

1. How to jump to a particular line in a file using vim editor?

Answer -

- Suppose there is a file.txt with 100 lines of content in it and we want to go to line number 15 then we can type
- **vim +15 file.txt**
- this will take our cursor directly to 15 lines
- **syntax : vim +linenumber filename**
- if in a vim editor if we want to jump to a line by a searching a specific word then
- **vim filename**
- enter to command mode by escape and **/word_name** type the word you want to find and enter it will take the cursor over there.

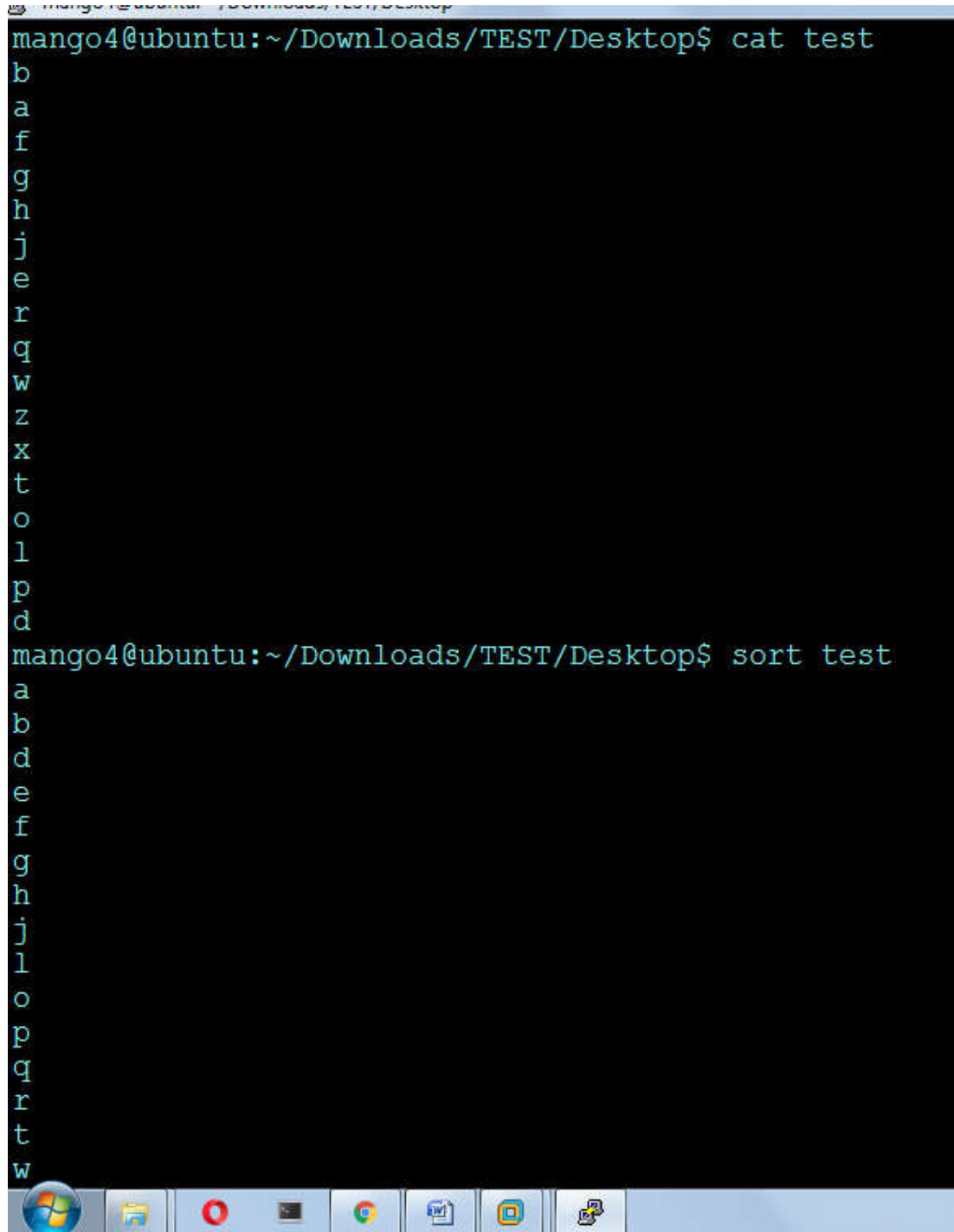
Below is sample snap

A screenshot of a terminal window titled "mango4@ubuntu: ~/Downloads/TEST/Desktop". The terminal displays a series of commands and their outputs. The first command is "hello", which outputs "ineuron". This is followed by "test_ineuron_t", which outputs "ineuron_t". Then, "/trial ineuron_t" is entered, resulting in "ineuron_t" being printed multiple times (approximately 10-12 repetitions). After this, another "hello" command is entered, leading to a sequence of outputs: "helloi", "hellodf", "hellofv", "hellodf", and "helloed". This pattern repeats several more times. At the bottom left, the prompt "/trial" is visible with a green cursor. The Ubuntu desktop environment is partially visible at the bottom, showing various application icons and a system tray with the time "11:56 PM".

