

CSE2005 - Operating Systems

LAB ASSIGNMENT-1

Slot: L35 + L36

Faculty: GERALDINE BESSIE AMALI D MAM

Date: 17-08-2020

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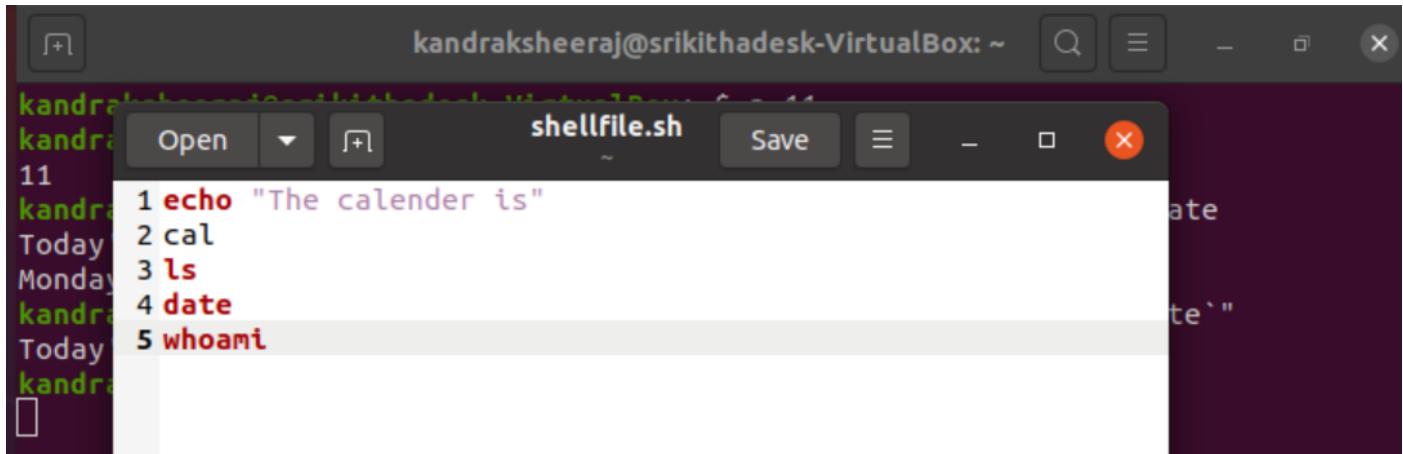
1. Study of basic Linux commands.

```
kandraksheeraj@srikithadesk-VirtualBox:~$ ls
Desktop      firstprog.sh  kk.txt        new.txt    sav,txt      Videos
Documents    hello          ksheeraj,txt  Pictures   sav.txt
Downloads    ifelse.sh     Music         Public     shellfile.sh
factorial.sh ifesle.sh    newshell.sh   q.txt     Templates
kandraksheeraj@srikithadesk-VirtualBox:~$ pwd
/home/kandraksheeraj
kandraksheeraj@srikithadesk-VirtualBox:~$ mkdir fi.txt
kandraksheeraj@srikithadesk-VirtualBox:~$ ls
Desktop      firstprog.sh  ifesle.sh    newshell.sh  q.txt      Templates
Documents    fi.txt       kk.txt       new.txt     sav,txt      Videos
Downloads    hello        ksheeraj,txt Pictures   sav.txt
factorial.sh ifelse.sh    Music        Public     shellfile.sh
kandraksheeraj@srikithadesk-VirtualBox:~$ rmdir kk.txt
kandraksheeraj@srikithadesk-VirtualBox:~$ ls
Desktop      firstprog.sh  ifesle.sh    new.txt    sav,txt      Videos
Documents    fi.txt       ksheeraj,txt Pictures   sav.txt
Downloads    hello        Music        Public     shellfile.sh
factorial.sh ifelse.sh    newshell.sh   q.txt     Templates
kandraksheeraj@srikithadesk-VirtualBox:~$ cd
kandraksheeraj@srikithadesk-VirtualBox:~$ cd fi.txt
kandraksheeraj@srikithadesk-VirtualBox:~/fi.txt$ cd ..
kandraksheeraj@srikithadesk-VirtualBox:~$
```

```
kandraksheeraj@srikithadesk-VirtualBox:~$ gedit ed.txt
1 date
2 cal
3 whoami
4 who
5 ls -a|
```

```
kandraksheeraj@srikithadesk-VirtualBox:~$ cat ed.txt
date
cal
whoami
who
ls -a
```

```
kandraksheeraj@srikithadesk-VirtualBox:~$ n=11
kandraksheeraj@srikithadesk-VirtualBox:~$ echo $n
11
kandraksheeraj@srikithadesk-VirtualBox:~$ echo "Today's date is";date
Today's date is
Monday 27 July 2020 05:52:33 PM IST
kandraksheeraj@srikithadesk-VirtualBox:~$ echo "Today's date is`date`"
Today's date isMonday 27 July 2020 05:53:02 PM IST
kandraksheeraj@srikithadesk-VirtualBox:~$ gedit shellfile.sh
kandraksheeraj@srikithadesk-VirtualBox:~$ sh newshell.sh
    July 2020
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 31
```



```
kandraksheeraj@srkithadesk-VirtualBox: ~$ sh shellfile.sh
The calender is
July 2020
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 31
```

```
kandraksheeraj@srkithadesk-VirtualBox: ~$ sh shellfile.sh
The calender is
July 2020
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 31

Desktop    Downloads   Music       Pictures   q.txt      Templates
Documents  hello      newshell.sh Public     shellfile.sh Videos
Monday 27 July 2020 05:56:48 PM IST
kandraksheeraj
kandraksheeraj@srkithadesk-VirtualBox: ~$ echo `expr 1+3`
1+3
kandraksheeraj@srkithadesk-VirtualBox: ~$ echo `expr 1 + 3`
4
kandraksheeraj@srkithadesk-VirtualBox: ~$ echo `expr 5 - 2`
3
kandraksheeraj@srkithadesk-VirtualBox: ~$ echo `expr 7 \* 2`
14
kandraksheeraj@srkithadesk-VirtualBox: ~$ echo `expr 4 / 2`
2
kandraksheeraj@srkithadesk-VirtualBox: ~$
```

```
kandraksheeraj@srikithadesk-VirtualBox:~$ date > new.txt
kandraksheeraj@srikithadesk-VirtualBox:~$ ls >> new.txt
kandraksheeraj@srikithadesk-VirtualBox:~$ gedit new.txt
```

The terminal window shows the user's session:

```
kandraksheeraj@srikithadesk-VirtualBox:~$ date > new.txt
kandraksheeraj@srikithadesk-VirtualBox:~$ ls >> new.txt
kandraksheeraj@srikithadesk-VirtualBox:~$ gedit new.txt
```

