1. Create in one command the directories ~/dir1/dir2/dir3 (dir3 is a subdirectory from dir2, and dir2 is a subdirectory from dir1)

```
rua4@Razzak-Umair-Ahmed: ~/dir1/dir2                                    —    □    ×
rua4@Razzak-Umair-Ahmed:~$ ls
 8question    '[9:45.zip]'              cron.sh       ece              file4      link           newfile.txt
 MyProfile    archieve-10-19-56.zip    cronjob.sh    edventurepark.com hardlink  listofetc.txt  project
 Myself       codeforindia             dummy         file              india     logs
rua4@Razzak-Umair-Ahmed:~$ mkdir -p dir1/dir2/dir3
rua4@Razzak-Umair-Ahmed:~$ ls
 8question    '[9:45.zip]'              cron.sh       dummy            file       india          logs
 MyProfile    archieve-10-19-56.zip    cronjob.sh    ece              file4      link           newfile.txt
 Myself       codeforindia             dir1          edventurepark.com hardlink  listofetc.txt  project
rua4@Razzak-Umair-Ahmed:~$ cd dir1
rua4@Razzak-Umair-Ahmed:~/dir1$ ls
dir2
rua4@Razzak-Umair-Ahmed:~/dir1$ cd dir2
rua4@Razzak-Umair-Ahmed:~/dir1/dir2$ ls
dir3
rua4@Razzak-Umair-Ahmed:~/dir1/dir2$ 
```

2. Download some images from the Internet by linux commands

```
rua4@Razzak-Umair-Ahmed: ~                                              —    □    ×
rua4@Razzak-Umair-Ahmed:~$ wget https://upload.wikimedia.org/wikipedia/commons/thumb/2/2c/Bismillah.svg/1200px-Bismillah
.svg.png
--2022-11-16 17:38:03--  https://upload.wikimedia.org/wikipedia/commons/thumb/2/2c/Bismillah.svg/1200px-Bismillah.svg.pn
g
Resolving upload.wikimedia.org (upload.wikimedia.org)... 103.102.166.240, 2001:df2:e500:ed1a::2:b
Connecting to upload.wikimedia.org (upload.wikimedia.org)|103.102.166.240|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 112632 (110K) [image/png]
Saving to: '1200px-Bismillah.svg.png'

1200px-Bismillah.svg.png      100%[===================================================>] 109.99K  --.-KB/s    in 0.1s

2022-11-16 17:38:03 (912 KB/s) - '1200px-Bismillah.svg.png' saved [112632/112632]

rua4@Razzak-Umair-Ahmed:~$ wget https://cdn.storymirror.com/cover/original/1575645997_791quote.png
--2022-11-16 17:38:37--  https://cdn.storymirror.com/cover/original/1575645997_791quote.png
Resolving cdn.storymirror.com (cdn.storymirror.com)... 205.185.216.10, 205.185.216.42
Connecting to cdn.storymirror.com (cdn.storymirror.com)|205.185.216.10|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 568652 (555K) [image/png]
Saving to: '1575645997_791quote.png'

1575645997_791quote.png       100%[===================================================>] 555.32K  2.10MB/s   in 0.3s

2022-11-16 17:38:38 (2.10 MB/s) - '1575645997_791quote.png' saved [568652/568652]

rua4@Razzak-Umair-Ahmed:~$ ls
 1200px-Bismillah.svg.png     Myself                     codeforindia     dummy              file4      listofetc.txt
 1575645997_791quote.png     '[9:45.zip]'                cron.sh          ece                hardlink   logs
 8question                    archieve-10-19-56.zip      cronjob.sh       edventurepark.com  india      newfile.txt
 MyProfile                    code_for_india_iugy4l.png  dir1             file               link       project
rua4@Razzak-Umair-Ahmed:~$ 
```

