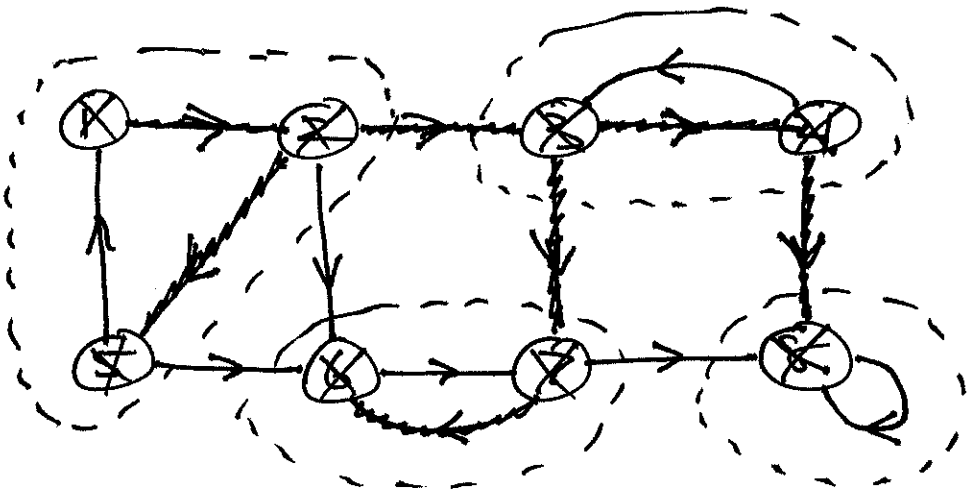
CSE 101 10-16-25

- Midterm 1 Th. 10/23
  Exam: 9:50 – 10:55
  Lecture to follow

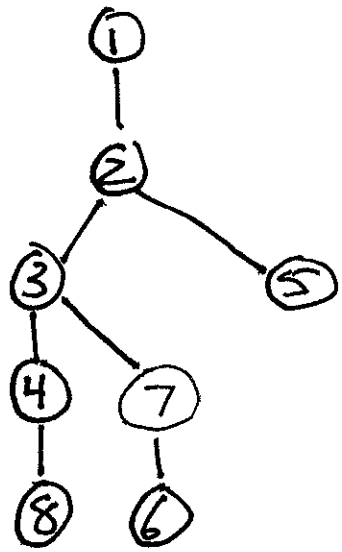
- extend Pa3 to Tuesday

Ex. SCC algorithm

G



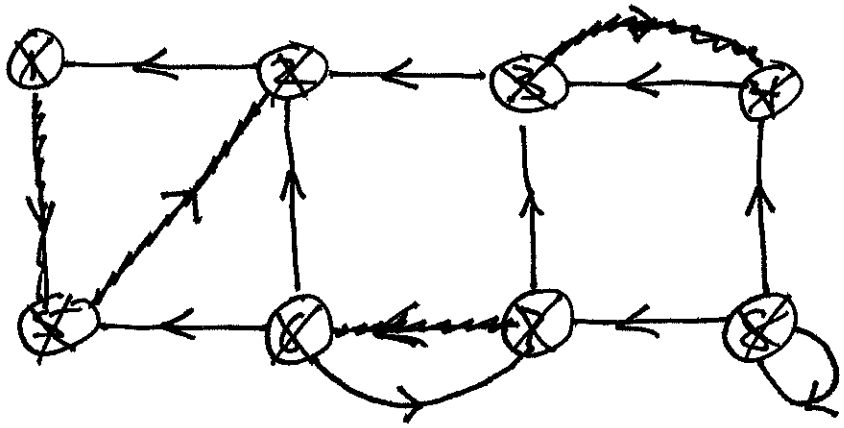
Forest



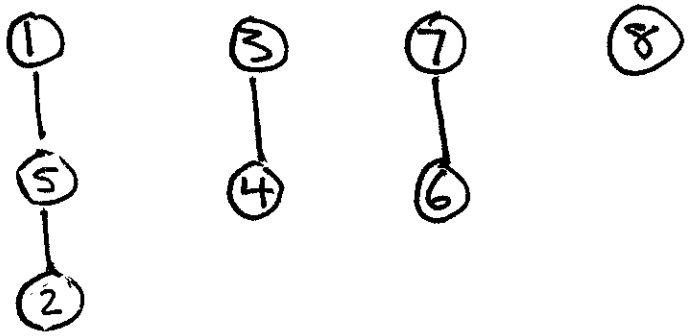
stack

1 ✓
2 ✓
5 ✓
3 ✓
7 ✓
6 ✓
4 ✓
8 ✓

G^T



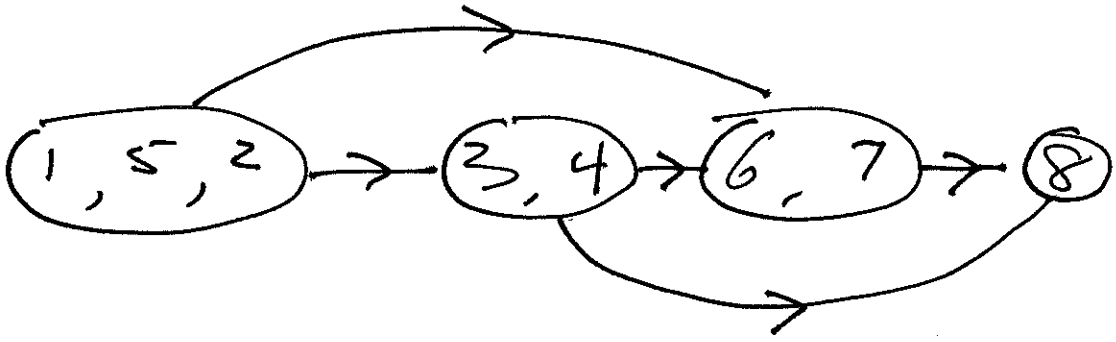
