C++:
Streams (specifically file I/O)

PLEASE Look at this Video

- 3 minute video on pointers and references
- https://www.youtube.com/watch?v=LwAPKuJpvmA
- (BTW I’m sorry about its weird background music)

File I/O

- #include <fstream>
- Provide char I/O to files
- Usually want to follow pattern

    open ->read or write->close

If reading file use ifstream

If writing file use ofstream

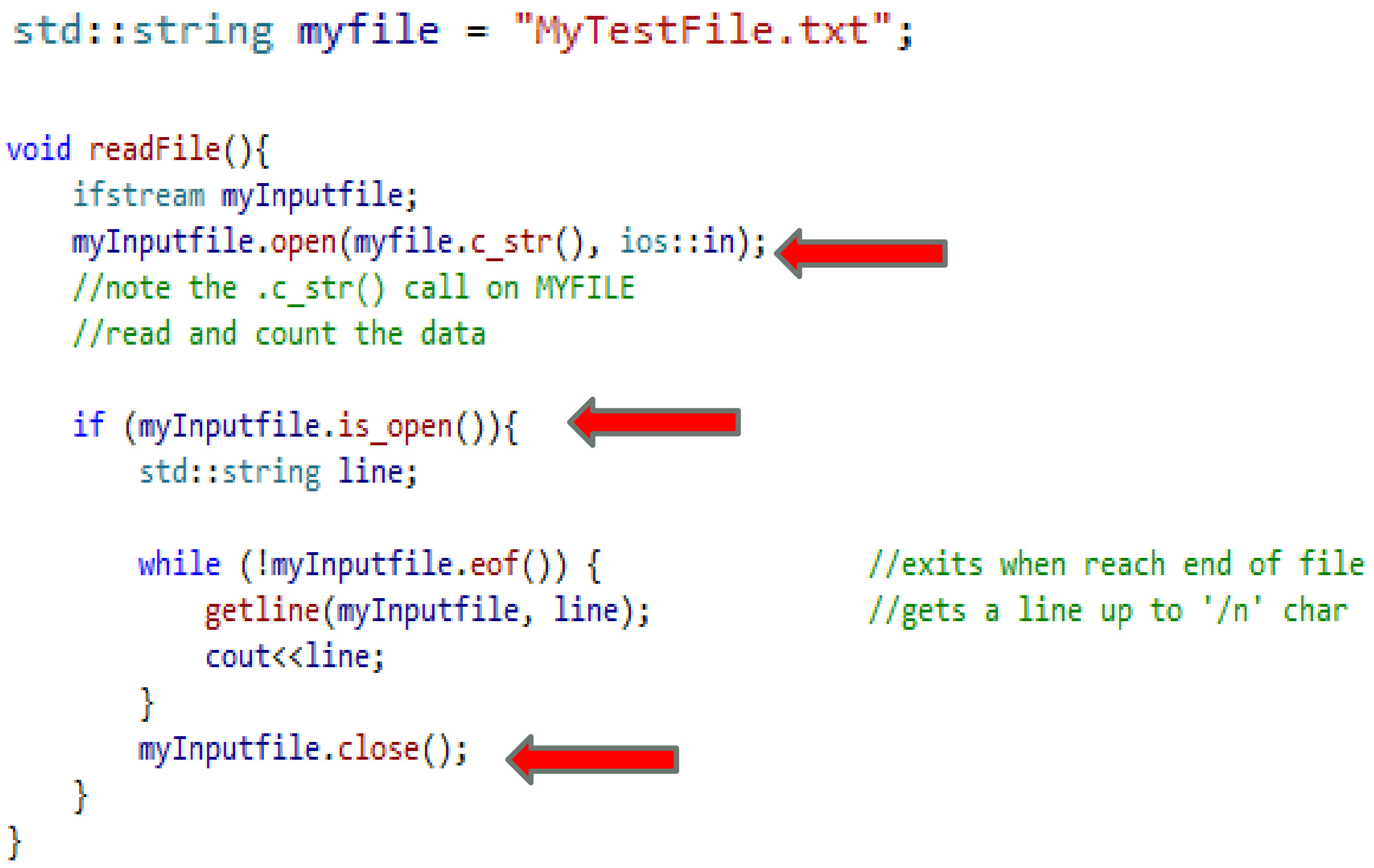
See http://www.cplusplus.com/doc/tutorial/files/

File I/O Opening a file

- .open(filename,mode)
- Filename is const char *, *a pointer*.
- Use std::string instead, easier and safer
- String.c_str() will return a const char pointer to string contents
- mode (flags)

ios::inOpen	for input
ios::outOpen	for output
ios::binaryOpen	binary, encryption, images etc
ios::ate	Set initial position at the end of the file. Default is beginning
ios::app	append to end of the file
ios::trunc	if exists, open and delete contents

