

Q1)

- i) `ls`: Lists all files, folders in this directory
- `ls -l, ll`: List all files, folders in directory along with size, creation date & other details

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```
ram@ram:~/Documents$ ls
OS
ram@ram:~/Documents$ ls -l
total 4
drwxrwxr-x 2 ram ram 4096 Aug  7 12:15 OS
ram@ram:~/Documents$ ls -ll
total 4
drwxrwxr-x 2 ram ram 4096 Aug  7 12:15 OS
ram@ram:~/Documents$
```

Q2)

- 2) cat: Shows the content (total) of a file
- more: Shows the content of a file with respect to size of terminal. If the terminal is big enough it shows all content or we must press enter to read more. After that we will be able to scroll the content.
- less: It is similar to more but it access Page by Page. Once all the content is shown we need to press "q" to stop the command. Other than Pressing "q" we can't do anything. After pressing "q" content will be erased

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```
ran@ran:~/Documents$ less os.txt
ran@ran:~/Documents$ cat os.txt
lorem ipsum dolor sit amet, consectetur adipiscing elit. Etiam mattis elit arcu, sed commodo massa semper ac. Nam interdum leo cursus dictum porta. Nam sed purus diam. Curabitur bibendum posuere bibendum.
Curabitur tincidunt vulputate aliquam. Nulla molestie libero ac odio faucibus sollicitudin. Donec tincidunt tincidunt odio, vitae suscipit lacus porta sed.

In auctor at justo ut viverra. Nullam faucibus tempus dolor, eget dignissim risus pretium non. Nam nec viverra est. Ut lacinia interdum du eu tincidunt. Aenean pharetra turpis vitae velit finibus maximu
s. Ut volutpat neque at mauris tincidunt pretium. Donec a arcu nec risus molestie pulvinar non quis libero. Mauris ornare erat non augue vestibulum, ultricies eleifend mauris sollicitudin. Sed posuere at
nunc at molestie. Vivamus bibendum a nibh eget accumsan. Duis sed tristique augue. Vestibulum vel arcu massa.

Nulla eu placerat erat, hendrerit laoreet nunc. Nam quis mauris nec arcu iaculis varius. Sed bibendum bibendum arcu a congue. Sed non magna dolor. Ut fermentum et ipsum nec sodales. Fusce ut congue magna
. Vestibulum a suscipit sapien. Quisque finibus lobortis du, eu suscipit quam fringilla id.

Phasellus auctor ipsum non metus vestibulum volutpat. Curabitur pellentesque massa velit. Nunc placerat, eros id dignissim ullamcorper, velit velit vehicula neque, sit amet euismod eros justo ac velit. D
onec id elit leo. Cras vel justo et purus sagittis efficitur eget id magna. Duis a imperdiet urna, ac interdum quam. Donec sodales lorem sed felis blandit, at volutpat orci dignissim. Aliquam ornare est
felis, vel sagittis dolor tempor eget. Maecenas commodo massa vitae vestibulum consectetur. Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas. Suspendisse sed u
ltricies elit. Aliquam eget laoreet tellus. Morbi faucibus, leo id consectetur aliquam, erat ante dapibus augue, vitae accumsan tellus mi consequat diam. Nullam nulla nulla, mattis quis tincidunt eget, c
onvallis et nunc. Curabitur pellentesque ullamcorper turpis vel posuere.

Pellentesque laoreet iaculis mollis. Nullam suscipit diam nec tellus venenatis, eleifend lacinia erat convallis. Quisque mauris leo, fermentum non rutrum quis, luctus nec enim. Mauris nisl erat, rutrum a
