

1. Write a shell script to find whether a given number is prime.

```
#!/bin/bash
echo -e "enter number:\c"
read n
for (( i=2; i<=$n/2; i++ ))
do
    ans=$((n%i))
    if [ $ans -eq 0 ]
    then
        echo "$n is not a prime number"
        exit 0
    fi
done
```

Output:

```
(rachitmaurya@kali)-[~]
└─$ bash k.sh
enter number:6
6 is not a prime number

(rachitmaurya@kali)-[~]
└─$ bash k.sh
enter number:7
7 is a prime number
```

2. Write a Shell script to find factorial of a given integer?

```
❏ rachitmaurya@kali: ~  
#!/bin/bash  
read -p "enter a number" num  
fact=1  
while [ $num -gt 1 ]  
do  
    fact=$((fact * num))  
    num=$((num-1))  
done  
echo $fact  
~  
~
```

Output

```
❏ (rachitmaurya@kali)-[~]  
❏ $ bash f.sh  
enter a number5  
120  
  
❏ (rachitmaurya@kali)-[~]  
❏ $ bash f.sh  
enter a number6  
720
```

3 . Write a Shell script to change data format . Show the time taken in execute of the script

```
(rachitmaurya@kali)-[~]  
$ date +"%M-%D-%Y"  
58-09/27/23-2023
```

```
(rachitmaurya@kali)-[~]  
$ date +"%D"  
09/27/23
```

```
(rachitmaurya@kali)-[~]  
$ date +"%T"  
21:58:54
```

```
(rachitmaurya@kali)-[~]  
$ date +"%R"  
21:59
```

```
(rachitmaurya@kali)-[~]  
$ date +"%H-%m"  
21-09
```

4 . Write a Shell script that displays list of all the files in the current directory to which the user has read , write and execute permission .

```
#!/bin/bash
echo "enter the directory name"
read dir
if [ -d $dir ]
then
    cd $dir
    ls>f
    exec<f
    while read line
    do
        if [ -f $line ]
        then if [ -r $line -a -w $line -a -x $line ]
        then
            echo "$line has all permission"
        else
            echo "file not having all permission"
        fi
    fi
done
```

Output

```
(rachitmaurya@kali)-[~]
$ bash a.sh
enter the directory name
1.txt
```

5 . User has read , write and execute permission .

```

+
rachitmaurya@kali: ~
echo "the name of all files having all permission"
for file in *
do
    if [ -f $file ]
    then
        if [ -r $file -a -w $file -a -x $file ]
        then
            ls -l $file
        fi
    fi
done
~
```

Output

```

(rachitmaurya@kali)-[~]
$ bash pr.sh
the name of all files having all permission
-rwxrwxrwx 1 rachitmaurya rachitmaurya 172 Sep 25 09:35 dn.sh
-rwxrwxrwx 1 rachitmaurya rachitmaurya 124 Sep 25 21:38 fact.sh
-rwxrwxrwx 1 rachitmaurya rachitmaurya 125 Sep 27 22:08 f.sh
-rwxrwxrwx 1 rachitmaurya rachitmaurya 62 Sep 10 20:51 ll.sh
-rwxrwxrwx 1 rachitmaurya rachitmaurya 45 Sep  4 11:12 raj.sh
-rwxrwxrwx 1 rachitmaurya rachitmaurya 46 Sep  7 12:55 ram.sh
-rwxrwxrwx 1 rachitmaurya rachitmaurya 71 Aug 26 09:57 rk.sh
-rwxrwxrwx 1 rachitmaurya rachitmaurya 115 Sep  6 10:07 vb.sh
-rwxrwxrwx 1 rachitmaurya rachitmaurya 42 Sep  7 12:50 vn.sh
-rwxrwxrwx 1 rachitmaurya rachitmaurya 73 Sep 10 20:22 ww.sh
```

