File Management

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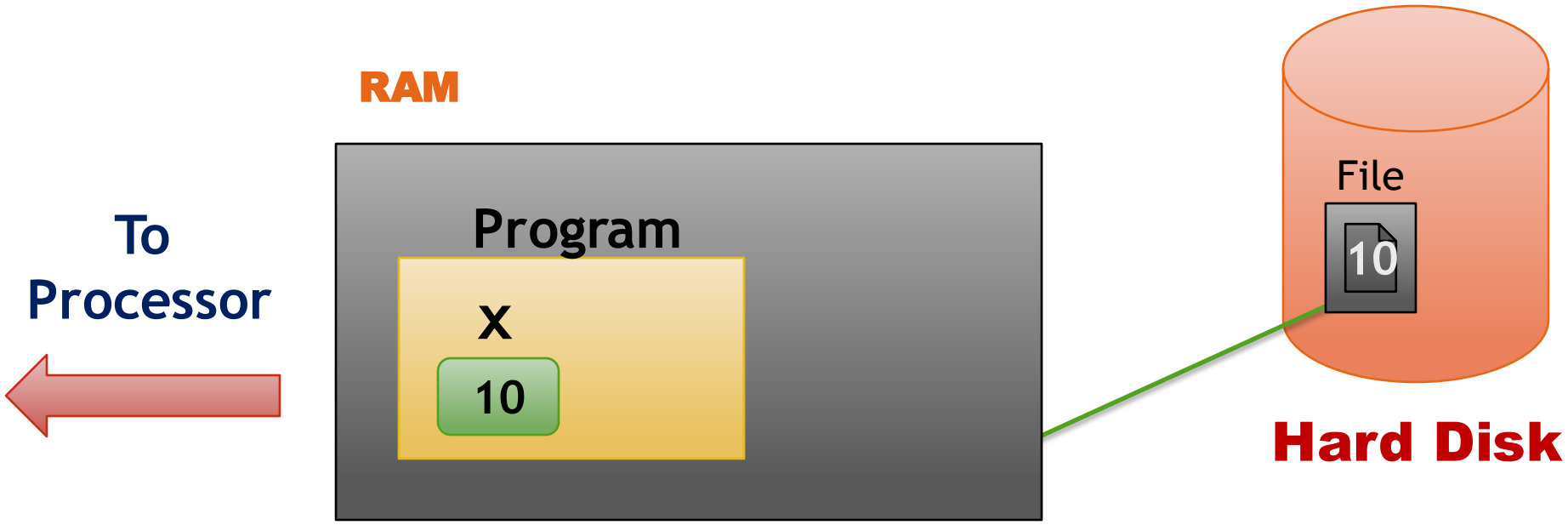
Agenda