interdum ut, scelerisque ac nulla. Nullam at nisl sapien. Curabitur sapien est, molestie quis porttitor at, fermentum eget tortor. In luctus, nulla quis pharetra euismod, orci ante consectetur urna, et
porttitor ligula ipsum ac ligula. Vivamus ut lectus nec ex sollicitudin finibus. Nullam fringilla diam ex, sed sodales lacus euismod a. Donec aliquet arcu non enim aliquam tempus. In eu molestie ipsum, p
osuere lacinia lorem. Maecenas est sen, volutpat vitae nisl id, molestie posuere enim. Quisque malesuada ligula sagittis fermentum efficitur.

ran@ran:~/Documents$ more os.txt
lorem ipsum dolor sit amet, consectetur adipiscing elit. Etiam mattis elit arcu, sed commodo massa semper ac. Nam interdum leo cursus dictum porta. Nam sed purus diam. Curabitur bibendum posuere bibendum
. Curabitur tincidunt vulputate aliquam. Nulla molestie libero ac odio faucibus sollicitudin. Donec tincidunt tincidunt odio, vitae suscipit lacus porta sed.

In auctor at justo ut viverra. Nullam faucibus tempus dolor, eget dignissim risus pretium non. Nam nec viverra est. Ut lacinia interdum du eu tincidunt. Aenean pharetra turpis vitae velit finibus maximu
s. Ut volutpat neque at mauris tincidunt pretium. Donec a arcu nec risus molestie pulvinar non quis libero. Mauris ornare erat non augue vestibulum, ultricies eleifend mauris sollicitudin. Sed posuere at
nunc at molestie. Vivamus bibendum a nibh eget accumsan. Duis sed tristique augue. Vestibulum vel arcu massa.

Nulla eu placerat erat, hendrerit laoreet nunc. Nam quis mauris nec arcu iaculis varius. Sed bibendum bibendum arcu a congue. Sed non magna dolor. Ut fermentum et ipsum nec sodales. Fusce ut congue magna
. Vestibulum a suscipit sapien. Quisque finibus lobortis du, eu suscipit quam fringilla id.

Phasellus auctor ipsum non metus vestibulum volutpat. Curabitur pellentesque massa velit. Nunc placerat, eros id dignissim ullamcorper, velit velit vehicula neque, sit amet euismod eros justo ac velit. D
onec id elit leo. Cras vel justo et purus sagittis efficitur eget id magna. Duis a imperdiet urna, ac interdum quam. Donec sodales lorem sed felis blandit, at volutpat orci dignissim. Aliquam ornare est
felis, vel sagittis dolor tempor eget. Maecenas commodo massa vitae vestibulum consectetur. Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas. Suspendisse sed u
ltricies elit. Aliquam eget laoreet tellus. Morbi faucibus, leo id consectetur aliquam, erat ante dapibus augue, vitae accumsan tellus mi consequat diam. Nullam nulla nulla, mattis quis tincidunt eget, c
onvallis et nunc. Curabitur pellentesque ullamcorper turpis vel posuere.

Pellentesque laoreet iaculis mollis. Nullam suscipit diam nec tellus venenatis, eleifend lacinia erat convallis. Quisque mauris leo, fermentum non rutrum quis, luctus nec enim. Mauris nisl erat, rutrum a
interdum ut, scelerisque ac nulla. Nullam at nisl sapien. Curabitur sapien est, molestie quis porttitor at, fermentum eget tortor. In luctus, nulla quis pharetra euismod, orci ante consectetur urna, et
porttitor ligula ipsum ac ligula. Vivamus ut lectus nec ex sollicitudin finibus. Nullam fringilla diam ex, sed sodales lacus euismod a. Donec aliquet arcu non enim aliquam tempus. In eu molestie ipsum, p
osuere lacinia lorem. Maecenas est sen, volutpat vitae nisl id, molestie posuere enim. Quisque malesuada ligula sagittis fermentum efficitur.

ran@ran:~/Documents$ less os.txt
ran@ran:~/Documents$
```

