**MANGALORE UNIVERSITY**

**Bachelor of Computer Applications (BCA) Degree Programme**

**Choice Based Credit System (2019-2020 Onwards)**

**III Semester – Practicals**

**BCAP 234**

**Operating Systems and Data Structures Lab**

**Part - B:**

Linux Shell Programs

**1. Write a menu driven shell script for the following.**

**(a) Rename a file (check for the existence of the source file)**

**(b) Display the current working directory**

**(c) List the users logged in.**

**Answer:**

clear

while true

do

echo Menu

echo 1. Rename a file

echo 2. Display the current working directory

echo 3. List the users logged in

echo 4. Exit

echo Enter the option

read opt

case $opt in

1)echo Enter the source file

read file

if test -f $file

then

echo Enter the new name for the file

read temp

mv $file $temp

echo The file $file renamed to $temp

else

echo file does not exist

fi

;;

2)x= 'pwd'

echo Current working directory is : $x

;;

3)echo Users logged in are

who

;;

4)exit

;;

\*)

echo Invalid option!

;;

esac

done

**Output:**

Menu

1. Rename a file

2. Display the current working directory

3. List the users logged in

4. Exit

Enter the option

1

Enter the source file

a.txt

file does not exist

Menu

1. Rename a file

2. Display the current working directory

3. List the users logged in

4. Exit

Enter the option

1

Enter the source file

rename.txt

Enter the new name for the file

renamed.txt

The file rename.txt renamed to renamed.txt

Menu

1. Rename a file

2. Display the current working directory

3. List the users logged in

4. Exit

Enter the option

2

/home/vignesh/linux\_shell

Current working directory is :

Menu

1. Rename a file

2. Display the current working directory

3. List the users logged in

4. Exit

Enter the option

3

Users logged in are

vignesh :0 2021-02-19 14:44 (:0)

Menu

1. Rename a file

2. Display the current working directory

3. List the users logged in

4. Exit

Enter the option

4

**2. Write a shell script to accept many filenames through command line. Do the following for each filename (a) If it is an ordinary file, display its content and also check whether it has execute permission. (b) If it is directory, display the number of files in it. (c) If the file/directory does not exist, display a message**

**Answer:**

for file in $\*

do

if [ -f $file ]

then

echo "$file is ordinary file"

echo "content of $ file is"

cat $file

if [ -x $file ]

then

echo "file has executable permission"

else

echo "file does not have executable permission"

fi

elif [ -d $file ]

then

echo "$file is directory"

cd $file

ls -l

echo "number of file is"

ls | wc -l

cd ..

else

echo "the $file does not exist"

fi

done

**Output:**

vignesh@vignesh-VirtualBox:~/linux\_shell$ sh prg2.sh a.txt

a.txt is ordinary file

content of $ file is

hello

file has executable permission

vignesh@vignesh-VirtualBox:~/linux\_shell$ sh prg2.sh b.txt

b.txt is ordinary file

content of $ file is

linux shell

hello

file does not have executable permission

vignesh@vignesh-VirtualBox:~/linux\_shell$ sh prg2.sh college

college is directory

total 8

-rw-rw-r-- 1 vignesh vignesh 20 Feb 28 12:16 bca.txt

-rw-rw-r-- 1 vignesh vignesh 21 Feb 28 12:17 bcom.txt

number of file is

2

**3. Write a menu driven shell script for the following. (a) Append the contents of a file to another file (Display the message if the file doesn’t exist in the directory). (b) List all file names/ directory names in the present working directory which has the specified pattern (c) Assign execute permission to a specified file for the owner and group. [Note: create files/directories with different permissions for the first two options]**

**Answer:**

y=1

while test $y -eq 1

do

echo "Main"

echo "1. Append the content of one file to another file"

echo "2. List all the files/directory names"

echo "3. Assign execution permission"

echo "Enter your choice"

read opt

case $opt in

1) echo "Enter the filename 1"

read file1

echo "Enter the filename 2"

read file2

if test -f $file1

then

if test -f $file2

then

cat $file1 >> $file2

echo "file 1 content appende to file 2"

cat $file2

else

echo "Destination file does mot exist"

fi

else

echo "Source file does not exist"

fi

;;

2)echo "Enter the pattern"

read m

ls $m

;;

3) echo "Enter file name"

read f1

if test -f $f1

then echo "Permission before updating"

ls -l $f1

chmod u+x,g+x $f1

echo "Permission after updating"

ls -l $f1

else

echo "File does not exist"

fi

;;

\*)echo "invaiid choice"

;;

esac

echo "Do you want to continue 0/1"

