

1. Perform reverse reading of a file by using lseek API

Program:

```
user@LAPTOP-EVHI4LP7: ~  
#include<fcntl.h>  
#include<stdlib.h>  
#include<sys/stat.h>  
#include<unistd.h>  
int main(int argc, char *argv[])  
{  
    char buf;  
    int fd, size;  
    fd=open(argv[1], O_RDONLY);  
    size=lseek(fd,-1,SEEK_END);  
    while (size -->=0){  
        read(fd,&buf,1);  
        write(STDOUT_FILENO,&buf,1);  
        lseek(fd,-2,SEEK_CUR);  
    }  
    return 0;  
}
```

"prog2.cpp" 16L, 308C 16,1 All

Output:

```
user@LAPTOP-EVHI4LP7: ~  
user@LAPTOP-EVHI4LP7:~$ vi prog2.cpp  
user@LAPTOP-EVHI4LP7:~$ cat random.txt  
hello what are you doing  
how is your day going  
good day  
user@LAPTOP-EVHI4LP7:~$ g++ prog2.cpp -o prog2output  
user@LAPTOP-EVHI4LP7:~$ ./prog2output random.txt  
  
yad doog  
gniog yad ruoy si woh  
gniod uoy era tahw ollehuser@LAPTOP-EVHI4LP7:~$
```

2. Program to emulate ls-l command using appropriate API

Program:

```
user@LAPTOP-EVHI4LP7: ~  
#include<stdio.h>  
#include<stdlib.h>  
#include<sys/stat.h>  
#include<unistd.h>  
int main(int argc, char *argv[]){  
    struct stat statbuf;  
    if(lstat(argv[1],&statbuf)==-1){  
        printf("Couldn't stat file!\n");  
        exit(0);  
    }  
    printf("File: \t%s\n",argv[1]);  
    printf("UID: \t%d\n",statbuf.st_uid);  
    printf((S_ISDIR(statbuf.st_mode))?"File is a directory\n:"");  
    printf("GID: \t%d\n",statbuf.st_gid);  
    printf("Type and permission: %o \n",statbuf.st_mode);  
    printf("No. of links: %ld\n",statbuf.st_nlink);  
    printf("Inode no: %ld\n",statbuf.st_ino);  
}  
~  
~  
~  
~  
~  
~  
~  
~  
-- INSERT -- 1,1 All
```

Output:

```
user@LAPTOP-EVHI4LP7: ~  
user@LAPTOP-EVHI4LP7:~$ vi prog3.cpp  
user@LAPTOP-EVHI4LP7:~$ cat random.txt  
hello what are you doing  
how is your day going  
good day  
user@LAPTOP-EVHI4LP7:~$ g++ prog3.cpp -o prog3  
user@LAPTOP-EVHI4LP7:~$ ./prog3 random.txt  
File:    random.txt  
UID:     1000  
GID:     1000  
Type and permission: 100644  
No. of links: 1  
Inode no: 40093  
user@LAPTOP-EVHI4LP7:~$
```