1. What is tar command? Why is it used?

Answer -

- Tar command is used to archive multiple files into a single file
- tar means tape archive
- Archiving is usually used as part of a system backup or when moving data from one system to another
- This command is used for creating Archive and extracting the archive files
- this command is used for creating uncompressed and compressed archive files and modify and maintain them as well.
- syntax for tar is tar [options] [archive-file] [directory or file to be archived]
- **tar -cvf file.tar <files_which_needs_to_be_archieved>**
- c is for create, v is verbose, f is filename of tar file which we want to create
- below the example which will tar all text file into file.tar

```
localhost:~# ls -l
total 28
-rw-r--r--    1 root     root           337 Feb 26 18:40 all.txt
-rw-r--r--    1 root     root           402 Feb 26 18:40 alltext.txt
-rw-r--r--    1 root     root           114 Jul  5  2020 bench.py
-rw-r--r--    1 root     root           108 Feb 26 18:35 error.txt
-rw-r--r--    1 root     root            76 Jul  3  2020 hello.c
-rw-r--r--    1 root     root            22 Jun 26  2020 hello.js
-rw-r--r--    1 root     root             0 Feb 26 18:39 hello.txt
-rw-r--r--    1 root     root           151 Jul  5  2020 readme.txt
-rw-r--r--    1 root     root             0 Feb 26 18:39 test.txt
localhost:~# tar -cvf file.tar *.txt
all.txt
alltext.txt
error.txt
hello.txt
readme.txt
test.txt
localhost:~# ls -lrt file.tar
-rw-r--r--    1 root     root          6144 Feb 26 19:15 file.tar
localhost:~#
```

- Now to untar the file we use
  tar -xvf file.tar
- -x is extract, v is verbose, f is which file to untar
- if we do not want to see which files are being tar or untar then we can skip v eg.
  tar -cf file.tar <file name to be tar>
- same to untar use **tar -xf <file name to be untar>**

```
localhost:~# cp -p file.tar /root/test/
localhost:~# cd test
localhost:~/test# ls -lrt
total 8
-rw-r--r--    1 root     root          6144 Feb 26 19:15 file.tar
localhost:~/test# tar -xvf file.tar
all.txt
alltext.txt
error.txt
hello.txt
readme.txt
test.txt
localhost:~/test# ls -l
total 24
-rw-r--r--    1 root     root           337 Feb 26 18:40 all.txt
-rw-r--r--    1 root     root           402 Feb 26 18:40 alltext.txt
-rw-r--r--    1 root     root           108 Feb 26 18:35 error.txt
-rw-r--r--    1 root     root          6144 Feb 26 19:15 file.tar
-rw-r--r--    1 root     root             0 Feb 26 18:39 hello.txt
-rw-r--r--    1 root     root           151 Jul  5  2020 readme.txt
-rw-r--r--    1 root     root             0 Feb 26 18:39 test.txt
localhost:~/test#
```

