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Date: 10/22/2021

Exercise 3 Report

EXERCISE 3 REPORT

**Time Complexity Analysis:**

*1. Adjacency Matrix to Adjacency Lists:*

Time complexity is O(n^2) where n is the number of vertices")

*2. Adjacency Lists to Incidence Matrix:*

There are for loops so most likely this is the upper bound.

for adjList in adjLists: 1 for every vertex: n time

for i in range(1,len(adjList)): for every entry in the adjList: 1 every edge: m time

final time complexity is O(n\*m)

3. *Incidence Matrix to Adjacency Lists:*

There are for loops so most likely this is the upper bound.

for i in range(numCols): go thru every edge, m times

for j in range(numRows): go thru every vertex, n times

final time complexity is O(n\*m)