

CS3000: Algorithms & Data — Summer 2025 — Laney Strange

APP 8

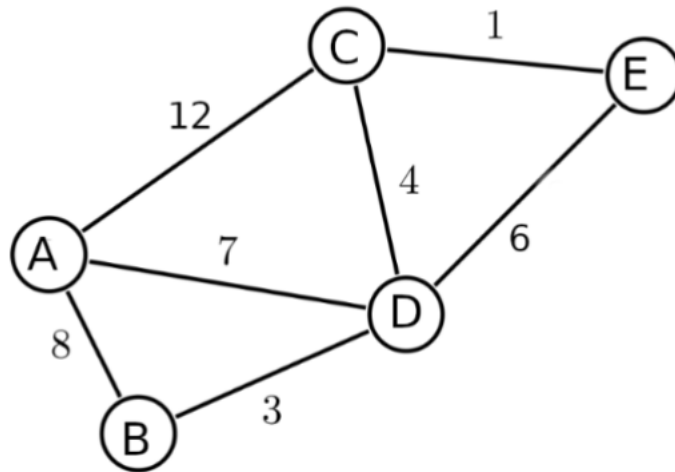
Due: June 10th, 2025 @ 11:30am via [Gradescope](#)

Name:

- APPs will be assigned towards the end of roughly two lectures each week. You'll put together a solution to a short problem that we'll all use in the following lecture. We'll have time set aside to do these in class, or you can work on your own.
- You may handwrite your solutions, or typeset them in \LaTeX or another system.
- APPs will be graded on completeness. They must be submitted by 11:30am (just before lecture) on the due date. They will not be accepted late, but we drop 3 of them (out of 8 total).
- Collaboration is strongly encouraged for APPs!

Problem 1. *DFS and Dijkstra's*

This APP is concerned with the following graph:



- (DFS) In what order would Depth-First Search complete the vertices, assuming it starts at *A*? In case of a tie, assume we go in alphabetical order.

Solution:

- (Dijkstra) What would the $v.d$ and $v.\pi$ values be after Dijkstra's algorithm has completed running on this graph, starting at *A*?

Solution: