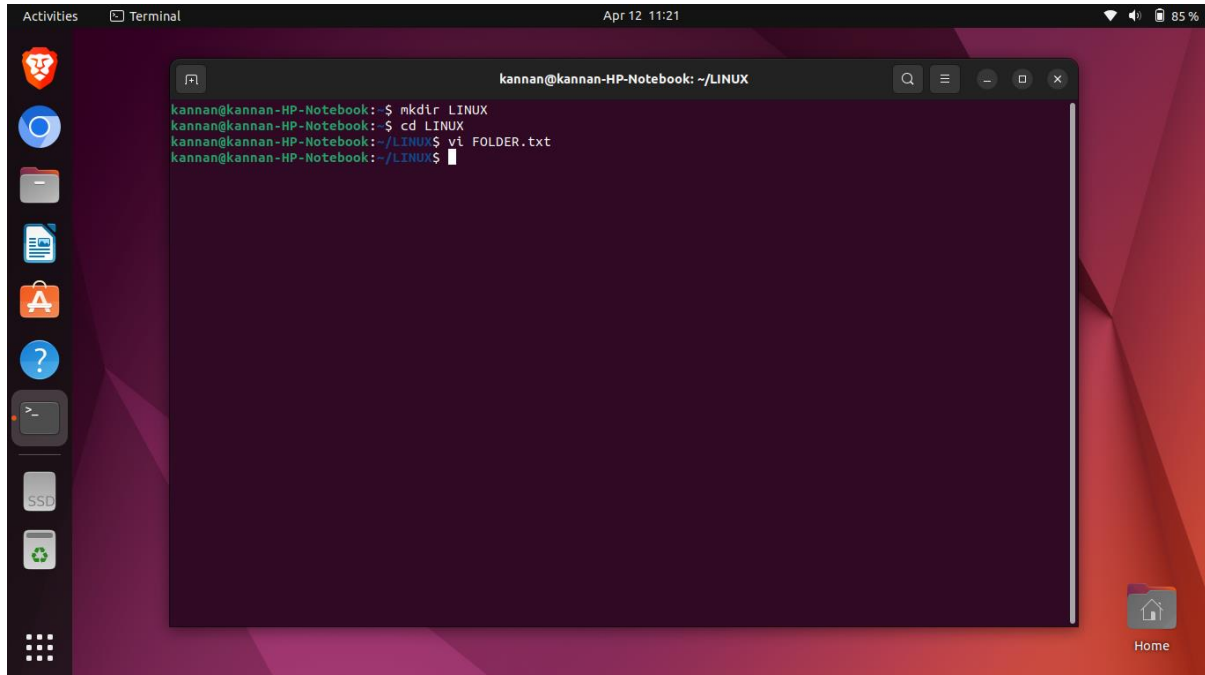


Module 6 Exercise

1. Create a file in a new directory using vi editor and ensure the filename doesn't exist already using shell commands.

Step 1: Created a new folder and created a new file.

