Assignment 4

U20CS005
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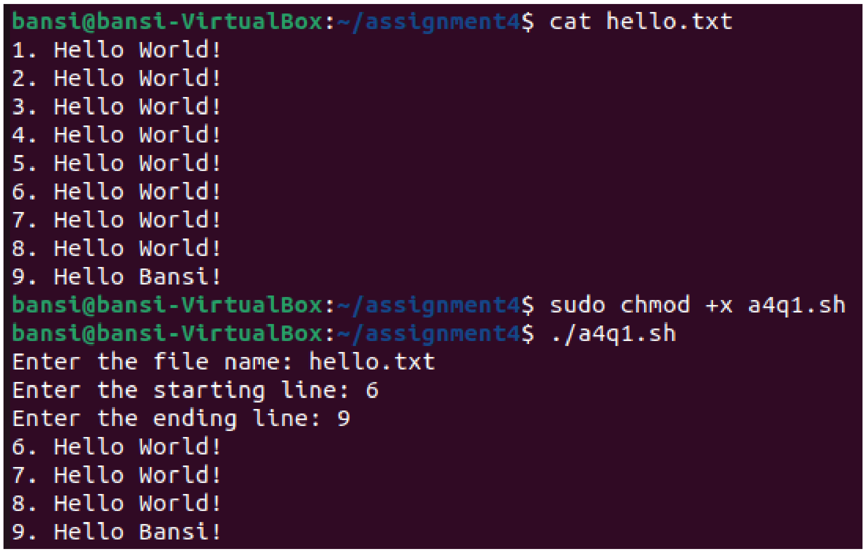
1. Write a shell script that accepts a filename, starting and ending line numbers as arguments and displays all the lines between the given line numbers.

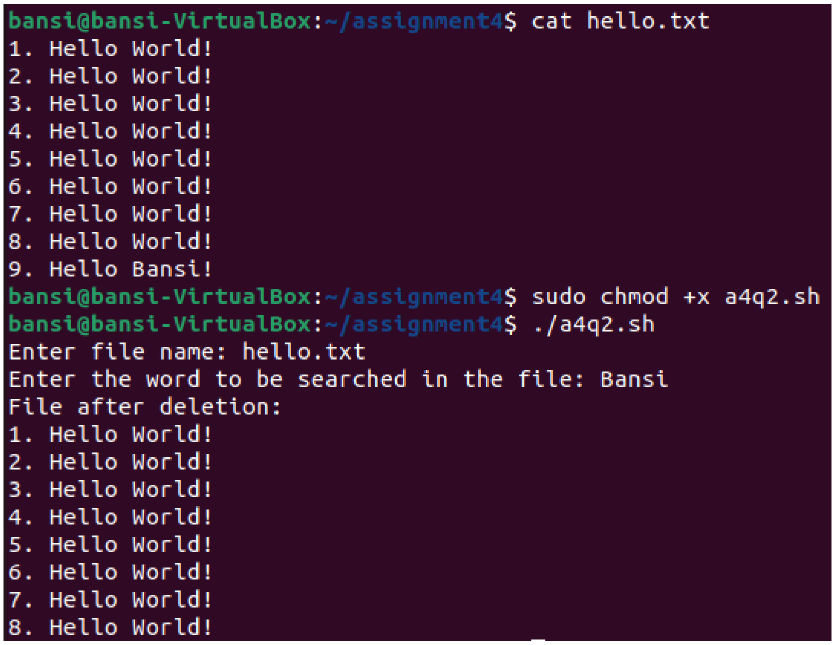
```
read -p "Enter the file name :" file_name
read -p "Enter the starting line :" starting_line
read -p "Enter the ending line :" ending_line
sed -n $starting_line,$ending_line\p $file_name
```



```
bansi@bansi-VirtualBox:~/assignment4$ cat hello.txt
1. Hello World!
2. Hello World!
3. Hello World!
4. Hello World!
5. Hello World!
6. Hello World!
7. Hello World!
8. Hello World!
9. Hello Bansi!
bansi@bansi-VirtualBox:~/assignment4$ sudo chmod +x a4q1.sh
bansi@bansi-VirtualBox:~/assignment4$ ./a4q1.sh
Enter the file name: hello.txt
Enter the starting line: 6
Enter the ending line: 9
6. Hello World!
7. Hello World!
8. Hello World!
9. Hello Bansi!
```

2. Write a shell script that deletes all lines containing a specified word in one or more files supplied as arguments to it.