The file editor window titled "new.txt" displays the following content:

```
1 Monday 27 July 2020 06:04:51 PM IST
2 Desktop
3 Documents
4 Downloads
5 hello
6 Music
7 newshell.sh
8 new.txt
9 Pictures
10 Public
11 q.txt
12 shellfile.sh
13 Templates
14 Videos
```

```
kandraksheeraj@srikithadesk-VirtualBox:~$ date > new.txt
kandraksheeraj@srikithadesk-VirtualBox:~$ ls >> new.txt
kandraksheeraj@srikithadesk-VirtualBox:~$ gedit new.txt
kandraksheeraj@srikithadesk-VirtualBox:~$ head < new.txt > sav.txt
kandraksheeraj@srikithadesk-VirtualBox:~$ ^C
kandraksheeraj@srikithadesk-VirtualBox:~$ ^C^C
kandraksheeraj@srikithadesk-VirtualBox:~$ head < new.txt > sav.txt
kandraksheeraj@srikithadesk-VirtualBox:~$ gedit sav.txt
```

The terminal window shows the user's session:

```
kandraksheeraj@srikithadesk-VirtualBox:~$ date > new.txt
kandraksheeraj@srikithadesk-VirtualBox:~$ ls >> new.txt
kandraksheeraj@srikithadesk-VirtualBox:~$ gedit new.txt
kandraksheeraj@srikithadesk-VirtualBox:~$ head < new.txt > sav.txt
kandraksheeraj@srikithadesk-VirtualBox:~$ ^C
kandraksheeraj@srikithadesk-VirtualBox:~$ ^C^C
kandraksheeraj@srikithadesk-VirtualBox:~$ head < new.txt > sav.txt
kandraksheeraj@srikithadesk-VirtualBox:~$ gedit sav.txt
```

The file editor window titled "sav.txt" displays the following content:

```
1 Monday 27 July 2020 06:04:51 PM IST
2 Desktop
3 Documents
4 Downloads
5 hello
6 Music
7 newshell.sh
8 new.txt
9 Pictures
10 Public
```

kandraksheeraj@srikithadesk-VirtualBox:~\$ gedit firstprog.sh

```

1 echo "enter the two numbers"
2 read a b
3 c=`expr $a + $b`
4 d=`expr $a - $b`
5 e=`expr $a\ * $b`
6 f=`expr $a / $b`
7 g=`expr $a % $b`
8 echo "sum=$c"
9 echo "difference=$d"
10 echo "product=$e"
11 echo "quotient=$f"
12 echo "remainder=$g"

```

kandraksheeraj@srikithadesk-VirtualBox:~\$ gedit firstprog.sh

kandraksheeraj@srikithadesk-VirtualBox:~\$ sh firstprog.sh

enter the two numbers

8 2

expr: syntax error: unexpected argument '2'

sum=10

difference=6

product=

quotient=4

remainder=0

kandraksheeraj@srikithadesk-VirtualBox:~\$

kandraksheeraj@srikithadesk-VirtualBox:~\$ gedit ifelse.sh

```

1 g=2
2 if [ $g -gt 0 ]
3 then
4 echo "g is positive"
5 fi
6

```

```
kandraksheeraj@srikithadesk-VirtualBox:~$ gedit ifelse.sh
kandraksheeraj@srikithadesk-VirtualBox:~$ sh ifelse.sh
g is positive
kandraksheeraj@srikithadesk-VirtualBox:~$ gedit ifelse.sh
kandraksheeraj@srikithadesk-VirtualBox:~$ c=10
kandraksheeraj@srikithadesk-VirtualBox:~$ echo $c
10
kandraksheeraj@srikithadesk-VirtualBox:~$ gedit factorial.sh
kandraksheeraj@srikithadesk-VirtualBox:~$ sh factorial.sh
enter the number
12
The factorial is 479001600
kandraksheeraj@srikithadesk-VirtualBox:~$ sh factorial.sh
enter the number
5
The factorial is 120
kandraksheeraj@srikithadesk-VirtualBox:~$
```

2. Write a shell script to swap two numbers without using 3rd variable.

```
kandraksheeraj@srikithadesk-VirtualBox:~$ whoami
kandraksheeraj
kandraksheeraj@srikithadesk-VirtualBox:~$ date
Monday 17 August 2020 06:09:51 PM IST
kandraksheeraj@srikithadesk-VirtualBox:~$ cal july 2020
    July 2020
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 31

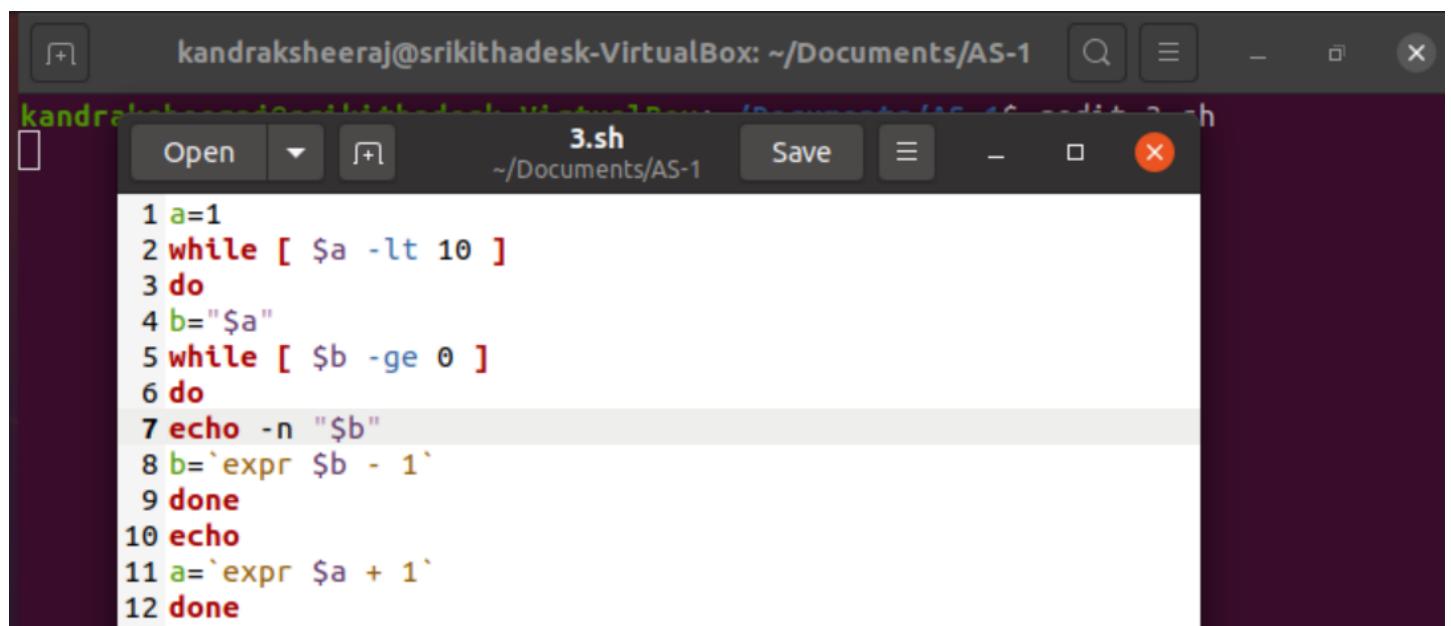
kandraksheeraj@srikithadesk-VirtualBox:~$ who
kandraksheeraj :0          2020-08-17 17:17 (:0)
kandraksheeraj@srikithadesk-VirtualBox:~$ ls
Desktop   factorial.sh  ifelse.sh    newshell.sh  q.txt      Templates
Documents  firstprog.sh  ifesle.sh   new.txt      sav.txt    Videos
Downloads  fi.txt       ksheeraj.txt Pictures    sav.txt
ed.txt     hello        Music       Public      shellfile.sh
```

```
kandraksheeraj@srikithadesk-VirtualBox:~/Documents/AS-1
```

