IT5003 Mar-May 2024

Data Structures and Algorithms

Tutorial+Lab 08
Shortest Paths (Part 2) + Finale

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1 Introduction and Objective

In this last session, we will wrap up the semester. First, we will spend some more time reviewing any loose ends about the SSSP problem.

Then, we will discuss a few past paper questions involving this SSSP problem.

Finally, we will use the remaining time to discuss the ongoing PS8 tasks.

2 Questions

SSSP Open QnA, Continued

We need to clear two more SSSP-related algorithms that are covered during Lecture 8a (the Modified Dijkstra's algorithm and the topological sort solution if the input graph is a DAG). Please use `https://visualgo.net/en/sssp` during the discussion.

Last Graph Modeling Exercise, via Past Paper Discussions

There are a few graph questions in recent related final assessment papers (of CS2040/C/S or IT5003). Let's discuss three of them (considering that SSSP will have to be asked in the Final Assessment):

1. `https://www.comp.nus.edu.sg/~stevenha/cs2040/tests/IT5003-2021-22-S1-final.pdf`, Application 2 - Book Translation

2. `https://www.comp.nus.edu.sg/~stevenha/cs2040/tests/CS2040-2017-18-S4-final.pdf`, Question C.1, SSSP in a Special "SLL".

3. `https://www.comp.nus.edu.sg/~stevenha/cs2040/tests/CS2010-2015-16-S4-final.pdf`, Question C.3, Avengers Initiative

Hands-on 8

TA will run most of this session to help students with PS8.

- PS7 Quick Debrief,

- Then, use the remaining time to help students with PS8... (in high level only), see below

Problem Set 8

We will end the tutorial and this course with high level discussion of PS8 A+B.