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Assignment Set :1

Problem No. 4

Problem Statement :

Write a program to generate 1,00,000 random integers between 1 and 1,00,000 without repetitions and store them in a file in character mode one number per line. Study and use the functions in C related to random numbers.

Solution Approach:

We seed the random number generator function in C as time to be zero and run a loop from 1 to 100000 and then generate a random number modulo 100000 and add 1 to ensure that the numbers are in the range from 1 to 100000.We then convert the integer randomly generated to a string and then write the data to a file.

Structured Pseudocode :

1.srand(time(0))

2.Open the file in write mode ,store its address in File pointer ptr

3.if(ptr==NULL)

4. print “File can’t be opened”

5. Exit from the program

6. else

7. Initialise char array to convert integer in string mode

8. For i from 1 to 1,00,000:

9. temp=rand()%1,00,000+1

10. convert temp to string

11. write to the file

12.Close the file

Results:

In this problem we are generating random numbers within 1 and 100000 and storing it in the required file by opening the file pointer using the fopen(“filename”,”mode”) function in c and then storing the integer to the file by converting it to a string.

Discussions:

Here we will be writing directly to a file so that the data is not lost when the lifetime of the program is over.We are using the functions fopen(“filename”,”mode”) and fprintf(file pointer,”control specifier”,list of values) to open and write to the file .Even if the file doesn’t exist and we open it in the write mode a new file with “filename” will be created.

Separate files containing commented source code

The file has been attached.