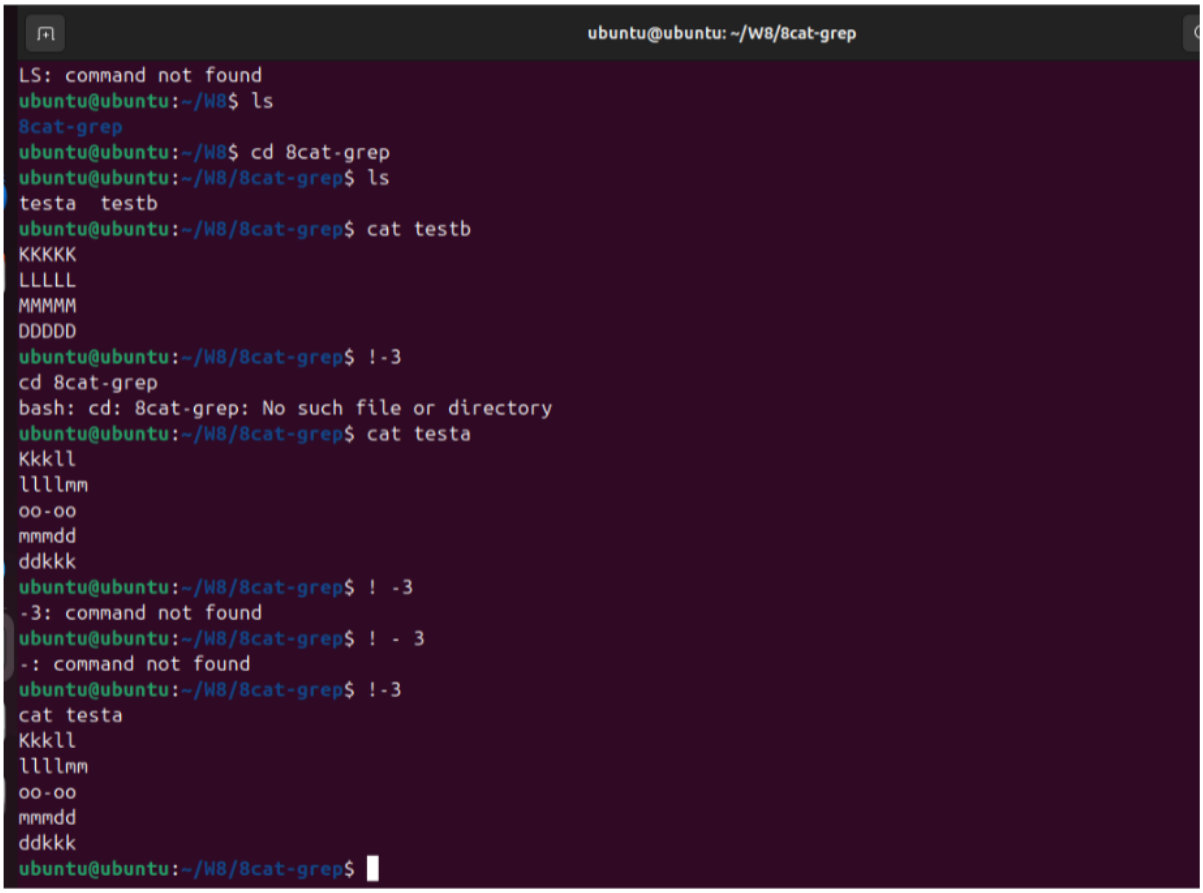

Figure 21: To re execute the command we used 3 commands ago

13. Re-execute the last command which name begins with 'l'. fc -e- l

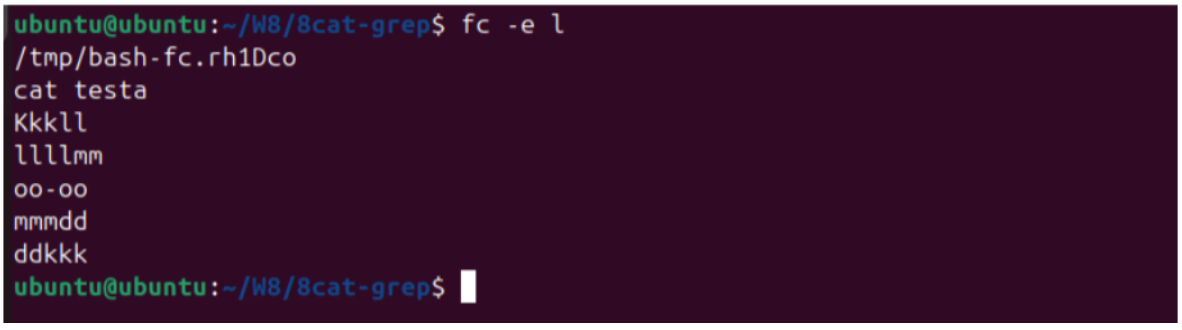

Figure 22: To re execute the command that start wit i

Conclusion

The practice improved our skills in the effective use of essential UNIX commands. We learned how to create files and directories, search for information in files using grep, and change how a command behaves using an alias. We also explored the history of the commands and how to re-execute them to save some time and effort. These are the skills needed for task management in UNIX and lay the groundwork for advanced scripting in addition to system administration. Comparing results with peers also made us realize the differences between system configurations and outputs that helped widen our understanding of UNIX systems.