

Assignment - 4 (Operating System)

U20CS110
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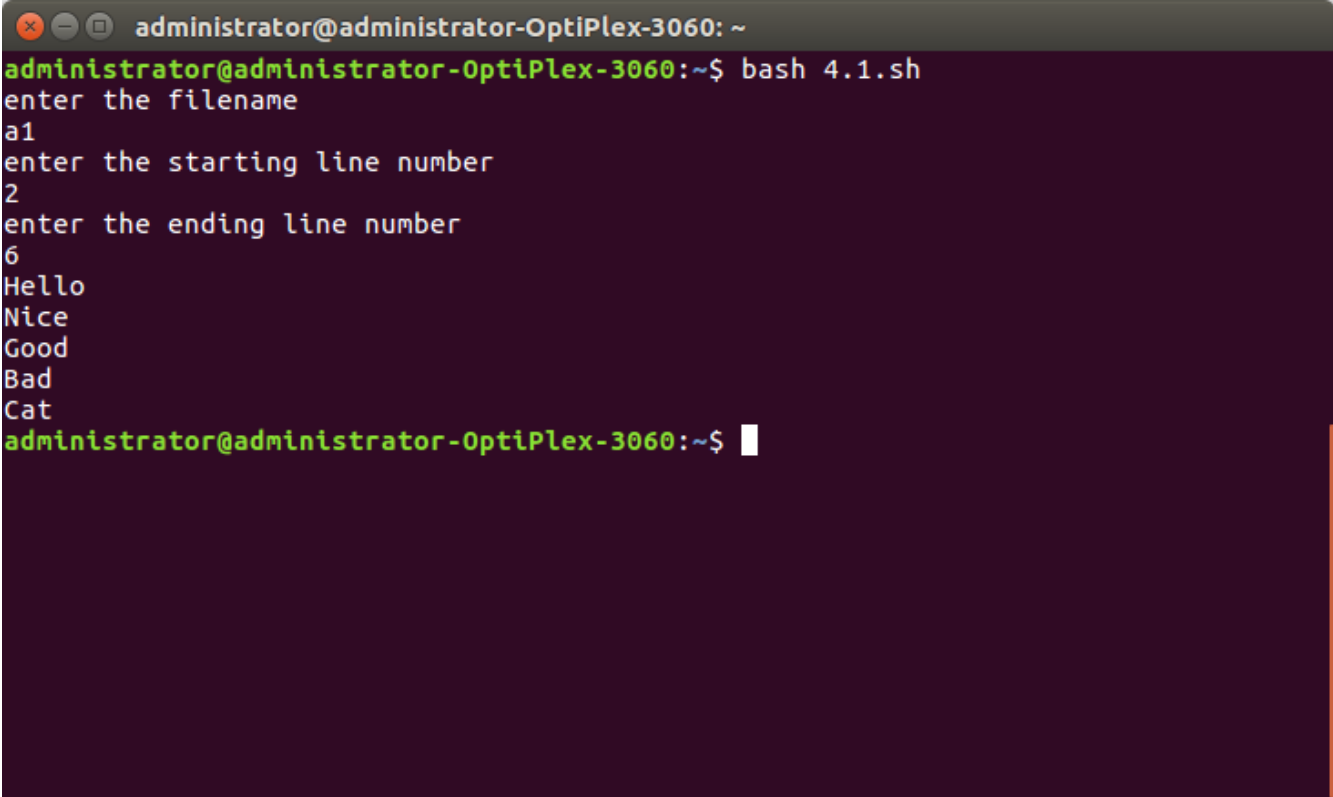
1. Write a shell script that accepts a file name starting and ending line numbers as arguments and displays all the lines between the given line numbers.

Ans.

