

LINUX ASSIGNMENT: 1

1. Write a program using file operations that demonstrates copying of data from input file and write into output file, until reaches end of file data.

Code :

```
#include<stdio.h>
#include<fcntl.h>
#include<unistd.h>

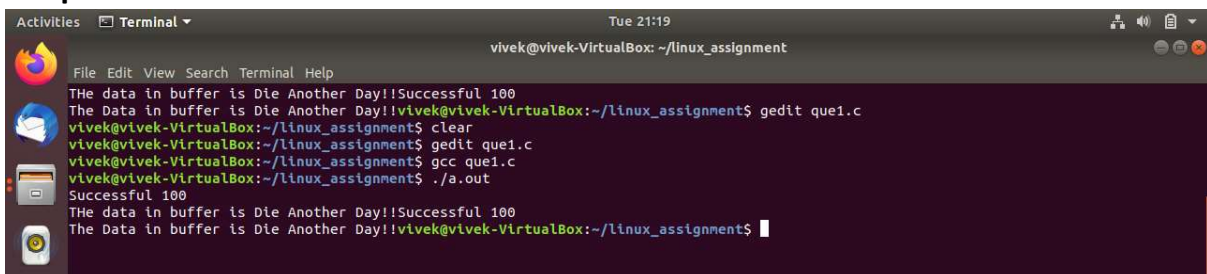
int main()
{
    int fd1,fd2,len,pen;
    char rit_buf[100]="Die Another Day!!";
    char red_buf[100];

    fd1=open("/home/vivek/linux_assignment/data2.txt",O_CREAT | O_RDWR,0777);
    len=write(fd1,rit_buf,100);
    printf("Successful %d\n",len);

    lseek(fd1,0,SEEK_SET);
    read(fd1,red_buf,len);
    printf("The data in buffer is %s",red_buf);
    close(fd1);

    fd2=open("/home/vivek/linux_assignment/data2.txt",O_CREAT | O_RDWR,0777);
    pen=write(fd2,red_buf,100);
    printf("Successful %d\n",pen);
    lseek(fd2,0,SEEK_SET);
    read(fd2,red_buf,len);
    printf("The Data in buffer is %s",red_buf);
    close(fd2);
    return 0;
}
```

Output:



```
Activities  Terminal  Tue 21:19
vivek@vivek-VirtualBox: ~/linux_assignment

The data in buffer is Die Another Day!!Successful 100
The Data in buffer is Die Another Day!!vivek@vivek-VirtualBox:~/linux_assignment$ gedit que1.c
vivek@vivek-VirtualBox:~/linux_assignment$ clear
vivek@vivek-VirtualBox:~/linux_assignment$ gedit que1.c
vivek@vivek-VirtualBox:~/linux_assignment$ gcc que1.c
vivek@vivek-VirtualBox:~/linux_assignment$ ./a.out
Successful 100
The data in buffer is Die Another Day!!Successful 100
The Data in buffer is Die Another Day!!vivek@vivek-VirtualBox:~/linux_assignment$
```

2. Write a program that demonstrates repositioning of file offset using SEEK_SET, SEEK_END and SEEK_CUR.

Code:

```
#include<stdio.h>
#include<fcntl.h>
#include<unistd.h>
int main()
{
    int fd1;
    char k[50];
    fd1=open("/home/vivek/linux_assignment/data1.txt",O_RDONLY,0775);
    lseek(fd1,0,SEEK_END);
    read(fd1,k,30);
    printf("%s\n",k);

    lseek(fd1,0,SEEK_SET);
    read(fd1,k,17);
    printf("%s\n",k);


    lseek(fd1,10,SEEK_CUR);
    read(fd1,k,7);
    printf("%s\n",k);

    close(fd1);

    return 0;

}
```

Output:



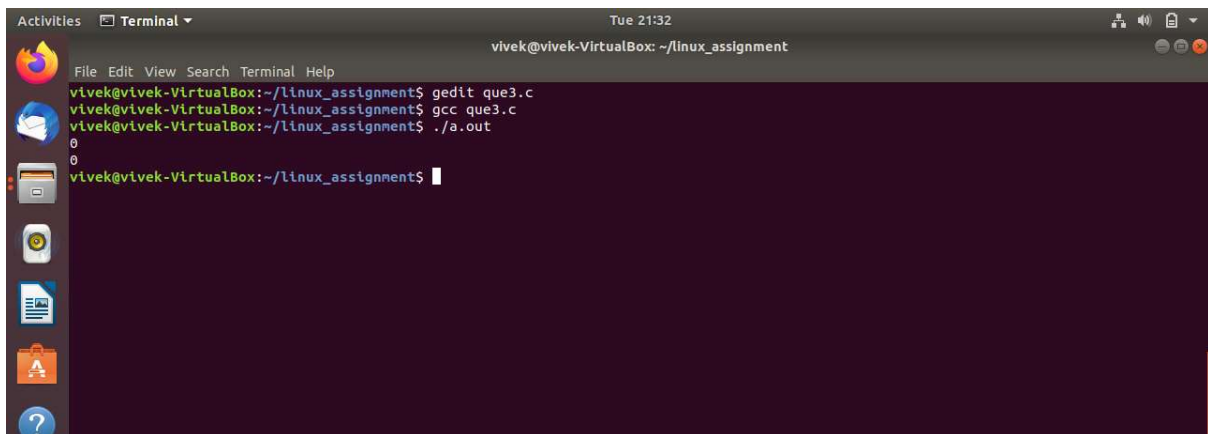
```
vivek@vivek-VirtualBox:~/linux_assignment$ gedit que2.c
vivek@vivek-VirtualBox:~/linux_assignment$ gcc que2.c
vivek@vivek-VirtualBox:~/linux_assignment$ ./a.out
HELLO
? HELLO
```