7. Display the last 5 commands you typed.

```
894  sort name.txt | uniq
895  clear
896  cd ..
897  cd 8question/
898  ls -li
899  ls -li | wc -l
900  clear
901  chmod -R 700 dirname
902  clear
903  chmod -R 700 8question
904  clear
905  cd
906  chmod -R 700 8question
907  ls -li
908  chmod 400 8question
909  ls-li
910  ls -li
911  clear
912  mkdir file
913  cd file
914  touch hi.txt hello.txt
915  ls
916  ln -s hello.txt hi.txt
917  ln -s hello.txt bye.txt
918  ls -l
919  nano hello.txt
920  cat hello.txt
921  cat bye.txt
922  clear
923  cat hello.txt
924  od hello.txt
925  cd
926  clear
927  history | head
928  clear
929  ls
930  file
```

8. Create the following files :
```
file1
file10
file11
file2
file2
file3
file33
fileAB
filea
fileA
fileAAA
file(
file 2
```

    A.   List (with ls) all files starting with file
    B.   List (with ls) all files starting with file and ending in a number
    C.   List (with ls) all files starting with File and having a digit as the fifth character.
    D.   List (with ls) all files that have exactly five characters.
    E.   List all files that do not start with the letter F.

```
rua4@Razzak-Umair-Ahmed:~$ ls
MyProfile  '[9:45.zip]'          codeforindia   cronjob.sh   ece              hardlink   link   project
Myself     archieve-10-19-56.zip cron.sh        dummy        edventurepark.com india     logs
rua4@Razzak-Umair-Ahmed:~$ mkdir 8question
rua4@Razzak-Umair-Ahmed:~$ cd 8question/
rua4@Razzak-Umair-Ahmed:~/8question$ touch file1 file10 file11 file2 file2 file3 file33 fileAB filea fileA fileAAA file"
(" file2
rua4@Razzak-Umair-Ahmed:~/8question$ ls
'file('   file1   file10   file11   file2   file3   file33   fileA   fileAAA   fileAB   filea
rua4@Razzak-Umair-Ahmed:~/8question$ ls file*[0-9]
file1  file10  file11  file2  file3  file33
rua4@Razzak-Umair-Ahmed:~/8question$ ls File*[0-9]
ls: cannot access 'File*[0-9]': No such file or directory
rua4@Razzak-Umair-Ahmed:~/8question$ ls ?????
'file('   file1   file2   file3   fileA   filea
rua4@Razzak-Umair-Ahmed:~/8question$
```

9. Make a list of all filenames in /etc that contain the string conf in their filename

```
rua4@Razzak-Umair-Ahmed:/etc$ cd
rua4@Razzak-Umair-Ahmed:~$ ls /etc | grep conf > newfile.txt
rua4@Razzak-Umair-Ahmed:~$ ls
 8question   '[9:45.zip]'          cron.sh     ece                india          logs
 MyProfile    archieve-10-19-56.zip cronjob.sh  edventurepark.com  link           newfile.txt
 Myself       codeforindia         dummy       hardlink           listofetc.txt  project
rua4@Razzak-Umair-Ahmed:~$ cat newfile.txt
adduser.conf
ca-certificates.conf
debconf.conf
deluser.conf
e2scrub.conf
fuse.conf
gai.conf
hdparm.conf
host.conf
ld.so.conf
ld.so.conf.d
libaudit.conf
logrotate.conf
manpath.config
mke2fs.conf
netconfig
nftables.conf
nsswitch.conf
pam.conf
resolv.conf
rsyslog.conf
sudo.conf
sudo_logsrvd.conf
sysctl.conf
ucf.conf
xattr.conf
rua4@Razzak-Umair-Ahmed:~$
```