File I/O reading a file



```
std::string myfile = "MyTestFile.txt";

void readFile(){
    ifstream myInputfile;
    myInputfile.open(myfile.c_str(), ios::in);
    //note the .c_str() call on MYFILE
    //read and count the data

    if (myInputfile.is_open()){
        std::string line;

        while (!myInputfile.eof()) {                    //exits when reach end of file
            getline(myInputfile, line);                 //gets a line up to '/n' char
            cout<<line;
        }
        myInputfile.close();
    }
}
```

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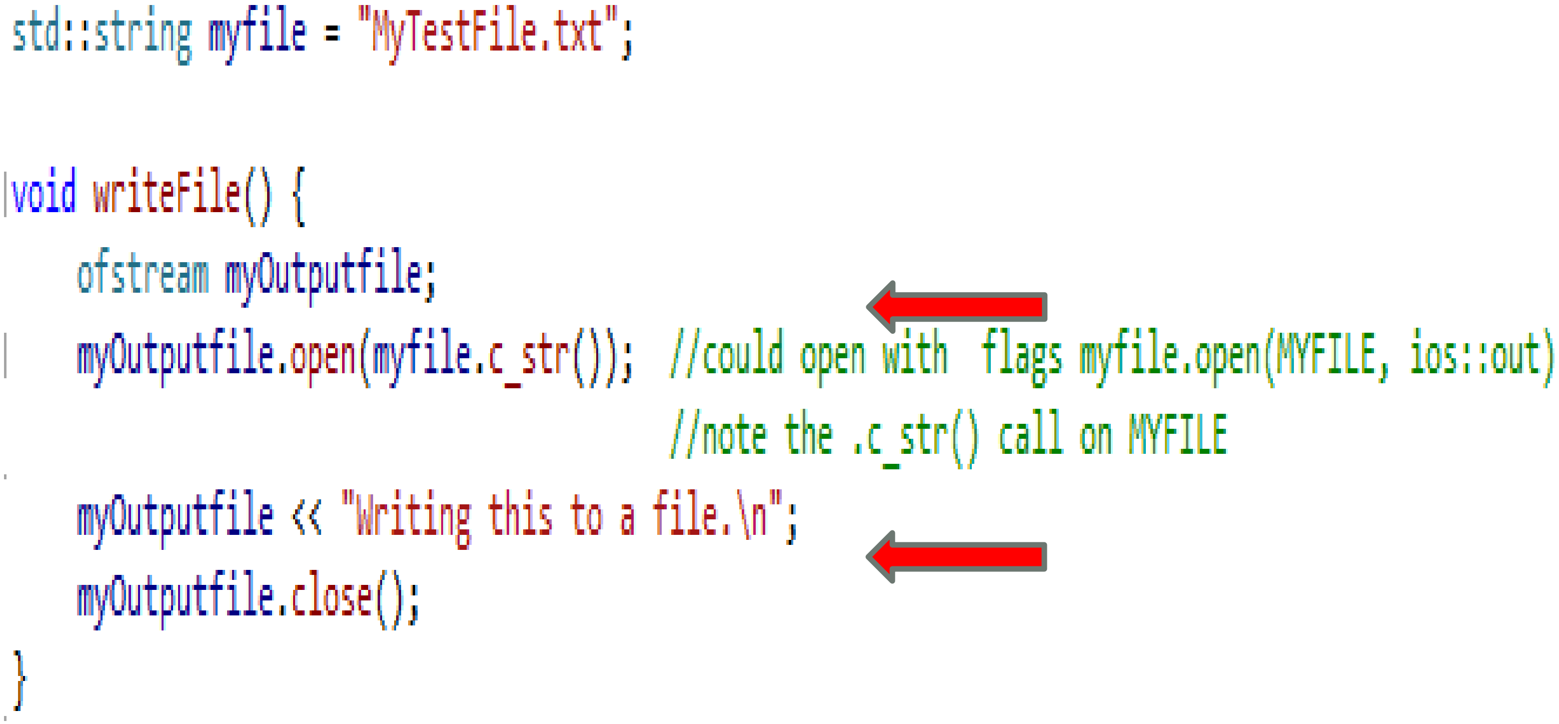
File I/O writing a file



```
std::string myfile = "MyTestFile.txt";

void writeFile() {
    ofstream myOutputfile;
    myOutputfile.open(myfile.c_str());  //could open with  flags myfile.open(MYFILE, ios::out)
                                        //note the .c_str() call on MYFILE
    myOutputfile << "Writing this to a file.\n";
    myOutputfile.close();
}
```

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