



RAMA UNIVERSITY

www.ramauniversity.ac.in

FACULTY OF ENGINEERING & TECHNOLOGY

CSPS103: Object Oriented Programming

Lecture-35

Preeti Singh

Department of Computer Science & Engineering
Rama University, Kanpur

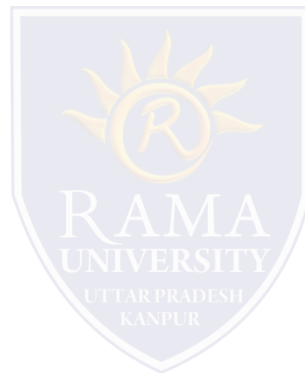
preeti.ru@ramauniversity.ac.in

OBJECTIVES

In this lecture, you will learn to:

❖ File I/O

❖ FileStream example



FILE I/O

- ❑ A file is a bunch of bytes stored on some storage devices like hard disk, floppy disk etc.
- ❑ File I/O and console I/O are closely related.
- ❑ In fact, the same class hierarchy that supports console I/O also supports the file I/O.
- ❑ To perform file I/O, you must include `<fstream>` in your program.
- ❑ It defines several classes, including `ifstream`, `ofstream` and `fstream`.
- ❑ In C++, a file is opened by linking it to a stream.
- ❑ There are three types of streams:
 - 1) input,
 - 2) output
 - 3) input/output.
- ❑ Before you can open a file, you must first obtain a stream.



FILE I/O (Contd.)

- 1) To create an input stream, declare an object of type ifstream.
- 2) To create an output stream, declare an object of type ofstream.
- 3) To create an input/output stream, declare an object of type fstream

```
ifstream in; // input;
```

```
ofstream out; // output;
```

```
fstream io; // input and output
```

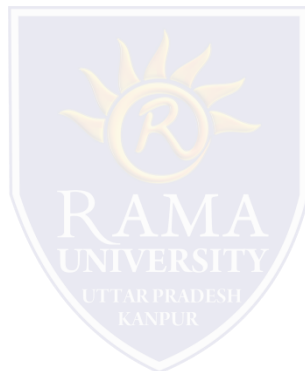


FILESTREAM EXAMPLE

Writing to a file

```
#include <iostream>
#include <fstream>

int main () {
    ofstream filestream("testout.txt");
    if (filestream.is_open())
    {
        filestream << "Welcome to javaTpoint.\n";
        filestream << "C++ Tutorial.\n";
        filestream.close();
    }
    else cout <<"File opening is fail.";
    return 0;
}
```

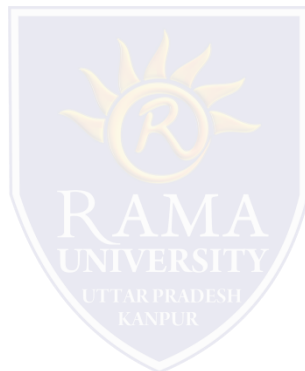


FILESTREAM EXAMPLE

Reading from a file

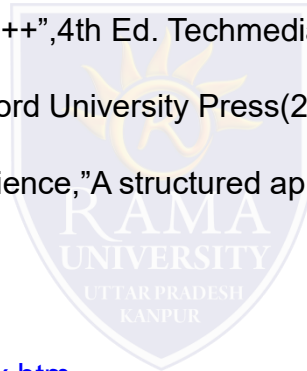
```
#include <iostream>
#include <fstream>

int main () {
    string srg;
    ifstream filestream("testout.txt");
    if (filestream.is_open())
    {
        while ( getline (filestream,srg) )
        {
            cout << srg <<endl;
        }
        filestream.close();
    }
    else {
        cout << "File opening is fail."<<endl;
    }
    return 0;
}
```



REFERENCES

- Kernighan, Brian W., and Dennis M. Richie. The C Programming Language. Vol. 2. Englewood Cliffs: Prentice-Hall, 1988.
- King, Kim N., and Kim King. C programming: A Modern Approach. Norton, 1996.
- Bjarne Stroustrup, "C++ Programming language", 3rd edition, Pearson education Asia (1997)
- Lafore R. "Object oriented Programming in C++", 4th Ed. Techmedia, New Delhi (2002).
- Yashwant Kenetkar, "Let us C++", 1st Ed., Oxford University Press (2006)
- B.A. Forouzan and R.F. Gilberg, Compiler Science, "A structured approach using C++" Cengage Learning, New Delhi.
- <https://www.javatpoint.com/cpp-tutorial>
- <https://www.tutorialspoint.com/cplusplus/index.htm>
- [https://ambedkarcollegevasai.com/wp-content/uploads/2019/03/ CPP.pdf](https://ambedkarcollegevasai.com/wp-content/uploads/2019/03/_CPP.pdf)
- https://onlinecourses.nptel.ac.in/noc20_cs07/unit?unit=3&lesson=19

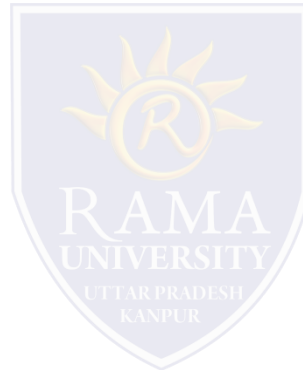


MULTIPLE CHOICE QUESTION

Multiple Choice Question:

Q1. How many objects are used for input and output to a string?

- a) 1
- b) 2
- c) 3
- d) 4

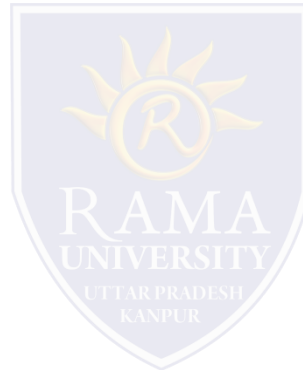


MULTIPLE CHOICE QUESTION

Multiple Choice Question:

Q2. Which operator is used to insert the data into file?

- a) >>
- b) <<
- c) <
- d) >



MULTIPLE CHOICE QUESTION

Multiple Choice Question:

Q3. Which function is used to position back from the end of file object?

- a) seekg
- b) seekp
- c) both seekg & seekp
- d) seekf



MULTIPLE CHOICE QUESTION

Multiple Choice Question:

Q4. Which member function is used to determine whether the stream object is currently associated with a file?

- a) is_open
- b) buf
- c) string
- d) is_out



MULTIPLE CHOICE QUESTION

Multiple Choice Question:

Q5. Which header file is used for reading and writing to a file?

- a) `#include<iostream>`
- b) `#include<fstream>`
- c) `#include<file>`
- d) `#include<fe>`



Summary

In this lecture, you learned that:

- To read and write from a file we are using the standard C++ library called `fstream`.