read y

done

**Output:**

Main

1. Append the content of one file to another file

2. List all the files/directory names

3. Assign execution permission

Enter your choice

1

Enter the filename 1

a.txt

Enter the filename 2

b.txt

file 1 content appende to file 2

linux shell

hello

Do you want to continue 0/1

1

Main

1. Append the content of one file to another file

2. List all the files/directory names

3. Assign execution permission

Enter your choice

2

Enter the pattern

-l

total 44

-rw-rw-r-- 1 vignesh vignesh 6 Feb 28 11:55 a.txt

-rw-rw-r-- 1 vignesh vignesh 18 Feb 28 12:04 b.txt

-rw-rw-r-- 1 vignesh vignesh 9 Feb 26 15:33 file1.txt

-rw-rw-r-- 1 vignesh vignesh 37 Feb 28 11:59 file2

drwxrwxr-x 2 vignesh vignesh 4096 Feb 26 15:32 fortest

-rw-rw-r-- 1 vignesh vignesh 844 Feb 28 12:03 p3.sh

-rw-rw-r-- 1 vignesh vignesh 6 Feb 26 14:50 peg2.sh

-rwxrwxr-- 1 vignesh vignesh 519 Feb 19 15:52 prg1.sh

-rw-rw-r-- 1 vignesh vignesh 379 Feb 26 15:18 prg2.sh

-rw-rw-r-- 1 vignesh vignesh 525 Feb 19 15:15 program1\_test.txt

-rwxrwxr-x 1 vignesh vignesh 31 Feb 19 15:42 renamed.txt

Do you want to continue 0/1

1

Main

1. Append the content of one file to another file

2. List all the files/directory names

3. Assign execution permission

Enter your choice

3

Enter file name

a.txt

Permission before updating

-rw-rw-r-- 1 vignesh vignesh 6 Feb 28 11:55 a.txt

Permission after updating

-rwxrwxr-- 1 vignesh vignesh 6 Feb 28 11:55 a.txt

Do you want to continue 0/1

0

**4. Write a shell script to accept your option for deleting (-d) or for copying (-c) a file and filename(s) through command line arguments**

**(Ex. For deletion: $sh filename –d file1; for copying: $sh filename –c file1 file2) and check for the following:**

**(a) Check whether the given arguments are sufficient for the selected option.**

**(b) File to be copied or deleted must be present in the directory.**

**c) While copying, if the destination file already exists, prompt for overwriting**

**Answer:**

op=$1

case $op in

-d) if test $# -eq 2

then

if test -f $2

then

rm $2

echo "file is deleted"

else

echo "file doesnot exist"

fi

else

echo "invalid no of parameters"

fi

;;

-c) if test $# -eq 3

then

if test -f $2

then

if test -f $3

then

echo "do you want to overwrite"

read ch

if test $ch = y

then

cp $2 $3

echo "file is overwritten"

else

cp $2 $3

echo "file is copied"

fi

else

echo "source file doesnot exist"

fi

else

echo "destination file doesnot exist"

fi

else

echo "invalid no of parameters"

fi

;;

\*)

echo "invalid option"

;;

esac

**Output:**

vignesh@vignesh-VirtualBox:~/linux\_shell$ cat > a.txt

bca

^Z

[6]+ Stopped cat > a.txt

vignesh@vignesh-VirtualBox:~/linux\_shell$ cat > b.txt

college

^Z

[7]+ Stopped cat > b.txt

vignesh@vignesh-VirtualBox:~/linux\_shell$ cat > c.txt

linux

^Z

[8]+ Stopped cat > c.txt

vignesh@vignesh-VirtualBox:~/linux\_shell$ sh p4.sh -d c.txt

file is deleted

vignesh@vignesh-VirtualBox:~/linux\_shell$ sh p4.sh –e C.txt

invalid no of parameters

vignesh@vignesh-VirtualBox:~/linux\_shell$ cat a.txt

bca

vignesh@vignesh-VirtualBox:~/linux\_shell$ cat b.txt

college

vignesh@vignesh-VirtualBox:~/linux\_shell$ sh p4.sh -c a.txt b.txt

do you want to overwrite

1

file is copied

vignesh@vignesh-VirtualBox:~/linux\_shell$ cat a.txt

bca

vignesh@vignesh-VirtualBox:~/linux\_shell$ cat b.txt

bcavignesh@vignesh-VirtualBox:~/linux\_shell$ sh p4.sh -c f.txt a.txt

destination file doesnot exist

vignesh@vignesh-VirtualBox:~/linux\_shell$ sh p4.sh -c c.txt e.txt

source file doesnot exist

vignesh@vignesh-VirtualBox:~/linux\_shell$ sh p4.sh -d f.txt

file doesnot exist

**5. Write a shell script to accept many characters and count individual vowels, digits, spaces, special characters and consonants.**

clear

echo "Enter a string"

read s

len=`echo $s | wc -c`

len=`expr $len - 1`

a=0

e=0

i=0

o=0

u=0

dig=0

sp=0

con=0

sch=0

j=' '

n=1

while [ $n -le $len ]

do

h=`echo "$s"|cut -c $n`

case $h in

[aA]) a=`expr $a + 1`

;;

[eE]) e=`expr $e + 1`

;;

[iI]) i=`expr $i + 1`

;;

[oO]) o=`expr $o + 1`

;;

[uU]) u=`expr $u + 1`

;;

[0-9]) dig=`expr $dig + 1`

;;

$j) sp=`expr $sp + 1`

;;

[b-zB-Z]) con=`expr $con + 1`

;;

\*) sch=`expr $sch + 1`

;;

esac

n=`expr $n + 1`

done

echo "Total number of a = $a"

echo "Total number of e = $e"

echo "Total number of i = $i"

echo "Total number of o = $o"

echo "Total number of u = $u"

echo "Total number of digits = $dig"

echo "Total number of space = $sp"

echo "Total number of constant = $con"

echo "Total number of special character = $sch"

**Output :**

Enter a string

aeiou 1234 bcdj @#$%

Total number of a = 1

Total number of e = 1

Total number of i = 1

Total number of o = 1

Total number of u = 1

Total number of digits = 4

Total number of space = 3

Total number of constant = 4

Total number of special character = 4