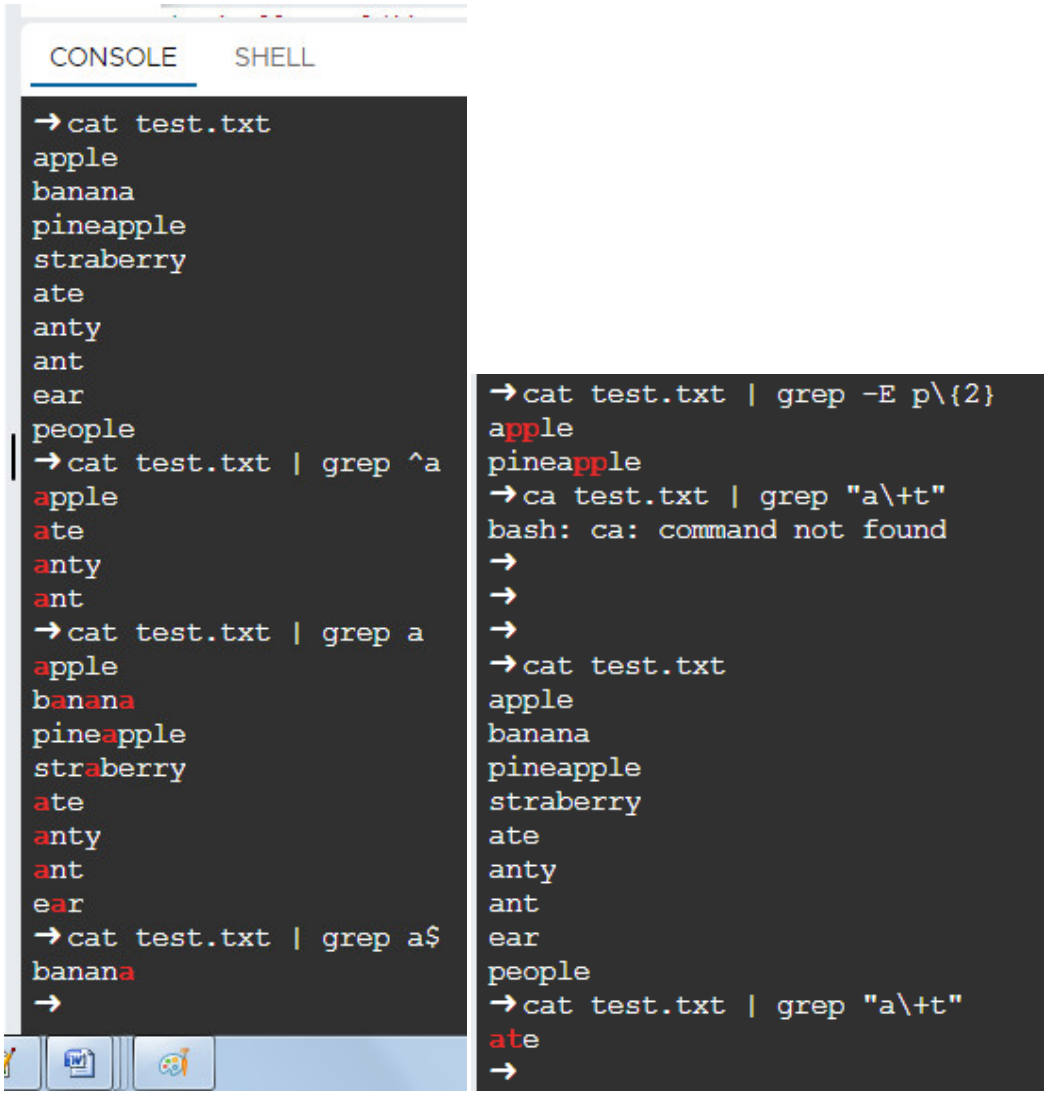
- If we want to tar folder then use below command :
  tar -cvf folder.tar folder_name
- To untar use command
  tar -xvf folder.tar

2. Explain Regular Expressions and Grep

Answer -

- Linux Regular Expressions are special characters which help search data and matching complex patterns. short form as ‘regexp’ or ‘regex’.
- Mainly they are used in many Linux programs like grep, tr, rename, sed, etc..
- 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.
- let's share the below example
- '**^**' matches the start of a string. Let's search for content that STARTS with a
  cat test.txt | grep ^a
- Select only those lines that end with t using **$**
  cat test.txt | grep t$
- We want to check that the character 'p' appears exactly 2 times in a string one after the other.
  cat test.txt | grep -E p\{2}
- For above few please find the screen shots in next page.



