Lab Exercise 2  
Implementation of System calls  
AIM:  
To develop a C program to implement the cp, ls, grep commands using system calls.  
  
#include<stdio.h>  
#include<unistd.h>  
#include<fcntl.h>  
#include<stdlib.h>  
#include<sys/types.h>  
#include<sys/stat.h>  
#include<string.h>  
void main(int argc,char \*argv[])  
{  
 char temp,line[100];  
 int fd,r,j=0,count=0;  
 printf("Option :%s\n",argv[1]);  
 printf("File :%s\n",argv[3]);  
 printf("Search :%s\n",argv[2]);  
 if((fd=open(argv[3],O\_RDONLY))!=-1)  
 {  
 while((r=read(fd,&temp,sizeof(char)))!=0)  
 {  
 if(temp!='\n')  
 {  
 line[j]=temp;  
 j++;  
 }  
 else  
 {  
 count++;  
 if((strstr(line,argv[2])!=NULL)&&(strcmp(argv[1],"n")==0)){  
 printf("%d",count);  
 printf("%s\t",line);  
 printf("\n");  
 }  
 else if((strstr(line,argv[2])==NULL)&&(strcmp(argv[1],"v")==0)){  
 printf("%s\n",line);  
 }  
 memset(line,0,sizeof(line));  
 j=0;  
 }  
 }  
 }  
if(strcmp(argv[1],"c")==0){   
 printf("%d",count);}   
}  
   
   
#include<sys/stat.h>  
#include<stdio.h>  
#include<fcntl.h>  
#include<stdlib.h>  
#include<sys/types.h>  
#include<string.h>  
void main(int argc,char\*\* argv)  
{  
 char option[10];  
 if(strcmp(argv[3],"-i")==0)  
 {  
 printf("\nDo you want to copy ? :");  
 scanf("%s",option);  
 if(strcmp(option,"yes")==0);  
 {  
 int fd1,fd2,fd3,fd4,rd;  
 char\* buffer;   
 buffer =(char\*)calloc(100,sizeof(char));  
 fd1=open(argv[1],O\_RDONLY);  
 //fd2=creat(argv[2],O\_CREAT);  
 fd3=open(argv[2],O\_WRONLY);  
 if(fd1 == -1 )  
 printf("Error occured ! File cannot be opened");   
 else  
 {  
 rd=read(fd1,buffer,100);  
 buffer[rd]='\0';  
 fd4=write(fd3,buffer,100);  
 printf("Successfully Copied!");  
 }  
 close(fd1);  
 close(fd3);  
 }  
 if(strcmp(option,"no")==0)  
 {  
 exit(0);  
 }  
 exit(0);  
 }  
 int fd1,fd2,fd3,fd4,rd;  
 char\* buffer;   
 buffer =(char\*)calloc(100,sizeof(char));  
 fd1=open(argv[1],O\_RDONLY);  
 //fd2=creat(argv[2],O\_CREAT);  
 fd3=open(argv[2],O\_WRONLY);  
 if(fd1 == -1 )  
 printf("Error occured ! File cannot be opened");   
 else  
 {  
 rd=read(fd1,buffer,100);  
 buffer[rd]='\0';  
 fd4=write(fd3,buffer,100);  
 printf("Successfully Copied!");  
 }  
 close(fd1);  
 close(fd3);   
}   
#include<stdio.h>  
#include<fcntl.h>  
#include<sys/stat.h>  
#include<dirent.h>  
int main(int argc,char\* argv[])  
{  
 DIR \*dp;  
 struct dirent \*d;  
 dp=opendir(argv[1]);  
 while((d=readdir(dp))!=NULL)  
 {  
 printf("%s\t",d->d\_name);  
 }  
 closedir(dp);  
}