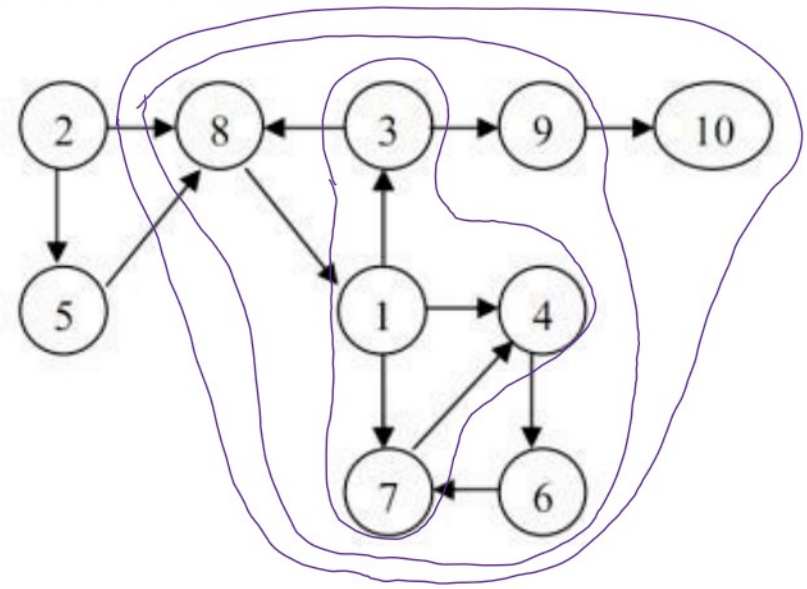
P07 - Graphen

Thursday, 29 October 2020 10:41

A1



1, 3, 4, 7, 6, 8, 9, 10

A2

	Adjazenz Matrix	Adjazenz Liste
Space	$O(\|V\|^2)$	$O(\|V\| + \|E\|)$
Add vertex	$O(\|V\|^2)$	$O(1)$
Add Edge	$O(1)$	$O(1)$
Remove Vertex	$O(\|V\|^2)$	$O(\deg(\|V\|))$
Remove Edge	$O(1)$	$O(\deg(\|V\|))$
Find adjacent vertices	$O(\|V\|)$	$O(\deg(\|V\|))$
Determine if a node is adjacent	$O(1)$	$\min(O(\deg(\|V\|)), O(\deg(\|E\|)))$

a) Remove Edge: Eintrag Matrix[i][j] = 0 setzen. → O(1).

Det. if a node v_i is adjacent to v_j: Check if M[i][j] == 1. → O(1)

b)