3. Write program that returns “ls -l” kind of structure of information from an existing file or open file.

Code:

```
#include<stdio.h>
#include<unistd.h>
#include<fcntl.h>
#include<sys/stat.h>
#include<sys/types.h>
int main()
{
    int f1;
    struct stat st;
    f1 =open ("input.txt",O_RDONLY,0775);
    stat("input.txt",&st);
    printf("%lu\n",st.st_size);
    printf("%lu\n",st.st_ino);
    return 0;
}
```

Output:



```
Activities Terminal Tue 21:32
vivek@vivek-VirtualBox: ~/linux_assignment
File Edit View Search Terminal Help
vivek@vivek-VirtualBox:~/linux_assignment$ gedit que3.c
vivek@vivek-VirtualBox:~/linux_assignment$ gcc que3.c
vivek@vivek-VirtualBox:~/linux_assignment$ ./a.out
0
0
vivek@vivek-VirtualBox:~/linux_assignment$
```

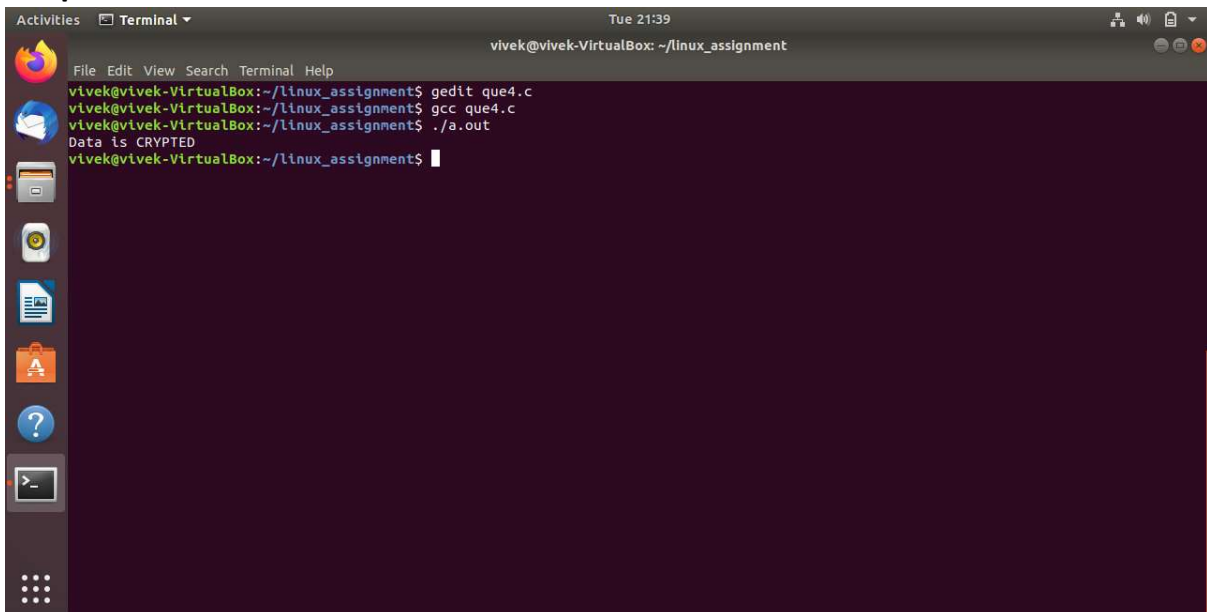
4. Write a program that implements all file operations (open/creat/write/read/lseek/close).