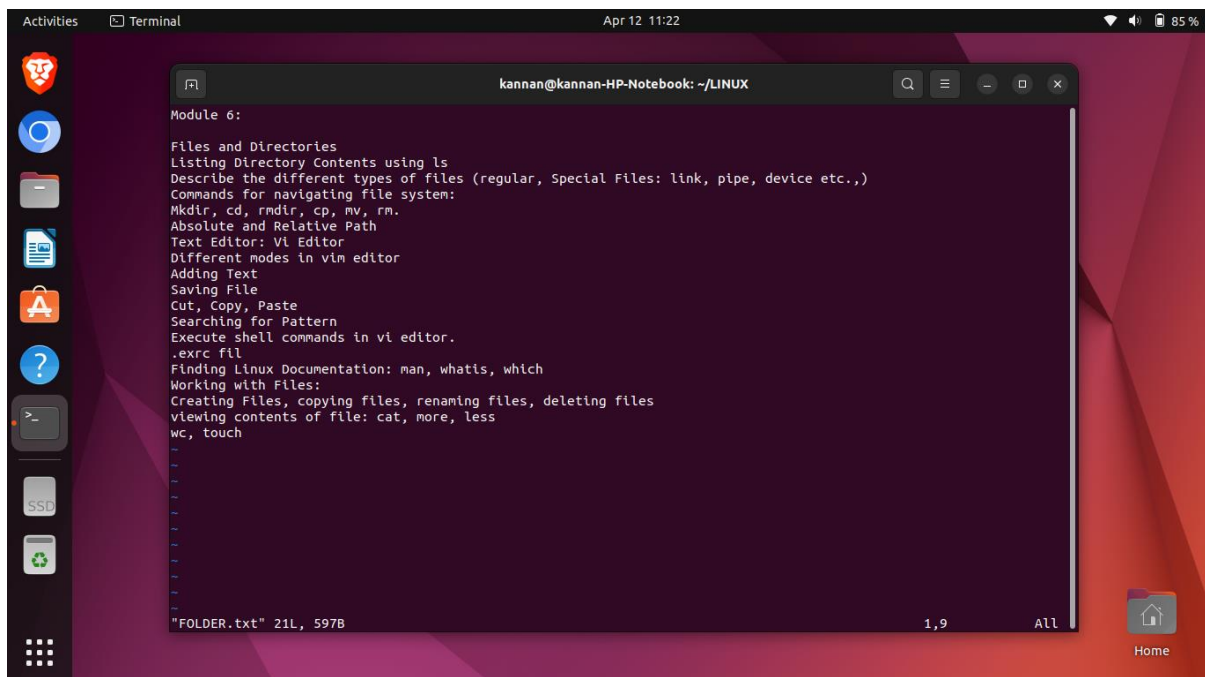


A terminal window titled 'kannan@kannan-HP-Notebook: ~/LINUX' shows the following commands and output:

```
kannan@kannan-HP-Notebook:~$ mkdir LINUX
kannan@kannan-HP-Notebook:~$ cd LINUX
kannan@kannan-HP-Notebook:~/LINUX$ vi FOLDER.txt
kannan@kannan-HP-Notebook:~/LINUX$
```

The terminal is open on a Linux desktop with a sidebar containing various application icons. The window title bar shows the user 'kannan' on a machine named 'kannan-HP-Notebook' in the directory '~/LINUX'.

Step 2: Added some data in the created file.