Code.

```
echo "enter the filename"
read fname
echo "enter the starting line number"
read s
echo "enter the ending line number"
read n
sed -n $s,$n\p $fname | cat > newline
cat newline
```

Output:



```
administrator@administrator-OptiPlex-3060: ~
administrator@administrator-OptiPlex-3060:~$ bash 4.1.sh
enter the filename
a1
enter the starting line number
2
enter the ending line number
6
Hello
Nice
Good
Bad
Cat
administrator@administrator-OptiPlex-3060:~$
```

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

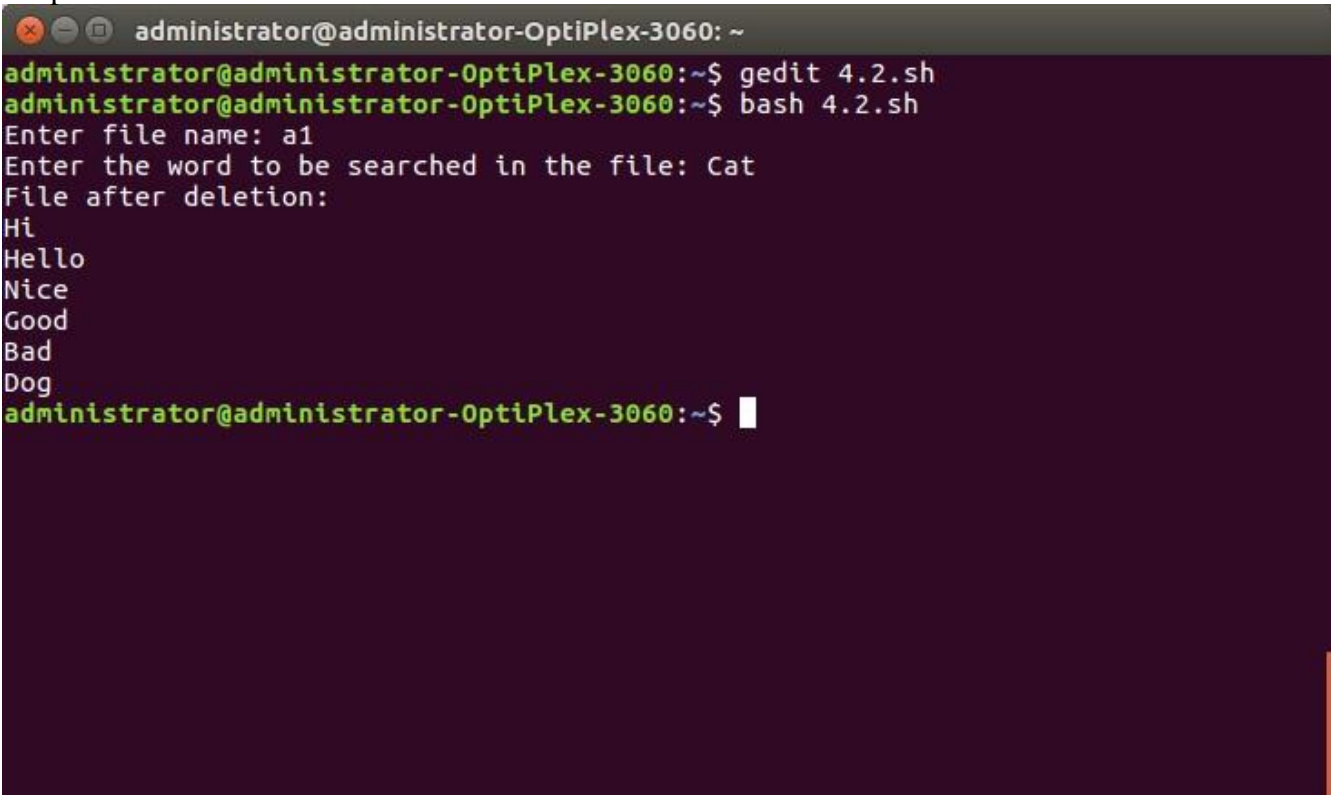
Ans.

Code.

```
echo -n "Enter file name: "
read FILE
```

```
echo -n "Enter the word to be searched in the file: "  
read word  
echo "File after deletion: "  
for file in FILE  
do  
sed "/$word/d" $FILE | tee tmp  
mv tmp $file  
done
```

Output.



```
administrator@administrator-OptiPlex-3060: ~  
administrator@administrator-OptiPlex-3060:~$ gedit 4.2.sh  
administrator@administrator-OptiPlex-3060:~$ bash 4.2.sh  
Enter file name: a1  
Enter the word to be searched in the file: Cat  
File after deletion:  
Hi  
Hello  
Nice  
Good  
Bad  
Dog  
administrator@administrator-OptiPlex-3060:~$
```

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

Ans.

