

Programming Exercises Review – Data abstraction through File IO

In no particular order:

1. Write a program to count the number of lines and the number of characters in a text file.
2. Write a program to input a specified number of integer values into an array, sort the array from lowest to highest, and output the array to the console.
3. Write a program to print pascal's triangle to a specified number of levels.
4. Write a program that allows the user to write their inputs to a text file line by line, until they enter "quit."
5. Write a math program (not using cmath) that gives the user a menu system used to calculate prime numbers, factorials, quadratic functions, and whatever else you want.
6. Write a program to input a c-string, reverse it, and output it.

Overall c-strings program:

7. Write a program that allows the user to input a c-string, and then gives them options to output a substring between two indices, reverse the string, add to the end of the string, compare it to another string (check if they are equal), find the length of the string, insert another string into the original string, and insert another string that replaces the characters of the original string.

Bonus – try the other ones first:

8. Write a very simple game where the player, represented by a character, can input the characters w, a, s, or d to move around a grid to get to an object, represented by another character, and can't pass through other objects represented by another character. Additionally, try having the game board inputted from a file, so it can be changed between runs of the program.

Example board – P = player, W = wall, G = goal:

```
.....  
.G.....  
.....W...  
.....  
....W.....  
.....W...  
.....P
```

You may want to know multidimensional arrays for this, which we will be doing next week. However, feel free to ask me about it.