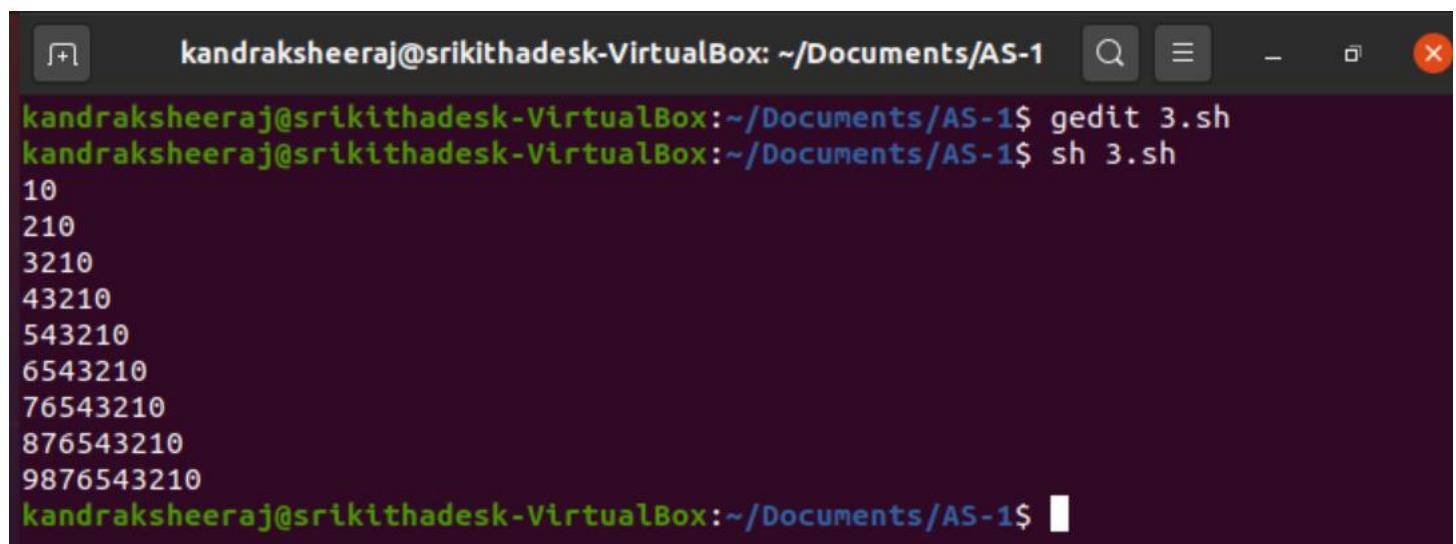
```
1 echo "Enter A:"
2 read A
3 echo "Enter B:"
4 read B
5 A=`expr $A + $B`
6 B=`expr $A - $B`
7 A=`expr $A - $B`
8 echo "A: $A"
9 echo "B: $B"
10
```

3. Write a shell script using while loop to print the structure.

```
1 0
2 1 0
3 2 1 0
4 3 2 1 0
5 4 3 2 1 0
6 5 4 3 2 1 0
7 6 5 4 3 2 1 0
8 7 6 5 4 3 2 1 0
9 8 7 6 5 4 3 2 1 0
```



```
1 a=1
2 while [ $a -lt 10 ]
3 do
4 b="$a"
5 while [ $b -ge 0 ]
6 do
7 echo -n "$b"
8 b=`expr $b - 1`
9 done
10 echo
11 a=`expr $a + 1`
12 done
```



```
kandraksheeraj@srikithadesk-VirtualBox:~/Documents/AS-1$ gedit 3.sh
kandraksheeraj@srikithadesk-VirtualBox:~/Documents/AS-1$ sh 3.sh
10
210
3210
43210
543210
6543210
76543210
876543210
9876543210
kandraksheeraj@srikithadesk-VirtualBox:~/Documents/AS-1$
```

4. Write a shell script to find the sum of first 'N' numbers in Fibonacci series(use for loop)

The terminal window shows the following details:

- Title bar: kandraksheeraj@srikithadesk-VirtualBox: ~/Documents/AS-1
- File menu: Open, Save
- File name: 4.sh
- File path: ~/Documents/AS-1
- Content of 4.sh:

```
1 echo "Enter any +ve Number Greater Than 1: "
2 read N
3 N=`expr $N - 2`
4 a=1
5 b=1
6 sum=2
7 for i in $(seq 1 1 $N);
8 do
9 s=`expr $a + $b`
10 a=$b
11 b=$s
12 sum=`expr $sum + $s`
13 done
14 echo "Sum of N numbers in Fibonacci series is: "
15 echo $sum
16
```

The terminal window shows the following details:

- Title bar: kandraksheeraj@srikithadesk-VirtualBox: ~/Documents/AS-1
- File menu: Open, Save
- File name: 4.sh
- File path: ~/Documents/AS-1
- Execution command: sh 4.sh
- Output:

```
kandraksheeraj@srikithadesk-VirtualBox:~/Documents/AS-1$ gedit 4.sh
kandraksheeraj@srikithadesk-VirtualBox:~/Documents/AS-1$ sh 4.sh
Enter any +ve Number Greater Than 1:
34
Sum of N numbers in Fibonacci series is:
14930351
kandraksheeraj@srikithadesk-VirtualBox:~/Documents/AS-1$
```

5. Write a shell script to print a given number in reverse order and sum of the individual digits.

```
kandraksheeraj@srikithadesk-VirtualBox:~$ gedit 5.sh
kandraksheeraj@srikithadesk-VirtualBox:~$ cat 5.sh
1 echo "Enter any +ve Number"
2 read N
3 n=$N
4
5 sum=0
6 while [ "$n" -gt 0 ]
7 do
8 s=`expr $n % 10`
9 sum=`expr $sum + $s`
10 n=`expr $n / 10`
11 done
12 echo "Sum of Digits in the entered Number is:"
13 echo $sum
14
15 S=`expr $N % 10`
16 N=`expr $N / 10`
17 while [ $N -gt 0 ]
18 do
19 S+=`expr $N % 10`
20 N=`expr $N / 10`
21 done
22 echo "Reverse Order of entered Number is:"
23 echo $S
```

```
kandraksheeraj@srikithadesk-VirtualBox:~$ gedit 5.sh
kandraksheeraj@srikithadesk-VirtualBox:~$ chmod +x 5.sh
kandraksheeraj@srikithadesk-VirtualBox:~$ ./5.sh
Enter any +ve Number
123456
Sum of Digits in the entered Number is:
21
Reverse Order of entered Number is:
654321
kandraksheeraj@srikithadesk-VirtualBox:~$
```