Forest



Stack f

8	n
7	n
6	
3	n
4	
1	n
5	
2	

Topological sort of G^{scc}



Note $(G^T)^{scc} = (G^{scc})^T$

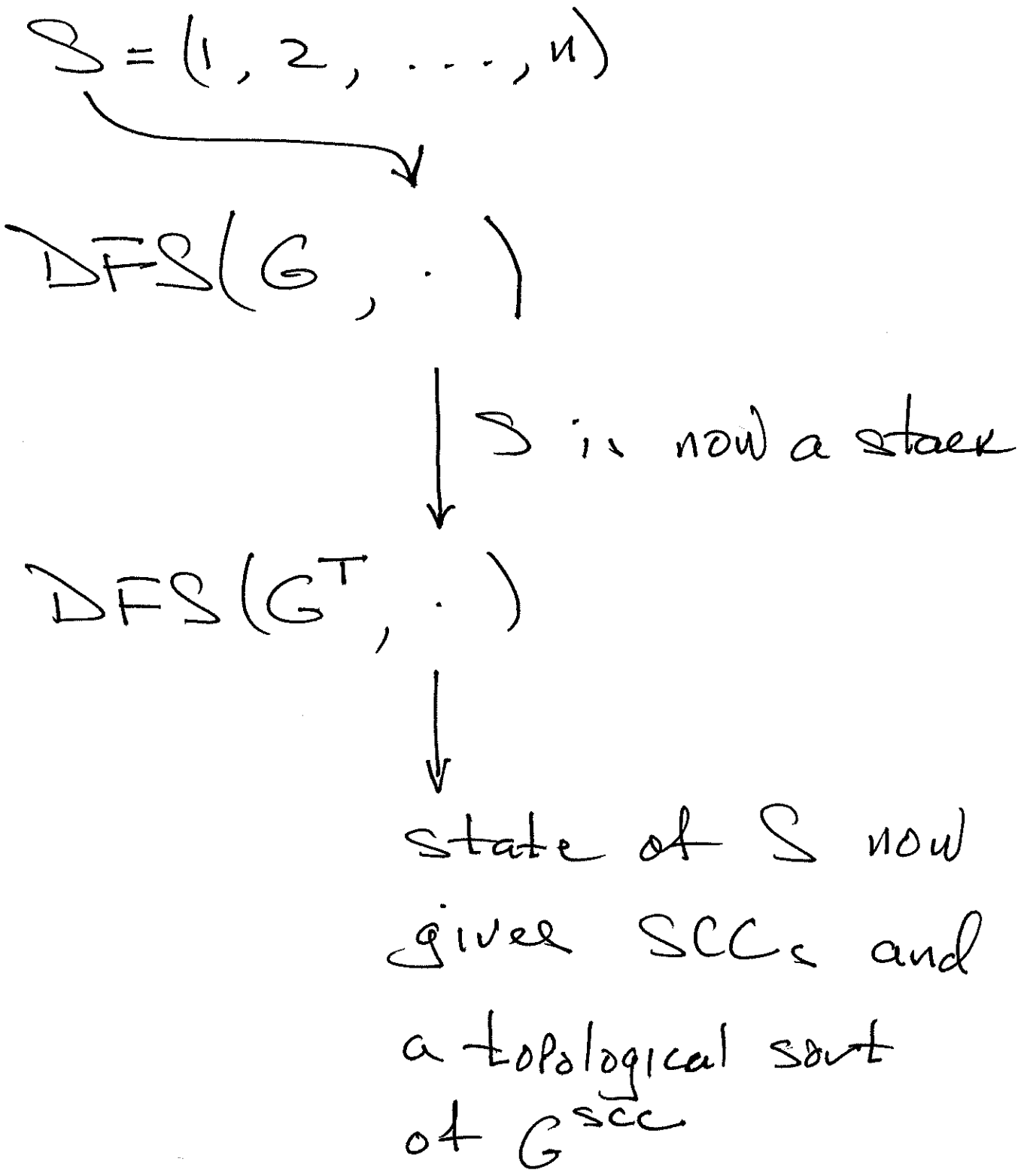
Output to Pa3

Comp. 1 : (1, 5, 2)

comp. 2 : (3, 4)

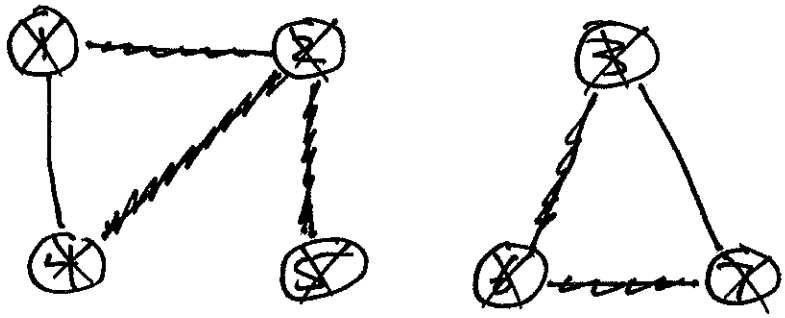
comp. 3 : (7, 6)

comp 4 : (8)

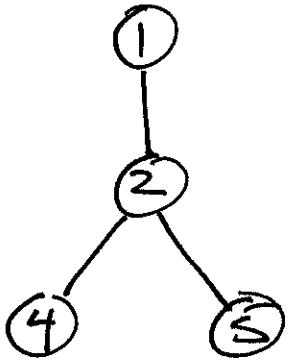

S = (1, 2, ..., n)
DFS(G, .)
S is now a stack
DFS(G^T, .)
state of S now gives SCCs and a topological sort of G^SCC

Back to undirected graphs.

Ex



Forest



Stack P

3	n
6	
7	
1	n
2	
5	
4	

How? (Back to Pa3)

S list controls main loop

↓

DFS(G, .)

↓

S stack records vertices in decreasing finish times

One way

- copy S ....

another way

Push = insertAfter(S)

- 1 2 ... n |

list Part — stack Part