FILE PROCESSING

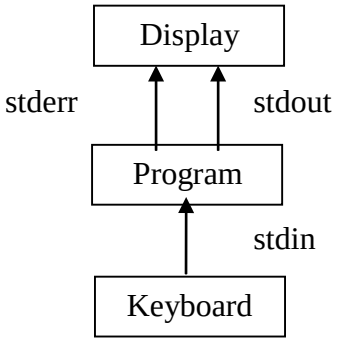
FILES

File is a collection of data stored on secondary storage device such as Hard Disk. It is used to store the data permanently. A file is used when the real life application involves large amount of data.

Streams in C

Stream is a logical interface to a file. In C, there are three standard streams. They are:

a) Standard input (stdin)
b) Standard output (stdout)
c) Standard error (stderr)



Standard Streams

a) Standard input (stdin)

It is the stream from which the program receives its data. Data transfer is done using read operation.

b) Standard output (stdout)

It is the stream where a program writes its output data. Data transfer is done using write operation.

c) Standard error (stderr)

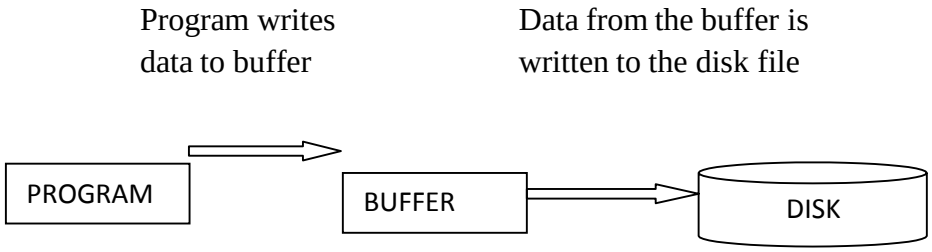
It is the output stream used by the program to report error messages.

Buffers Associated with File Streams

A Stream is linked to a file using an open operation and disconnected from a file using a close operation. When a stream is linked to a file, an associated buffer is created automatically.A Buffer is a temporary storage area from which data are read from or written to a file.

When writing output data to a file by the program, the data is first stored in the buffer until it becomes full. Then the entire data in the buffer is written into the disk file.

When reading input data from a disk file, the data is read as a block from the file and stored into the buffer. The program reads data from the buffer. The data resides in the buffer until the buffer is flushed or written to a file.



Buffers Associated With Stream

Types of Files

Files are categorized into two. They are:

d) ASCII Text Files
e) Binary Files

a) ASCII Text Files

A text file is a sequence of characters which are processed sequentially. The operations done on text files are reading, writing and appending. Each line in a text file can have maximum of 255 characters. Each line ends with a newline character and each file ends with a EOF (end- of-file) marker.

b) Binary Files

A binary file may contain any type of data that is encoded in binary form. It can be processed either sequentially or randomly. The file can be processed randomly by moving the current file position to the required position in the file from where the data can be read or written to. Binary files require less space than the text files to store the same piece of data. Binary file also ends with a EOF marker.