

CPSC 1160: Assignment 1[25 marks]

Exercise 1 [20 marks]

The expanded form of the equation $(ax+by)(cx+dy)$ would equal $(a*c)x^2+(a*d+b*c)*xy+(b*d)y^2$.

Write a program

1. Start with the starter file that is given (starter_assign1.cpp).
2. Read in a file and process the file line by line
 - a. Each line will have 4 integers separated by white space.
3. Complete that following 4 functions so that your code will run correctly. You are not allowed to edit the main in this program.
 - a. `get_coefficients (ifstream&, int&, int&,int&, int&);`
 - i. will read in the next four coefficients from a file and store them
 - b. `print_starting_equation (int a, int b, int c , int d)`
 - i. will print out the not expanded equation
 - c. `cal_new_coefficients (int,int,int,int, int&,int&,int&)`
 - i. use the coefficients that were read in to calculate the new coefficients
 - d. `print_expanded_equation (int,int,int)`
 - i. use the calculated coefficients to display the expanded equation
 - ii. if a coefficient is 0 the variable should not be displayed
 - iii. if a coefficient is 1 or -1 only the variable should be displayed
 - iv. the first coefficients should never have a +
 - v. display a 0 if all coefficients are 0

Examples

Output

```
(1x-2y)(3x+4y)
3x^2-2xy-8y^2
(0x+4y)(1x-42y)
4xy-168y^2
(1x+0y)(1x+0y)
x^2
```

Test.txt

```
56 2 -1 5
1 -2 3 4
0 4 1 -42
1 0 1 0
```

Submissions

Make sure that your code is neat and is well commented [5 marks]

Check that all of your programs work the way they are intended to work by running them with different inputs

Before the submission date more test input may be giving, your program should run on those examples and any other examples.

Submit to D2L a zip/archive file containing the .cpp you have written

If you do not zip your file or if you submit the .class files, you will receive ZERO for this lab
(<http://www.wikihow.com/Zip-Files-Together>)