**1) Create user with name Techie and provide sudo access to user**

**A) vboxuser@Aleemuddin:~$ sudo useradd waseem (To add user)**

**vboxuser@Aleemuddin:~$ Sudo passwd**

**Type new passwd\*\*\*\*\* (Type password)**

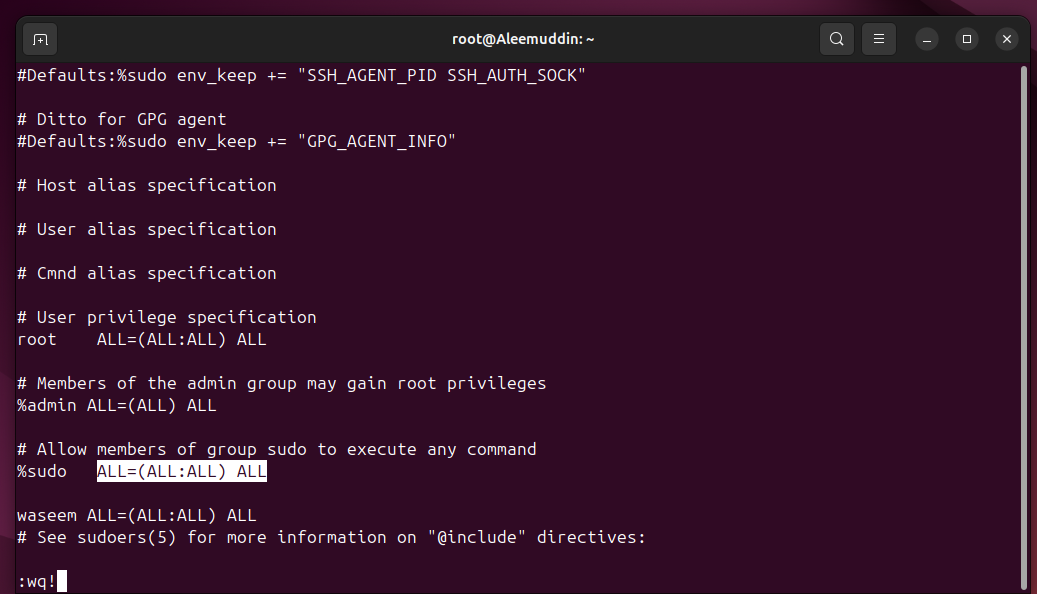
**Retype new passwd\*\*\*\*\* (Type password)**

**vboxuser@Aleemuddin:~$ su root (switch to root user)**

**Password:\*\*\*\*\*\*\*\*\*\*\*\***

**root@Aleemuddin:/home/vboxuser# cd (Back to home)**

**root@Aleemuddin:~# vi sudoers** **(Extra privelilages)**

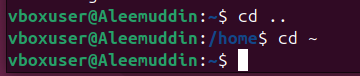


**root@Aleemuddin:~# sudo vi /etc/sudoers :  list of users or user groups with permission to execute a subset of commands while having the privileges of the root user or another specified user**

**2) Navigate to the home directory.**

**A) vboxuser@Aleemuddin:~$ pwd (Present working directory)**

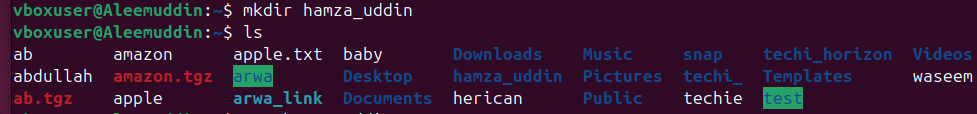
**vboxuser@Aleemuddin:~$ cd .. (one step back)**

**vboxuser@Aleemuddin:/home$ (Home directory )**

**3) Create a new directory.**

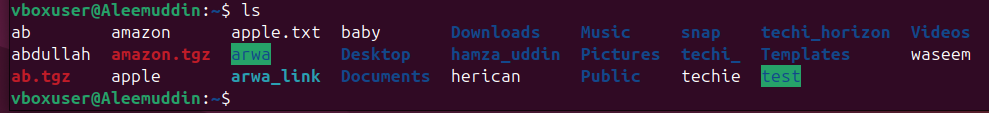
**A) vboxuser@Aleemuddin:~$ mkdir hamza\_uddin (Create directory)**