Code.

```
echo -n "Enter first text file: "  
read text1  
echo -n "Enter second text file: "  
read text2  
if cmp -s -- "$text1" "$text2";  
then  
    rm -i -- "$text2"  
echo "Second file is deleted"  
fi
```

Output.

```
administrator@administrator-OptiPlex-3060: ~  
administrator@administrator-OptiPlex-3060:~$ bash 4.3.sh  
Enter first text file: a1  
Enter second text file: a2  
4.3.sh: line 10:  : command not found  
Second file is deleted  
administrator@administrator-OptiPlex-3060:~$
```

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.

Ans.

Code.

file a1

Output.

```
administrator@administrator-OptiPlex-3060: ~  
administrator@administrator-OptiPlex-3060:~$ file a1  
a1: ASCII text  
administrator@administrator-OptiPlex-3060:~$
```

5. Write a shell script which will take file name as argument and check whether the file name is a dir or not and then proceed further only if it is a dir, else give usage message. The script should then print in the tabular format, name of each sub-dir (within the argument dir) 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.

Ans.

Code.

Output.

```
administrator@administrator-OptiPlex-3060: ~  
administrator@administrator-OptiPlex-3060:~$ bash 4.5.sh  
Enter first text file: tanisha.txt  
The given argument does not exist on the file system.  
administrator@administrator-OptiPlex-3060:~$
```

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.

Ans.

Code.

```
grep -r -l "Krishna Pandey"
```

output:



```
(base) oogway@temple:~/sem 5/os/U20CS110_Asgmt-2_OS$ grep -r -l "Krishna"
1.txt
2.txt
(base) oogway@temple:~/sem 5/os/U20CS110_Asgmt-2_OS$ AC
```

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

Ans.