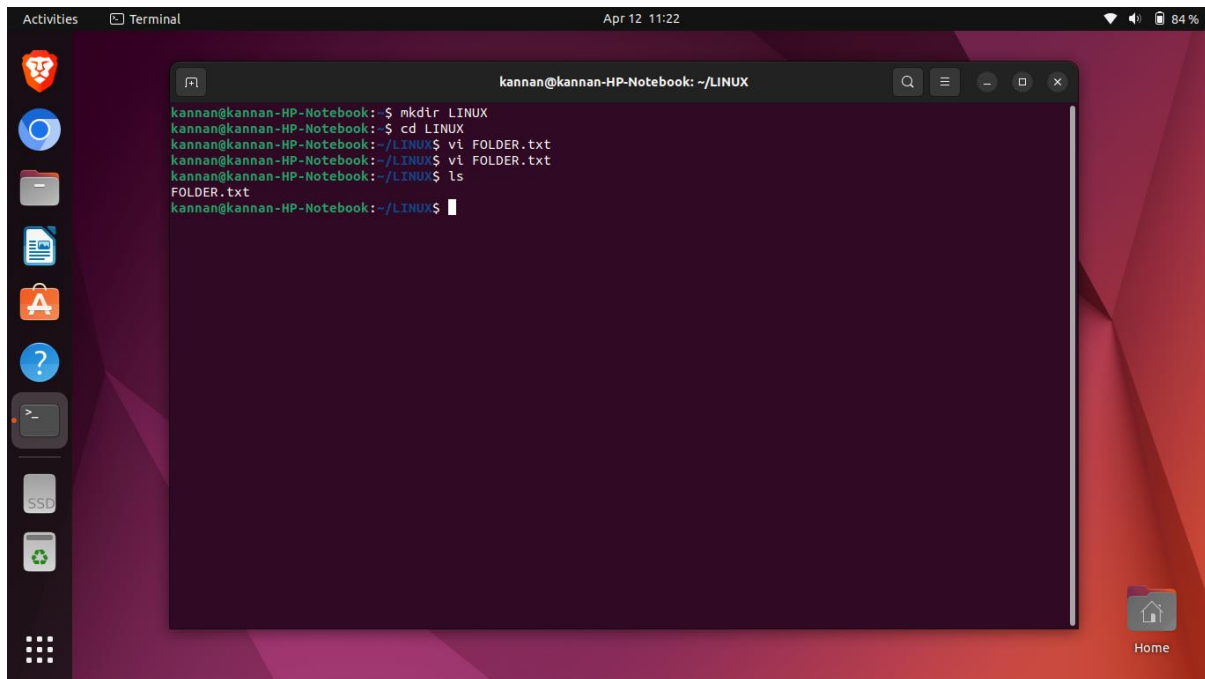


The same terminal window now shows the content of the file 'FOLDER.txt' being edited in the vi editor. The text inside the file is as follows:

```
Module 6:
Files and Directories
Listing Directory Contents using ls
Describe the different types of files (regular, Special Files: link, pipe, device etc.,)
Commands for navigating file system:
Mkdir, cd, rmdir, cp, mv, rm.
Absolute and Relative Path
Text Editor: Vi Editor
Different modes in vim editor
Adding Text
Saving File
Cut, Copy, Paste
Searching for Pattern
Execute shell commands in vi editor.
.exrc fil
Finding Linux Documentation: man, whatis, which
Working with Files:
Creating Files, copying files, renaming files, deleting files
Viewing contents of file: cat, more, less
wc, touch
```

The status bar at the bottom of the terminal window indicates the file 'FOLDER.txt' is 21 lines long and 597 bytes in size. The cursor is at line 1, column 9.

Step 3: Made sure there is no other file with the similar name.