**vboxuser@Aleemuddin:~$ ls (To list the directory & files)**



**4) List the contents of a directory.**

**A) vboxuser@Aleemuddin:~$ ls (To list the directory & files)**



**5) Change the current directory.**

**A) vboxuser@Aleemuddin:~/hamza\_uddin$ cd(logout from present directory)**

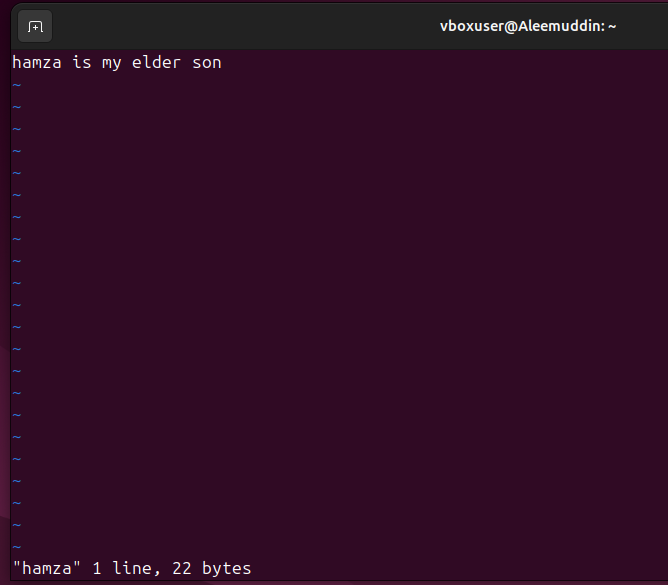


**6) Create a new empty file.**

**A) vboxuser@Aleemuddin:~$ touch hamza (Create a file with o size)**



**vboxuser@Aleemuddin:~$ vi Hamza (Login to editor)**



**Press I to text, Type text, press esc, wqi: exit.**

**7) View the contents of a file.**

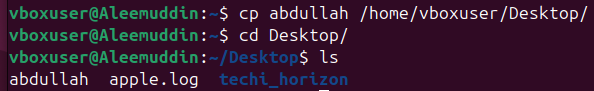
**A) vboxuser@Aleemuddin:~$ cat hamza (Read the content of file)**



**8) Copy a file to another location.**

**A) vboxuser@Aleemuddin:~$ cp abdullah /home/vboxuser/Desktop/**

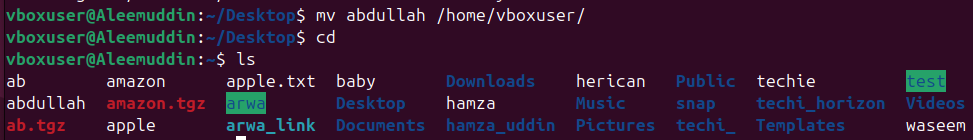
**(Copy a file to another location)**



**9) Move a file to another location.**

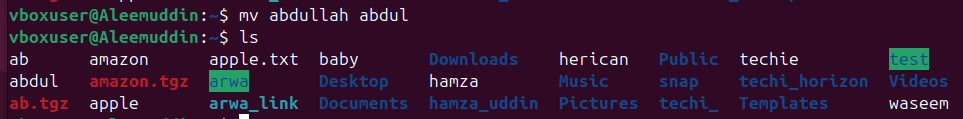
**A) vboxuser@Aleemuddin:~/Desktop$ mv abdullah /home/vboxuser/**