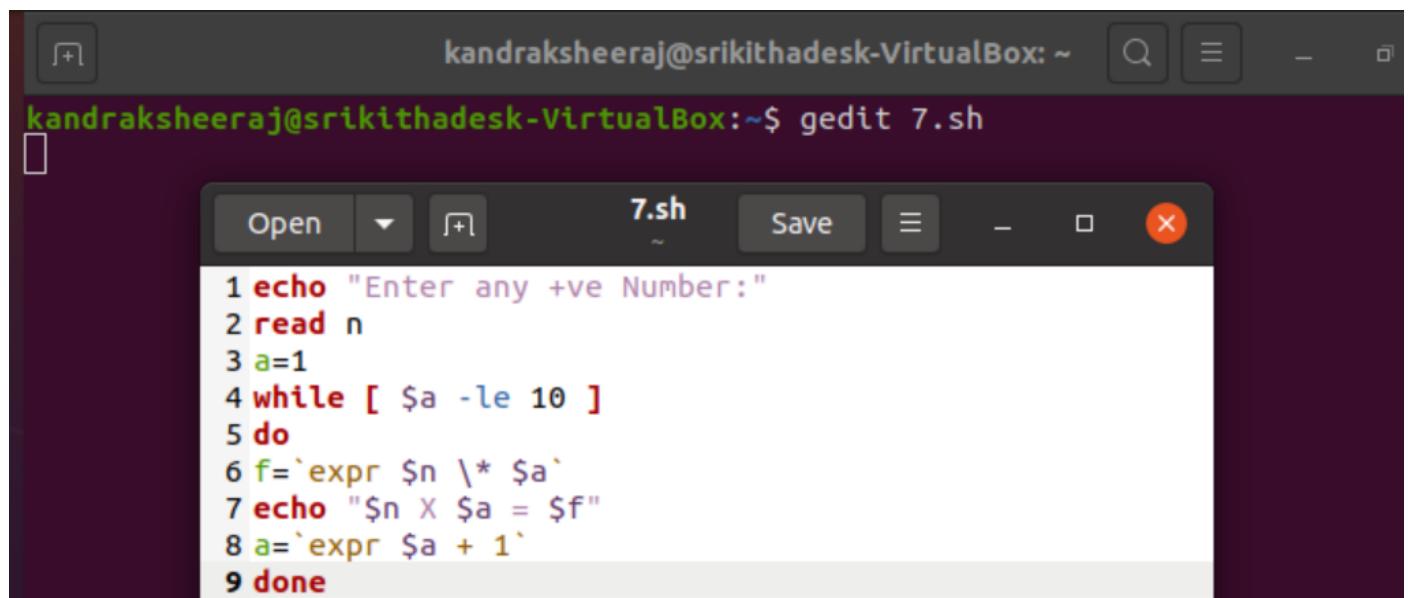
6. Write a shell script to read two strings and display whether it is equal, not equal, null strings or string with special characters.

The screenshot shows a terminal window with the command `kandraksheeraj@srkithadesk-VirtualBox:~$ gedit 6.sh`. Below the terminal is a gedit text editor window titled "6.sh". The script content is as follows:

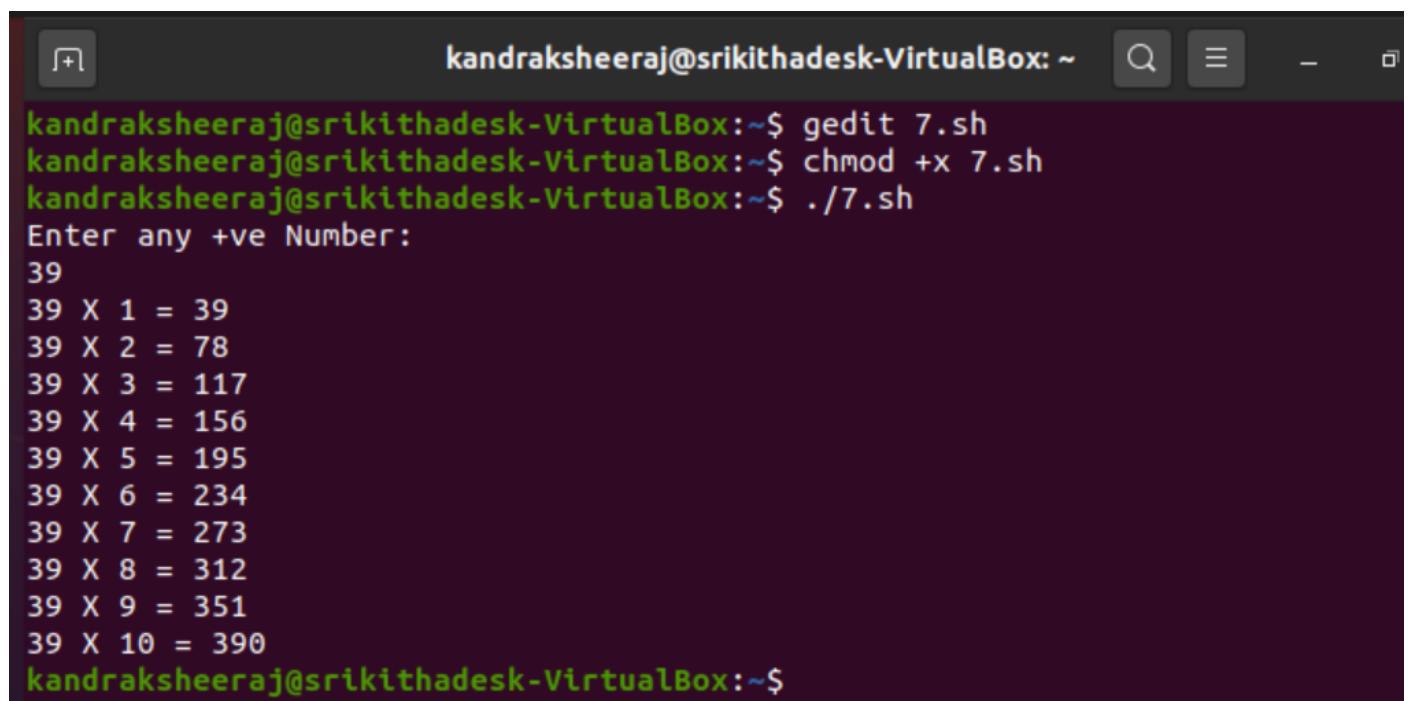
```
1 echo "Enter First String:"\n2 read str1\n3 echo "Enter Second String:"\n4 read str2\n5 if [ $str1 == $str2 ]\n6 then\n7 echo "Strings Are Equal"\n8 else\n9 echo "Strings Are Not Equal"\n10 fi\n11 if [ -z $str1 ]\n12 then\n13 echo "First string is empty"\n14 else\n15 echo "First string is not empty"\n16 fi\n17 if [ -z $str2 ]\n18 then\n19 echo "Second string is empty"\n20 else\n21 echo "Second string is not empty"\n22 fi
```

```
kandraksheeraj@srikithadesk-VirtualBox: ~$ gedit 6.sh
kandraksheeraj@srikithadesk-VirtualBox: ~$ chmod +x 6.sh
kandraksheeraj@srikithadesk-VirtualBox: ~$ ./6.sh
Enter First String:
Hello
Enter Second String:
Bonjour
Strings Are Not Equal
First string is not empty
Second string is not empty
No special Characters in First string
No special Characters in Second string
kandraksheeraj@srikithadesk-VirtualBox: ~$
```