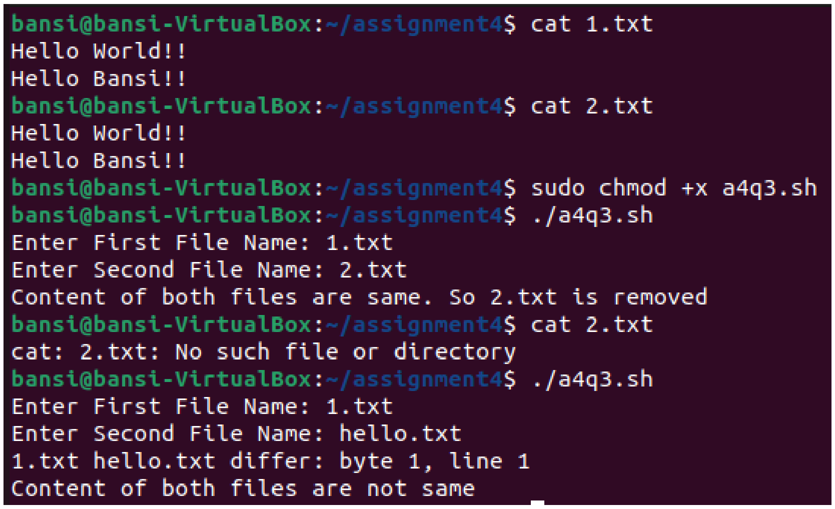
```
read -p "Enter file name: " file_name
read -p "Enter the word to be searched in the file: " word
echo "File after deletion: "
for file in file_name
do
        sed "/$word/d" $file_name | tee temp
        mv temp $file_name
done
```



```
bansi@bansi-VirtualBox:~/assignment4$ cat hello.txt
1. Hello World!
2. Hello World!
3. Hello World!
4. Hello World!
5. Hello World!
6. Hello World!
7. Hello World!
8. Hello World!
9. Hello Bansi!
bansi@bansi-VirtualBox:~/assignment4$ sudo chmod +x a4q2.sh
bansi@bansi-VirtualBox:~/assignment4$ ./a4q2.sh
Enter file name: hello.txt
Enter the word to be searched in the file: Bansi
File after deletion:
1. Hello World!
2. Hello World!
3. Hello World!
4. Hello World!
5. Hello World!
6. Hello World!
7. Hello World!
8. Hello World!
```

3. Write a shell script which receives two file names as arguments. It should check weather the two file contents are the same or not. If they are the same then the second file should be deleted.

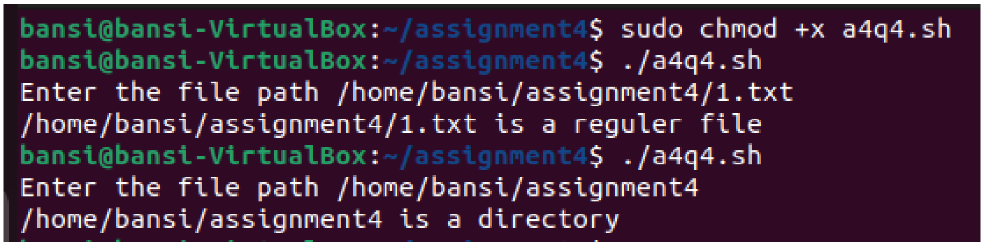
```
read -p "Enter First File Name: " file1
read -p "Enter Second File Name: " file2
if cmp $file1 $file2
then
        echo "Content of both files are same. So $file2 is removed"
        rm $file2
else
        echo "Content of both files are not same"
fi
```



```
bansi@bansi-VirtualBox:~/assignment4$ cat 1.txt
Hello World!!
Hello Bansi!!
bansi@bansi-VirtualBox:~/assignment4$ cat 2.txt
Hello World!!
Hello Bansi!!
bansi@bansi-VirtualBox:~/assignment4$ sudo chmod +x a4q3.sh
bansi@bansi-VirtualBox:~/assignment4$ ./a4q3.sh
Enter First File Name: 1.txt
Enter Second File Name: 2.txt
Content of both files are same. So 2.txt is removed
bansi@bansi-VirtualBox:~/assignment4$ cat 2.txt
cat: 2.txt: No such file or directory
bansi@bansi-VirtualBox:~/assignment4$ ./a4q3.sh
Enter First File Name: 1.txt
Enter Second File Name: hello.txt
1.txt hello.txt differ: byte 1, line 1
Content of both files are not same
```