**(Moving a file to another location)**



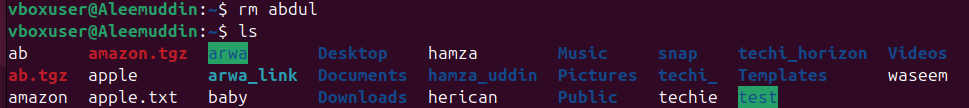
**10) Rename a file.**

**A) vboxuser@Aleemuddin:~$ mv abdullah abdul (Rename the file)**



**11) Delete a file.**

**A) vboxuser@Aleemuddin:~$ rm abdul (Delete a file)**



**12) Grant or revoke permissions on a file or directory.**

**A) vboxuser@Aleemuddin:~$ chmod 777 hamza (permessions rwx)**



**13) View the current date and time.**

**A) vboxuser@Aleemuddin:~$ date (To check the date&time)**



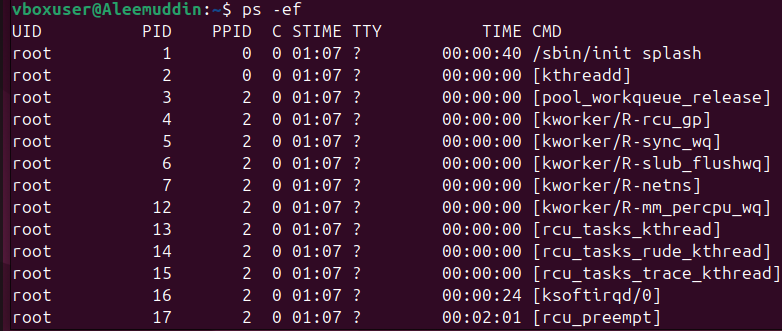
**14) Check the system uptime.**

**A) vboxuser@Aleemuddin:~$ uptime (To check system uptime)**



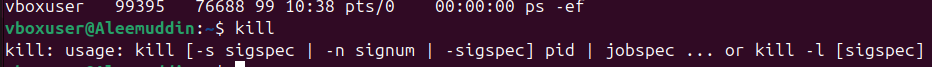
**15) View the running processes.**

**A) vboxuser@Aleemuddin:~$ ps –ef (To check the system running process)**



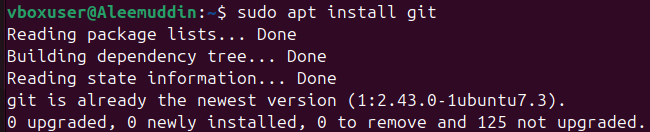
**16) Kill a running process.**

**A) vboxuser@Aleemuddin:~$ kill (To stop the machine running process)**



**17) Install a package using the package manager (e.g., apt or yum).**

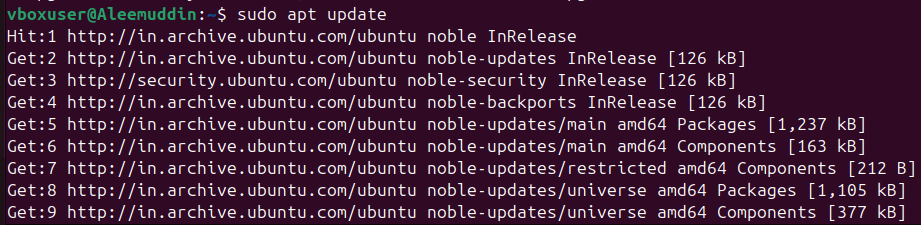
**A) vboxuser@Aleemuddin:~$ sudo apt install git (To install applicaton)**



**18) Update the system packages.**

**A) vboxuser@Aleemuddin:~$ sudo apt update (update)**

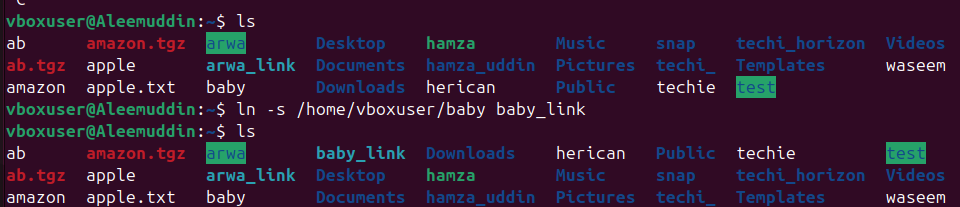
**(To update the app)**



**19) Create a symbolic link.**

**A) vboxuser@Aleemuddin:~$ ln -s /home/vboxuser/baby baby\_link**

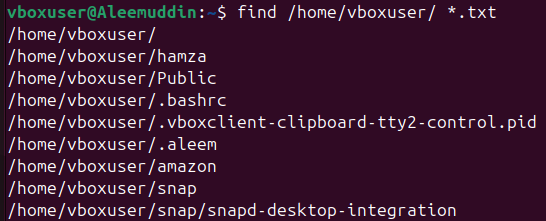
**(Create a link file)**



**20) Search for files using the find command.**

**A) vboxuser@Aleemuddin:~$ find /home/vboxuser/ \*.txt**

**(To find the files)**



**21) Compress and decompress files using tar.**

**A) vboxuser@Aleemuddin:~$ tar xvf techie.tgz techie (compress)**

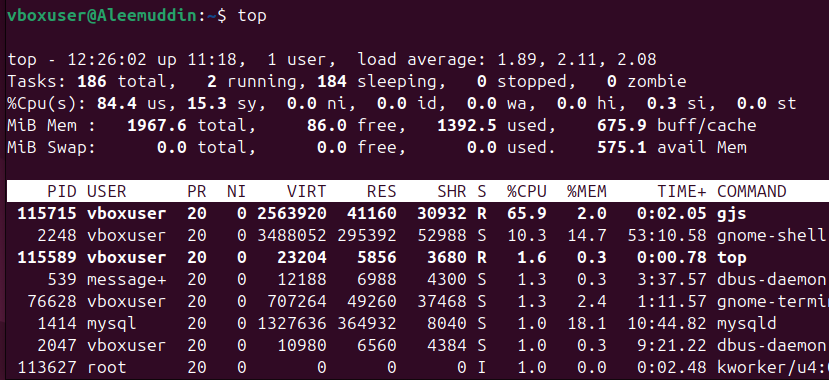
**vboxuser@Aleemuddin:~$ tar zcvf techie.tgz techie techie**

