LAB8

November 21, 2023

1 Critical Paths.

The Program (or Project) Evaluation and Review Technique, commonly abbreviated PERT, is a statistical tool, used in project management, that is designed to analyze and represent the tasks involved in completing a given project. First developed by the United States Navy in the 1950s, it is commonly used in conjunction with the critical path method or CPM.
critical paths in PERT chart analysis. Edges represent jobs to be performed, and edge weights represent the times required to perform particular jobs. If edge (u, v) enters vertex v and edge (v, x) leaves v, then job (u, v) must be performed prior to job (v, x). A path through this dag represents a sequence of jobs that must be performed in a particular order. A critical path is a longest path through the dag, corresponding to the longest time to perform an ordered sequence of jobs.
The PERT chart formulation given above is somewhat unnatural. It would be more natural for vertices to represent jobs and edges to represent sequencing constraints; that is, edge (u, v, w) would indicate that job u must be performed before job v. weights would then be assigned to edges. Write a procedure that can finds a longest path in a directed acyclic graph with weighted edges.

2 Points for Attention

(1) Please refer to the example file for test cases.
(2)Your document should be submitted in electronic format whenever possible. If you have a handwritten document, please ensure that the writing is neat and the layout is well-organized. The document format should be either Word, PDF, or Markdown.
(3) Kindly upload the source code files along with their associated documentation in a compressed ZIP format to the elearning system for assessment.
(4) The deadline of this lab is 23:59:59 on November 24, 2023.
(5) The naming format for the file should be "lab8-StudentID-Name," and make sure to compress all the files into a single compressed folder.
(6) If you have any questions please feel free to contact teaching assistants.