Linux Lab week 4 and 5

Week 4:

Write a shell script that accept a list of file names as arguments count and report the occurrence of each word.

Code:

```
if [ $# -eq 0 ]
then
echo "no arguments"
else
tr " " "
" < $1 > temp
shift
for i in $*
do
tr " " "
" < $i > temp1
y=`wc -l < temp`
j=1
while [ $j -le $y ]
do
x=`head -n $j temp | tail -1`
c=`grep -c "$x" temp1`
echo $x $c
j=`expr $j   1`
done
done
fi
```

Input and output:

```
$sh 9a.sh hegde.sh ravi.sh
Raghu 2
Hary 1
Vinay 9
```

write a shell script to find the factorial of given integer.

Code:

```
# !/bin/bash
```

```
echo "enter a number"
read num
fact=1
while [ $num -ge 1 ]
do
fact=`expr  $fact\* $num`
num='expr $num – 1'
done
echo "factorial of $n is $fact"
```

Input and output:

```
guest-glcbls@ubuntu:~$sh lprg7.sh
enter a number
4
Factorial of 4 is 24
```

write a shell script that list the all files in a director

Code:

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

Output:

```
guest-glcbIs@ubuntu:~$sh lprg6.sh
enter directory name
dir1
list of files in the directory
drwxrwxr-x 4 guest-glcbls guest-glcbls 140 2012-07-06 14:40 dir1
```

Week 5:

Write a awk script to find the number of characters, words and lines in a file.

Code:

```
BEGIN{print "record.\t characters \t words"}
```

```
#BODY section
{
len=length($0)
total_len =len
print(NR,":\t",len,":\t",NF,$0)
words =NF
}
END{
print("\n total")
print("characters :\t" total len)
print("lines :\t" NR)
}
```

Output:

```
Student@ubuntu:~$ awk –f cnt.awk ff1
Record  words
1:          5:          1hello
Total
Characters:5
Lines:1
```

Write a C Program that makes a copy of a file using standard I/O and system calls

Code:

```
#include <stdio.h>
#include <unistd.h>
#include <fcntl.h>
void typefile (char *filename)
{
int fd, nread;
char buf[1024];
fd = open (filename, O_RDONLY);
if (fd == -1) {
perror (filename);
return;
}
while ((nread = read (fd, buf, sizeof (buf))) > 0)
write (1, buf, nread);
close (fd);
}
int
main (int argc, char **argv)
{
int argno;
for (argno = 1; argno < argc; argno  )
```

```
typefile (argv[argno]);
exit (0);
}
```

Output:

```
student@ubuntu:~$gcc –o prg10.out prg10.c
student@ubuntu:~$cat > ff
hello
hai
student@ubuntu:~$./prg10.out ff
hello
hai
```

Implement in C the following Unix commands using system calls A) cat B) mv

A)cat

Code:

```
#include<sys/types.h>
#include<sys/stat.h>
#include<stdio.h>
#include<fcntl.h>
main( int argc,char *argv[3] )
{
int fd,i;
char buf[2];
fd=open(argv[1],O_RDONLY,0777);
if(fd==-argc)
{
printf("file open error");
}
else
{
while((i=read(fd,buf,1))>0)
{
printf("%c",buf[0]);
}
close(fd);
}
}
```

Output:

```
student@ubuntu:~$gcc –o prgcat.out prgcat.c
```

```
student@ubuntu:~$cat > ff
hello
hai
student@ubuntu:~$./prgcat.out ff
hello
hai
```

B)mv

Code:

```
#include<sys/types.h>
#include<sys/stat.h>
#include<stdio.h>
#include<fcntl.h>
main( int argc,char *argv[] )
{
int i,fd1,fd2;
char *file1,*file2,buf[2];
file1=argv[1];
file2=argv[2];
printf("file1=%s file2=%s",file1,file2);
fd1=open(file1,O_RDONLY,0777);
fd2=creat(file2,0777);
while(i=read(fd1,buf,1)>0)
write(fd2,buf,1);
remove(file1);
close(fd1);
close(fd2);
}
```

Output:

```
student@ubuntu:~$gcc –o mvp.out mvp.c
student@ubuntu:~$cat > ff
hello
hai
student@ubuntu:~$./mvp.out ff ff1
student@ubuntu:~$cat  ff
cat:ff:No such file or directory
student@ubuntu:~$cat ff1
hello
hai
```