**(Decompress)**



**22) Monitor system resources with top or htop.**

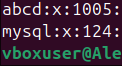
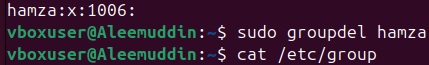
**A) vboxuser@Aleemuddin:~$ top (To check the system running process)**



**23) Create and manage user groups.**

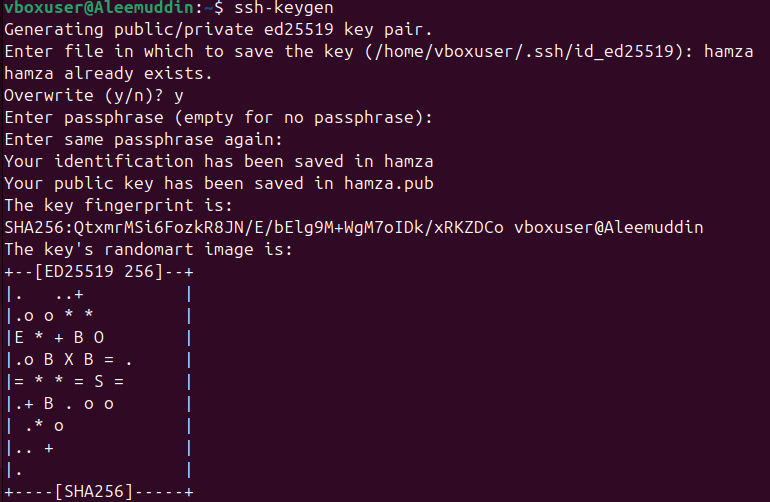
**A) vboxuser@Aleemuddin:~$ sudo groupadd hamza (To add a group)**

**vboxuser@Aleemuddin:~$ cat /etc/group (To check content)**



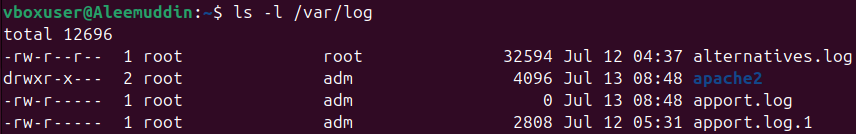
**24) Set up SSH password less authentication.**

**A) vboxuser@Aleemuddin:~$ ssh-keygen (To set up ssh passwd)**



**25) Monitor log files using tail or grep.**

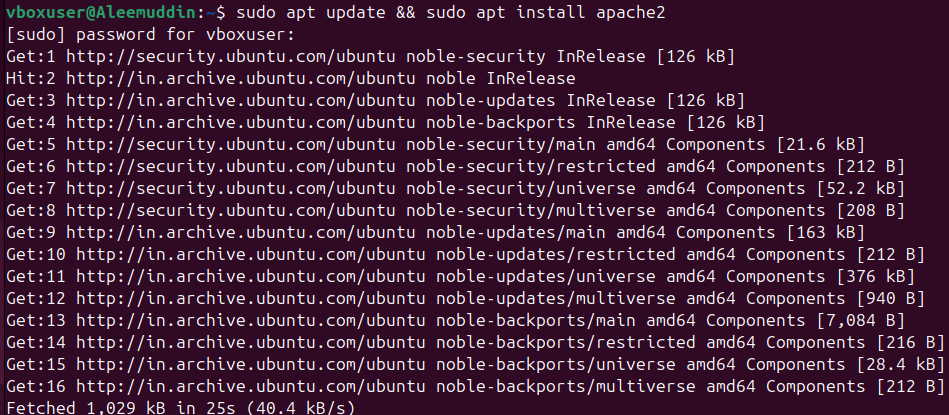
**A) vboxuser@Aleemuddin:~$ ls -l /var/log (monitor log files by tail)**