7. Write a shell script to accept one integer argument and print its multiplication table.



```
1 echo "Enter any +ve Number:"
2 read n
3 a=1
4 while [ $a -le 10 ]
5 do
6 f=`expr $n \* $a`
7 echo "$n X $a = $f"
8 a=`expr $a + 1`
9 done
```

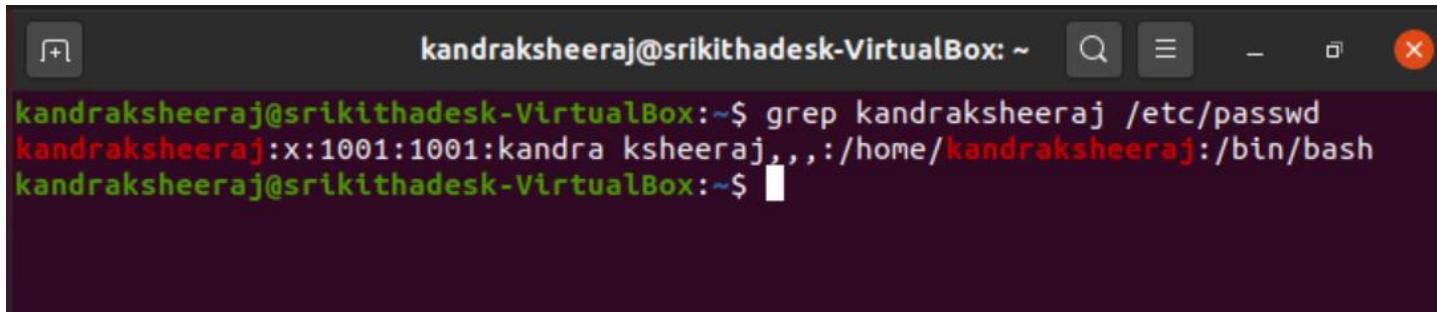


```
kandraksheeraj@srikithadesk-VirtualBox:~$ gedit 7.sh
kandraksheeraj@srikithadesk-VirtualBox:~$ chmod +x 7.sh
kandraksheeraj@srikithadesk-VirtualBox:~$ ./7.sh
Enter any +ve Number:
39
39 X 1 = 39
39 X 2 = 78
39 X 3 = 117
39 X 4 = 156
39 X 5 = 195
39 X 6 = 234
39 X 7 = 273
39 X 8 = 312
39 X 9 = 351
39 X 10 = 390
kandraksheeraj@srikithadesk-VirtualBox:~$
```

8. Write a Shell Script that makes use of grep to isolate the line in /etc/passwd that contains your login details.

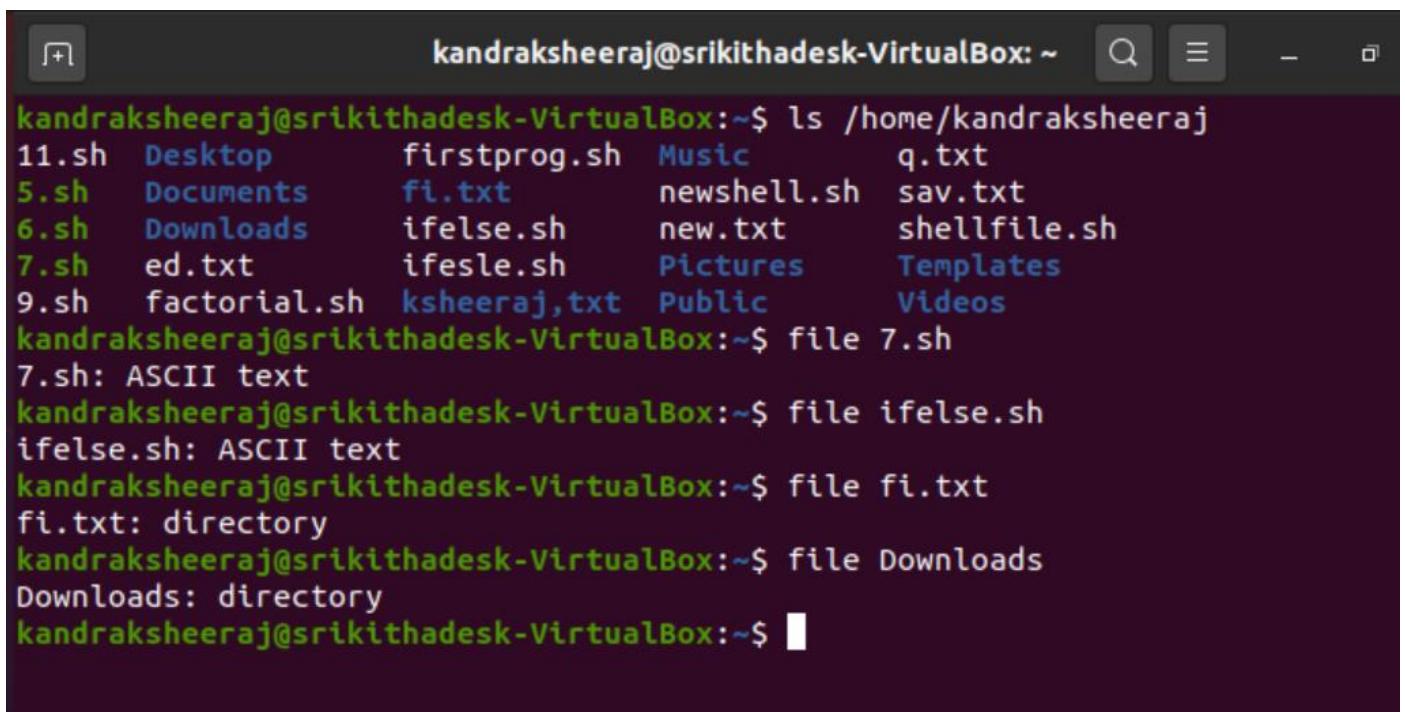
```
kandraksheeraj@srikithadesk-VirtualBox:~$ cat /etc/passwd
root:x:0:0:root:/bin/bash
daemon:x:1:1:daemon:/usr/sbin:/usr/sbin/nologin
bin:x:2:2:bin:/bin:/usr/sbin/nologin
sys:x:3:3:sys:/dev:/usr/sbin/nologin
sync:x:4:65534:sync:/bin:/sync
games:x:5:60:games:/usr/games:/usr/sbin/nologin
man:x:6:12:man:/var/cache/man:/usr/sbin/nologin
lp:x:7:7:lp:/var/spool/lpd:/usr/sbin/nologin
mail:x:8:8:mail:/var/mail:/usr/sbin/nologin
news:x:9:9:news:/var/spool/news:/usr/sbin/nologin
uucp:x:10:10:uucp:/var/spool/uucp:/usr/sbin/nologin
proxy:x:13:13:proxy:/bin:/usr/sbin/nologin
www-data:x:33:33:www-data:/var/www:/usr/sbin/nologin
backup:x:34:34:backup:/var/backups:/usr/sbin/nologin
list:x:38:38:Mailing List Manager:/var/list:/usr/sbin/nologin
irc:x:39:39:ircd:/var/run/ircd:/usr/sbin/nologin
gnats:x:41:41:Gnats Bug-Reporting System (admin):/var/lib/gnats:/usr/sbin/nologin
nobody:x:65534:65534:nobody:/nonexistent:/usr/sbin/nologin
systemd-network:x:100:102:systemd Network Management,,,:/run/systemd:/usr/sbin/nologin
systemd-resolve:x:101:103:systemd Resolver,,,:/run/systemd:/usr/sbin/nologin
systemd-timesync:x:102:104:systemd Time Synchronization,,,:/run/systemd:/usr/sbin/nologin
messagebus:x:103:106::/nonexistent:/usr/sbin/nologin
syslog:x:104:110::/home/syslog:/usr/sbin/nologin
_apt:x:105:65534::/nonexistent:/usr/sbin/nologin
tss:x:106:111:TPM software stack,,,:/var/lib/tpm:/bin/false
```

```
_apt:x:105:65534::/nonexistent:/usr/sbin/nologin
tss:x:106:111:TPM software stack,,,:/var/lib/tpm:/bin/false
uuidd:x:107:114::/run/uuidd:/usr/sbin/nologin
tcpdump:x:108:115::/nonexistent:/usr/sbin/nologin
avahi-autoipd:x:109:116:Avahi autoip daemon,,,:/var/lib/avahi-autoipd:/usr/sbin/nologin
usbmux:x:110:46:usbmux daemon,,,:/var/lib/usbmux:/usr/sbin/nologin
rtkit:x:111:117:RealtimeKit,,,:/proc:/usr/sbin/nologin
dnsmasq:x:112:65534:dnsmasq,,,:/var/lib/misc:/usr/sbin/nologin
cups-pk-helper:x:113:120:user for cups-pk-helper service,,,:/home/cups-pk-helper:/usr/sbin/nologin
speech-dispatcher:x:114:29:Speech Dispatcher,,,:/run/speech-dispatcher:/bin/false
avahi:x:115:121:Avahi mDNS daemon,,,:/var/run/avahi-daemon:/usr/sbin/nologin
kernoops:x:116:65534:Kernel Oops Tracking Daemon,,,:/usr/sbin/nologin
saned:x:117:123::/var/lib/saned:/usr/sbin/nologin
nm-openvpn:x:118:124:NetworkManager OpenVPN,,,:/var/lib/openvpn/chroot:/usr/sbin/nologin
hplip:x:119:7:HPLIP system user,,,:/run/hplip:/bin/false
whoopsie:x:120:125::/nonexistent:/bin/false
colord:x:121:126:colord colour management daemon,,,:/var/lib/colord:/usr/sbin/nologin
geoclue:x:122:127::/var/lib/geoclue:/usr/sbin/nologin
pulse:x:123:128:PulseAudio daemon,,,:/var/run/pulse:/usr/sbin/nologin
gnome-initial-setup:x:124:65534::/run/gnome-initial-setup/:/bin/false
gdm:x:125:130:Gnome Display Manager:/var/lib/gdm3:/bin/false
systemd-coredump:x:999:999:systemd Core Dumper:/:/usr/sbin/nologin
kandraksheeraj:x:1001:1001:kandra ksheeraj,,,:/home/kandraksheeraj:/bin/bash
```



```
kandraksheeraj@srikithadesk-VirtualBox:~$ grep kandraksheeraj /etc/passwd
kandraksheeraj:x:1001:1001:kandra ksheeraj,,,:/home/kandraksheeraj:/bin/bash
kandraksheeraj@srikithadesk-VirtualBox:~$ █
```

