TUTORIAL 9

1. Explain the term: a) file b) stream c) buffer d) file management e) random file access f) sequential file access

a) A collection of data which is stored on a secondary device like a hard disk is known as a file

b) A stream is a logical entity that represents a file or device, that can accept input or output. All input and output functions in standard C, operate on data streams. Streams can be divided into text streams and binary streams.

c) a buffer is temporary storage used to store input and output commands. All input and output commands are buffered in the operating system's buffer.

d) A mechanism of manipulating with the files is called as file management.

e) Random access means you can move to any part of a file and read or write data from it without having to read through the entire file.

f) Sequential access is a term describing a group of elements (such as data in a memory array or a disk file or on magnetic tape data storage) being accessed in a predetermined, ordered sequence.

2. How many files can open at once?

Any

3. Define FILE?

It is datatype used for file pointers.

4. What is the purpose of fopen() function?

To open and create a file.

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5. What is the purpose of fclose() function?

To close an open file.

6. Differentiate between text mode stream and binary mode stream?

Text streams are interpreted, with a maximum length of 255 characters. With text streams, carriage return/line feed combinations are translated to the newline n character and vice versa. Binary streams are uninterpreted and are treated one byte at a time with no translation of characters.

7. What are the three general methods of file access?

Sequential-Access, Direct Access, Index sequential Method.

8. Describe the different methods of reading and writing in to data file?

Reading- fscanf(), fgets(), fgetc(), fread()

Writing- fwrite(), fprintf(), fputs(), fputc()

9. Compare fscanf() and fread()

fscanf accepts input according to a format string that you provide. For instance, it is capable of stuffing decimal numbers in a file into floats or doubles. Fread doesn't do that sort of processing and simply reads of block of bytes.

10. What is the difference between fgets() and gets()

gets() keeps reading input until newline character or end-of-file(EOF) shows up. This can lead to buffer overflow as it doesn't check array bounds of variable. While in case of fgets() it will also stop when maximum limit of input characters is reached.

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11. What happens if anyone doesn't close a file?

Not closing streams may cause data corruption in the output file, or other programming errors.

12. What is the purpose of feof()?

The feof() function indicates whether the end-of-file flag is set for the given stream .

Practice!

Write a C program that takes the name of a file as a command- line argument, opens the file, read through it to determine the number of words in each sentence, display the total number of words and sentences, and compute the average number of words per sentence. The result should be printed in a table (at standard output), such as shown below:

This program counts the words and sentences in the file "comp.text".

Sentence: 1 Words: 29

Sentence: 2 Words: 41

Sentence: 3 Words: 16

Sentence: 4 Words: 22

Sentence: 5 Words: 44

Sentence: 6 Words: 14

Sentence: 7 Words: 32

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File “comp.txt” contains 198 words in 7 sentences for an average of 28.3 words per

sentence.

In this program, you should count a word as any contiguous sequence of letters, and apostrophes should be ignored. Thus, “O’Henry”, “government”, and “friend’s” should be considered as one word. Also, in the program, you should think of a sentence as any sequence of words that ends with a period, exclamation point, or question mark. A period after a single capital letter (e.g., an initial) or embedded with digits (e.g., a real number) should not be counted as being the end of a sentence. White space, digits, and other punctuations should be ignored.

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