**26) Set up a web server (e.g., Apache or Nginx).**

**A) vboxuser@Aleemuddin:~$ sudo apt update && sudo apt install apache2**

**(To set up web server)**

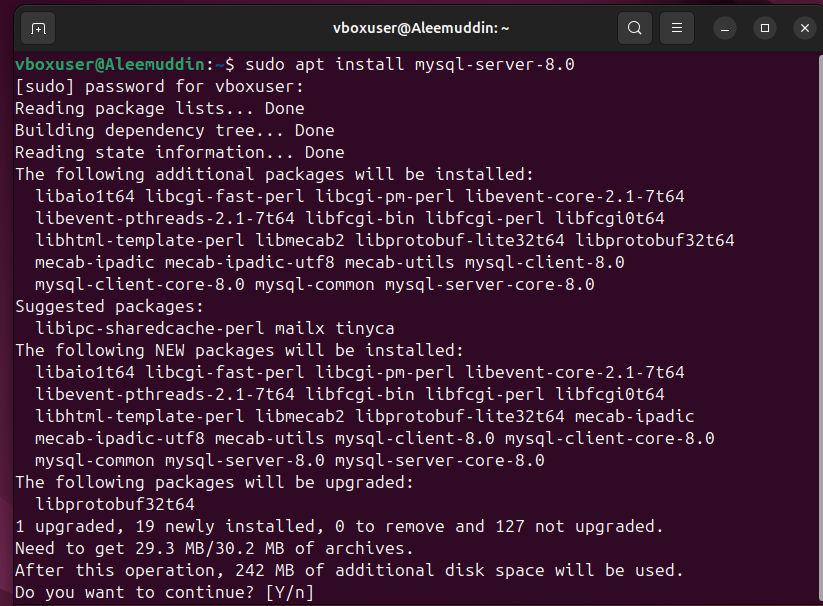


**27) Configure and secure a MySQL Database**

**A) vboxuser@Aleemuddin:~$ sudo apt install mysql-server-8.0**

**(To configure and secure)**

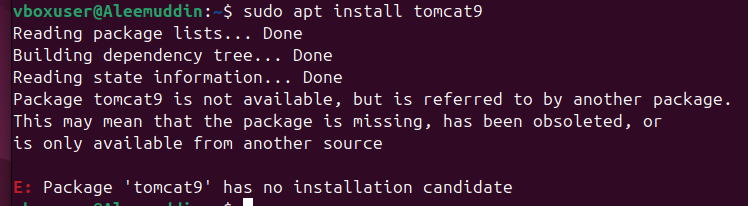
.



**28) Set up a Application Server (e.g.,Apache Tomcat)**

**A) vboxuser@Aleemuddin:~$ sudo apt install tomcat9**

**(Set up app server tomcat9)**

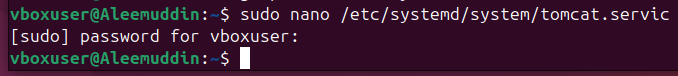


**29) Create a service file for Apache Tomcat.(Should execute by using**

**systemtctl command)**

1. **vboxuser@Aleemuddin:~$ sudo nano /etc/systemd/system/tomcat.servic**

**(To create service file for Apache Tomcat)**

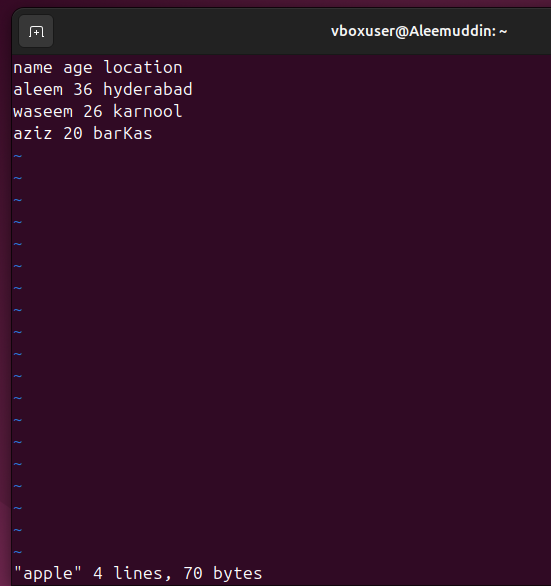


**Write any content and save option yes ctlr+x Exit**

30) Print specific columns from a delimited file.

A) **vboxuser@Aleemuddin:~$ vboxuser@Aleemuddin:~$ vi apple**

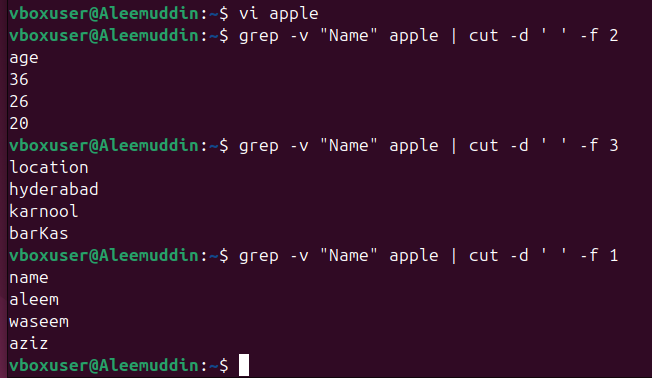
**(login to editor)**



**vboxuser@Aleemuddin:~$ grep -v "Name" apple | cut -d ' ' -f 2**

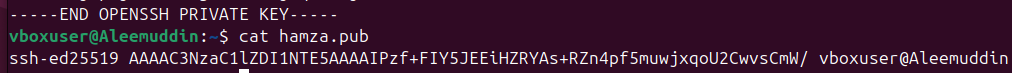
**vboxuser@Aleemuddin:~$ grep -v "Name" apple | cut -d ' ' -f 3**