9. Write a shell script to display all files in the /home/YourLoginName subdirectory as well as display the type of all files.



```
kandraksheeraj@srikithadesk-VirtualBox:~$ ls /home/kandraksheeraj
11.sh Desktop firstprog.sh Music q.txt
5.sh Documents fi.txt newshell.sh sav.txt
6.sh Downloads ifelse.sh new.txt shellfile.sh
7.sh ed.txt ifesle.sh Pictures Templates
9.sh factorial.sh ksheeraj.txt Public Videos
kandraksheeraj@srikithadesk-VirtualBox:~$ file 7.sh
7.sh: ASCII text
kandraksheeraj@srikithadesk-VirtualBox:~$ file ifelse.sh
ifelse.sh: ASCII text
kandraksheeraj@srikithadesk-VirtualBox:~$ file fi.txt
fi.txt: directory
kandraksheeraj@srikithadesk-VirtualBox:~$ file Downloads
Downloads: directory
kandraksheeraj@srikithadesk-VirtualBox:~$ █
```

The type of the file can be recognised by the colour displayed:

White: any file (EX: ifelse.sh)

Blue: Directory (EX: Documents)

Green: executable files (EX: 5.sh)

```
kandraksheeraj@srikithadesk-VirtualBox:~$ ls
5.sh      Documents    fi.txt      Music      q.txt      Videos
6.sh      Downloads    hello      newshell.sh  sav.txt
7.sh      ed.txt      ifelse.sh   new.txt      sav.txt
9.sh      factorial.sh ifesle.sh  Pictures    shellfile.sh
Desktop  firstprog.sh ksheeraj.txt Public    Templates
kandraksheeraj@srikithadesk-VirtualBox:~$ cd ..
kandraksheeraj@srikithadesk-VirtualBox:/home$ ls
kandraksheeraj
kandraksheeraj@srikithadesk-VirtualBox:/home$ cd ..
kandraksheeraj@srikithadesk-VirtualBox:$ ls
bin      dev      lib      libx32     mnt      root      snap      sys      var
boot    etc      lib32    lost+found  opt      run       srv      tmp
cdrom   home    lib64    media      proc      sbin      swapfile  usr
kandraksheeraj@srikithadesk-VirtualBox:$ cd home
kandraksheeraj@srikithadesk-VirtualBox:/home$ ls
kandraksheeraj
kandraksheeraj@srikithadesk-VirtualBox:/home$ cd kandraksheeraj
kandraksheeraj@srikithadesk-VirtualBox:~$ ls
5.sh      Documents    fi.txt      Music      q.txt      Videos
6.sh      Downloads    hello      newshell.sh  sav.txt
7.sh      ed.txt      ifelse.sh   new.txt      sav.txt
9.sh      factorial.sh ifesle.sh  Pictures    shellfile.sh
Desktop  firstprog.sh ksheeraj.txt Public    Templates
kandraksheeraj@srikithadesk-VirtualBox:~$ █
```