2. How do you sort the entries in a text file in ascending order?

Answer -

- We can use command **sort filename**
- Below is the example/poc which i tried and working

A screenshot of a Linux terminal window. The prompt is 'mango4@ubuntu:~/Downloads/TEST/Desktop\$'. The first command entered is 'cat test', which outputs a list of lowercase letters: 'b', 'a', 'f', 'g', 'h', 'j', 'e', 'r', 'q', 'w', 'z', 'x', 't', 'o', 'l', 'p', 'd'. The second command entered is 'sort test', which outputs the same letters sorted in ascending order: 'a', 'b', 'd', 'e', 'f', 'g', 'h', 'j', 'l', 'o', 'p', 'q', 'r', 't', 'w'. The terminal window has a blue title bar and a taskbar at the bottom with several application icons.

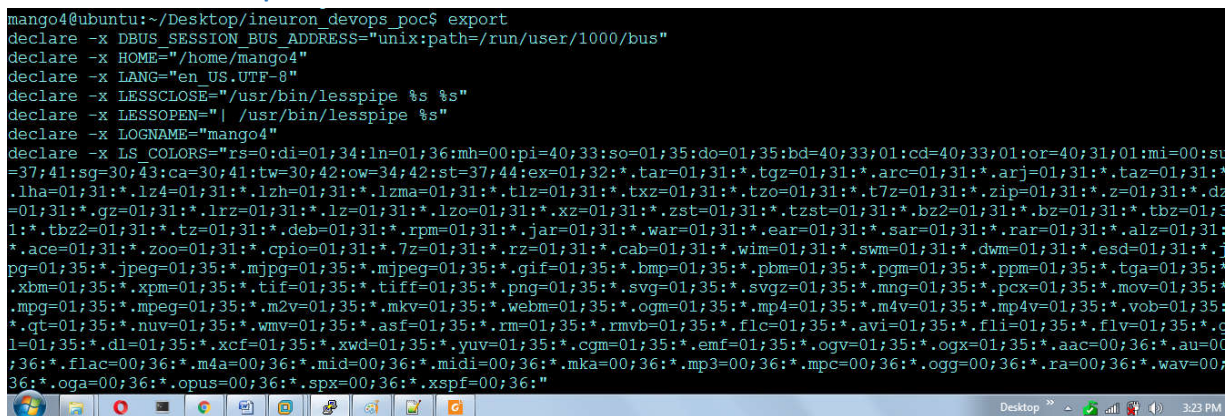
```
mango4@ubuntu:~/Downloads/TEST/Desktop$ cat test
b
a
f
g
h
j
e
r
q
w
z
x
t
o
l
p
d
mango4@ubuntu:~/Downloads/TEST/Desktop$ sort test
a
b
d
e
f
g
h
j
l
o
p
q
r
t
w
```

3. What is the export command used for?

Answer -

- export command is used to display the environment variables
- The **export** command is used to ensure the environment variables and functions to be passed to child processes.
- To display exported environment variable of the current shell, we can run below command : **export -p**
- one more usage is **export [environment variable]=filename**

