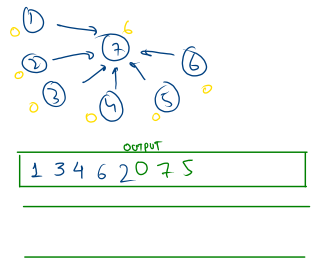
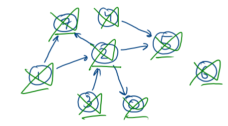
Kahn's algo



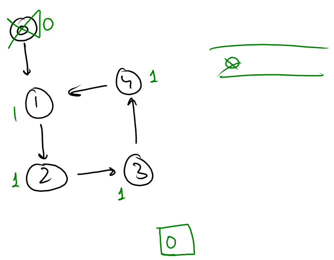
output

1 3 4 6 2 0 7 5

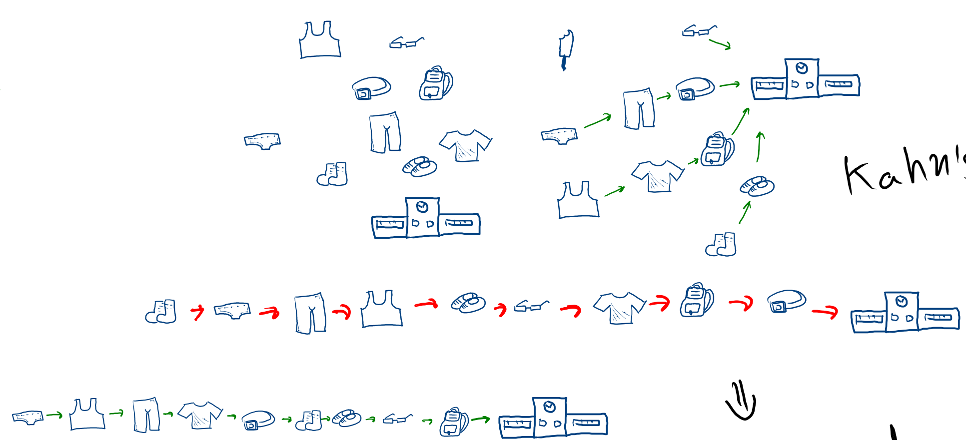
1. Get the indegree of all nodes
2. Add all nodes with indegree == 0 in queue
3. Perform BFS
   - Reduce the indegree of nbrs
   - if indegree[nbr] == 0 add nbr to Q



4 3 1 6 2 0 7 5



Topological Sorting



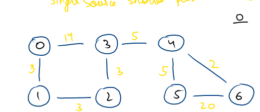
Kahn's Algo

⇓

Topological order

Dijkstra BFS + PQ

↳ Single source shortest path to all nodes



a.wsf = 10

b.wsf = 20

10 - 20

50 , 70

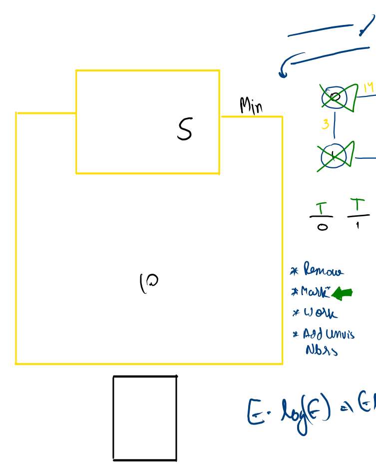
a - b

50 - 70 → +ve

() → { } → -ve ⇒ a < b

→ 0 ⇒ a == b

→ +ve ⇒ a > b

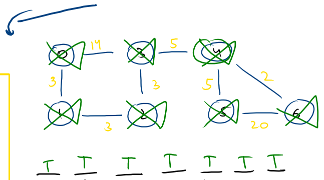


Min

log(E)

* Remove
* Mark
* Work
* Add unvis Nbrs

$E \cdot \log(E) \approx E \log V$



0 @ 0
01 @ 3
012 @ 6
0123 @ 9
01234 @ 14
012346 @ 16
012345 @ 19

Path @ cost

0 @ 0
01 @ 3
012 @ 6
0123 @ 9
01234 @ 14
012345 @ 19
012346 @ 16