10. Make a sorted list of all files in /etc that contain the case insensitive string conf in their filename.

```
rua4@Razzak-Umair-Ahmed:~$ ls /etc | grep -i conf > file4
rua4@Razzak-Umair-Ahmed:~$ cat file4
adduser.conf
ca-certificates.conf
debconf.conf
deluser.conf
e2scrub.conf
fuse.conf
gai.conf
hdparm.conf
host.conf
ld.so.conf
ld.so.conf.d
libaudit.conf
logrotate.conf
manpath.config
mke2fs.conf
netconfig
nftables.conf
nsswitch.conf
pam.conf
resolv.conf
rsyslog.conf
sudo.conf
sudo_logsrvd.conf
sysctl.conf
ucf.conf
xattr.conf
rua4@Razzak-Umair-Ahmed:~$
```

11. Display the calendar

```
rua4@Razzak-Umair-Ahmed:~$ cal
    November 2022
Su Mo Tu We Th Fr Sa
       1  2  3  4  5
 6  7  8  9 10 11 12
13 14 15 16 17 18 19
20 21 22 23 24 25 26
27 28 29 30
```

12. Translate all lowercase to uppercase in a file

```
rua4@Razzak-Umair-Ahmed:~/8question$ touch name.txt
rua4@Razzak-Umair-Ahmed:~/8question$ nano name.txt
rua4@Razzak-Umair-Ahmed:~/8question$
rua4@Razzak-Umair-Ahmed:~/8question$ cat name.txt
Junaid
Jalal
Zabi
Fahad
Nabil
rua4@Razzak-Umair-Ahmed:~/8question$ cat name.txt | tr [a-z] [A-Z]
JUNAID
JALAL
ZABI
FAHAD
NABIL
rua4@Razzak-Umair-Ahmed:~/8question$
```

13. command to remove duplicates from a file

```
rua4@Razzak-Umair-Ahmed: ~/8question
rua4@Razzak-Umair-Ahmed:~/8question$ cat name.txt
Junaid
Jalal
Zabi
Fahad
Nabil
Nabil
Jalal
rua4@Razzak-Umair-Ahmed:~/8question$ name.txt | uniq
name.txt: command not found
rua4@Razzak-Umair-Ahmed:~/8question$ cat name.txt
Junaid
Jalal
Zabi
Fahad
Nabil
Nabil
Jalal
rua4@Razzak-Umair-Ahmed:~/8question$ sort name.txt | uniq
Fahad
Jalal
Junaid
Nabil
Zabi
```

14. command to count the number of files in the current directory

```
rua4@Razzak-Umair-Ahmed:~/8question$ ls -li | wc -l
13
rua4@Razzak-Umair-Ahmed:~/8question$ █
```

15. Recursively set read, write, and execute permissions to the file owner and no permissions
for all other users on a given directory.

rua4@Razzak-Umair-Ahmed: ~

```
rua4@Razzak-Umair-Ahmed:~/8question$ cd
rua4@Razzak-Umair-Ahmed:~$ chmod -R 700 8question
rua4@Razzak-Umair-Ahmed:~$ ls -li
total 76
 4675 drwx------ 2 rua4 rua4 4096 Nov 16 11:34  8question
  336 drwxr-xr-x 2 rua4 rua4 4096 Nov  8 11:14  MyProfile
 4676 drwxr-xr-x 2 rua4 rua4 4096 Nov 16 09:30  Myself
 3786 -rw-r--r-- 1 rua4 rua4  788 Nov 16 09:45  '[9:45.zip]'
11720 -rw-r--r-- 1 rua4 rua4  694 Nov 16 10:19  archieve-10-19-56.zip
 1881 drwxr-xr-x 2 rua4 rua4 4096 Nov  9 09:09  codeforindia
 1683 -rwxrwxrwx 1 rua4 rua4   68 Nov 15 10:47  cron.sh
 4674 -rwxrwxrwx 1 rua4 rua4   60 Nov 16 08:40  cronjob.sh
 1608 drwxr-xr-x 5 rua4 rua4 4096 Nov  9 10:45  dummy
 1331 drwxr-xr-x 4 rua4 rua4 4096 Nov 16 08:47  ece
11629 drwxr-xr-x 3 rua4 rua4 4096 Nov 11 09:30  edventurepark.com
11730 -rw-r--r-- 1 rua4 rua4  326 Nov 16 11:25  file4
12681 drwxr-xr-x 2 rua4 rua4 4096 Nov 15 09:17  hardlink
 1709 drwxr-xr-x 2 rua4 rua4 4096 Nov 11 09:15  india
 3683 drwxr-xr-x 2 rua4 rua4 4096 Nov 15 08:59  link
11728 -rw-r--r-- 1 rua4 rua4  326 Nov 16 11:13  listofetc.txt
11476 drwxr-xr-x 3 rua4 rua4 4096 Nov 16 10:25  logs
11729 -rw-r--r-- 1 rua4 rua4  326 Nov 16 11:22  newfile.txt
 3686 drwxr-xr-x 4 rua4 rua4 4096 Nov  9 11:04  project
rua4@Razzak-Umair-Ahmed:~$ ▃
```