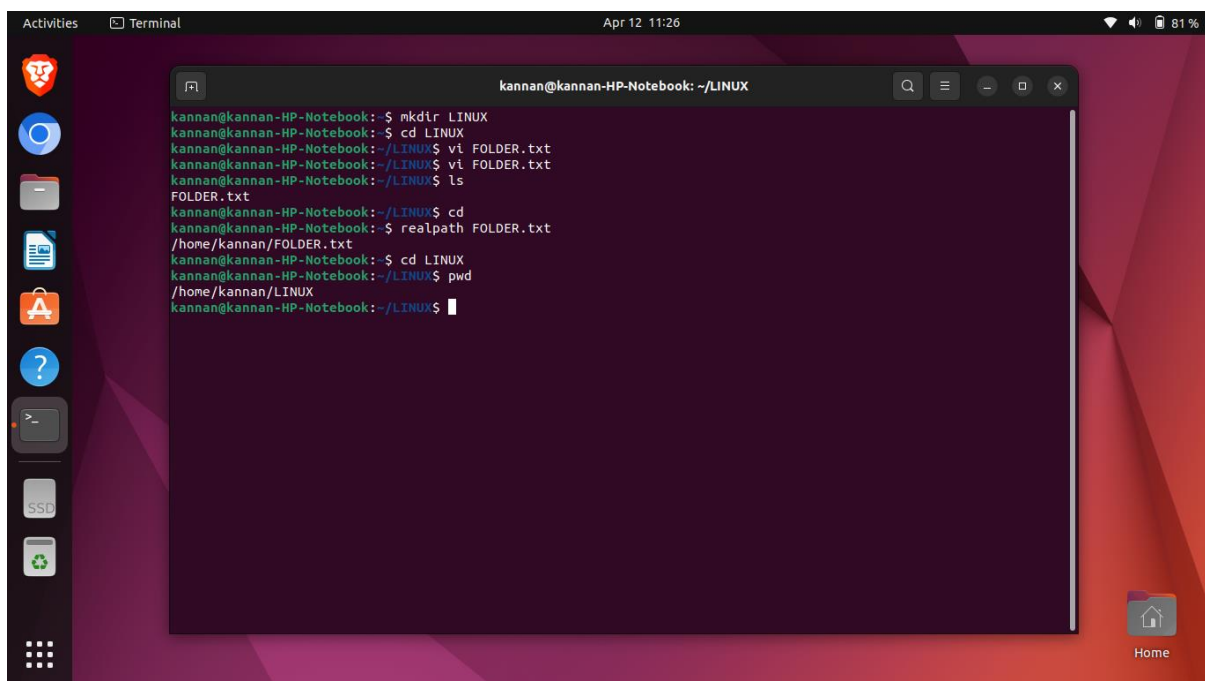


A terminal window titled 'kannan@kannan-HP-Notebook: ~/LINUX' is open on a Linux desktop. The terminal shows the following commands and output:

```
kannan@kannan-HP-Notebook:~$ mkdir LINUX
kannan@kannan-HP-Notebook:~$ cd LINUX
kannan@kannan-HP-Notebook:~/LINUX$ vi FOLDER.txt
kannan@kannan-HP-Notebook:~/LINUX$ vi FOLDER.txt
kannan@kannan-HP-Notebook:~/LINUX$ ls
FOLDER.txt
kannan@kannan-HP-Notebook:~/LINUX$
```

The desktop background is a red and purple geometric pattern. A sidebar on the left contains icons for various applications. A 'Home' button is visible in the bottom right corner of the desktop.

2. Get the Absolute path and relative path of the file you created in Question 1.



A terminal window titled 'kannan@kannan-HP-Notebook: ~/LINUX' is open on a Linux desktop. The terminal shows the following commands and output:

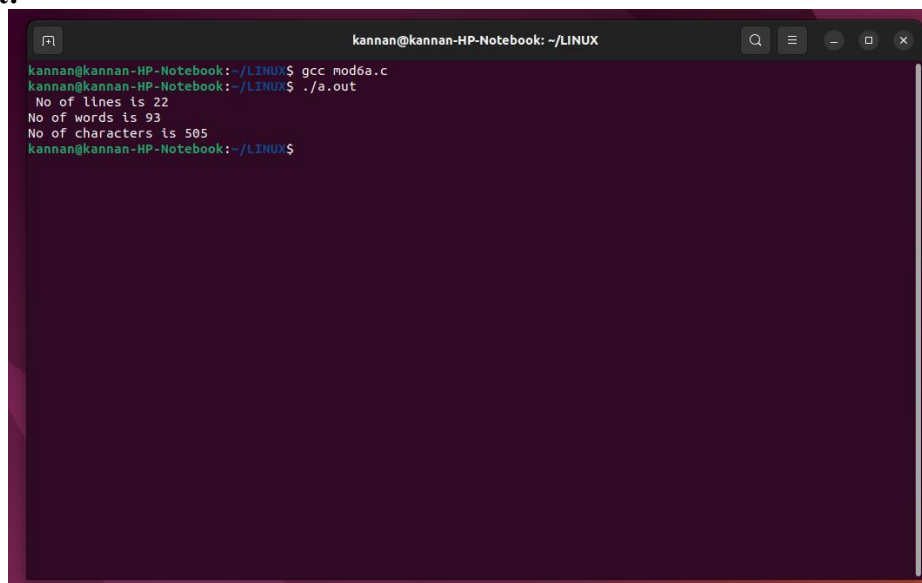
```
kannan@kannan-HP-Notebook:~$ mkdir LINUX
kannan@kannan-HP-Notebook:~$ cd LINUX
kannan@kannan-HP-Notebook:~/LINUX$ vi FOLDER.txt
kannan@kannan-HP-Notebook:~/LINUX$ vi FOLDER.txt
kannan@kannan-HP-Notebook:~/LINUX$ ls
FOLDER.txt
kannan@kannan-HP-Notebook:~/LINUX$ cd
kannan@kannan-HP-Notebook:~$ realpath FOLDER.txt
/home/kannan/FOLDER.txt
kannan@kannan-HP-Notebook:~$ cd LINUX
kannan@kannan-HP-Notebook:~/LINUX$ pwd
/home/kannan/LINUX
kannan@kannan-HP-Notebook:~/LINUX$
```

The desktop background is a red and purple geometric pattern. A sidebar on the left contains icons for various applications. A 'Home' button is visible in the bottom right corner of the desktop.