Code.

```
find . -executable
```

Output.

```
administrator@administrator-OptiPlex-3060: ~  
/AndroidStudioProjects/MyTestApplication/app/build/generated/not_namespaced_r_class_sources/debug/r/androidx/asyncLayoutInflater  
/AndroidStudioProjects/MyTestApplication/app/build/generated/not_namespaced_r_class_sources/debug/r/androidx/fragment  
/AndroidStudioProjects/MyTestApplication/app/build/generated/not_namespaced_r_class_sources/debug/r/androidx/swiperefreshlayout  
/AndroidStudioProjects/MyTestApplication/app/build/generated/not_namespaced_r_class_sources/debug/r/androidx/viewpager  
/AndroidStudioProjects/MyTestApplication/app/build/generated/not_namespaced_r_class_sources/debug/r/androidx/core  
/AndroidStudioProjects/MyTestApplication/app/build/generated/not_namespaced_r_class_sources/debug/r/androidx/constraintlayout  
/AndroidStudioProjects/MyTestApplication/app/build/generated/not_namespaced_r_class_sources/debug/r/androidx/constraintlayout/widget  
/AndroidStudioProjects/MyTestApplication/app/build/generated/not_namespaced_r_class_sources/debug/r/androidx/documentfile  
/AndroidStudioProjects/MyTestApplication/app/build/generated/not_namespaced_r_class_sources/debug/r/androidx/drawerlayout  
/AndroidStudioProjects/MyTestApplication/app/build/generated/not_namespaced_r_class_sources/debug/r/androidx/arch  
/AndroidStudioProjects/MyTestApplication/app/build/generated/not_namespaced_r_class_sources/debug/r/androidx/lifecycle  
/AndroidStudioProjects/MyTestApplication/app/build/generated/not_namespaced_r_class_sources/debug/r/androidx/lifecycle/livedata  
/AndroidStudioProjects/MyTestApplication/app/build/generated/not_namespaced_r_class_sources/debug/r/androidx/lifecycle/livedata/core  
/AndroidStudioProjects/MyTestApplication/app/build/generated/not_namespaced_r_class_sources/debug/r/androidx/lifecycle/viewmodel  
/AndroidStudioProjects/MyTestApplication/app/build/generated/not_namespaced_r_class_sources/debug/r/com  
/AndroidStudioProjects/MyTestApplication/app/build/generated/not_namespaced_r_class_sources/debug/r/com/example  
/AndroidStudioProjects/MyTestApplication/app/build/generated/not_namespaced_r_class_sources/debug/r/com/example/mytestapplication  
/AndroidStudioProjects/MyTestApplication/app/build/generated/ap_generated_sources/debug  
/AndroidStudioProjects/MyTestApplication/app/build/generated/ap_generated_sources/debug/out  
/AndroidStudioProjects/MyTestApplication/app/build/generated/source/buildConfig  
/AndroidStudioProjects/MyTestApplication/app/build/generated/source/buildConfig/debug  
/AndroidStudioProjects/MyTestApplication/app/build/generated/source/buildConfig/debug/com  
/AndroidStudioProjects/MyTestApplication/app/build/generated/source/buildConfig/debug/com/example  
/AndroidStudioProjects/MyTestApplication/app/build/generated/source/buildConfig/debug/com/example/mytestapplication  
/AndroidStudioProjects/MyTestApplication/app/build/generated/source/buildConfig/androidTest  
/AndroidStudioProjects/MyTestApplication/app/build/generated/source/buildConfig/androidTest/debug  
/AndroidStudioProjects/MyTestApplication/app/build/generated/source/buildConfig/androidTest/debug/com  
/AndroidStudioProjects/MyTestApplication/app/build/generated/source/buildConfig/androidTest/debug/com/example  
/AndroidStudioProjects/MyTestApplication/app/build/generated/source/buildConfig/androidTest/debug/com/example/mytestapplication  
/AndroidStudioProjects/MyTestApplication/app/build/generated/source/buildConfig/androidTest/debug/com/example/mytestapplication/test  
/AndroidStudioProjects/MyTestApplication/app/libs  
/AndroidStudioProjects/MyTestApplication/gradle  
/AndroidStudioProjects/MyTestApplication/gradle/wrapper  
/AndroidStudioProjects/MyTestApplication/.gradle  
/AndroidStudioProjects/MyTestApplication/.gradle/5.4.1  
/AndroidStudioProjects/MyTestApplication/.gradle/5.4.1/vcsMetadata-1  
/AndroidStudioProjects/MyTestApplication/.gradle/5.4.1/fileHashes  
/AndroidStudioProjects/MyTestApplication/.gradle/5.4.1/executionHistory  
/AndroidStudioProjects/MyTestApplication/.gradle/5.4.1/fileContent  
/AndroidStudioProjects/MyTestApplication/.gradle/5.4.1/fileChanges  
/AndroidStudioProjects/MyTestApplication/.gradle/5.4.1/javaCompile  
/AndroidStudioProjects/MyTestApplication/.gradle/buildOutputCleanUp  
/AndroidStudioProjects/MyTestApplication/.gradle/vcs-1  
/AndroidStudioProjects/MyTestApplication/.idea  
/AndroidStudioProjects/MyTestApplication/.idea/codeStyles  
/AndroidStudioProjects/MyTestApplication/.idea/caches  
/AndroidStudioProjects/MyTestApplication/.idea/libraries  
/Public  
/lex  
/UI9CS118  
/UI9CS118/client  
/UI9CS118/g2  
/UI9CS118/rev_server  
/UI9CS118/server.c  
/UI9CS118/server  
/UI9CS118/client.c  
/UI9CS118/rev_client  
administrator@administrator-OptiPlex-3060:~$
```

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.

Ans.

Code.

```
du -h /home/administrator/Documents/
```

Output.

```
administrator@administrator-OptiPlex-3060: ~  
/  
16K /home/administrator/Documents/Exam  
56K /home/administrator/Documents/DS_LAB_EXAM/yacc  
84K /home/administrator/Documents/DS_LAB_EXAM/ForLoop  
144K /home/administrator/Documents/DS_LAB_EXAM  
60K /home/administrator/Documents/Desktop/libgraph-1.0.2/.deps  
240K /home/administrator/Documents/Desktop/libgraph-1.0.2/Font  
276K /home/administrator/Documents/Desktop/libgraph-1.0.2/doc/man  
412K /home/administrator/Documents/Desktop/libgraph-1.0.2/doc  
1.2M /home/administrator/Documents/Desktop/libgraph-1.0.2/.libs  
4.2M /home/administrator/Documents/Desktop/libgraph-1.0.2  
20K /home/administrator/Documents/Desktop/ST4  
20K /home/administrator/Documents/Desktop/U20EC019  
4.8M /home/administrator/Documents/Desktop  
8.0K /home/administrator/Documents/Practice  
5.6M /home/administrator/Documents/  
administrator@administrator-OptiPlex-3060:~$
```