4. Write a shell script which takes filename as argument and checks whether file is regular file, directory, block special file, character special file, named pipe, symbolic link, socket, device file etc.

```
read -p "Enter the file path " file_name
if [[ -f $file_name ]]
then
        echo "$file_name is a reguler file"
elif [[ -d $file_name ]]
then
        echo "$file_name is a directory"
elif [[ -c $file_name ]]
then
        echo "$file_name is character special file"
elif [[ -b $file_name ]]
then
        echo "$file_name is block special file"
elif [[ -s $file_name ]]
then
        echo "$FILE is socket"
elif [[ -p $file_name ]]
then
        echo "$file_name is named pipe"
elif [[ -s $file_name ]]
then
        echo "$file_name is symbolic link"
fi
```

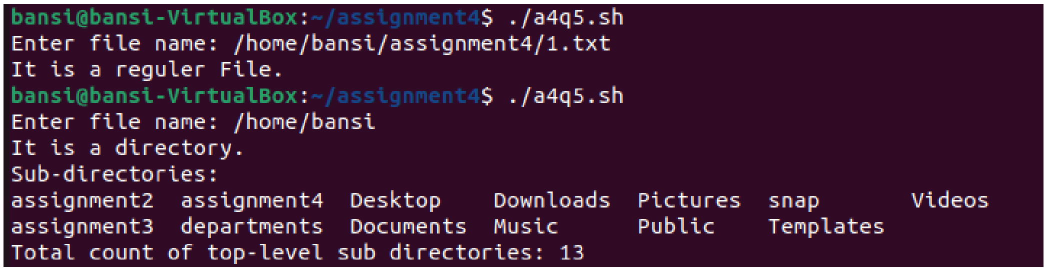


```
bansi@bansi-VirtualBox:~/assignment4$ sudo chmod +x a4q4.sh
bansi@bansi-VirtualBox:~/assignment4$ ./a4q4.sh
Enter the file path /home/bansi/assignment4/1.txt
/home/bansi/assignment4/1.txt is a reguler file
bansi@bansi-VirtualBox:~/assignment4$ ./a4q4.sh
Enter the file path /home/bansi/assignment4
/home/bansi/assignment4 is a directory
```

5. Write a shell script which will take file name as argument and check whether the file name is a directory or not and then proceed further only if it is a directory, else give usage messages. The script should then print in the tabular format, name of each sub-directory (within the argument directory) and a count of the number of top level files in that sub-dir. Modify the program to work with multiple numbers of arguments, too.

```
if [ -f $file_name ]
then
        echo "It is a reguler File."
        exit 0
elif [ -d $file_name ]
then
```