3. Select a random file and do the following:

a. Count the no. of lines, words in the file

```
#include<stdio.h>
#include<string.h>
int main()
{
    FILE *fp=fopen("file1.txt","r");
    char ch;
    int l=0,c=0,w=0;
    if(fp!=NULL)
    {
        while((ch=getc(fp))!=EOF)
        {
            if(ch!=' ' && ch!='\n')
                ++c;
            if(ch==' ' || ch=='\n')
                ++w;
            if(ch=='\n')
                ++l;
        }
        if(c>0)
        {
            ++l;
            ++w;
        }
    }
    else
    {
        printf("File not found");
    }
    printf(" No of lines is %d\nNo of words is %d\nNo of characters
is %d\n",l,w,c);
    return 0;
} Output:
```



```
kannan@kannan-HP-Notebook: ~/LINUX
kannan@kannan-HP-Notebook:~/LINUX$ gcc mod6a.c
kannan@kannan-HP-Notebook:~/LINUX$ ./a.out
No of lines is 22
No of words is 93
No of characters is 505
kannan@kannan-HP-Notebook:~/LINUX$
```

b. Display the list 10 lines of a file

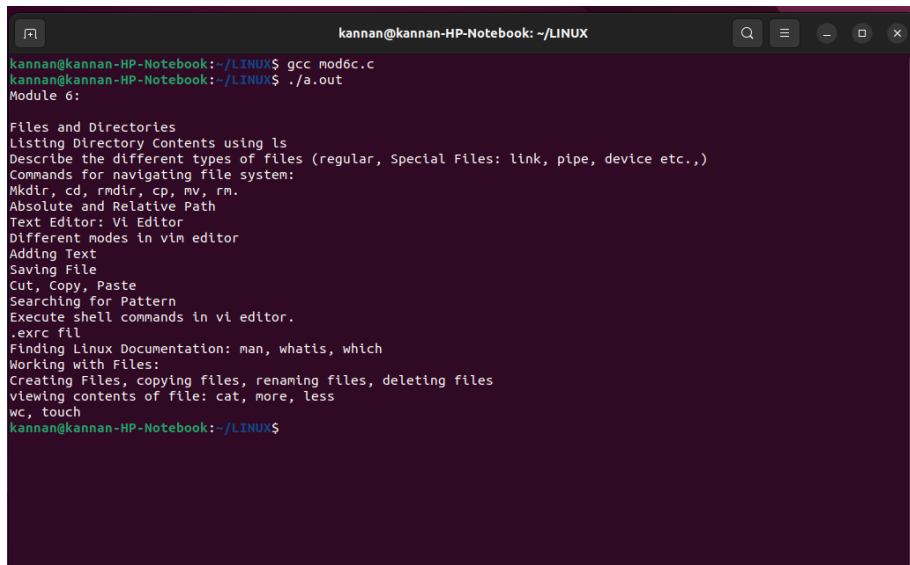
```
#include<stdio.h>
#include<stdlib.h>
int main()
{
    FILE *fp=fopen("file1.txt","r");
    int c=0;
    char ch;
    if(fp!=NULL)
    {
        while((ch=getc(fp))!=EOF)
        {
            if(ch!='\n')
            {
                printf("%c",ch);
            }
            else
            {
                printf("\n");
                ++c;
            }
            if(c==10)
            {
                break;
            }
        }
    }
    else
    {
        printf("File not found");
    }
    fclose(fp);
    return 0;
} Output:      /* Also can be printed by using 'head' command in terminal*/
```



c. Display the entire file

```
#include<stdio.h>
#include<stdlib.h>
int main()
{
    FILE *fp=fopen("file1.txt","r");
    char ch;
    if(fp!=NULL)
    {
        while((ch=getc(fp))!=EOF)
        {
            fputc(ch,stdout);
        }
    }
    else
    {
        printf("File not found");
    }
    return 0;
}
```

