CS 5970/6970: Graph Algorithms
October 16, 2023

Homework 5

Question 1. Implement a function that converts a DNA sequence into a de Bruijn graph with k=4. (20 points)

Question 2. Implement Tarjan's algorithm for strongly connected components. (30 points)

Question 3. Implement a function that determines if there is an Eularian trail in a graph. (note that you will want to find the source and sink if they exist and then make an edge from sink to source before running Tarjan's algorithm on the graph). (20 points)

Question 4. Implement Hierholzer's algorithm on the de Bruijn graph if an Eularian trail exists in the graph. (30 points)