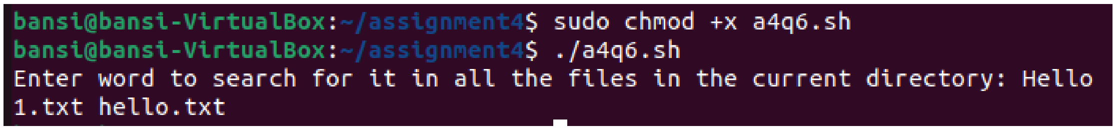
```
        echo "It is a directory."
        echo "Sub-directories: "
        ls $file_name
        echo -n "Total count of top-level sub directories: "
        ls $file_name | wc -l
        exit 1
else
        echo "File is of another type"
        exit 2
fi
```



```
bansi@bansi-VirtualBox:~/assignment4$ ./a4q5.sh
Enter file name: /home/bansi/assignment4/1.txt
It is a reguler File.
bansi@bansi-VirtualBox:~/assignment4$ ./a4q5.sh
Enter file name: /home/bansi
It is a directory.
Sub-directories:
assignment2  assignment4  Desktop    Downloads  Pictures  snap       Videos
assignment3  departments  Documents  Music      Public    Templates
Total count of top-level sub directories: 13
```

6. Write a script that will search for a specific word in all the files in the current directory and then prompt with the file name in which word is found.

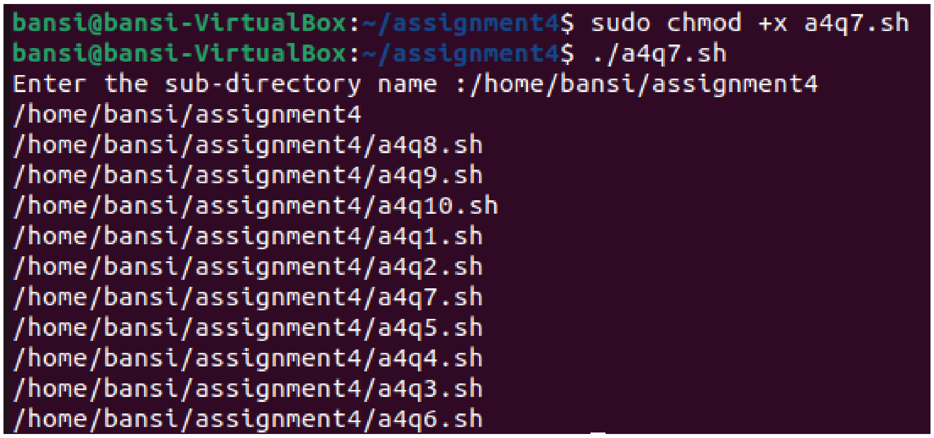
```
read -p "Enter word to search for it in all the files in the current directory: " word
echo $(grep -r -l $word)
```



```
bansi@bansi-VirtualBox:~/assignment4$ sudo chmod +x a4q6.sh
bansi@bansi-VirtualBox:~/assignment4$ ./a4q6.sh
Enter word to search for it in all the files in the current directory: Hello
1.txt hello.txt
```

7. Write a script to print only the number of executable files in each sub-directory of the argument directory specified.

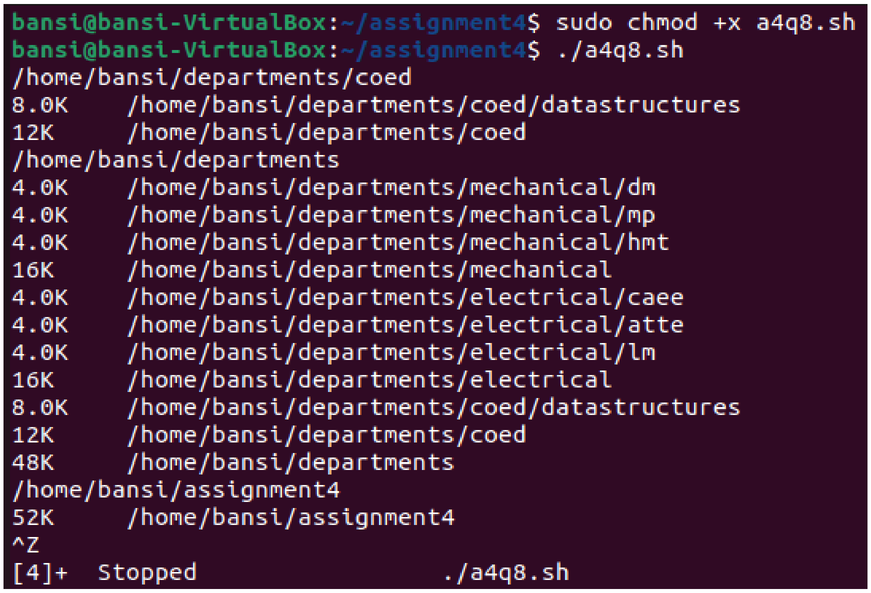
```
read -p "Enter the sub-directory name :" file_name
find $file_name –executable
```



```
bansi@bansi-VirtualBox:~/assignment4$ sudo chmod +x a4q7.sh
bansi@bansi-VirtualBox:~/assignment4$ ./a4q7.sh
Enter the sub-directory name :/home/bansi/assignment4
/home/bansi/assignment4
/home/bansi/assignment4/a4q8.sh
/home/bansi/assignment4/a4q9.sh
/home/bansi/assignment4/a4q10.sh
/home/bansi/assignment4/a4q1.sh
/home/bansi/assignment4/a4q2.sh
/home/bansi/assignment4/a4q7.sh
/home/bansi/assignment4/a4q5.sh
/home/bansi/assignment4/a4q4.sh
/home/bansi/assignment4/a4q3.sh
/home/bansi/assignment4/a4q6.sh
```