**vboxuser@Aleemuddin:~$ grep -v "Name" apple | cut -d ' ' -f 1**



**31) Filter and print lines based on a specific pattern or condition.**

**A) vboxuser@Aleemuddin:~$ grep "pattern" hamza**



**32) Calculate and print the average, sum, or other statistics of a column.**

**A) vboxuser@Aleemuddin:~$ awk '{ sum += $2 } END { print sum }' apple**



**33) Perform string manipulation, such as extracting substrings or changing case.**

**A) vboxuser@Aleemuddin:~$ string="HelloWorld" (Extracting)**

**vboxuser@Aleemuddin:~$ echo "${string:0:5}" (Hello)**

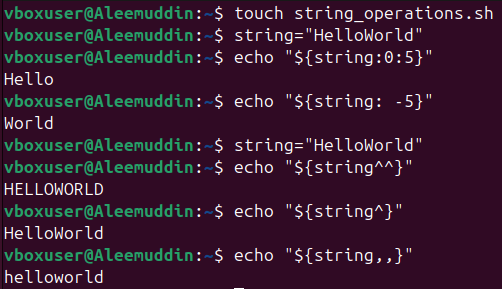
**vboxuser@Aleemuddin:~$ echo "${string: -5}" (World)**

**vboxuser@Aleemuddin:~$ string="HelloWorld" (Changing case)**

**vboxuser@Aleemuddin:~$ echo "${string^^}" (Upper case)**

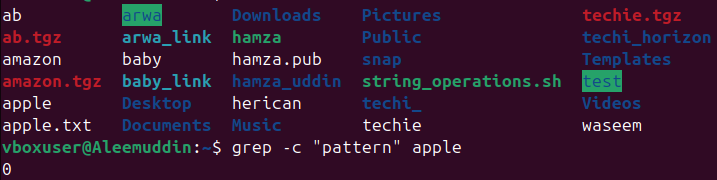
**vboxuser@Aleemuddin:~$ echo "${string^}" (Upper case 1st letter)**

**vboxuser@Aleemuddin:~$ echo "${string,,}" (Lower case)**



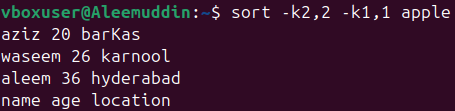
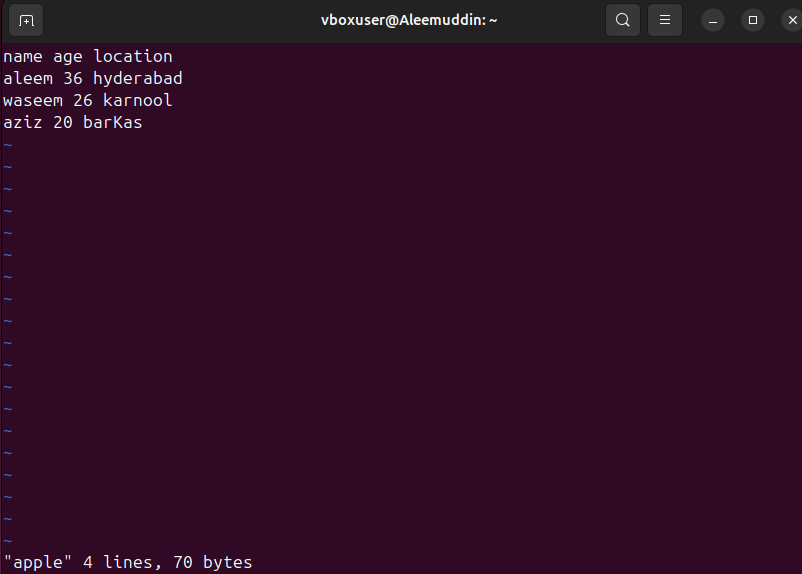
**34) Count the occurrences of a specific pattern in a file.**

