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Batch: E-1

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Title: > Demonstrate various file operations using C++.

Objectives: - 1) To learn and understand streams and files in object oriented paradigm.

2) To demonstrate file operations like create open, read, write and close a file.

Problem Statement: > Write a C++ program that creates an output file, writes information to it, closes the file and open it again as an input file and read the information from the

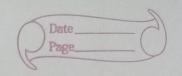
Learning Outromes: - After completion of this assignment, students to will be able to implement file handling using C++.

Theo S/W or H/W requirement:

1 64- bit open source Linux.

2.) Open source C++ programming tool like G++ | GCC.

The ibstream library is an object-oriented library that provides input and output functionality using streams. A. Stream is an abstraction that represents a device on which enfut and output operations are performed. A stream can basically be represented as a source or destination of characters



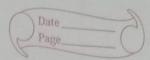
of indefinite length. Streams are generally associated to a physical source or destination of characters, like a disk file, the keyboard, or the console, so the characters getten or written to from our abstraction cot called streams are physically input/output to the physical device. For example, file strams are C++ objects to manipulate and interact with files. Once a file stelam is used to open a file, any input or output operation performed on that stream is physically reflected in the file. So far, we have been using the instream standard library, which provides cin and cout methods for reading from standard input and writing to standard output respectively. This requires another standard C++ dibrary called f stream, which defines 3 new data types:

is ofstream: This data type represents the output file stream and is used to create files & to write in

information to files.

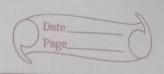
27. ifstream: - This data type represents the input file stream and is used to read information from file. 30 foream: - This data type represents the file stream generally, and has the capabilities of both ofstream and ifstream which means it can create files, write information to files, and read information from files

To perform file processing in C++, header files < lostream> and <fstream> must be included in your C++ source file: These classes are derived directly or indirectly from the classes istream and ostream. We have already used objects whose types were these classes:



cin is an object of class istream and cout is an object of class ostream. Therefore we have already been using classes that are related to our file streams. And in fact we can use our file streams the same way we are already used to use ain and cout, with the only difference that we have to associate these streams with physical files. let's see an example. #include <iostream> # include <fstream> using namespace stay int main() & ofstream myfile; myfile. ropen ("example.txt"); myfile << " working this to a file. In" : myfile close (); return o; Opening a file: 7 A file much be opened before you can read it or write to it. Either the ofstream or fatream object may be used to open a file for writing and ifstream object is used to open a file for reading purpose only. Syntax for open ().> void open (const char * filename, ios: 1 openmode) Here, the 1st arguement specifies the name and location of the file to be opened and the second arguement of the opin () member function defines the mode in which the file should be opened. 1.) ios: in -> open afile for reading 3) ios: ate -> Open a file for output and move the read write control to the end of the file. 4.) is: app -> Append mode. All output to that file to be

appended to the end.



5) is: trunc - If the file already exists its content will be truncated before opening the fite. You can combine 2 or more of these values by ORing them together.

Closing a file: - When a C++ program terminates it automatically doses flushes all the streams, release are the allocated memory and close all the opened files. But it is always a good practise that a programmer Should close all the opened file before program termination Following is the standard syntax for close function: roid close();

Writing to a file: > while doing C++ programming, you write information to a file from your program using the stream insertion operator (<<) just as you use an ofstream or fotream object instead of the cout object.

Fr: # include <iostream>

include < fstream >

using namespace std;

int main() &

Ostream myfile ("example trit"):

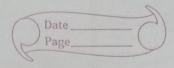
in (myfile. 95-open())

in my file<< "unel" << endl;

my file << "une 2" << end];

myfile close():

I else cout < L "Unable to open file" de travo.



Reading from a file: - You read information from a file into your program using the stream extraction operator (>>) just as you use that operator to input information from the keyboard. The only difference is that you use an if stream or f stream object instead of the ein object. Il reading a text file. #include <iostream> # include <fstream> # include < string > using namespace std; int main () &. string line; if stream myfile ("example txt"); if (myfile is open ()) } while (gettine (myfile, line)) 2 coutec line < < " In"; } my file close (); 3. else cout << "Unable to open file"; return 0; Text files: > Text files streams are those where the ics: binary flag is not included in their opening mode. These files

Jext files: > Jeant files streams are those where the west him all flag is not included in their opening mode. These files are designed to store text and thus all values that are input or output from to them can suffer some formatting transformations, which do not necessarily correspond to their literal binary value.

File Pointers and Manipulators:

· Fach file has a pointers benown as file pointers, one is called the input pointer and the other is called output pointer.

• The input pointer is used for reading the contents of a given file location and the output pointer is used

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for writing to a given file location.

• Each time an input or output operation takes place,
the appropriate pointer is automatically advanced.

functions for Manipulations of file pointer:

· All the actions on the file pointers takes place

by default · For controlling the movement of file pointers file stroam classes support the following functions:

D seekg() → moves get pointer to a specified location.

D putg() → @ seekp() = moves the put pointer to a specified

(tellg() > Give the current position of the get pointer.

(2) tellp():-> Give the current poin of the put pointer.

Specifying the offset:

. * Seek' functions seekg () & seekpl) can also be used with a arguements as follows:

seeky (offset, resposition);

supposition);

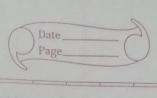
The parameter offset represents the number of bytes the file pointer is to be moved from the location specified by the parameter responition.

The resposition takes one of the following 3 unastants defined in the ins class:

1) ios .. beg -> start of file

2) ios: : was > Current position of the pointer

3) ios; and > End of file.



algorithm: > i) Start 2) Include instream and foreream header files 3) In main(), read name and age from of file from user. 4) Read name and age of student 5.) Open file using ofstream for writing 6.) If file is not present, a error message is displayed. And if file is present, it is opened 2) close the file 8.) Open the same file for reading.
9.) In while loop, start reading from file line by line and display output on terminal. (0) If end of file is reached, exit woop. 11) Stop. Test Cases: Test Case 1:-Enter file Name to open: Assignment 7 txt Enter Name Sameer Enter Age Enter Name Ram Enter Age Enter Name

Shyam

Enter Age.

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