8. Write a non-interactive script that takes in any no. of directory name as argument and calculates total no. of blocks of disk space occupied by the ordinary files in all the directories.

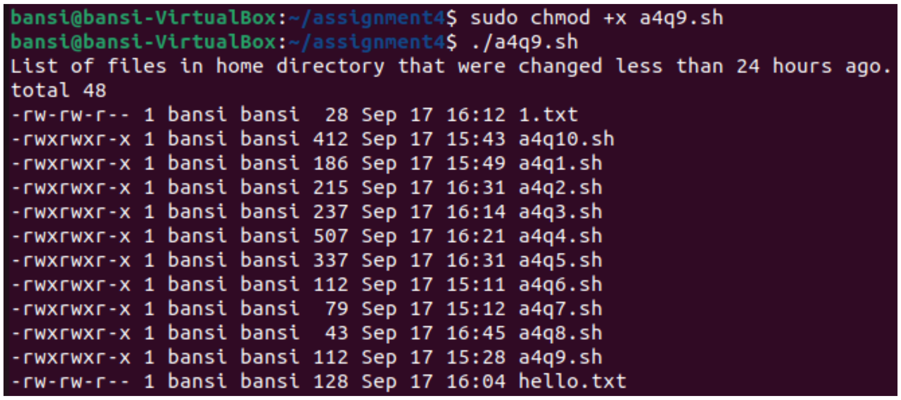
```
while true
do
        read path
        du -h $path
done
```



```
bansi@bansi-VirtualBox:~/assignment4$ sudo chmod +x a4q8.sh
bansi@bansi-VirtualBox:~/assignment4$ ./a4q8.sh
/home/bansi/departments/coed
8.0K    /home/bansi/departments/coed/datastructures
12K     /home/bansi/departments/coed
/home/bansi/departments
4.0K    /home/bansi/departments/mechanical/dm
4.0K    /home/bansi/departments/mechanical/mp
4.0K    /home/bansi/departments/mechanical/hmt
16K     /home/bansi/departments/mechanical
4.0K    /home/bansi/departments/electrical/caee
4.0K    /home/bansi/departments/electrical/atte
4.0K    /home/bansi/departments/electrical/lm
16K     /home/bansi/departments/electrical
8.0K    /home/bansi/departments/coed/datastructures
12K     /home/bansi/departments/coed
48K     /home/bansi/departments
/home/bansi/assignment4
52K     /home/bansi/assignment4
^Z
[4]+  Stopped                 ./a4q8.sh
```

9. Write a shell script file named exercise2.sh that makes a list of files in your home directory that were changed less than 24 hours ago, but leave out directories.