➤ let us do below poc



```
mango4@ubuntu:~/Desktop/ineuron_devops_poc$ export
declare -x DBUS_SESSION_BUS_ADDRESS="unix:path=/run/user/1000/bus"
declare -x HOME="/home/mango4"
declare -x LANG="en_US.UTF-8"
declare -x LESSCLOSE="/usr/bin/lesspipe %s %s"
declare -x LESSOPEN="| /usr/bin/lesspipe %s"
declare -x LOGNAME="mango4"
declare -x LS_COLORS="rs=0:di=01;34:ln=01;36:mh=00:pi=40;33:so=01;35:do=01;35:bd=40;33;01:cd=40;33;01:or=40;31;01:mi=00:su=37;41:sg=30;43:ca=30;41:tw=30;42:ow=34;42:st=37;44:ex=01;32:*.tar=01;31:*.tgz=01;31:*.arc=01;31:*.arj=01;31:*.taz=01;31:*.lha=01;31:*.lz4=01;31:*.lzh=01;31:*.lma=01;31:*.tlz=01;31:*.txz=01;31:*.tzo=01;31:*.t7z=01;31:*.zip=01;31:*.z=01;31:*.dz=01;31:*.gz=01;31:*.lrz=01;31:*.lzo=01;31:*.xz=01;31:*.zst=01;31:*.tzst=01;31:*.bz2=01;31:*.bz=01;31:*.tbz=01;31:*.tbz2=01;31:*.taz=01;31:*.deb=01;31:*.rpm=01;31:*.jar=01;31:*.war=01;31:*.ear=01;31:*.sar=01;31:*.rar=01;31:*.alz=01;31:*.ace=01;31:*.zoo=01;31:*.cpio=01;31:*.7z=01;31:*.rz=01;31:*.cab=01;31:*.wim=01;31:*.swm=01;31:*.dwm=01;31:*.esd=01;31:*.fpg=01;35:*.jpeg=01;35:*.mjpg=01;35:*.mjpeg=01;35:*.gif=01;35:*.bmp=01;35:*.pbm=01;35:*.pgm=01;35:*.ppm=01;35:*.tga=01;35:*.xbm=01;35:*.xpm=01;35:*.tif=01;35:*.tiff=01;35:*.png=01;35:*.svg=01;35:*.svgz=01;35:*.mng=01;35:*.pcx=01;35:*.mov=01;35:*.mpg=01;35:*.mpeg=01;35:*.m2v=01;35:*.mkv=01;35:*.webm=01;35:*.ogm=01;35:*.mp4=01;35:*.m4v=01;35:*.mp4v=01;35:*.vob=01;35:*.qt=01;35:*.nuv=01;35:*.wmv=01;35:*.asf=01;35:*.rm=01;35:*.rmvb=01;35:*.flc=01;35:*.avi=01;35:*.fli=01;35:*.flv=01;35:*.gl=01;35:*.dl=01;35:*.xcf=01;35:*.xwd=01;35:*.yuv=01;35:*.cgm=01;35:*.emf=01;35:*.ogv=01;35:*.ogx=01;35:*.aac=00;36:*.au=00;36:*.flac=00;36:*.m4a=00;36:*.mid=00;36:*.midi=00;36:*.mka=00;36:*.mp3=00;36:*.mpc=00;36:*.ogg=00;36:*.ra=00;36:*.wav=00;36:*.oga=00;36:*.opus=00;36:*.spx=00;36:*.xspf=00;36:"
```

➤ One more poc let us set env variable

mango4@ubuntu:~/Desktop/ineuron_devops_poc\$ echo \$host

mango4@ubuntu:~/Desktop/ineuron_devops_poc\$ whereis hostname

hostname: /usr/bin/hostname /etc/hostname

/usr/share/man/man1/hostname.1.gz /usr/share/man/man5/hostname.5.gz

/usr/share/man/man7/hostname.7.gz

mango4@ubuntu:~/Desktop/ineuron_devops_poc\$ **export**

host=/usr/bin/hostname

mango4@ubuntu:~/Desktop/ineuron_devops_poc\$ **echo \$host**

/usr/bin/hostname

mango4@ubuntu:~/Desktop/ineuron_devops_poc\$

```
mango4@ubuntu:~/Desktop/ineuron_devops_poc$ echo $host
mango4@ubuntu:~/Desktop/ineuron_devops_poc$ whereis hostname
hostname: /usr/bin/hostname /etc/hostname /usr/share/man/man1/hostname.1.gz /usr/share/man/man5/hostname.5.gz /usr/share/man/man7/hostname.7.gz
mango4@ubuntu:~/Desktop/ineuron_devops_poc$ export host=/usr/bin/hostname
mango4@ubuntu:~/Desktop/ineuron_devops_poc$ echo $host
/usr/bin/hostname
mango4@ubuntu:~/Desktop/ineuron_devops_poc$
```