3. What is the minimum number of disk partitions required to install Linux?

   Answer -

   - We need minimum one disk partition to install linux

4. How to copy a file in Linux?

Answer -

- **cp** is the command used to copy a file
- for eg.
- ls -l

  total 8

  -rw-r--r-- 1 mysql mysql 31 Feb 26 14:37 main.sh

  -rw-r--r-- 1 mysql mysql 57 Feb 26 14:37 test.txt

  cp test.txt test1.txt

  ls -l

  total 12

  -rw-r--r-- 1 mysql mysql 31 Feb 26 14:37 main.sh

  -rw-r--r-- 1 mysql mysql 57 Feb 26 14:38 test1.txt

  -rw-r--r-- 1 mysql mysql 57 Feb 26 14:37 test.txt

- **cp** has multiple parameters/arguments which we can use.. one of them is -p to preserve the attribute

  cp -p source_filepath_filename destination_filepath_filename

5. How to terminate a running process in Linux?

Answer -

- **kill process_id** is the command to terminate a running process
- **kill -9 process_id** to forcefully terminate a process

6. How to rename a file in Linux?

Answer -

- We can use move command
- **mv source_filename destination_new_file_name**
- **mv file1.txt file2.txt**

7. How to write the output of a command to a file?

Answer -

- we can use operators
- for eg. output of hostname will give use the server name and if we want to save to file then use
- **hostname > file.txt**
- **date >> file.txt**
- **point to remember is > and >>**
- **>** will overwrite everything in file if anything exist in file
- **>>** will append to end of the line in that file.

8. How to see the list of mounted devices on Linux?

Answer -

- We can use df command to find the mounted FS
- df -h in human readable format
- findmnt
- there are few more ways which system admin uses like(cat /proc/mounts) etc..
- df --help will show all parameters which we can use as per requirement.

```
localhost:~/test# df
Filesystem           1K-blocks      Used Available Use% Mounted on
/dev/root              5120000   2417780   2702220  47% /
devtmpfs                 93464         0     93464   0% /dev
tmpfs                    93620         8     93612   0% /run
none                     93620         0     93620   0% /dev/shm
localhost:~/test# df -h
Filesystem               Size      Used Available Use% Mounted on
/dev/root                4.9G      2.3G      2.6G  47% /
devtmpfs                91.3M         0     91.3M   0% /dev
tmpfs                   91.4M      8.0K     91.4M   0% /run
none                    91.4M         0     91.4M   0% /dev/shm
localhost:~/test# df -aTh
Filesystem           Type            Size      Used Available Use% Mounted on
/dev/root            9p              4.9G      2.3G      2.6G  47% /
devtmpfs             devtmpfs       91.3M         0     91.3M   0% /dev
proc                 proc              0         0         0   0% /proc
tmpfs                tmpfs          91.4M      8.0K     91.4M   0% /run
sysfs                sysfs              0         0         0   0% /sys
devpts               devpts             0         0         0   0% /dev/pts
none                 tmpfs          91.4M         0     91.4M   0% /dev/shm
localhost:~/test#
localhost:~/test# findmnt
TARGET       SOURCE   FSTYPE   OPTIONS
/            root     9p       rw,relatime,sync,dirsync,trans=virtio
├─/dev       devtmpfs devtmpfs rw,relatime,size=93464k,nr_inodes=23366,mode=755
│ ├─/dev/pts devpts   devpts   rw,relatime,mode=600,ptmxmode=000
│ └─/dev/shm none     tmpfs    rw,relatime
├─/proc      proc     proc     rw,relatime
├─/run       tmpfs    tmpfs    rw,nosuid,nodev,relatime,mode=755
└─/sys       sysfs    sysfs    rw,relatime
localhost:~/test#
```

9. How to find where a file is stored in Linux?

Answer -

- We can use **whereis** command to locate binary source code. syntax **whereis command_binary_name**
- eg. if we want to check where date command source code /binary is stored

```
localhost:~/test# whereis date
date: /bin/date
localhost:~/test#
```

- Few eg.
  find .
- this will find all files in current directory

find . -name test.txt

- this will find file with nametest.txt in current and sub-directories.

find /home -name *.mp3

- this will find all .mp3 files under /home

10. How to find the difference between two configuration files?

Answer -

- **diff** is the command which we can use to compare or find difference between two files.
- **diff file1 file2**
- there are multiple options or arguments available which can be checked **diff --help**
- **cmp file1.txt file2.txt** ->to compare two files if they are identical or not