Code:

```
#include<stdio.h>
#include<fcntl.h>
#include<unistd.h>

int main()
{
    int fd1;
    char k[50]="ENCRYPTED";
    char p[50];
    creat("Lib.txt",0755);
    fd1=open("Lib.txt",O_RDWR,0775);
    write(fd1,k,50);
    close(fd1);
    fd1=open("Lib.txt",O_RDWR,0775);
    lseek(fd1,2,SEEK_CUR);
    read(fd1,p,30);
    printf("Data is %s\n",p);
    close(fd1);
    return 0;
}
```

Output:



```
Activities  Terminal  Tue 21:39
vivek@vivek-VirtualBox: ~/linux_assignment

File Edit View Search Terminal Help
vivek@vivek-VirtualBox:~/linux_assignment$ gedit que4.c
vivek@vivek-VirtualBox:~/linux_assignment$ gcc que4.c
vivek@vivek-VirtualBox:~/linux_assignment$ ./a.out
Data is CRYPTED
vivek@vivek-VirtualBox:~/linux_assignment$
```

5. Write a program that creates a file with a 4K bytes free space. (Such files are called files with holes.)

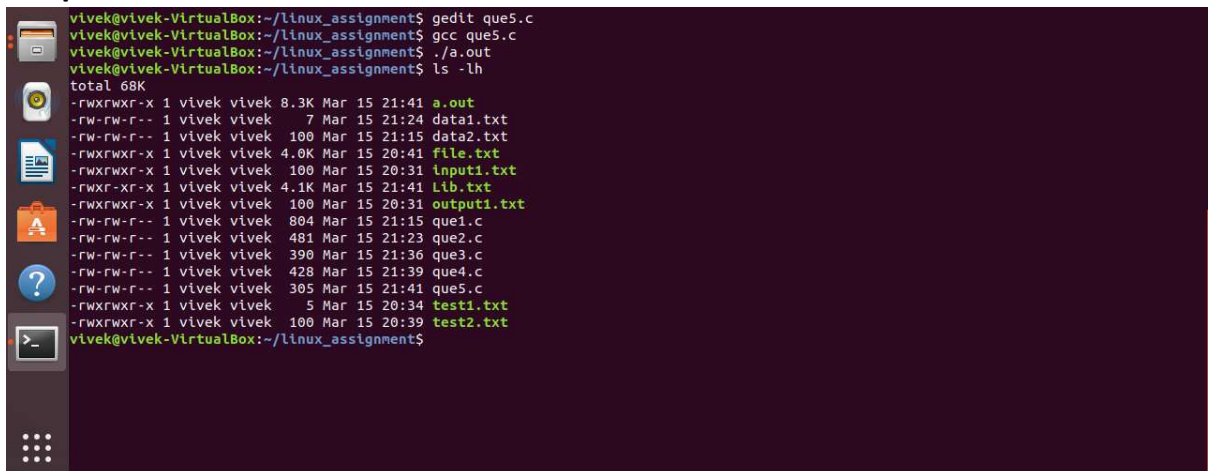
Code:

```
#include<stdio.h>
#include<fcntl.h>
#include<unistd.h>
int main()
{
    int fd1;
    fd1=open("Lib.txt",O_RDWR,0775);
    lseek(fd1,4096,SEEK_END);
    write(fd1,"kdc",3);

    close(fd1);

    return 0;
}
```

Output:



```
vivek@vivek-VirtualBox:~/linux_assignment$ gedit que5.c
vivek@vivek-VirtualBox:~/linux_assignment$ gcc que5.c
vivek@vivek-VirtualBox:~/linux_assignment$ ./a.out
vivek@vivek-VirtualBox:~/linux_assignment$ ls -lh
total 68K
-rwxrwxr-x 1 vivek vivek 8.3K Mar 15 21:41 a.out
-rw-rw-r-- 1 vivek vivek 7 Mar 15 21:24 data1.txt
-rw-rw-r-- 1 vivek vivek 100 Mar 15 21:15 data2.txt
-rwxrwxr-x 1 vivek vivek 4.0K Mar 15 20:41 file.txt
-rwxrwxr-x 1 vivek vivek 100 Mar 15 20:31 input1.txt
-rwxr-xr-x 1 vivek vivek 4.1K Mar 15 21:41 Lib.txt
-rwxrwxr-x 1 vivek vivek 100 Mar 15 20:31 output1.txt
-rw-rw-r-- 1 vivek vivek 804 Mar 15 21:15 que1.c
-rw-rw-r-- 1 vivek vivek 481 Mar 15 21:23 que2.c
-rw-rw-r-- 1 vivek vivek 390 Mar 15 21:36 que3.c
-rw-rw-r-- 1 vivek vivek 428 Mar 15 21:39 que4.c
-rw-rw-r-- 1 vivek vivek 305 Mar 15 21:41 que5.c
-rwxrwxr-x 1 vivek vivek 5 Mar 15 20:34 test1.txt
-rwxrwxr-x 1 vivek vivek 100 Mar 15 20:39 test2.txt
vivek@vivek-VirtualBox:~/linux_assignment$
```

GITHUB LINK : https://github.com/VIVEK0014/Linux_internals.git