Programming Project #3
CS 3410

Use a Disjoint Sets data structure to solve the "Galactic Breakup" problem. Note: the I/O from the problem has been modified to make it work better in Gradel. You will no longer iterate through multiple test cases; Gradel will do this for you. Your code should only solve one test case.

Specific guidelines:

a. You will need to solve the problem for the Gradel test sets. You may want to try other input sets to be sure it works properly or to facilitate debugging.
b. You need to emulate the output format exactly.
c. You will work in teams of 2.
d. You can use either C++ or java.
e. You can use any development environment you choose.

Required for turn-in:

a. Listing of your program (properly commented, and in compliance with the appropriate CS style guide). Include in your header an overview of your algorithm.
b. Correctness results in Gradel; match the output format exactly.
c. An analysis of the running time of your algorithm (just a 2-3 sentence argument).
d. A CS cover sheet, including a signed statement regarding how well your final code worked. For example, "Our code compiled and ran properly, and produced the correct output" or "Our code compiled correctly, but core dumps when executed."
e. (optional) Comments on problems you ran into/lessons learned.

Sample Input

```
2 2 3 9
2 4 5
3 6 8 10
1 7
1 2
1 11
1 9
1 1
1 0
1 3

(or)

2 2 3 3
4 0 1 2 3
4 4 5 6 7
4 8 9 10 11
```

Sample Output

```
4

(or)

0
```