Q3)

3) cp: It copies the content from a file to another file

cp-r: It copies the structure, contents of directory

mv: If we use mv on a ^{destination} file which is not there then the source file will be renamed to destination file name.

If we use mv on a destination file which is existed then the content will be copied from source to destination & source file will be removed.

rm: It removes a file

mkdir: It creates a new directory

rm -d: It removes a directory

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```
OS available locally via: http://www.ubuntu.com
ram@ram:~/Documents$ cp os.txt os_1.txt
ram@ram:~/Documents$ ls
OS  os_1.txt  os.txt
ram@ram:~/Documents$ cp -r OS os_1
ram@ram:~/Documents$ ls
OS  os_1  os_1.txt  os.txt
ram@ram:~/Documents$ mv os_1.txt os_2.txt
ram@ram:~/Documents$ ls
OS  os_1  os_2.txt  os.txt
ram@ram:~/Documents$ mv os_2.txt os.txt
ram@ram:~/Documents$ ls
OS  os_1  os.txt
ram@ram:~/Documents$ mv os.txt os_1.txt
ram@ram:~/Documents$ mv os_1.txt os.txt
ram@ram:~/Documents$ ls
OS  os_1  os_1.txt  os.txt
ram@ram:~/Documents$ rm os_1.txt
ram@ram:~/Documents$ ls
OS  os_1  os.txt
ram@ram:~/Documents$ mkdir os_2
ram@ram:~/Documents$ ls
OS  os_1  os_2  os.txt
ram@ram:~/Documents$
```

Q4)

Tar:

4) tar:

It archives files.

tar cvf file.tar *.txt : compress all files with extension .txt & make file.tar

tar xvf file.tar : extract files from tar

For only c files we need to give an extension of file.tar.gz

tar cvfj file.tar.tbz ... : make file of less size than gzip

tar xvf file.tar : untar files

tar tf file.tar : lists all items in file

tar tvf file-1.tar os.txt : searches for os.txt in file-1.tar

tar tvf file.tar --wildcards '*.png' : searches for images

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```
ram@ram:~/Documents$ tar cvf file.tar *.txt
os_1.txt
os.txt
ram@ram:~/Documents$ tar xvf file.tar
os_1.txt
os.txt
ram@ram:~/Documents$ tar cvzf file_1.tat *.txt
os_1.txt
os.txt
ram@ram:~/Documents$ tar cvzf file_1.tar *.txt
os_1.txt
os.txt
ram@ram:~/Documents$ tar xvzf file_1.tar
os_1.txt
os.txt
```

```
ram@ram:~/Documents$ tar tvf file.tar.tbz
-rw-rw-r-- ram/ram      2814 2021-08-07 13:17 os.txt
ram@ram:~/Documents$ tar xvf file.tar os.txt
os.txt
ram@ram:~/Documents$ tar xvf file.tar os_2.txt
tar: os_2.txt: Not found in archive
tar: Exiting with failure status due to previous errors
ram@ram:~/Documents$ tar czf file.tar | wc -c
tar: Cowardly refusing to create an empty archive
Try 'tar --help' or 'tar --usage' for more information.
0
ram@ram:~/Documents$ tar czf file.tar
tar: Cowardly refusing to create an empty archive
Try 'tar --help' or 'tar --usage' for more information.
ram@ram:~/Documents$ tar czf file.tar wc
tar: wc: Cannot stat: No such file or directory
tar: Exiting with failure status due to previous errors
ram@ram:~/Documents$ tar czf file.tar wc -c
tar: wc: Cannot stat: No such file or directory
tar: Exiting with failure status due to previous errors
ram@ram:~/Documents$ tar czf file.tar| wc -c
tar: Cowardly refusing to create an empty archive
Try 'tar --help' or 'tar --usage' for more information.
0
ram@ram:~/Documents$ tar czf file.tar| wc -txt
wc: invalid option -- 't'
Try 'wc --help' for more information.
tar: Cowardly refusing to create an empty archive
Try 'tar --help' or 'tar --usage' for more information.
ram@ram:~/Documents$ tar tf file.tar
ram@ram:~/Documents$ tar tf file_1.tar
os_1.txt
os.txt
ram@ram:~/Documents$ tar t file_1.tar
tar: Refusing to read archive contents from terminal (missing -f option?)
tar: Error is not recoverable: exiting now
ram@ram:~/Documents$
```


grep:

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grep:

helps to filter & search a file

grep [OPTIONS] "Pattern" filename

-c : displays count of matches (case sensitive)
-i : case insensitive
-l : displays file names that match pattern
(for this file-name is not required - Place *)

