

Lab 7 – 08227 Advanced Programming

This tutorial introduces the reader to using IO in C++.

The content of this lab tutorial may be covered in the lecture after the scheduled lab, depending on timetabling. If this is the case, then try to complete as much as you can before the lecture, and then complete the rest of this lab next week during the next lab session.

1.0 IO Exercise 1

Download the **Lab7.zip** file and extract the files to **G:/08227/Lab7/**. Open the **Copy** solution and then compile and run the program.

The program will display something like:

```
Usage: G:\08227\Lab7\Debug\Copy.exe <input filename> <output filename>
```

The program displays this message because it has not been passed an input filename or an output filename. Look at the code in **main.cpp**. The program checks to see whether or not the user has passed these arguments to the program, as follows:

```
if (argc != 3) {
    cerr << "Usage: "
        << argv[0]
        << "<input filename> <output filename>"
        << endl;
    int keypress; cin >> keypress;
    return -1;
}
```

Firstly the code checks to see whether **3** arguments have been passed to the program. The operating system will always pass at least one argument when the program is run, namely the **path** of the program. Therefore any argument that you pass to the program will be the second, third, fourth, etc.

Our program will be required to copy a text file. Therefore the program requires the user to send an **input filename** and an **output filename** as arguments. One can do this in the Visual Studio IDE. Select **Project**, then **Properties**, then **Configuration Properties**, and then **Debugging**. Then click inside of the **Command Arguments** box. Here is where you enter the parameters to send to the program when it is run. You should enter **input.txt output.txt** into the **Command Arguments** box. This will mean that **argv[1]** will contain **input.txt** and **argv[2]** will contain **output.txt**. Enter the two program arguments and then compile and run your program and you should not get any error message.

2.0 IO Exercise 2

Implement the functionality inside of the **Copy(char filenamein[], char filenameout[])** function that will read in a text file given by the **filenamein** array, and will output a copy of the text file to a new text file given by the **filenameout** array.

Make sure that you check for the input file existence before trying to copy it.

3.0 ADVANCED: IO Exercise

Implement a function that will compare the contents of the **input.txt** and **output.txt** files to make sure that they are the same. Also check that their file sizes are equal.