Output: (Also can be printed in the terminal using ‘cat’ command)



```
kannan@kannan-HP-Notebook: ~/LINUX
kannan@kannan-HP-Notebook:~/LINUX$ gcc mod6.c
kannan@kannan-HP-Notebook:~/LINUX$ ./a.out
Module 6:

Files and Directories
Listing Directory Contents using ls
Describe the different types of files (regular, Special Files: link, pipe, device etc.,)
Commands for navigating file system:
Mkdir, cd, rmdir, cp, mv, rm.
Absolute and Relative Path
Text Editor: Vi Editor
Different modes in vim editor
Adding Text
Saving File
Cut, Copy, Paste
Searching for Pattern
Execute shell commands in vi editor.
.exrc file
Finding Linux Documentation: man, whatis, which
Working with Files:
Creating Files, copying files, renaming files, deleting files
viewing contents of file: cat, more, less
wc, touch
kannan@kannan-HP-Notebook:~/LINUX$
```

d. Search a word 'X' in the entire file and display the lines with it.

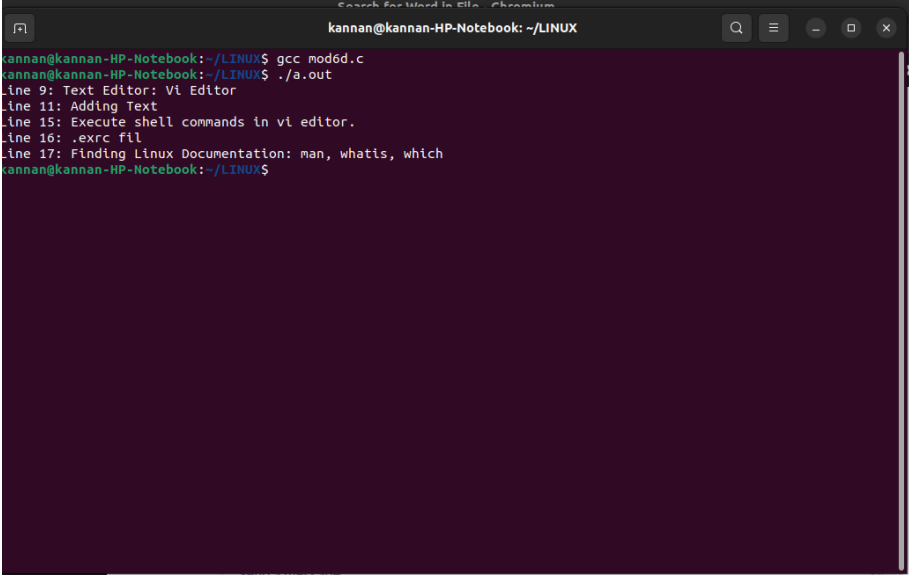
```
#include <stdio.h>
#include <string.h>
#define MAX_LINE_LEN 1000

int main()
{
    char filename[100], line[MAX_LINE_LEN];
```

```
char word[] = "x";
int line_num = 0;
FILE *fp = fopen("file1.txt", "r");
if (fp == NULL)
{
    printf("File not found");
    return 1;
}
while (fgets(line, MAX_LINE_LEN, fp))
{
    line_num++;
    if (strstr(line, word))
    {
        printf("Line %d: %s", line_num, line);
    }
}

fclose(fp);
return 0;
}
```

Output:



```
kannan@kannan-HP-Notebook: ~/LINUX$ gcc mod6d.c
kannan@kannan-HP-Notebook: ~/LINUX$ ./a.out
line 9: Text Editor: Vi Editor
line 11: Adding Text
line 15: Execute shell commands in vi editor.
line 16: .exrc file
line 17: Finding Linux Documentation: man, whatis, which
kannan@kannan-HP-Notebook: ~/LINUX$
```