10. Using shell script, display the contents of the present working directory. If it is an ordinary file print its permission and change the permissions to r--r--r—

```
kandraksheeraj@srikithadesk-VirtualBox:~$ ls -l
total 100
-rwxrwxr-x 1 kandraksheeraj kandraksheeraj 339 Aug 22 20:48 5.sh
-rwxrwxr-x 1 kandraksheeraj kandraksheeraj 639 Aug 22 21:11 6.sh
-rwxrwxr-x 1 kandraksheeraj kandraksheeraj 122 Aug 22 21:25 7.sh
-rw-rw-r-- 1 kandraksheeraj kandraksheeraj 74 Aug 23 12:02 9.sh
drwxr-xr-x 2 kandraksheeraj kandraksheeraj 4096 Jul 20 17:41 Desktop
drwxr-xr-x 3 kandraksheeraj kandraksheeraj 4096 Aug 17 18:21 Documents
drwxr-xr-x 2 kandraksheeraj kandraksheeraj 4096 Jul 20 17:41 Downloads
-rw-rw-r-- 1 kandraksheeraj kandraksheeraj 25 Aug 17 17:28 ed.txt
-rw-rw-r-- 1 kandraksheeraj kandraksheeraj 135 Jul 27 18:50 factorial.sh
-rw-rw-r-- 1 kandraksheeraj kandraksheeraj 216 Jul 27 18:21 firstprog.sh
drwxrwxr-x 2 kandraksheeraj kandraksheeraj 4096 Aug 17 17:25 fi.txt
drwxrwxr-x 2 kandraksheeraj kandraksheeraj 4096 Jul 20 18:05 hello
-rw-rw-r-- 1 kandraksheeraj kandraksheeraj 50 Jul 27 18:36 ifelse.sh
-rw-rw-r-- 1 kandraksheeraj kandraksheeraj 47 Jul 27 18:34 ifesle.sh
drwxrwxr-x 2 kandraksheeraj kandraksheeraj 4096 Aug 17 17:22 ksheeraj.txt
drwxr-xr-x 2 kandraksheeraj kandraksheeraj 4096 Jul 20 17:41 Music
-rw-rw-r-- 1 kandraksheeraj kandraksheeraj 13 Jul 27 17:45 newshell.sh
-rw-rw-r-- 1 kandraksheeraj kandraksheeraj 148 Jul 27 18:05 new.txt
drwxr-xr-x 2 kandraksheeraj kandraksheeraj 4096 Jul 27 17:47 Pictures
drwxr-xr-x 2 kandraksheeraj kandraksheeraj 4096 Jul 20 17:41 Public
-rw-rw-r-- 1 kandraksheeraj kandraksheeraj 0 Jul 20 18:01 q.txt
-rw-rw-r-- 1 kandraksheeraj kandraksheeraj 112 Jul 27 18:06 sav.txt
-rw-rw-r-- 1 kandraksheeraj kandraksheeraj 112 Jul 27 18:07 sav.txt
-rw-rw-r-- 1 kandraksheeraj kandraksheeraj 42 Jul 27 17:54 shellfile.sh
drwxr-xr-x 2 kandraksheeraj kandraksheeraj 4096 Jul 20 17:41 Templates
drwxr-xr-x 2 kandraksheeraj kandraksheeraj 4096 Jul 20 17:41 Videos
```

```
kandraksheeraj@srikithadesk-VirtualBox:~$ chmod 444 9.sh
kandraksheeraj@srikithadesk-VirtualBox:~$ ls -l
total 100
-rwxrwxr-x 1 kandraksheeraj kandraksheeraj 339 Aug 22 20:48 5.sh
-rwxrwxr-x 1 kandraksheeraj kandraksheeraj 639 Aug 22 21:11 6.sh
-rwxrwxr-x 1 kandraksheeraj kandraksheeraj 122 Aug 22 21:25 7.sh
-r--r--r-- 1 kandraksheeraj kandraksheeraj 74 Aug 23 12:02 9.sh
drwxr-xr-x 2 kandraksheeraj kandraksheeraj 4096 Jul 20 17:41 Desktop
drwxr-xr-x 3 kandraksheeraj kandraksheeraj 4096 Aug 17 18:21 Documents
drwxr-xr-x 2 kandraksheeraj kandraksheeraj 4096 Jul 20 17:41 Downloads
-rw-rw-r-- 1 kandraksheeraj kandraksheeraj 25 Aug 17 17:28 ed.txt
-rw-rw-r-- 1 kandraksheeraj kandraksheeraj 135 Jul 27 18:50 factorial.sh
-rw-rw-r-- 1 kandraksheeraj kandraksheeraj 216 Jul 27 18:21 firstprog.sh
drwxrwxr-x 2 kandraksheeraj kandraksheeraj 4096 Aug 17 17:25 fi.txt
drwxrwxr-x 2 kandraksheeraj kandraksheeraj 4096 Jul 20 18:05 hello
-rw-rw-r-- 1 kandraksheeraj kandraksheeraj 50 Jul 27 18:36 ifelse.sh
-rw-rw-r-- 1 kandraksheeraj kandraksheeraj 47 Jul 27 18:34 ifesle.sh
drwxrwxr-x 2 kandraksheeraj kandraksheeraj 4096 Aug 17 17:22 ksheeraj,txt
drwxr-xr-x 2 kandraksheeraj kandraksheeraj 4096 Jul 20 17:41 Music
-rw-rw-r-- 1 kandraksheeraj kandraksheeraj 13 Jul 27 17:45 newshell.sh
-rw-rw-r-- 1 kandraksheeraj kandraksheeraj 148 Jul 27 18:05 new.txt
drwxr-xr-x 2 kandraksheeraj kandraksheeraj 4096 Jul 27 17:47 Pictures
drwxr-xr-x 2 kandraksheeraj kandraksheeraj 4096 Jul 20 17:41 Public
-rw-rw-r-- 1 kandraksheeraj kandraksheeraj 0 Jul 20 18:01 q.txt
-rw-rw-r-- 1 kandraksheeraj kandraksheeraj 112 Jul 27 18:06 sav,txt
-rw-rw-r-- 1 kandraksheeraj kandraksheeraj 112 Jul 27 18:07 sav.txt
-rw-rw-r-- 1 kandraksheeraj kandraksheeraj 42 Jul 27 17:54 shellfile.sh
drwxr-xr-x 2 kandraksheeraj kandraksheeraj 4096 Jul 20 17:41 Templates
drwxr-xr-x 2 kandraksheeraj kandraksheeraj 4096 Jul 20 17:41 Videos
```