-w : match whole word

-o : displays only matched pattern

-n : Show line number

-v : Print all lines do not match pattern

^ in pattern : Points lines that start with pattern

\$ in " : Points lines that end with pattern

-f : takes patterns from file, one per line

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```
ram@ram:~/Documents$ grep -i "Lore" os.txt
Loren ipsum dolor sit amet, consectetur adipiscing elit. Etiam mattis elit arcu, sed commodo massa semper ac. Nam interdum leo cursus dictum porta.
. Curabitur tincidunt vulputate aliquam. Nulla molestie libero ac odio faucibus sollicitudin. Donec tincidunt tincidunt odio, vitae suscipit lacus p
Phasellus auctor ipsum non metus vestibulum volutpat. Curabitur pellentesque massa velit. Nunc placerat, eros id dignissim ullamcorper, velit velit
onec id elit leo. Cras vel justo et purus sagittis efficitur eget id magna. Duis a imperdiet urna, ac interdum quam. Donec sodales Loren sed felis b
felis, vel sagittis dolor tempor eget. Maecenas commodo massa vitae vestibulum consectetur. Pellentesque habitant morbi tristique senectus et netus
ltrices elit. Aliquam eget laoreet tellus. Morbi faucibus, leo id consectetur aliquam, erat ante dapibus augue, vitae accumsan tellus mi consequat
onvallis et nunc. Curabitur pellentesque ullamcorper turpis vel posuere.
Pellentesque laoreet iaculis mollis. Nullam suscipit diam nec tellus venenatis, eleifend lacinia erat convallis. Quisque mauris leo, fermentum non r
interdum ut, scelerisque ac nulla. Nullam at nisl sapien. Curabitur sapien est, molestie quis porttitor at, fermentum eget tortor. In luctus, nulla
porttitor ligula ipsum ac ligula. Vivamus ut lectus nec ex sollicitudin finibus. Nullam fringilla diam ex, sed sodales lacus euismod a. Donec aliq
osuerue lacinia Loren. Maecenas est sem, volutpat vitae nisi id, molestie posuere enim. Quisque malesuada ligula sagittis fermentum efficitur.
ram@ram:~/Documents$ grep -c "Lore" os.txt
1
ram@ram:~/Documents$ grep -l "Lore" *
grep: OS: Is a directory
grep: os_1: Is a directory
os_1.txt
grep: os_2: Is a directory
os.txt
ram@ram:~/Documents$ grep -w "Lore" os.txt
ram@ram:~/Documents$ grep -w "Loren" os.txt
Loren ipsum dolor sit amet, consectetur adipiscing elit. Etiam mattis elit arcu, sed commodo massa semper ac. Nam interdum leo cursus dictum porta.
. Curabitur tincidunt vulputate aliquam. Nulla molestie libero ac odio faucibus sollicitudin. Donec tincidunt tincidunt odio, vitae suscipit lacus p
ram@ram:~/Documents$ grep -o "Loren" os.txt
Loren
Loren
ram@ram:~/Documents$ grep -n "Loren" os.txt
7:Phasellus auctor ipsum non metus vestibulum volutpat. Curabitur pellentesque massa velit. Nunc placerat, eros id dignissim ullamcorper, velit veli
Donec id elit leo. Cras vel justo et purus sagittis efficitur eget id magna. Duis a imperdiet urna, ac interdum quam. Donec sodales Loren sed felis
t felis, vel sagittis dolor tempor eget. Maecenas commodo massa vitae vestibulum consectetur. Pellentesque habitant morbi tristique senectus et netu
ultrices elit. Aliquam eget laoreet tellus. Morbi faucibus, leo id consectetur aliquam, erat ante dapibus augue, vitae accumsan tellus mi consequa
convallis et nunc. Curabitur pellentesque ullamcorper turpis vel posuere.
9:Pellentesque laoreet iaculis mollis. Nullam suscipit diam nec tellus venenatis, eleifend lacinia erat convallis. Quisque mauris leo, fermentum non
a interdum ut, scelerisque ac nulla. Nullam at nisl sapien. Curabitur sapien est, molestie quis porttitor at, fermentum eget tortor. In luctus, nul
t porttitor ligula ipsum ac ligula. Vivamus ut lectus nec ex sollicitudin finibus. Nullam fringilla diam ex, sed sodales lacus euismod a. Donec aliq
posuere lacinia Loren. Maecenas est sem, volutpat vitae nisi id, molestie posuere enim. Quisque malesuada ligula sagittis fermentum efficitur.
ram@ram:~/Documents$ grep -v "Loren" os.txt
Loren ipsum dolor sit amet, consectetur adipiscing elit. Etiam mattis elit arcu, sed commodo massa semper ac. Nam interdum leo cursus dictum porta.
. Curabitur tincidunt vulputate aliquam. Nulla molestie libero ac odio faucibus sollicitudin. Donec tincidunt tincidunt odio, vitae suscipit lacus p
In auctor at justo ut viverra. Nullam faucibus tempus dolor, eget dignissim risus pretium non. Nam nec viverra est. Ut lacinia interdum dui eu tinci
s. Ut volutpat neque at mauris tincidunt pretium. Donec a arcu nec risus molestie pulvinar non quis libero. Mauris ornare erat non augue vestibulum,
nunc at molestie. Vivamus bibendum a nibh eget accumsan. Duis sed tristique augue. Vestibulum vel arcu massa.
Nulla eu placerat erat, hendrerit laoreet nunc. Nam quis mauris nec arcu iaculis varius. Sed bibendum bibendum arcu a congue. Sed non magna dolor. U
```

