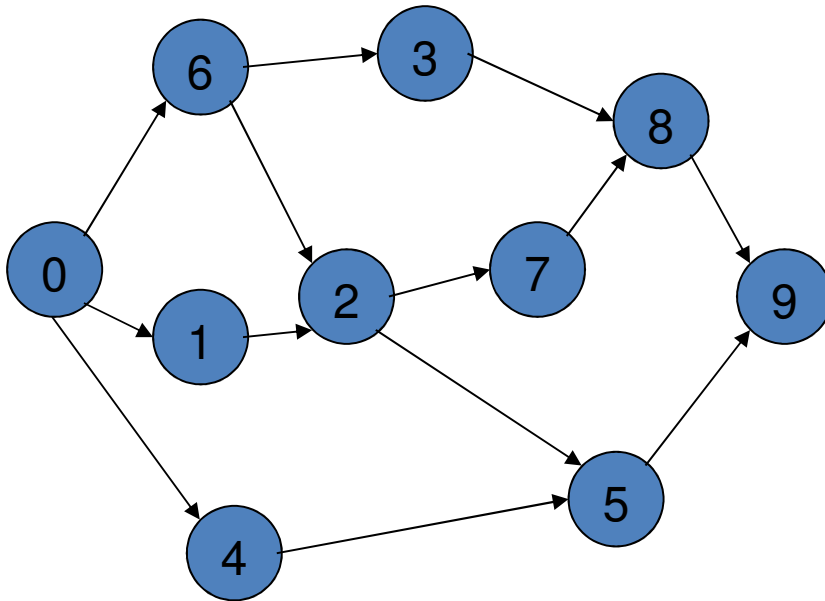


## Algorithms and Complexity I Homework 4



Question 1 (25 pts). Please list all possible outputs of Topology Sorting Algorithm for the graph given above.

Question 2 (30 pts). Please write a DFS based cycle detection algorithm for

- Undirected graphs. Give an example execution.
- Directed Graphs. Give an example execution.
- Provide time complexity analysis for both of them.

Question 3 (45 pts). Please write a BFS based cycle detection algorithm by considering the time complexity. Provide time complexity analysis for the algorithm.

Deadline: 5 December 2012.

Submission: Please send your homework to these e-mails:

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