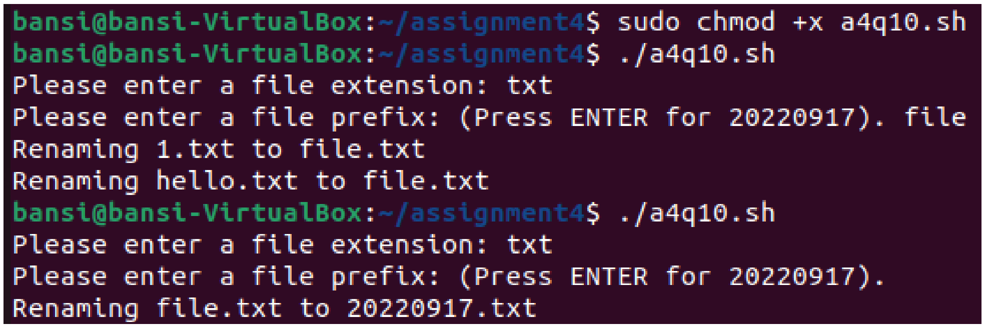
```
echo "List of files in home directory that were changed less than 24 hours ago."
echo "$(ls -l | grep -v '^$')"
```



```
bansi@bansi-VirtualBox:~/assignment4$ sudo chmod +x a4q9.sh
bansi@bansi-VirtualBox:~/assignment4$ ./a4q9.sh
List of files in home directory that were changed less than 24 hours ago.
total 48
-rw-rw-r-- 1 bansi bansi  28 Sep 17 16:12 1.txt
-rwxrwxr-x 1 bansi bansi 412 Sep 17 15:43 a4q10.sh
-rwxrwxr-x 1 bansi bansi 186 Sep 17 15:49 a4q1.sh
-rwxrwxr-x 1 bansi bansi 215 Sep 17 16:31 a4q2.sh
-rwxrwxr-x 1 bansi bansi 237 Sep 17 16:14 a4q3.sh
-rwxrwxr-x 1 bansi bansi 507 Sep 17 16:21 a4q4.sh
-rwxrwxr-x 1 bansi bansi 337 Sep 17 16:31 a4q5.sh
-rwxrwxr-x 1 bansi bansi 112 Sep 17 15:11 a4q6.sh
-rwxrwxr-x 1 bansi bansi  79 Sep 17 15:12 a4q7.sh
-rwxrwxr-x 1 bansi bansi  43 Sep 17 16:45 a4q8.sh
-rwxrwxr-x 1 bansi bansi 112 Sep 17 15:28 a4q9.sh
-rw-rw-r-- 1 bansi bansi 128 Sep 17 16:04 hello.txt
```

10. Write the script that renames files based on the file extension. Next, it should ask the user what prefix to prepend to the file name(s). By default, the prefix should be the current date in YYYY-MM-DD format. If the user simply press enter, the current date will be used. Otherwise, whatever the user entered will be used as the prefix. Next, it should display the original file name and new name of the file. Finally, it should rename the file.

```
read -p "Please enter a file extension: " extension
if [ ${#extension} -eq 0 ]
then
        echo "No file extension provided!"
        exit 1
fi
name=$(date +%Y%m%d)
read -p "Please enter a file prefix: (Press ENTER for ${name}). " new_name
if [ ${#new_name} -ne 0 ]
then
        name="${new_name}"
fi
for FILENAME in *.${extension}
do
        echo "Renaming $FILENAME to ${name}.${extension}"
        mv $FILENAME ${name}.${extension}
done
```



```
bansi@bansi-VirtualBox:~/assignment4$ sudo chmod +x a4q10.sh
bansi@bansi-VirtualBox:~/assignment4$ ./a4q10.sh
Please enter a file extension: txt
Please enter a file prefix: (Press ENTER for 20220917). file
Renaming 1.txt to file.txt
Renaming hello.txt to file.txt
bansi@bansi-VirtualBox:~/assignment4$ ./a4q10.sh
Please enter a file extension: txt
Please enter a file prefix: (Press ENTER for 20220917).
Renaming file.txt to 20220917.txt
```