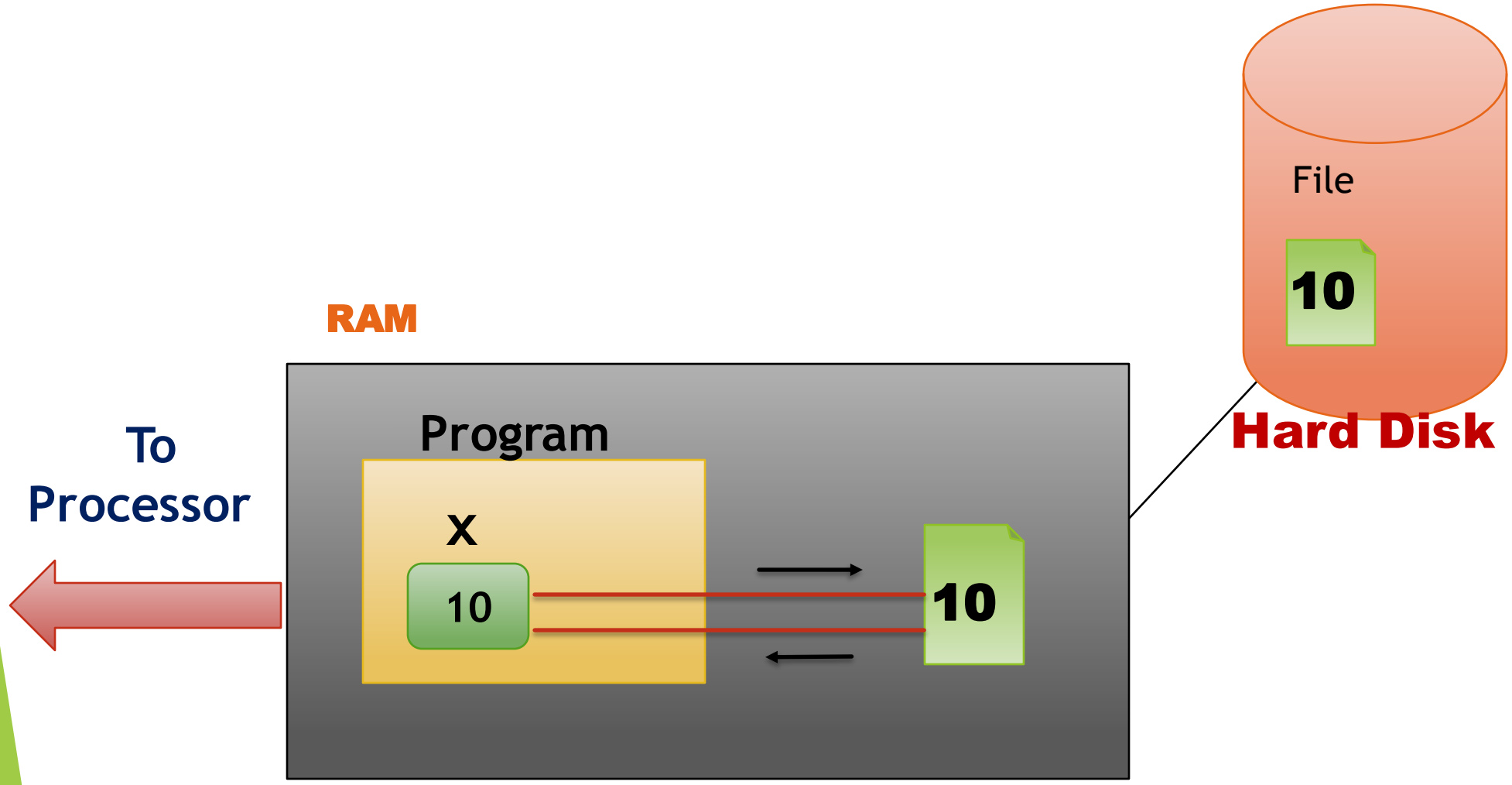
- What is file handling ?
- Introduction to stream
- Writing data to a File
- Appending data to a file
- Reading data from a File
- Mode of file opening
- Renaming a file, Removing a file

What is file handling?