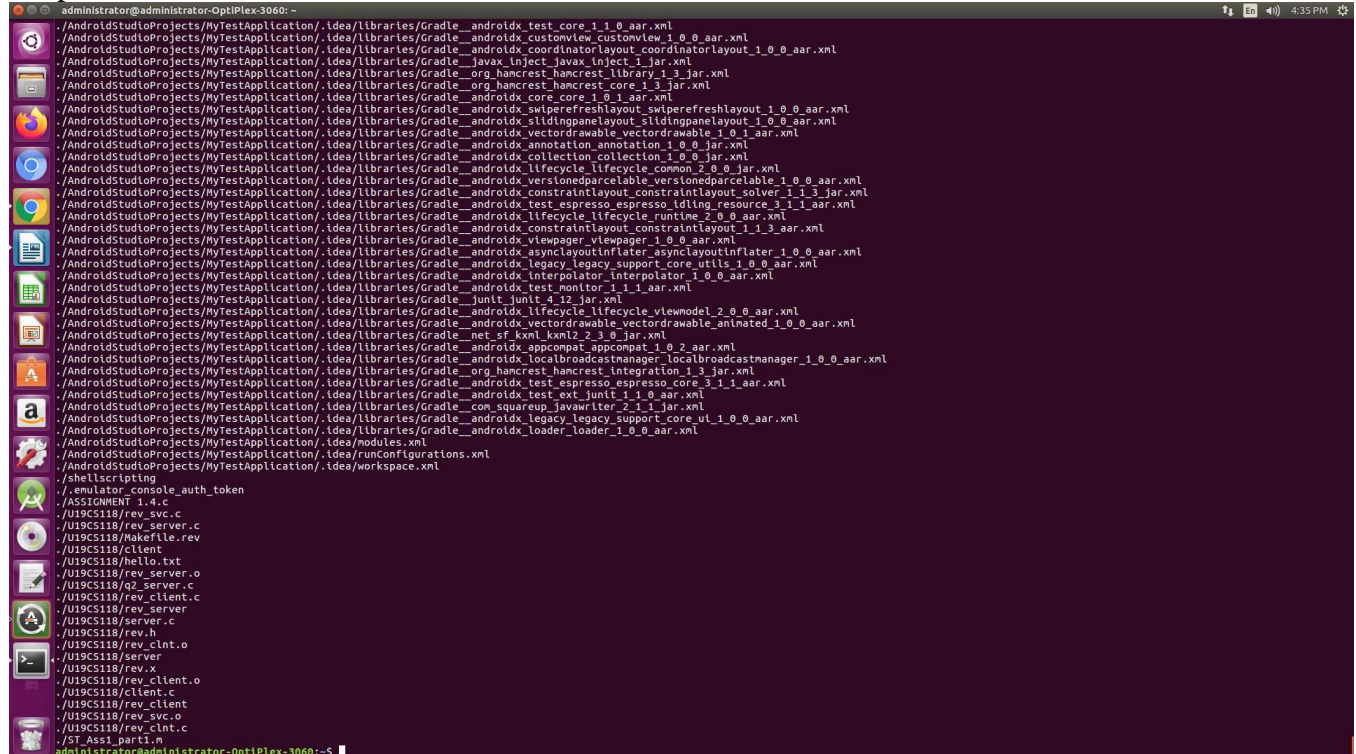

9. Write a shell script file named exercise2.sh that makes a list of files in your home directory that were changed less than 24 hours ago, but leave out directories.

Ans.

Code.

```
find -type f -mtime +1
```

Output.



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.