4. How do you check if a particular service is running?

Answer -

- **sudo systemctl status service_name**
- eg. **sudo systemctl status cron.service**
- One more way to check is from process level below is eg.
- **ps**
- **ps -ef**
- **ps -ef | grep service_name**
eg. ps -ef | grep cron.service
- **ps aux | grep service_name**
eg. ps aux | grep cron.service

5. How do you check the status of all the services?

Answer -

- **service --status-all**
- Above command will show status of all services

6. How do you start and stop a service?

Answer -

- To start a service
systemctl start service-name
- To stop a service
systemctl stop service-name

- To restart a service
systemctl restart service-name
- To Check the status of a service
systemctl status service-name
- eg. - note depending upon user access we can run with sudo in front of the all these below commands.
systemctl status cron.service
systemctl stop cron.service
systemctl start cron.service
systemctl restart cron.service

7. Explain the free command.

Answer -

- free command is used to get the detailed information of memory available
 - this command is very useful if we want to know how much free memory is available
 - it tells us the total,used,free,shared,buff/cache,available columns
- *let us do a poc as below, please bear with me as i used to do a lot of poc for whichever concept i am learning/practicing and i believe that is the only way to learn fast :)*

```
mango4@ubuntu:~/Downloads/TEST/Desktop$ free
      total    used    free   shared  buff/cache   available
Mem:  2845808 1060540  640316   1772    1144952    1617092
Swap:  945416     0       945416
mango4@ubuntu:~/Downloads/TEST/Desktop$
```

8. Explain chmod command

Answer -

- chmod is used to change the permission of any file/directory
- let us explain that with all options
- All file and directory in Linux is assigned 3 type owner-set, group and others.
- All file and directory has 3 permissions defined for all 3 owners(Read-r, Write-w, Execute-x)
- Let take a example to understand
- -rwxrwxrwx File1
- In this file 1st Dash or hyphen means it is a file
- next rwx is for user (read write execute)
- next rwx is for group
- next rwx is for others
- we can change file permission by chmod command in two ways numeric and symbolic
- weightage for read(r) is 4, write(w) is 2, execute(x) is 1
- 0 means no permission,
- 1 means execute,
- 2 means only write,
- 3 means only write and execute,
- 4 means only read,
- 5 means only read and execute,
- 6 means only read and write,
- 7 means full permission read, write execute.
- eg if we want to change a file permission in above eg. File1 which has full permission then we can do as
- chmod 3digit filename
- 3digit - first digit represent user, second represent group, third represent others.

- eg. `chmod 765 file1` -> this means user has full permission, group has only read and write permission, others have only read and execute permission.
 - eg. `chmod 777` means full permission to all users
 - Same example in symbolic way syntax is `chmod u+rwx,g+rw-e,o+rx-w file1`
 - Let us do a POC i will change the permission for file name test with numeric and then will revert that change with symbolic. we can change as per requirement but to explain in simple way i will keep user, group, other same permission :)
-
- `mango4@ubuntu:~/Downloads/TEST/Desktop$ ls -l test`
`-rw-rw-rw- 1 mango4 mango4 34 Feb 26 23:55 test`
`mango4@ubuntu:~/Downloads/TEST/Desktop$ chmod u+rwx,g+rw,x,o+rw-x test`
`mango4@ubuntu:~/Downloads/TEST/Desktop$ ls -l test`
`-rwxrwxrwx 1 mango4 mango4 34 Feb 26 23:55 test`
`mango4@ubuntu:~/Downloads/TEST/Desktop$ chmod u+rw-x,g+rw-x,o+rw-x test`
`mango4@ubuntu:~/Downloads/TEST/Desktop$ ls -l test`
`-rw-rw-rw- 1 mango4 mango4 34 Feb 26 23:55 test`
`mango4@ubuntu:~/Downloads/TEST/Desktop$`

9. Explain grep command

Answer -

- grep command is used to find a pattern in a file
- ef. there is a file with name file123.txt and inside that file there are list of fruits available and we want to find if fruit with name apple is there then we can do that with command : **grep apple file123.txt** -> this will show/print if there is a word with name apple in files123.txt . If that pattern matches multiple times then also it will show the word that many times.