16. Change the file permission of a file to read-only to the user and remove it for groups and
others.

```
rua4@Razzak-Umair-Ahmed:~$ chmod 400 8question
rua4@Razzak-Umair-Ahmed:~$ ls-li

ls-li: command not found
rua4@Razzak-Umair-Ahmed:~$
rua4@Razzak-Umair-Ahmed:~$ ls -li
total 76
 4675 dr-------- 2 rua4 rua4 4096 Nov 16 11:34  8question
  336 drwxr-xr-x 2 rua4 rua4 4096 Nov  8 11:14  MyProfile
 4676 drwxr-xr-x 2 rua4 rua4 4096 Nov 16 09:30  Myself
 3786 -rw-r--r-- 1 rua4 rua4  788 Nov 16 09:45  '[9:45.zip]'
11720 -rw-r--r-- 1 rua4 rua4  694 Nov 16 10:19  archieve-10-19-56.zip
 1881 drwxr-xr-x 2 rua4 rua4 4096 Nov  9 09:09  codeforindia
 1683 -rwxrwxrwx 1 rua4 rua4   68 Nov 15 10:47  cron.sh
 4674 -rwxrwxrwx 1 rua4 rua4   60 Nov 16 08:40  cronjob.sh
 1608 drwxr-xr-x 5 rua4 rua4 4096 Nov  9 10:45  dummy
 1331 drwxr-xr-x 4 rua4 rua4 4096 Nov 16 08:47  ece
11629 drwxr-xr-x 3 rua4 rua4 4096 Nov 11 09:30  edventurepark.com
11730 -rw-r--r-- 1 rua4 rua4  326 Nov 16 11:25  file4
12681 drwxr-xr-x 2 rua4 rua4 4096 Nov 15 09:17  hardlink
 1709 drwxr-xr-x 2 rua4 rua4 4096 Nov 11 09:15  india
 3683 drwxr-xr-x 2 rua4 rua4 4096 Nov 15 08:59  link
11728 -rw-r--r-- 1 rua4 rua4  326 Nov 16 11:13  listofetc.txt
11476 drwxr-xr-x 3 rua4 rua4 4096 Nov 16 10:25  logs
11729 -rw-r--r-- 1 rua4 rua4  326 Nov 16 11:22  newfile.txt
 3686 drwxr-xr-x 4 rua4 rua4 4096 Nov  9 11:04  project
rua4@Razzak-Umair-Ahmed:~$ ▃
```

