

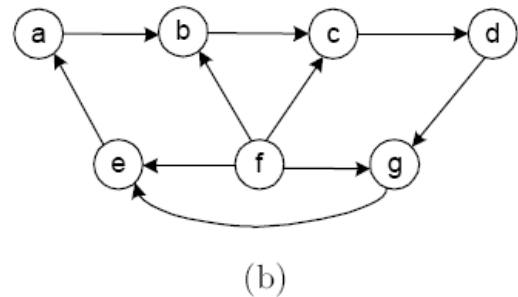
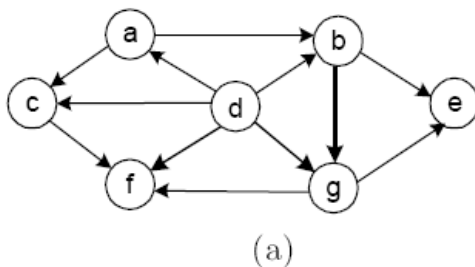
COMP 157 Assignment 4

Exercises 4.1:

6. *Team ordering* You have results of a completed round-robin tournament in which n teams played each other once. Each game ended either with a victory of one of the teams or with a tie. Design an algorithm that lists the teams in a sequence so that every team did not lose the game with the team listed immediately after it. What is the time efficiency class of your algorithm?

Exercises 4.2:

1. Apply the DFS-based algorithm to solve the topological sorting problem for the following digraphs:



Exercises 4.3:

5. Generate all the subsets of a four-element set $A = \{a_1, a_2, a_3, a_4\}$ by each of the two algorithms outlined in this section.
7. Write a pseudocode for a recursive algorithm for generating all 2^n bit strings of length n .

Submission Requirements:

- Submit your answers via Canvas.
- All submissions must be typeset. No handwritten work will be accepted.
- Word or PDF formats are preferred. If submitting documents in another format, include a separate text note indicating tools needed to read the document.