```

grep: os_2: is a directory
os.txt
ram@ram:~/Documents$ grep -w "Lore" os.txt
ram@ram:~/Documents$ grep -w "Lorem" os.txt
Lorem ipsum dolor sit amet, consectetur adipiscing elit. Etiam mattis elit arcu, sed commodo massa senper ac. Nam interdum leo cursus dictum porta.
. Curabitur tincidunt vulputate aliquam. Nulla molestie libero ac odio faucibus sollicitudin. Donec tincidunt tincidunt odio, vitae suscipit lacus p
ram@ram:~/Documents$ grep -o "lorem" os.txt
lorem
lorem
ram@ram:~/Documents$ grep -n "lorem" os.txt
7:Phasellus auctor ipsum non metus vestibulum volutpat. Curabitur pellentesque massa velit. Nunc placerat, eros id dignissim ullamcorper, velit vel
Donec id elit leo. Cras vel justo et purus sagittis efficitur eget id magna. Duis a imperdiet urna, ac interdum quam. Donec sodales lorem sed felis
t felis, vel sagittis dolor tempor eget. Maecenas commodo massa vitae vestibulum consectetur. Pellentesque habitant morbi tristique senectus et netu
intricies elit. Aliquam eget laoreet tellus. Morbi faucibus, leo id consectetur aliquam, erat ante dapibus augue, vitae accumsan tellus mi consequa
Terminal s et nunc. Curabitur pellentesque ullamcorper turpis vel posuere.
9:Pellentesque laoreet iaculis mollis. Nullam suscipit diam nec tellus venenatis, eleifend lacinia erat convallis. Quisque mauris leo, fermentum non
a interdum ut, scelerisque ac nulla. Nullam at nisl sapien. Curabitur sapien est, molestie quis porttitor at, fermentum eget tortor. In luctus, nu
t porttitor ligula ipsum ac ligula. Vivamus ut lectus nec ex sollicitudin finibus. Nullam fringilla diam ex, sed sodales lacus euismod a. Donec alio
posuere lacinia lorem. Maecenas est sem, volutpat vitae nisi id, molestie posuere enim. Quisque malesuada ligula sagittis fermentum efficitur.
ram@ram:~/Documents$ grep -v "lorem" os.txt
Lorem ipsum dolor sit amet, consectetur adipiscing elit. Etiam mattis elit arcu, sed commodo massa senper ac. Nam interdum leo cursus dictum porta.
. Curabitur tincidunt vulputate aliquam. Nulla molestie libero ac odio faucibus sollicitudin. Donec tincidunt tincidunt odio, vitae suscipit lacus p
In auctor at justo ut viverra. Nullam faucibus tempus dolor, eget dignissim risus pretium non. Nam nec viverra est. Ut lacinia interdum dui eu tinc
s. Ut volutpat neque at mauris tincidunt pretium. Donec a arcu nec risus molestie pulvinar non quis libero. Mauris ornare erat non augue vestibulum
nunc at molestie. Vivamus bibendum a nibh eget accumsan. Duis sed tristique augue. Vestibulum vel arcu massa.
Nulla eu placerat erat, hendrerit laoreet nunc. Nam quis mauris nec arcu iaculis varius. Sed bibendum bibendum arcu a congue. Sed non magna dolor. U
. Vestibulum a suscipit sapien. Quisque finibus lobortis dui, eu suscipit quam fringilla id.
ram@ram:~/Documents$ grep "^lorem" os.txt
ram@ram:~/Documents$ grep "^Lorem" os.txt
Lorem ipsum dolor sit amet, consectetur adipiscing elit. Etiam mattis elit arcu, sed commodo massa senper ac. Nam interdum leo cursus dictum porta.
. Curabitur tincidunt vulputate aliquam. Nulla molestie libero ac odio faucibus sollicitudin. Donec tincidunt tincidunt odio, vitae suscipit lacus p
ram@ram:~/Documents$ grep "sed$" os.txt
ram@ram:~/Documents$

```

Find:

find:

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find [start point] [expression] [-options] [what to find]

- name: search for files with name given
- empty: search for empty files/folders
- print: Displays path name of files

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```
./os_1.txt
ram@ram:~/Documents$ find ./ -name os.txt
./os.txt
ram@ram:~/Documents$ find ./ -name "*.txt"
./os.txt
./os_1.txt
ram@ram:~/Documents$ find ./ -empty
./os_2
./OS
./os_1
ram@ram:~/Documents$ find ./ -perm 664
./file.tar
./os.txt
./os_1.txt
./file_1.tar
./file.tar.tbz
ram@ram:~/Documents$ find ./ -print
./
./file.tar
./os.txt
./os_2
./os_1.txt
./file_1.tar
```