17. Create a text file with some content in it, and also create a symbolic link

```
rua4@Razzak-Umair-Ahmed:~$ mkdir file
rua4@Razzak-Umair-Ahmed:~$ cd file
rua4@Razzak-Umair-Ahmed:~/file$ touch hi.txt hello.txt
rua4@Razzak-Umair-Ahmed:~/file$ ls
hello.txt  hi.txt
rua4@Razzak-Umair-Ahmed:~/file$ ln -s hello.txt hi.txt
ln: failed to create symbolic link 'hi.txt': File exists
rua4@Razzak-Umair-Ahmed:~/file$ ln -s hello.txt bye.txt
rua4@Razzak-Umair-Ahmed:~/file$ ls -l
total 0
lrwxrwxrwx 1 rua4 rua4 9 Nov 16 11:56 bye.txt -> hello.txt
-rw-r--r-- 1 rua4 rua4 0 Nov 16 11:54 hello.txt
-rw-r--r-- 1 rua4 rua4 0 Nov 16 11:54 hi.txt
rua4@Razzak-Umair-Ahmed:~/file$ nano hello.txt
rua4@Razzak-Umair-Ahmed:~/file$ cat hello.txt
Hi How Are You
I hope you are fine
rua4@Razzak-Umair-Ahmed:~/file$ cat bye.txt
Hi How Are You
I hope you are fine
rua4@Razzak-Umair-Ahmed:~/file$
```

18. Command to show the contents of the file in hexadecimal bytes.

```
rua4@Razzak-Umair-Ahmed:~$ ls
1200px-Bismillah.svg.png    Myself                      codeforindia   dummy                file4      listofetc.txt
1575645997_791quote.png    '[9:45.zip]'                 cron.sh        ece                  hardlink   logs
8question                   archieve-10-19-56.zip        cronjob.sh     edventurepark.com    india      newfile.txt
MyProfile                   code_for_india_iugy4l.png    dir1           file                 link       project
rua4@Razzak-Umair-Ahmed:~$ cd file
rua4@Razzak-Umair-Ahmed:~/file$ ls
bye.txt  hello.txt  hi.txt
rua4@Razzak-Umair-Ahmed:~/file$ cat hello.txt
Hi How Are You
I hope you are fine
rua4@Razzak-Umair-Ahmed:~/file$ od hello.txt
0000000 064510 044040 073557 040440 062562 054440 072557 044412
0000020 064040 070157 020145 067571 020165 071141 020145 064546
0000040 062556 000012
0000043
rua4@Razzak-Umair-Ahmed:~/file$ _
```

20. Display the first 10 commands from your history of commands.

```
rua4@Razzak-Umair-Ahmed: ~
rua4@Razzak-Umair-Ahmed:~$ history | head
    1  cal
    2  sudo apt install ncal
    3  cal
    4  sudo apt update
    5  sudo apt upgrade
    6  cal
    7  Cal
    8  cal
    9  sudo apt install ncal
   10  cal
rua4@Razzak-Umair-Ahmed:~$
```

21. Print the contents of the file in reverse order

```
rua4@Razzak-Umair-Ahmed: ~/file
rua4@Razzak-Umair-Ahmed:~/file$ cat hello.txt
Hi How Are You
I hope you are fine
rua4@Razzak-Umair-Ahmed:~/file$ tac hello.txt
I hope you are fine
Hi How Are You
rua4@Razzak-Umair-Ahmed:~/file$
```

22. Linux commands to restart and shutdown

Shutdown

```
rua4@Razzak-Umair-Ahmed: ~
rua4@Razzak-Umair-Ahmed:~$ sudo init 0
```

Restart

```
rua4@Razzak-Umair-Ahmed: ~
rua4@Razzak-Umair-Ahmed:~$ sudo init 6
```

19. Create the given directories in one command (dir2, dir3, dir5 is a subdirectory of dir1 and dir4 is a subdirectory of dir3)

dir1
|_ dir2
|_ dir3
| |_dir4
|_dir5

rua4@Razzak-Umair-Ahmed: ~

```
rua4@Razzak-Umair-Ahmed:~$ mkdir -p dir1/{dir2,dir3/dir4,dir5}
rua4@Razzak-Umair-Ahmed:~$ tree dir1
dir1
├── dir2
├── dir3
│   └── dir4
└── dir5

4 directories, 0 files
rua4@Razzak-Umair-Ahmed:~$
```

Bonus Question:

Scrapping a Webpage.

To Delete the file in one command:

 rm –rf *ile*