- In above example if we want to know the line number we can add **grep -n apple file123.txt** -> this will show apple pattern with line numbers. it will show if these characters are in other word as well. for eg. if pineapple is in the file123.txt and if we do **grep -n apple** then apple is in pineapple so it will show that pineapple also.
- if we want only the perfect keyword match then in that case we should use **grep -wn apple file123.txt** and it will show only if apple is there as a single word in that file123.txt
- if we want to search for capital case sensitive then we have to use **grep -i apple file123.txt**
- **grep -v mango file123.txt** -> In this it will show all results except mango.
- **grep -A2 apple file123.txt** -> this will first find apple and will show 2 lines after that apple
- **grep -B2 apple file123.txt** -> this will first find apple and will show 2 lines before that apple
- **grep -A2 -B2 apple file123.txt** -> this will first find apple and will show 2 lines before and after that apple
- **grep -nr mango .** -> if we do not know which file we need to find this mango then we can use this command and give fullstop . at end and it will search all files in that directly and will show the file name and the word apple in it.
- Apart from that we can combine and use grep command
- for eg. i have ran a process (p -ef) command which will show a long long output for all process and if i want to search only a process with some keyword i can do that by eg.
- **ps -ef | grep java** -> this is first run ps -ef and from output of ps -ef it will grep or search only for java and if that process is find with name java then it will show the output.

let us do below poc where we will get Process ID (PID with grep)

```
mango4@ubuntu:~/Downloads/TEST/Desktop$ ps -ef | grep init
root      1      0  0 Feb26 ?        00:00:08 /sbin/init auto noprompt
mango4    3141   2717  0 00:23 pts/0    00:00:00 grep --color=auto init
mango4@ubuntu:~/Downloads/TEST/Desktop$ ps -ef | grep date
mango4    1709   1374  0 Feb26 ?        00:00:00 /usr/libexec/gsd-datetime
mango4    2446   1582  0 Feb26 ?        00:00:00 update-notifier
mango4    3143   2717  0 00:23 pts/0    00:00:00 grep --color=auto date
mango4@ubuntu:~/Downloads/TEST/Desktop$
```

10. What is the use of nano editor?

Answer -

- Nano is a simple, modeless command line text editor.
- it is very simple to use nano, to It was bacially introduced to replace pico editor
- it is good to for those who are beginner level or who are coming from the Windows system and familiart such as Notepad or Microsoft Word.
- When compared to other editeros we have vi, vim and so on other text editors but those are very powerfull with multiple options.
- when compared to vim/Vi it has 3 modes while in nano there are no modes.

Let us do some poc

```
mango4@ubuntu:~/Desktop/ineuron_devops_poc$ ls -l
total 0
```

```
mango4@ubuntu:~/Desktop/ineuron_devops_poc$ nano
```

- this will now open a editor you can type anything more right left up down with arrow key
 - now once you are done then to save ctrl+x then will ask to save say y and enter then it will ask to enter a filename so type the file name with which you want to create a file with above written text/content.
- Below is the poc done

```
mango4@ubuntu:~/Desktop/ineuron_devops_poc$ ls -l
total 4
-rw-rw-r-- 1 mango4 mango4 81 Feb 27 01:42 poc
mango4@ubuntu:~/Desktop/ineuron_devops_poc$ cat poc
this is fist line in nano
this is second line in nano
this is third line in nano
mango4@ubuntu:~/Desktop/ineuron_devops_poc$
```

- Now suppose there is a file already exist and you want to edit that then use nano filename
- Hit enter and it will open a nano editor and it's file content, do whatever you want to type as per requirement and same ctrl+x to exit then it will ask save say y hit enter then it will ask again filename so enter the same filename if you want to add /append in the same file or if you want a new file with all these content then you can give some other file name as well.
- there are also few more options we can see we can try each of them when we open nano editor at the bottom of the page.