

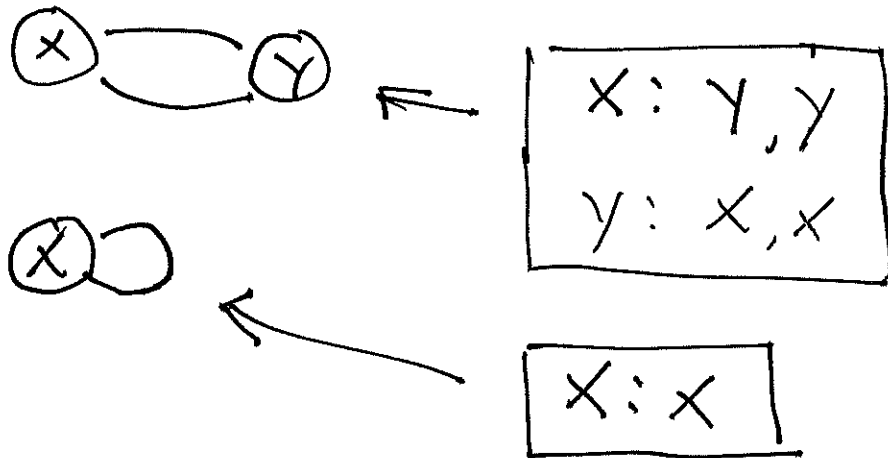
CSL 101 1-20-26

1

multi-g-aph

allows

adj list

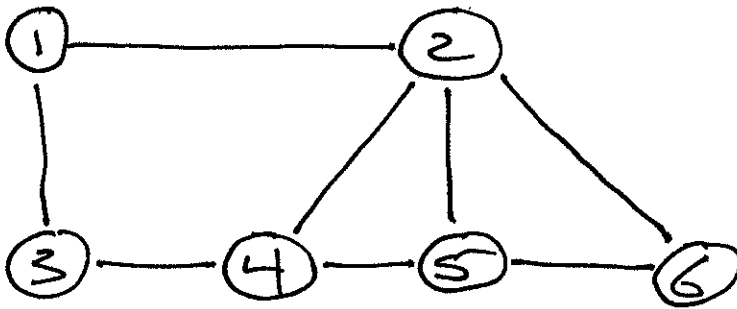


• Pa2: ext. 1 day

• Pa3: due sat. $\frac{1}{31}$

Depth First Search (DFS)

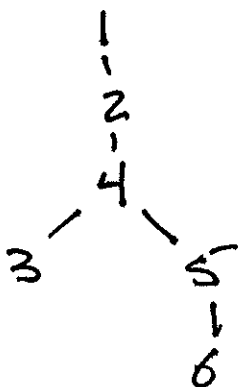
Ex



time
 0 9
 1 12
 2 12
 3 12
 4 12
 5 12
 6 12
 7 12
 8 12

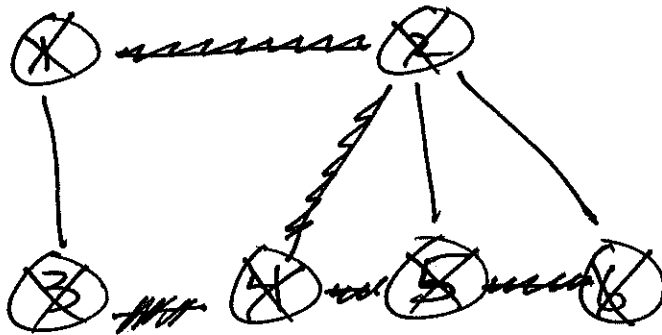
	adj	color	d	f	p
1	<u>2, 3</u>	w g/b	1	12	11
2	<u>1, 4, 5, 6</u>	w g/b	2	11	1
3	<u>1, 4</u>	w g/b	4	5	4
4	<u>2, 3, 5</u>	w g/b	3	10	2
5	<u>2, 4, 6</u>	w g/b	6	9	4
6	<u>2, 5</u>	w g/b	7	8	5

