Lecture : File Handling 1

Quick Recap

A)

B)

C)

D)

E)

Quick Recap

- File Handling
- Opening and Closing of files
- Modes of file
- File Stream function
- Reading and Writing of files

Let’s Get Started-

File Handling and Stream

Files store data permanently in a storage device. With file handling, the output from a program can be stored in a file. Various operations can be performed on the data while in the file.

A stream is an abstraction of a device where input/output operations are performed. You can represent a stream as either a destination or a source of characters of indefinite length. This will be determined by their usage. C++ provides you with a library that comes with methods for file handling.

fstream file

The fstream library provides C++ programmers with three classes for working with files. These classes include:

- **ofstream**- This class represents an output stream. It's used for creating files and writing information to files.
- **ifstream**- This class represents an input stream. It's used for reading information from data files.
- **fstream**- This class generally represents a file stream. It comes with ofstream/ifstream capabilities. This means it's capable of creating files, writing to files, reading from data files.

Opening of a file

Before performing any operation on a file, you must first open it. If you need to write to the file, open it using fstream or ofstream objects. If you only need to read from the file, open it using the ifstream object.

The three objects, that is, fstream, ofstream, and ifstream, have the open() function defined in them. The function takes this syntax:

Syntax:- open (file_name, mode);

- The file_name parameter denotes the name of the file to open.
- The mode parameter is optional. It can take any of the following values.

Modes of opening a file

ios:: app	The Append mode. The output sent to the file is appended to it.
ios::ate	It opens the file for the output then moves the read and write control to file's end.
ios::in	It opens the file for a read.
ios::out	It opens the file for a write.
ios::trunc	If a file exists, the file elements should be truncated prior to its opening.

Closing of a file

Once a C++ program terminates, it automatically

- flushes the streams
- releases the allocated memory
- closes opened files.

Closing of a file

```
#include <iostream>
#include <fstream>
using namespace std;
int main() {
	fstream my_file;
	my_file.open("my_file", ios::out);
	if (!my_file) {
		cout << "File not created!";
	}
	else {
		cout << "File created successfully!";
		my_file.close();
	}
	return 0;
}
```

Writing of a file

We use stream insertion operator (<<) for writing on a file. The text to be written to the file should be enclosed within double-quotes.

```
#include <iostream>
#include <fstream>
using namespace std;
int main() {
	fstream my_file;
	my_file.open("my_file.txt", ios::out);
	if (!my_file) {
		cout << "File not created!";
	}
	else {
		cout << "File created successfully!";
		my_file << "Guru99";
		my_file.close();
	}  }
```

Read from file

We can read from a file using stream extraction operator (>>). We use the operator in the same way you use it to read user input from the keyboard. However, instead of using the cin object, you use the ifstream/ fstream object.

Read from file

```
#include <iostream>
#include <fstream>
using namespace std;

int main() {
	fstream my_file;
	my_file.open("my_file.txt", ios::in);
	if (!my_file) {
		cout << "No such file";
	}
	else {
		char ch;
```

Read from file

```
while (1) {
my_file >> ch;
if (my_file.eof())
break;

cout << ch;
}

}
my_file.close();
return 0;
}
```

MCQ 1

1. Which header file is required to use file I/O operations?

a) <ifstream>

b) <ostream>

c) <fstream>

d) <iostream>

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MCQ 2

Which of the following statements are correct?

1) It is not possible to combine two or more file opening mode in open() method.

2) It is possible to combine two or more file opening mode in open() method.

3) ios::in and ios::out are input and output file opening mode respectively.

a) 1, 3

b) 2, 3

c) 3 only

d) 1, 2

MCQ 2

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1) It is not possible to combine two or more file opening mode in open() method.

2) It is possible to combine two or more file opening mode in open() method.

3) ios::in and ios::out are input and output file opening mode respectively.

a) 1, 3

b) 2, 3

c) 3 only

d) 1, 2

MCQ 3

3. Which of the following is the default mode of the opening using the ifstream class?

a) ios::in

b) ios::out

c) ios::app

d) ios::trunc

MCQ 3

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a) ios::in

b) ios::out

c) ios::app

d) ios::trunc

MCQ 4

4.Which of the following is the default mode of the opening using the fstream class?

a) ios::in

b) ios::out

c) ios::in|ios::out

d) ios::trunc

MCQ 4

4.Which of the following is the default mode of the opening using the fstream class?

a) ios::in

b) ios::out

c) ios::in|ios::out

d) ios::trunc

MCQ 5

5. Which operator is used to insert the data into file?

a) >>

b) <<

c) <

d) >

MCQ 5

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a) >>

b) <<

c) <

d) >

QNA Time

Any Questions ??

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Thank You!

See you guys in next class.