ssh:

ssh:

Secure shell. helps to securely connects b/w host & client
It has 3 parts
ssh command
user-name
host

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diff:

diff:

It compare files line by line & give difference
diff [option] file1 file2

-a : context

-u : unified

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```
ram@ram:~/Documents$ diff -c os.txt os_1.txt
ram@ram:~/Documents$ diff -c os.txt os_1.txt
*** os.txt      2021-08-07 13:17:51.000000000 +0530
--- os_1.txt    2021-08-07 16:06:39.341856867 +0530
*****
*** 5,9 ****
Nulla eu placerat erat, hendrerit laoreet nunc. Nam quis mauris nec arcu iaculis varius. Sed bibendum bibendum arcu a congue. Sed non magna dolor.
na. Vestibulum a suscipit sapien. Quisque finibus lobortis dui, eu suscipit quam fringilla id.

Phasellus auctor ipsum non metus vestibulum volutpat. Curabitur pellentesque massa velit. Nunc placerat, eros id dignissim ullamcorper, velit veli
Donec id elit leo. Cras vel justo et purus sagittis efficitur eget id magna. Duis a imperdiet urna, ac interdum quam. Donec sodales lorem sed felis
t felis, vel sagittis dolor tempor eget. Maecenas commodo massa vitae vestibulum consectetur. Pellentesque habitant morbi tristique senectus et netu
ultrices elit. Aliquam eget laoreet tellus. Morbi faucibus, leo id consectetur aliquam, erat ante dapibus augue, vitae accumsan tellus mi consequa
convallis et nunc. Curabitur pellentesque ullamcorper turpis vel posuere.

- Pellentesque laoreet iaculis mollis. Nullam suscipit diam nec tellus venenatis, eleifend lacinia erat convallis. Quisque mauris leo, fermentum non
a interdum ut, scelerisque ac nulla. Nullam at nisl sapien. Curabitur sapien est, molestie quis porttitor at, fermentum eget tortor. In luctus, nul
t porttitor ligula ipsum ac ligula. Vivamus ut lectus nec ex sollicitudin finibus. Nullam fringilla diam ex, sed sodales lacus euismod a. Donec aliq
posuere lacinia lorem. Maecenas est sem, volutpat vitae nisl id, molestie posuere enim. Quisque malesuada ligula sagittis fermentum efficitur.
--- 5,7 ----
ram@ram:~/Documents$
```

sort:

SORT:

Sort according to ASCII by default.

In case of text it sort line by line

sort (filename)

-o : We can move contents to a new file

sort Inputfile.txt > filename.txt

Sort -o filename.txt inputfile.txt

-r : sort in reverse order

-n : numerically

-nr : " reverse

-c : Check if sorted or not

-u : Sort & remove duplicates

-ms to sort by month

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```
es tacos eotshod a. donec atque arcu non enim atque tempus. in eu molestie ipsum, posuere tactica lorem. Maecenas est sem, volutpat vitae nisl id, molestie posuere enim. Quisque molestias
--- 5,7 ----
ram@ram:~/Documents$ sort os_1.txt

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ram@ram:~/Documents$ sort -n os_1.txt

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ram@ram:~/Documents$ sort -c os_1.txt
sort: os_1.txt:2: disorder:
ram@ram:~/Documents$ sort -u os_1.txt

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ram@ram:~/Documents$
```

pwd:

pwd!