DFS
Forest

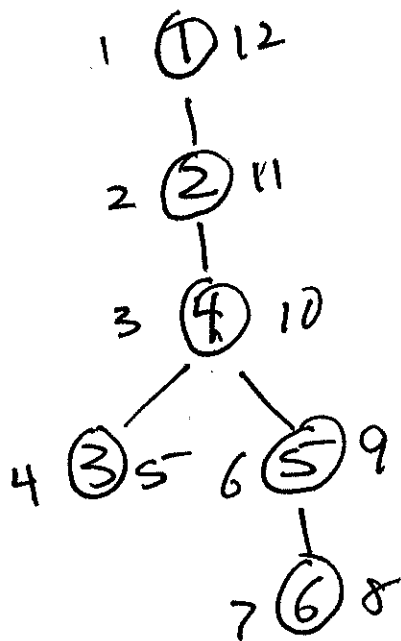


Ex. Sample

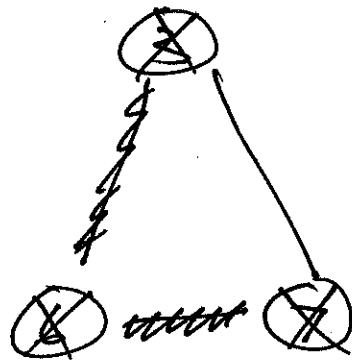
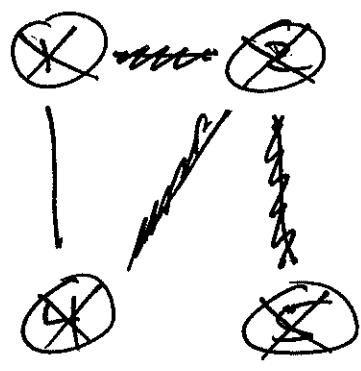
Time
0



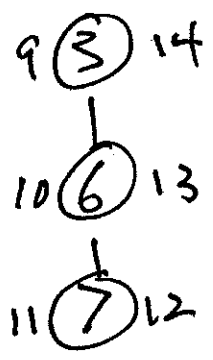
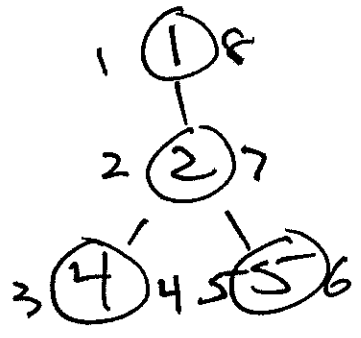
DFS Forest



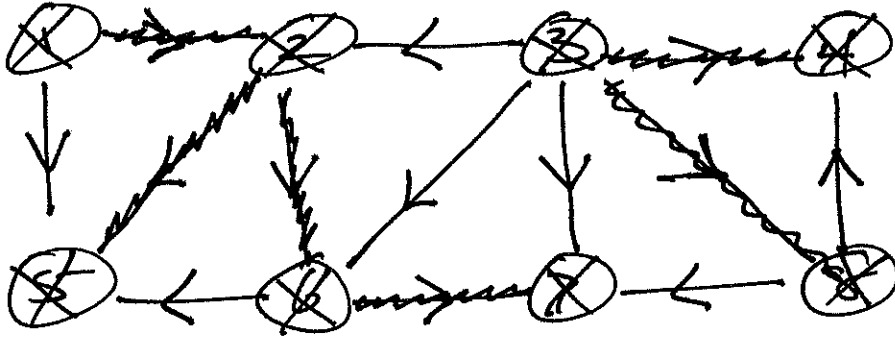
Ex.



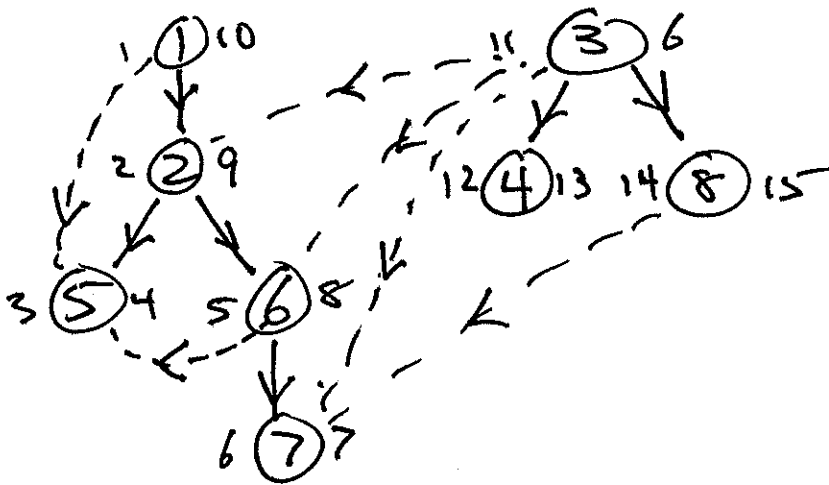
Forest



Ex.



Forest



Tree : (1,2), (2,5), (2,6), (6,7), (3,4), (3,8)

Back :

Forward : (1,5)

Cross : $\boxed{(6,5), (8,4)}$

$\boxed{(3,2), (3,6), (3,7), (8,7)}$

classification of edges

Tree: belong to DFS forest

Back: Join descendent to ancestor

Forward: Join ancestor to descendent

Cross: all other $\left\{ \begin{array}{l} \text{cousin to cousin} \\ \text{tree to tree} \end{array} \right.$