11. Use find, grep and sort to display a sorted list of all files in the /home/YourLoginName subdirectory that contains the word “hello” somewhere inside them.

```
kandraksheeraj@srikithadesk-VirtualBox:~$ find /home/kandraksheeraj
/home/kandraksheeraj
/home/kandraksheeraj/.config
/home/kandraksheeraj/.config/gnome-initial-setup-done
/home/kandraksheeraj/.config/gtk-3.0
/home/kandraksheeraj/.config/gtk-3.0/bookmarks
/home/kandraksheeraj/.config/enchant
/home/kandraksheeraj/.config/enchant/en.exc
/home/kandraksheeraj/.config/enchant/en.dic
/home/kandraksheeraj/.config/dconf
/home/kandraksheeraj/.config/dconf/user
/home/kandraksheeraj/.config/nautilus
/home/kandraksheeraj/.config/pulse
/home/kandraksheeraj/.config/pulse/1a50e472ee134035978fedeba2a62592-default-sink
/home/kandraksheeraj/.config/pulse/1a50e472ee134035978fedeba2a62592-stream-volumes.tdb
/home/kandraksheeraj/.config/pulse/1a50e472ee134035978fedeba2a62592-card-database.tdb
/home/kandraksheeraj/.config/pulse/1a50e472ee134035978fedeba2a62592-device-volumes.tdb
/home/kandraksheeraj/.config/pulse/1a50e472ee134035978fedeba2a62592-default-source
/home/kandraksheeraj/.config/pulse/cookie
/home/kandraksheeraj/.config/user-dirs.dirs
/home/kandraksheeraj/.config/update-notifier
/home/kandraksheeraj/.config/gedit
/home/kandraksheeraj/.config/gedit/accels
/home/kandraksheeraj/.config/user-dirs.locale
```

```
kandraksheeraj@srikithadesk-VirtualBox:~$ 
/home/kandraksheeraj/.local/share/xorg/Xorg.1.log
/home/kandraksheeraj/.local/share/xorg/Xorg.0.log
/home/kandraksheeraj/.local/share/ibus-table
/home/kandraksheeraj/.local/share/gnome-shell
/home/kandraksheeraj/.local/share/gnome-shell/notifications
/home/kandraksheeraj/.local/share/gnome-shell/gnome-overrides-migrated
/home/kandraksheeraj/.local/share/gnome-shell/application_state
/home/kandraksheeraj/.local/share/session_migration-ubuntu
/home/kandraksheeraj/.local/share/recently-used.xbel
/home/kandraksheeraj/.local/share/icc
/home/kandraksheeraj/.local/share/gvfs-metadata
/home/kandraksheeraj/.local/share/gvfs-metadata/home-8d2da3a5.log
/home/kandraksheeraj/.local/share/gvfs-metadata/trash:-30f889f2.log
/home/kandraksheeraj/.local/share/gvfs-metadata/root-a8528794.log
/home/kandraksheeraj/.local/share/gvfs-metadata/root
/home/kandraksheeraj/.local/share/gvfs-metadata/home
/home/kandraksheeraj/.local/share/gvfs-metadata/trash:
/home/kandraksheeraj/6.sh
/home/kandraksheeraj/11.sh
/home/kandraksheeraj/fi.txt
/home/kandraksheeraj/sav.txt
/home/kandraksheeraj/.f.txt.swo
/home/kandraksheeraj/Music
/home/kandraksheeraj/Downloads
/home/kandraksheeraj/ifelse.sh
/home/kandraksheeraj/9.sh
/home/kandraksheeraj/ksheeraj.txt
/home/kandraksheeraj/ed.txt
kandraksheeraj@srikithadesk-VirtualBox:~$
```

```
kandraksheeraj@srikithadesk-VirtualBox:~$ grep hello 11.sh
hello
kandraksheeraj@srikithadesk-VirtualBox:~$ grep -c hello 11.sh
1
kandraksheeraj@srikithadesk-VirtualBox:~$ grep -i hello 11.sh
hello
HELLO
kandraksheeraj@srikithadesk-VirtualBox:~$ grep -n hello sav.txt
5:hello
kandraksheeraj@srikithadesk-VirtualBox:~$ grep -l hello *
11.sh
grep: Desktop: Is a directory
grep: Documents: Is a directory
grep: Downloads: Is a directory
grep: fi.txt: Is a directory
grep: ksheeraj.txt: Is a directory
grep: Music: Is a directory
new.txt
grep: Pictures: Is a directory
grep: Public: Is a directory
sav.txt
grep: Templates: Is a directory
grep: Videos: Is a directory
```

```
kandraksheeraj@srikithadesk-VirtualBox:~$ grep -l hello * | sort
grep: Desktop: Is a directory
grep: Documents: Is a directory
grep: Downloads: Is a directory
grep: fi.txt: Is a directory
grep: ksheeraj.txt: Is a directory
grep: Music: Is a directory
grep: Pictures: Is a directory
grep: Public: Is a directory
grep: Templates: Is a directory
grep: Videos: Is a directory
11.sh
new.txt
sav.txt
kandraksheeraj@srikithadesk-VirtualBox:~$
```

LAB NOTES REFERRED TO COMPLETE THIS ASSIGNMENT:



20-7-20

UBUNTU OS

ctrl alt t - Terminal

ls - list all files and directories

white-files blue-directories green-executable files

pwd - Print working directory

mkdir - Create new directory - folder

cd - change directory <=> folder

gedit - Notepad

gedit f.txt

Vi - vi editor

vi f.txt

i - insert

ESC + : + w + q

ctrl + c

clear

rmdir - delete directory

mkdir f1

rmdir f1

cd .. - go back to Parent directory

→ We cannot delete directory which we are present in

man - command to open manual

man ls

man rm

→ To remove files in dir

rm

→ dir can be deleted only when it is empty

so 1st delete all files in dir to del dir

→ date

cal - calender

cal 2 2018

whoami - user name

who

ls - a

→ cat f.txt - to display text on terminal

head f.txt

tail f.txt

→ cp f.txt new1.txt copy paste data

mv new1.txt new2.txt rename

→ finger login data

privilege - owner, group, others

ls -l

access - read, write, Executable
rw rw r

→ gcc test.c

compile

→ creating executable file

4 100

5 101

6 110

7 111

→ ./a.out

Prints (Executes)

r w -

r w -

r - -

1 1 0

1 1 0

1 0 0

(664)

- 1 1 1 1 0 1 0 0

test.out

(764)

chmod - change mode

diff files for output

then
664

→ chmod demo.txt

ls -l

view privilege

2

→ ps - Process state

echo - for displaying

echo "Hello"

Hello world

echo "Today's date is"; date

echo "Today's date is `date`"

→ gedit newshell.sh

→ sh newshell.sh

echo "The calender is"

cal
ls
date
who am i

→ n=10

echo \$n

case sensitive, no space

→ echo `expr 1+3`

1+3

→ echo `expr 1 + 3`

4

→ echo `expr 1 - 3`

-2

→ echo `expr 1 ^ 3`

3

→ echo `expr 1 / 3`

To store the output in a file, new old
overwrite

→ date > f.txt

ls > f.txt

→ date >> f.txt ^{to append}

→ head < f.txt > g.txt ^{"not" to sort}
tail f.txt ^{produces converse}

Arithmetic operations

'expr \$a + \$b'

If else :

eq
-ne

-gt
-ge

-lt
-le

L TEST
L L J

if test + \$a -gt 0; then echo

"\$a is +ve no"; fi

if [\$a -gt 0]; then echo "a"; fi

3

→ grep for forex.sh

↳ gives matching line in shell

grep -c for forex.sh

→ no of lines matching for

→ grep -i FOR forex.sh

~ ignore sensitivity

→ grep -n for forex.sh

~ with line number

grep -l "for" *

" " not compulsory

~ searching everywhere - lists all files

grep -l "for" * | sort

~ arrange

PIPE

→ wc forex.sh

~ words, lines

→ ~~head~~

grep ^d forex.sh

~ stats with d

→ grep e\$ forex.sh

~ ending with e

→ grep -v e\$ forex.sh

~ not ending with e