Ramaneek Gill 1000005754
CSC373 Problem Set 7

Frugal:

Input is the same as the input in the problem set for Frugal.

Output:

Is there some subset of recipes $R' \subset R \; with \; size \; |R'| < M$ such that all together the recipes in R' use some ingredients in G $(\cup_{r \in R'} r = G \; \wedge \; r_1 \cap r_2 \neq \emptyset, \exists r_1, r_2 \in R'$

Verifying Frugal:

VerifyFrugal(G, R, M, R'):

If R' is a subset of recipes from R with size |R'| < M:

If for all elements r_1 and $r_2 \in R' = G, r_1 \cap r_2 = \emptyset$:

Return True

Return false

ShortPaths:

Input: an undirected graph $G = (V, E)$ and a positive integer k

Output:

Are there any simple paths in G that contain more than k edges

VerifyShortPaths(G,k,P): #not the complement!

If P is a simple path in G and there are more than K edges in P

Return false

Return true