Lab 03

Resources

- Discussion slides (./lab03slides.pdf) - Copy of the presentation given by the TA

Idea

The goal of this lab is to go over some recurring problems in lab, as well as talk abou functions and some file I/O. After doing the lab exercise, you should feel confortable functions to accomplish tasks. Also, you should understand that there are many ways implment a function. This lab should be relatively short and you can use time after t on your project or ask questions about it.

In-lab assignment

Description

You will implement a function that does the same thing in many different ways. The function to be implemented is a simple "echo" function. It should read a file and then output that file's contents to either the console or a given file. It should also notify th caller whether or not the function was successful via either a return value or passed integer. For this lab your functions only need to work for files that are formatted like project. This means single strings with no white space on separate lines

Requirements/Deliverables

The following functions should be implemented. I have given you the description of t function. You need to come up with a function prototype and a function definition fo each. Function defintions should be placed below main.

Ex: Write a function called max that takes in two integers and returns the maximum the two.

Function prototype:

```
int max(int, int);
```

Function definition:

```
int max(int a, int b){
    if(a > b) return a;
    return b;
}
```

- Write a function called echo_1 that takes in a string representing the name of an input file. The function should print the contents of the file to the console. On su the function should return 1 (or true). On failure of any kind, the function should return 0 (or false).
- Write a function called echo_2 that takes in a reference to an ifstream variable. can assume the ifstream has already been opened and is ready for input. The fun should print the contents of the file to the console. On success, the function shou return 1 (or true). On failure of any kind, the function should return 0 (or false).
- Write a function called echo_3 that takes in a string representing the name of an input file as well as a reference (or a pointer) to an integer value. The function sh print the contents of the file to the console. On success, the function should set th value of the integer paramter to 1. On failure, the function should set the value o integer parameter to 0.
- Write a function called echo_4 that takes in a reference to an ifstream variable a as a reference (or a pointer) to an integer value. You can assume the ifstream ha already been opened and is ready for input. The function should print the conter the file to the console. On success, the function should set the value of the intege paramter to 1. On failure, the function should set the value of the integer parame

0.

- Write a function called echo_5 that has the same paramters and functionality of of the above 4 functions (you choose). Also, add in a string parameter representi file name to output the input file to. Instead of writing to the console, the functio should write the contents of the given input file to the given output file.
- Write a main function that thouroughly tests the functions you have written.

Hints

- Dr. Nemo provided a sample file I/O program (http://www.cise.ufl.edu/~nemo/cop3503/src/fileIODemo.cpp) that does somet similar to what we are doing here.
- Notice that the core logic does not change from function to function.

Grading Distribution

- 3 points for each function
- 5 points for main and good style (this includes things like naming files and funct correctly, etc.)

Optional Enhancements

The following are completely optional additions you can add to your code once you a done. Completion or incompletion will not aid/hurt your grade.

- Only write the core logic once in your file. How will functions then access this log Hint: cout and ofstream are both of supertype ostream, which supports the << operation
- Write a test harness (menu) in main (or in separate functions) to thouroughly te your functions.
- Echo files of any format (not just your project format). Hint: use getline() or get(