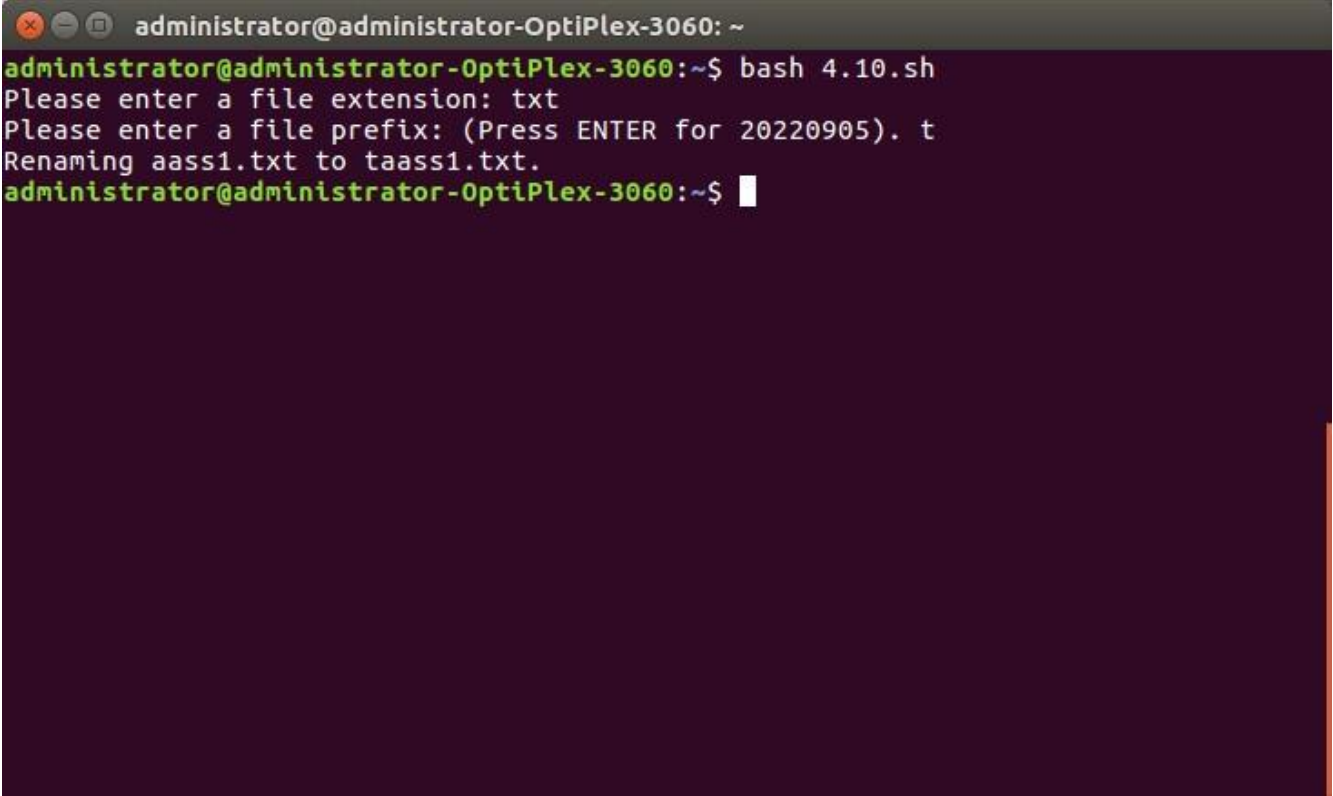
Ans.

Code.

```
read -p "Please enter a file extension: " EXTENSION
if [ ${#EXTENSION} -eq 0 ]
then
    echo "No file extension provided. Aborting."
    exit 1
fi
PREFIX=$(date +%Y%m%d)
read -p "Please enter a file prefix: (Press ENTER for ${PREFIX}). " NEW_PREFIX
if [ ${#NEW_PREFIX} -ne 0 ]
then
    PREFIX="${NEW_PREFIX}"
fi
shopt -s nullglob
```

```
for FILENAME in *.${EXTENSION}
do
    NEW_FILENAME="${PREFIX}${FILENAME}"
    echo "Renaming ${FILENAME} to ${NEW_FILENAME}."
    mv "${FILENAME}" "${NEW_FILENAME}"
done
shopt -u nullglob
```

Output.

A terminal window with a dark purple background and a grey title bar. The title bar contains window control icons and the text 'administrator@administrator-OptiPlex-3060: ~'. The terminal shows the execution of a script named '4.10.sh'. It prompts for a file extension, which is 'txt', and a file prefix, which is 't'. It then shows the command 'mv' being used to rename 'aass1.txt' to 'taass1.txt'.

```
administrator@administrator-OptiPlex-3060: ~
administrator@administrator-OptiPlex-3060:~$ bash 4.10.sh
Please enter a file extension: txt
Please enter a file prefix: (Press ENTER for 20220905). t
Renaming aass1.txt to taass1.txt.
administrator@administrator-OptiPlex-3060:~$
```