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CMSC401 Final Project

Compile instructions:

program takes one command line argument, input file name (cpIn.txt).

Program outputs file (cpOut)

Program report: The running time of my algorithm is O(n)

My alg:

-Read in graph/file

-calc degrees of each vertex

-sort degrees highest-> lowest

-select first k vertices from sorted degree list (largest degree vertices)

-remove those nodes and connected edges

-return count number of edges in new graph Gs (Minimum pairwise connectivity)

-return k number of vertices which have highest degrees

I had trouble implementing removing vertices from a 2d array so I just changed the values at which i wanted to remove to -1 .

**Pt1 Test runs:**

Given sample file (7,11,5)

Output:

4

3,4

Random graph input (50, 51,5)

Output:

20

10,13,29,40,8

.

Random graph input (100, 111,5)

Output:

52

75,16,33,55,81

Random graph input (500, 505,5)

Output:

187

332,107,10,236,78

**Part2:**

Random graph input (100, 111,5)

Output:

52

75,16,33,55,81

Same graph input change k(100, 111,10)

Output:

18

75,16,33,55,81,12,66,58,9,2

Same graph input change k(100, 111,50)

Output:

2

75,16,33,55,81,12,66,58,9,2

8,17,70,80,91,79,3,47,87,14

89,15,65,30,1,42,98,78,85,46

59,25,5,69,52,88,28,34,12,4