Print working directory

Prints path of working directory

pwd -L - Symbolic path

pwd -P - actual path

COE19B055
K-Ram Mohan

CS Scanned with CamScanner

```
ram@ram:~/Documents$ pwd
/home/ram/Documents
ram@ram:~/Documents$ pwd -l
bash: pwd: -l: invalid option
pwd: usage: pwd [-LP]
ram@ram:~/Documents$ pwd -L
/home/ram/Documents
ram@ram:~/Documents$ pwd -P
/home/ram/Documents
ram@ram:~/Documents$
```

gzip:

gzip:

Compressed files

COF19B058
K. Ram Mohan

gzip [option] filename

-f: forcefull compress a file even if compressed file name already

-d: ^{exists} allows to decompress

-L: displays licence

-r: compress folder & its all subfolders

-v: displays size of compression

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```
/home/ram/Documents
ram@ram:~/Documents$ gzip os.txt
ram@ram:~/Documents$ gzip -L os.txt.gz
gzip 1.10
Copyright (C) 2018 Free Software Foundation, Inc.
Copyright (C) 1993 Jean-loup Gailly.
This is free software. You may redistribute copies of it under the terms of
the GNU General Public License <https://www.gnu.org/licenses/gpl.html>.
There is NO WARRANTY, to the extent permitted by law.
ram@ram:~/Documents$ gzip -r os_2
ram@ram:~/Documents$ gzip -v os_2.txt
os_2.txt:      55.3% -- replaced with os_2.txt.gz
ram@ram:~/Documents$ gzip -d os.txt.gz
ram@ram:~/Documents$
```

ps:

PS:

Displays currently running process

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R. Ram Mohan

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```
3902 pts/1 00:00:00 ps
ram@ram:~/Documents$ ps
  PID TTY          TIME CMD
 2606 pts/1    00:00:00 bash
 3903 pts/1    00:00:00 ps
ram@ram:~/Documents$ ps -a
  PID TTY          TIME CMD
 1380 tty2      00:05:07 Xorg
 1433 tty2      00:00:00 gnome-session-b
 3904 pts/1    00:00:00 ps
ram@ram:~/Documents$
```


free:

free:

Shows how much memory is free

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free [options]

-b : bytes

-k : KB

-m : MB

-g : GB

-t : TB

Kill:

terminates process manually

CS Scanned with CamScanner

```
3949 3949 pts/1 00:00:00 ps
ram@ram:~/Documents$ free
              total        used         free       shared    buff/cache   available
Mem:           4027868        906032        2148744         28880         973092        2860792
Swap:          459260            0         459260
ram@ram:~/Documents$ free -b
              total        used         free       shared    buff/cache   available
Mem:      4124536832      927789056      2200305664      29540352      996442112      2929471488
Swap:      470282240            0      470282240
ram@ram:~/Documents$ free -k
              total        used         free       shared    buff/cache   available
Mem:           4027868        906028        2148744         28848         973096        2860828
Swap:          459260            0         459260
ram@ram:~/Documents$ free -m
              total        used         free       shared    buff/cache   available
Mem:             3933            885            2098             28             950             2793
Swap:             448              0             448
ram@ram:~/Documents$ free -g
              total        used         free       shared    buff/cache   available
Mem:                3              0              2              0              0              2
Swap:                0              0              0
ram@ram:~/Documents$ free -t
              total        used         free       shared    buff/cache   available
Mem:           4027868        906540        2148224         28848         973104        2860308
Swap:          459260            0         459260
Total:         4487128        906540        2607484
ram@ram:~/Documents$ free --tera
              total        used         free       shared    buff/cache   available
Mem:                0              0              0              0              0              0
Swap:                0              0              0
ram@ram:~/Documents$ free -c
free: option requires an argument -- 'c'

Usage:
  free [options]

Options:
  -b, --bytes          show output in bytes
  -k, --kbytes         show output in kilobytes
  -m, --megabytes      show output in megabytes
  -g, --gigabytes      show output in gigabytes
  -t, --total           show total system memory
  -s, --show-buffers   show buffers and cache
  -c, --count           show count of free blocks
  -h, --help            display this help message
  -V, --version          display version number
```

Q5)

chmod:

chmod:

change access mode of a file

chmod [reference] [operator] [mode] file..