**A} vboxuser@Aleemuddin:~$ grep -c "pattern" apple**



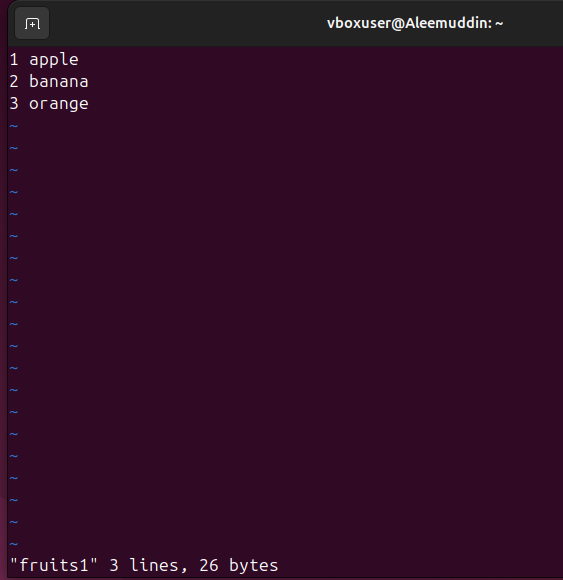
**35) Sort lines based on a specific field or column.**

**A) vboxuser@Aleemuddin:~$ sort -k2 -n -r apple**

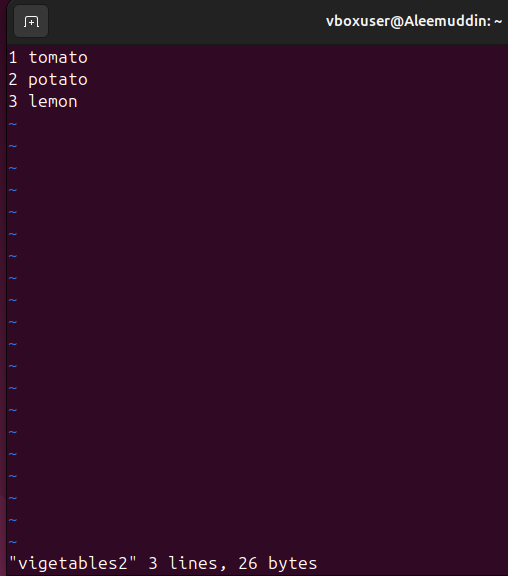


**36) Merge multiple files based on a common field or column.**

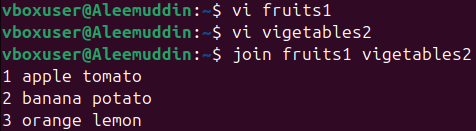
**A) vboxuser@Aleemuddin:~$ vi fruits1 (file+editor 1)**