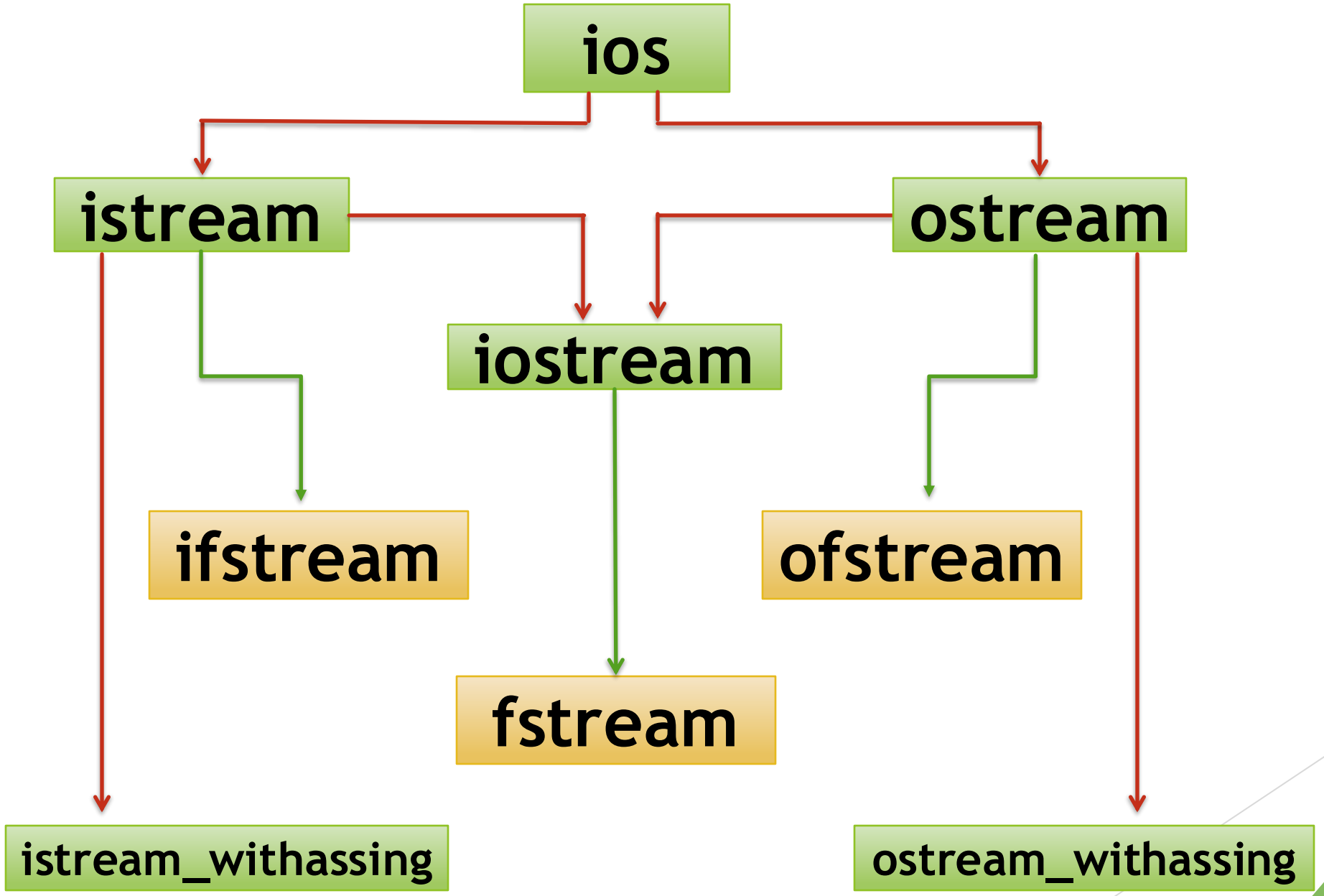


- File handling is used to store data permanently in a computer.
- Using file handling we can store our data in secondary memory (Hard disk).

Introduction to stream



Streams Classes



- fstream — ifstream, ofstream — class

- **ofstream:-** Represents the output file stream and is used to create and write to files.
- **ifstream:-** Represents the input file stream and is used to read from files.
- **fstream:-** Represents the file stream and can be used for both reading from and writing to files.

- **ifstream** → इसका **object** बनाके **file** में **read** करते हैं
- **ofstream** → इसका **object** बनाके **file** में **write** करते हैं

File Operations in C++

- **open() :–** This is used to create a file.
- **read() :–** This is used to read the data from the file.
- **write() :–** This is used to write new data to file.
- **close() :–** This is used to close the file.

❖ Steps of File Handling:- 👇

1. **Open a File :-** Before performing any operation on a file, it must be opened.
2. **Perform Operation :-** Once opened, you can perform various operations likes :-
   1. Writing, 2. Reading, 3. appending,
   4. deleting.
3. **Close the File:-** After completing operations on the file.

Writing data to a File

```
#include<iostream>
#include<fstream>
using namespace std;
int main()
{
    ofstream out;
    out.open("Demo.txt");
    if(out)
        cout<<"File Created"<<endl;
    else
        cout<<"File don't Created"<<endl;
    out<<"TasiNCoder";
    out.close();
}
```

Appending data to a file

```
#include<iostream>
#include<fstream>
using namespace std;
int main()
{
    ofstream out;
    out.open("Demo.txt", ios::app);
    if(out)
        cout<<"File Created"<<endl;
    else
        cout<<"File don't Created"<<endl;
    out<<"\nI write code.";
    out.close();
}
```

Reading data from a File

```
#include<iostream>
#include<fstream>
#include<string>
using namespace std;
int main()  {
    ifstream in;
    string name;
    in.open("Demo.txt");
    if(in)
        cout<<"File opend"<<endl;
    else
        cout<<"File don't opend"<<endl;
    in>>name;
    cout<<name<<endl;
    in.close();
}
```

Mode of file opening

❖File open() mode

- **ios is a class**
  - **ios :: in → read mode**
  - **ios :: out → write mode**
  - **ios :: trunc → Delete \ Rewrite**
  - **los :: app → append mode**

- **file open one time multiple modes**
  - **syntax:-**

object.open("filename.txt", mode | mode)

- **eof() :-** This function returns true if the end of the file is reached while reading the file.
- **fail() :-** returns true when the read/write operation fails or a format error occurs.
- **bad() :-** returns true if reading from or writing to a file fails.

Renaming a file & Removing a file

```
int main()
{
    remove("Demo.txt");
    rename("temp.txt", "Demo.txt");
    return 0;
}
```