**LAB EXERCISES**

**EX.NO:10**

**USING FILE**

**AIM:**

**To write a C program to count the number of characters, words and lines in a file.**

**PROCEDURE:**

1. **Start the program.**
2. **Declare a file pointer using:**

* **C= FILE \*fp;**

1. **Declare required variables:**
   * **char (ch); → to store each character**
   * **int char Count = 0, word Count = 0, line Count = 0;**
   * **int in Word = 0; → to track word boundaries**
2. **Open the file in read mode using fopen("filename.txt", "r");**
   * **If the file cannot be opened, print an error and exit.**
3. **Read the file character by character using a while loop and fgetc(fp).**
4. **For each character read:**
   * **Increment char Count**
   * **If the character is a newline '\n', increment line Count**
   * **If the character is space ' ' or newline or tab '\t':**
     1. **Set in Word = 0**
   * **Else if in Word == 0:**
     1. **Set in Word = 1 and increment word Count**
5. **Repeat step 6 until end of file (EOF) is reached.**
6. **Close the file using fclose(fp);**
7. **Display the results:**
   * **Total characters: char Count**
   * **Total words: word Count**
   * **Total lines: line Count**
8. **End the program.**

**PROGRAM:**

**#include <stdio.h>**

**#include <stdlib.h>**

**void main()**

**{**

**FILE \*f;**

**char ch;**

**int characters = 0, words = 0, lines = 0;**

**int in\_word = 0;**

**clrscr();**

**f = fopen("sample.txt", "r");**

**if (f == NULL) {**

**printf("\nUnable to open file");**

**getch();**

**exit(0);**

**}**

**while ((ch = fgetc(f)) != EOF) {**

**characters++;**

**if (ch == '\n') {**

**lines++;**

**}**

**if (ch == ' ' || ch == '\t' || ch == '\n') {**

**in\_word = 0;**

**} else if (in\_word == 0) {**

**in\_word = 1;**

**words++;**

**}**

**}**

**fclose(f);**

**printf("\nNumber of characters = %d", characters);**

**printf("\nNumber of words = %d", words);**

**printf("\nNumber of lines = %d", lines);**

**getch();**

**}**

**RESULT:**

**Thus the above C program is executed and the output is obtained.**