**vboxuser@Aleemuddin:~$ vi vigetables2 (file+editor 2)**

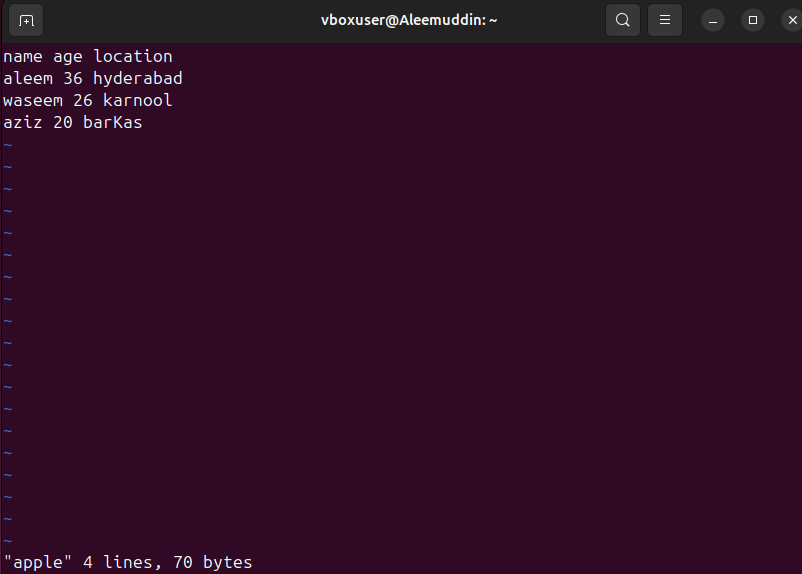


**vboxuser@Aleemuddin:~$ join fruits1 vigetables2 (merge)**

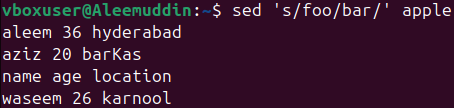


**37) Substitute text in a file using search and replace.**

**vboxuser@Aleemuddin:~$ vi apple (file+editor)**



**vboxuser@Aleemuddin:~$ sed 's/foo/bar/' apple (substitute text)**



**38) Delete specific lines based on a pattern or line number.**

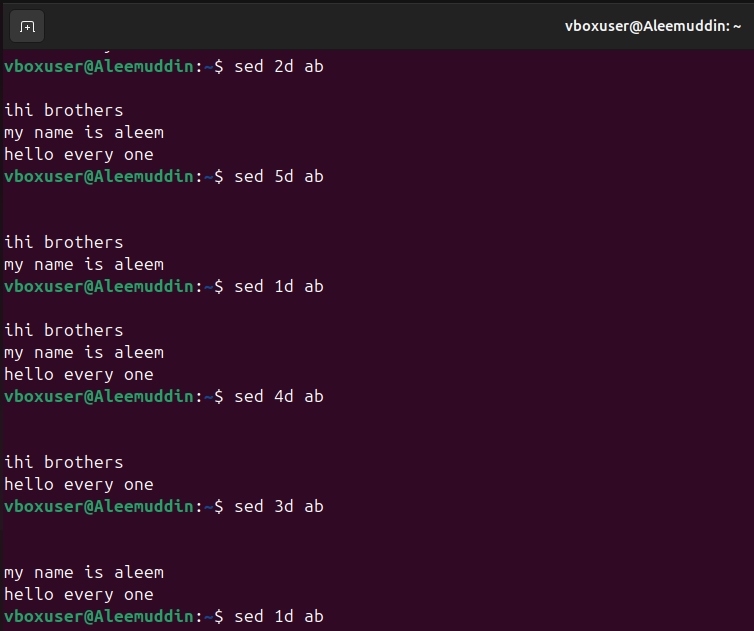
**A) vboxuser@Aleemuddin:~$ sed 2d ab**

**vboxuser@Aleemuddin:~$ sed 5d ab**

**vboxuser@Aleemuddin:~$ sed 1d ab**

**vboxuser@Aleemuddin:~$ sed 4d ab**

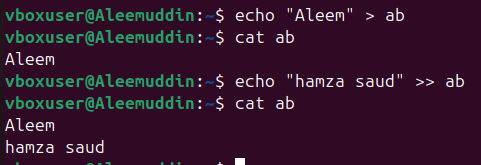
**vboxuser@Aleemuddin:~$ sed 3d ab**



**39) Append or insert text before or after a specific pattern or line.**

**vboxuser@Aleemuddin:~$ echo "Aleem" > ab**

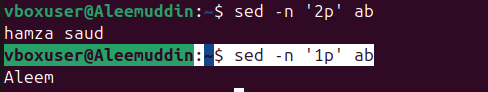
**vboxuser@Aleemuddin:~$ echo "hamza saud" >> ab**



**40) Print only specific lines from a file.**

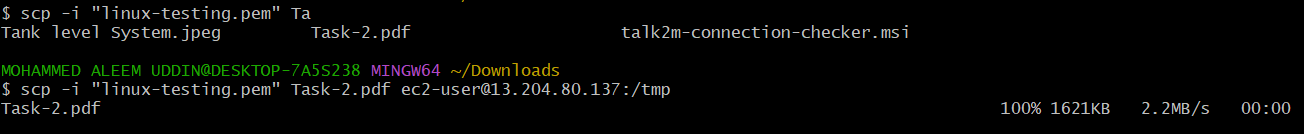
**vboxuser@Aleemuddin:~$ sed -n '2p' ab**

**vboxuser@Aleemuddin:~$ sed -n '1p' ab**

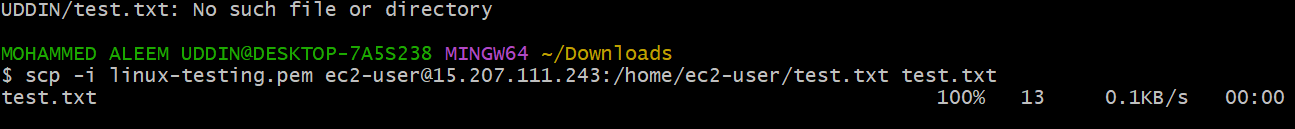
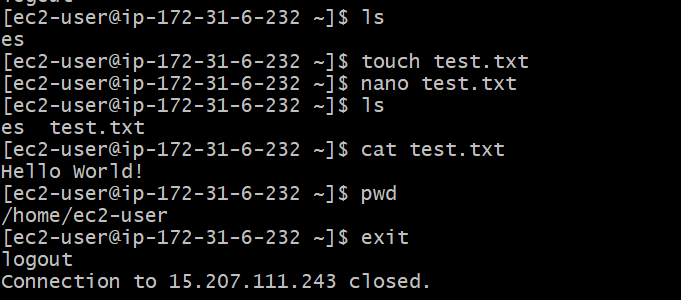


**41) Copy file from linux to windows machine**

**$ scp -i "linux-testing.pem" Task-2.pdf** [**ec2-user@13.204.80.137:/**](mailto:ec2-user@13.204.80.137:/#)



**scp -i linux-testing.pem** [**ec2-user@15.207.111.243:/home/ec2-**](mailto:ec2-user@15.207.111.243:/home/ec2-)**user/test.txt test.txt**



**42) 5 use cases for AWK and 5 use cases for sed**

**A)**