6. usage of following commands:

ls.pwd.tty.cat.who.whoami,rm.rmdir.touch,makdir,touch,cd?

```
(rachitmaurya@kali)-[~]
$ ls
arvind  c.sh  Desktop  dn.sh  Downloads  file1  k.sh  movien  n  pk  pl  pr.sh  rachit  rachit.text  Rachit.txt  raj.sh  ram.sh  rh.gh  rk.txt  Templates  vb.sh  Videos  vishal.txt  vv  what.sh
a.sh  dd.txt  dm.txt  Documents  fact.sh  f.sh  ll.sh  Music  Pictures  pk.sh  pp.txt  Public  rachit1.sh  rachit.txt  rajat  ram  rg.gh  rk.sh  sahu.sh  vb  vb.txt  vishal1  vn.sh  vv.sh  ww.sh

(rachitmaurya@kali)-[~]
$ pwd
/home/rachitmaurya

(rachitmaurya@kali)-[~]
$ tty
/dev/pts/0

(rachitmaurya@kali)-[~]
$ cat>file1
hello

(rachitmaurya@kali)-[~]
$ who
rachitmaurya :1      2023-11-25 20:55 (:1)

(rachitmaurya@kali)-[~]
$ who i am

(rachitmaurya@kali)-[~]
$ mkdir rachitk

(rachitmaurya@kali)-[~]
$ touch file1.txt

(rachitmaurya@kali)-[~]
$ rm file1.txt

(rachitmaurya@kali)-[~]
$ cd DESKTOP
cd: no such file or directory: DESKTOP
```

7.write a shell script to display the multiplication table any number?

```
#!/bash/ bin
echo "enter number to genrate multiplication table"
read -p "enter the number : " number
i=1
while [ $i -le 10 ]
do
    echo " $number * $i = `expr $number \* $i ` "
    i=`expr $i + 1`
done
```

Output:

```
(rachitmaurya@kali)-[~]
$ bash h.sh
enter number to genrate multiplication table
enter the number : 5
5 * 1 =5
5 * 2 =10
5 * 3 =15
5 * 4 =20
5 * 5 =25
5 * 6 =30
5 * 7 =35
5 * 8 =40
5 * 9 =45
5 * 10 =50
```


8.usage of following commands: cal,mv,cp,man?

1.cal:-

```
(rachitmaurya@kali)-[~]  
$ cal  
November 2023  
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
```

2.mv:-

```
(rachitmaurya@kali)-[~]  
$ cat>file1  
rachit  
  
(rachitmaurya@kali)-[~]  
$ touch file1.txt  
  
(rachitmaurya@kali)-[~]  
$ mv file1 file1.txt  
  
(rachitmaurya@kali)-[~]  
$ cat file1.txt  
rachit
```

3.cp:-


```
(rachitmaurya@kali)-[~]
$ cat>file2
rachit

(rachitmaurya@kali)-[~]
$ cat>file3
rachit maurya

(rachitmaurya@kali)-[~]
$ cp file2 file3

(rachitmaurya@kali)-[~]
$ cat file1
cat: file1: No such file or directory

(rachitmaurya@kali)-[~]
$ cat file2
rachit

(rachitmaurya@kali)-[~]
$ cat file3
rachit
```

4:-MAN:-

```
(rachitmaurya@kali)-[~]
$ man man
```

NAME

man - an interface to the system reference manuals

SYNOPSIS

```
man [man options] [[section] page ...] ...
man -k [apropos options] regexp ...
man -K [man options] [section] term ...
man -f [whatis options] page ...
man -l [man options] file ...
man -w|-W [man options] page ...
```

9. usage of following commands: grep,tput(clear,highlight),etc?

1.grep:-

```
(rachitmaurya@kali)-[~]  
$ cat>file3  
rachit  
  
(rachitmaurya@kali)-[~]  
$ grep "rachit" file3  
rachit
```

2.tput:-

```
(rachitmaurya@kali)-[~]  
$ cat>file3  
rachit  
  
(rachitmaurya@kali)-[~]  
$ grep "rachit" file3  
rachit  
  
(rachitmaurya@kali)-[~]  
$ tput clear
```

3.bc:-

```
(rachitmaurya@kali)-[~]  
$ bc  
bc 1.07.1  
Copyright 1991-1994, 1997, 1998, 2000, 2004, 2006, 2008, 2012-2017 Free Software Foundation, Inc.  
This is free software with ABSOLUTELY NO WARRANTY.  
For details type `warranty'.  
333-33  
300  
45*6  
270  
35+7  
42
```

10.write A shell script to list all of the directory file in directory?

```
#!/bin/bash
echo "enter directory name"
read dir
if [ -d $d ]
then
    echo "list of files in the directory"
    ls -l $dir | egrep 'd'
else
    echo "enter the proper directory name"
fi
```

Output:

```
(rachitmaurya@kali)-[~]
$ bash h.sh
enter directory name
2.txt
list of files in the directory
```