Reference:

u - owner
g - group
o - others
a - all

operator

+ : Add
- : remove
= : exact mode for
specified classes

mode

r - read
w - write
x - execute

CS Scanned with CamScanner

```
-S: COMMAND NOT FOUND
ram@ram:~/Documents$ chmod u+r-wx os.txt
ram@ram:~/Documents$ chmod u+wx os.txt
ram@ram:~/Documents$ chmod u=rwx, o=x os.txt
chmod: invalid mode: 'u=rwx,'
Try 'chmod --help' for more information.
ram@ram:~/Documents$ chmod u=r+w+x, o=x os.txt
chmod: invalid mode: 'u=r+w+x,'
Try 'chmod --help' for more information.
ram@ram:~/Documents$ chmod u=r+w+x,o=x os.txt
ram@ram:~/Documents$ chmod u=r-w+x,o=x os.txt
ram@ram:~/Documents$ chmod u=r+w+x,o=x os.txt
ram@ram:~/Documents$
```

Q6)

// Ram Mohan - COE19B055

#include<stdio.h>

#include<stdlib.h>

int main()

{

int a=10, *p;

p = &a;

printf("Address of integer variable: %d\n", p);

//printing address of an integer variable

int b[10] = {1, 2, 3, 4, 5, 6, 7, 8, 9, 10};

p = b;

for(int i=0; i<10; i++)

{

//p = &b[i];

printf("Address of %d element in array: %d \n", i+1, p++);

//printing address of an array elements

}

}

Q7)

```
//Ram Mohan - COE19B055
```

```
#include<stdio.h>
```

```
#include<stdlib.h>
```

```
#include<ctype.h>
```

```
int main()
```

```
{
```

```
FILE *file1, *file2, *file3, *file4;
```

```
char content, content1;
```

```
file1 = fopen("sample_1.txt", "r");    //Opening file1
```

```
if(file1 == NULL)                //checking whether file1 is created or not
```

```
{
```

```
    printf( "File1 failed to open." );
```

```
}
```

```
else
```

```
{
```

```
    file2 = fopen("sample_2.txt", "w");    //opening file2
```

```
if(file2==NULL)
```

```
{
```

```
    printf("File2 failed to open");
```

```
}
```

```
else
```

```
{
```

```
    content = fgetc(file1);    //getting first character of file1
```

```
    while(content!=EOF)
```

```
{
```

```

        fputc(content, file2);        //copying content from file1 to file2
        content = fgetc(file1);      //getting the next content
    }

    printf("File copied Successfully\n");

    fclose(file1);
    fclose(file2);
}

file1 = fopen("sample_1.txt", "r");
file3 = fopen("sample_3.txt", "w");

if(file1 == NULL)
{
    printf("File1 failed to open.");
}
else
{
    content = fgetc(file1);
    while(content != EOF)
    {
        if(content >= 'A' && content <= 'Z')        //condition to change upper to lower
        {
            content = tolower(content);
            fputc(content, file3);
            content = fgetc(file1);
        }
        else        //condition to change lower to upper
        {

```



```
        content = toupper(content);  
        fputc(content, file3);  
        content = fgetc(file1);  
    }  
}  
printf("Content modified successfully");  
}  
}
```

Q8)

//Ram Mohan - COE19B055

#include<stdio.h>

#include<stdlib.h>

#include<ctype.h>

int main()

{

FILE *file1, *file2;

char content;

file1 = fopen("sample_2.txt", "r");

if(file1 == NULL) //checking whether file1 is created or not

{

printf("File1 failed to open.");

}

else

{

file2 = fopen("sample_5.txt", "w"); //opening file2

if(file2==NULL)

{

printf("File2 failed to open");

}

else

{

content = fgetc(file1); //getting first character of file1

while(content!=EOF)

```

    {
        fputc(content, file2);    //copying content from file1 to file2
        content = fgetc(file1);    //getting the next content
    }
    fclose(file1);
    fclose(file2);
}
}

```

//Now removing vowels and moving it to original file from temporary file

```

file1 = fopen("sample_5.txt", "r");
if(file1 == NULL)
{
    printf("File failed to open");
}
else
{
    file2 = fopen("sample_2.txt", "w");

    content = fgetc(file1);
    while(content!=EOF)
    {
        if(!(content=='A' || content=='E' || content=='I' || content=='O' || content=='U' ||
            content=='a' || content=='e' || content=='i' || content=='o' || content=='u'))
        {
            fputc(content, file2);
        }
        content = fgetc(file1);
    }
}

```

```
fclose(file1);  
fclose(file2);  
  
remove("sample_5.txt");    //removing the temporary file  
  
printf("Removed vowels from sample_2.txt successfully");  
}  
}
```