CSB101: Problem Solving and Computer Programming
LAB 11: File handling in C.

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Instructions:
A) Save your lab.doc as LAB_no_RollNo.doc.  At the end of lab you need to submit your all programs along with the output.
-- LAB_No_Roll_No_2hr.doc for  lab task executed duing the lab
-- LAB_No_Roll_No_complete.doc for Full solution of the Lab assignment ( It should contain all lab assignemnt/problems)
B) Use/paste the snapshot of the steps followed along with result/s.
C) Mention your observation/comment after results in the doc.
D) Along with the doc/pdf file you need to upload your c program filles with following nomenaculture.
-- LAB_No_Prob_No.c
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Objective(s):

- To understand data files and file handling in C.

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PART A : Conceptual Questions

1. Write a program to read RollNo, Name, Address, Age & marks in physics, C, math in 1st semester of three students in CSE. Store the records into a file std.txt located at a location (PATH fo directory). Display the student details with average marks achieved (use data files record I/O).

2. Prompt the user to enter the filename. Write a C program that counts the number of characters and number of lines in a file. (hint : Use the file created (std.txt) in Prog 1)

3. Write a program using file handling concepts in C, as discussed in lab 8 problem 2, store the following details of COVID-19 cases in Delhi for last one week, as an 2 Dimension array elements of size 7x4 and display the sum and average of respective column.

21/01/2021	Delhi	227	Hospitalized
21/01/2021	Delhi	246	Recovered
21/01/2021	Delhi	8	Deceased
22/01/2021	Delhi	266	Hospitalized
22/01/2021	Delhi	319	Recovered
22/01/2021	Delhi	7	Deceased
23/01/2021	Delhi	197	Hospitalized
23/01/2021	Delhi	367	Recovered
23/01/2021	Delhi	10	Deceased
24/01/2021	Delhi	185	Hospitalized
24/01/2021	Delhi	315	Recovered
24/01/2021	Delhi	9	Deceased
25/01/2021	Delhi	148	Hospitalized
25/01/2021	Delhi	190	Recovered
25/01/2021	Delhi	5	Deceased

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26/01/2021	Delhi	157	Hospitalized
26/01/2021	Delhi	218	Recovered
26/01/2021	Delhi	7	Deceased
27/01/2021	Delhi	96	Hospitalized
27/01/2021	Delhi	212	Recovered
27/01/2021	Delhi	9	Deceased

SAMPLE OUTPUT :

One Week COVID-19 STATISTICS in DELHI

Date	Hospitalized	Recovered	Deceased
:	:	:	:
:	:	:	:

4. Write characters into a file "filec.txt". The set of characters are read form the keyboard until an enter key is pressed (use putc() and getc() function).

5. Read characters form file "filec.txt" created in question 1. Also count the number of characters in the file (use fputs() and fgets() function).

6. Write set of strings each of length 40 into a file "stringc.txt" and display it (use fputs() and fgets() function).

7. Write name, age and height of a person into a data file "person.txt" and read it (use fprintf() and fscanf() function)

8. Write a C program to count occurrences of all words in a file. Classify the file as Sales, Medical Report or Tales, etc.

PART B : Exploratory Problem :

9. You are provided a matrix of size N*N with source position at (0,0) and destination at (N-1,N-1) in a 2D array. Some of the positions in the array are marked as 0 which are blocked cells, rest being marked 1. A path is a connected sequence of elements from (0,0) to (N-1,N-1) which consists of 1. A sequence of 1s in the 2D array is connected if every 1 in the sequence is adjacent (the above or left neighbour) to the next 1 in the sequence.

　　For example, in the following matrix,
　　1 1 0
　　0 1 1
　　1 0 1
　　the 1's (in bold) is a connected path from (0,0) to (2,2)

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Note that cells at (0,0) and (N-1,N-1) are always 1. You can either make movement towards right or down, i.e., from position (x,y), you can go to either the position (x,y+1) or (x+1,y).

Take the input from a text file

Input:
1 1 1 0
0 1 1 0
1 1 1 0
1 0 1 1
1 1 0 1

Output:
Path exists.

Observation /Comments:

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