# CS 351 Lab 1 (Due August 31st 11:59 pm)

## Prompt

You must first read in a filepath from the command line (System.in) followed by a criteria to be tested, either "within" or "overlap".

Within the file you must read in ranges in the following format:

lower1-upper1,lower2-upper2

Each line of the file will contain 1 pair of ranges. You must then determine how many pairs within the file pass the criteria. Namely, if the criteria is "within" then you would count how many lines have ranges where one range is contained within the other range. Or if the criteria is "overlap" then you would count how many lines have ranges where one range overlaps with the other range. You must then print this count followed by a newline without any other text. Then you must read in another filepath and criteria. You must repeat this process until the filepath is "DONE", then your program should exit gracefully.

You can assume that all numbers given will be integers and that lower <= upper and that the format of the input file will be correct.

For example if a file contains the following ranges:

2-4,6-8
2-3,4-5
5-7,7-9
2-8,3-7
6-6,4-6
2-6,4-8

And the criteria is "within" then you would print "2" because the range 3-7 is fully within the range 2-8 and the range 6-6 is fully within the range 4-6. Whereas if the criteria was "overlap" then you would print "4" because the range 5-7 overlaps with the range 7-9, the range 2-8 overlaps with the range 3-7, the range 6-6 overlaps with the range 4-6, and the range 2-6 overlaps with the range 4-8.

Here is a transcript of my program running:

docs/lab1/test_case1.txt
within
2
docs/lab1/test_case1.txt
overlap
4
DONE

This assumes you have a docs folder in the root of your project with a lab1 folder within it and a test_case1.txt file within that folder.

test_case1.txt looks like this:

2-4,6-8
2-3,4-5
5-7,7-9
2-8,3-7
6-6,4-6
2-6,4-8

I have also included this file in the lab1 link on canvas. We will be running your code on much longer test cases then the file given so make sure to thoroughly test your code!

## Submission

Submit a zip of only your java source files onto canvas. No other files or folders should be within the zip file ONLY your java source files.