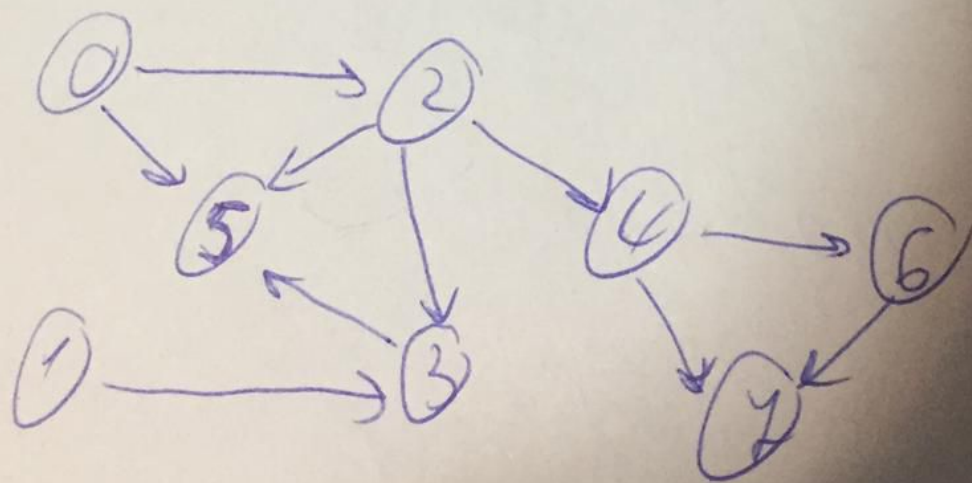
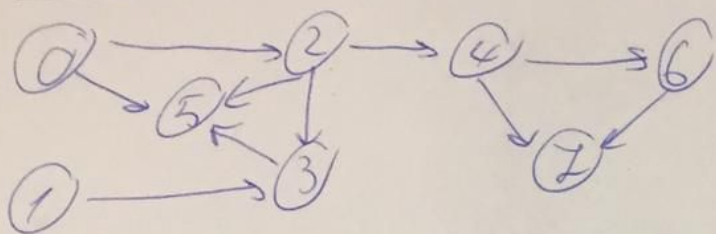


Act.	Duration	Prerequisites
0	1	—
1	3	—
2	1	0
3	2	1, 2
4	2	2
5	5	0, 2, 3
6	3	4
7	3	4, 6



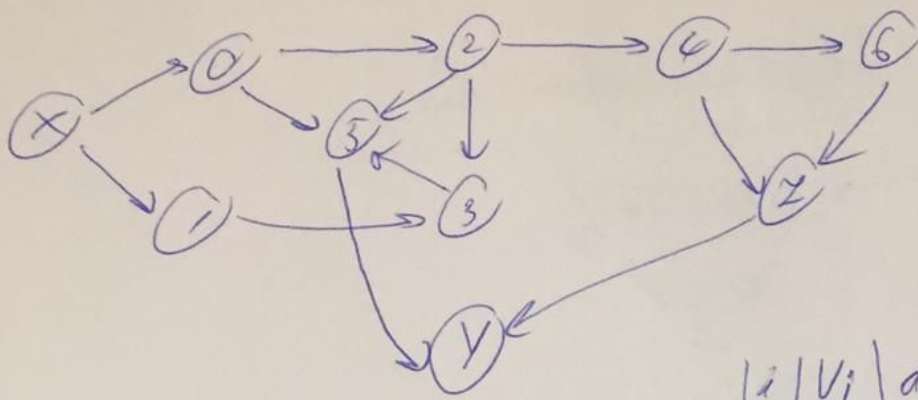
Topological sort (Tarjan's algorithm) :



Calls	x, y	visited	sorted	processing
visit(1, [], [], [])	$x=0$ $y=2$	[]	[]	[0] 0, 1
↳ visit(2, [], [], [])	$x=2$ $y=3$	[]	[]	[0, 2] 0, 2, 3
↳ visit(3, [], [], [0, 2])	$x=3$ $y=5$	[]	[]	[0, 2, 3] [0, 2, 3, 5]
↳ visit(5, [], [], [0, 2, 3])	$x=5$ -	[]	[]	[0, 2, 3, 5] [0, 2, 3]
↳ visit(3, [5], [5], [0, 2, 3])	$x=3$ -	[5]	[5]	[0, 2, 3] [0, 2]
↳ visit(2, [5, 3], [3, 5], [0, 2])	$x=2$ $y=4$	-/-	-/-	-/- [0, 2, 4]
↳ visit(4, [5, 3], [3, 5], [0, 2, 4])	$x=4$ $y=6$	-/-	-/-	-/- [0, 2, 4, 6]
↳ visit(6, -/-, -/-, [0, 2, 4, 6])	$x=6$ $y=7$	-/-	-/-	-/- [0, 2, 4, 6, 7]

↳ visit(7, -1, -1, [0, 2, 4, 6, 7])	$z=7$ —	-1 [5, 3, 2]	-1 [2, 3, 5]	-1 [0, 2, 4, 6]
↳ visit(6, [0, 3, 2], [7, 3, 5], [0, 3, 4])	$z=6$ —	-1 [0, 3, 2, 6]	-1 [6, 2, 3, 5]	-1 [0, 2, 4]
↳ visit(4, [0, 3, 2, 6], [6, 3, 5], [0, 3, 4])	$z=4$ $y=2x$ —	[0, 3, 2, 6, 4]	[4, 6, 2, 3, 5]	[0, 2]
↳ visit(2, [0, 3, 2, 6, 4], [4, 6, 2, 3, 5], [0, 2])	$z=2$ $y=5x$ —	[0, 3, 2, 6, 4, 2]	[2, 4, 6, 2, 3, 5]	[0]
visit(0, -1, -1, -1)	$z=0$ $y=5x$ —	[0, 3, 2, 6, 4, 2, 0]	[0, 2, 4, 6, 2, 3, 5]	[0]
visit(1, [0, 2], [0])				[1]
visit(1, [0, 3, 2, 6, 4, 2, 0], [0, 2, 4, 6, 2, 3, 5], [0])	$z=1$ $y=3x$ —	[0, 3, 2, 6, 4, 2, 0, 1]	[0, 0, 2, 4, 6, 2, 3, 5]	[2]

$\Rightarrow [1, 0, 2, 4, 6, 2, 3, 5]$



Earliest:

$$t_m(X) = t_m^b(X) = 0$$

$$V = [X, 0, 2, 4, 6, Z, 3, 5, Y]$$

i	V_i	$d(V_i)$	$t_m(V_i)$	$t_m^b(V_i)$
1	1	3	0	3
2	0	1	0	1
3	2	1	1	2
4	4	2	2	4
5	6	3	4	7
6	2	3	7	10
7	3	2	3	5
8	5	5	5	10
9	Y	0	10	10

Latest:

$$t_M(Y) = t_M^b(Y) = t_m^b(Y) = 10$$

i	V_i	$d(V_i)$	$t_M(V_i)$	$t_M^b(V_i)$
8	5	5	5	10
7	3	2	3	5
6	2	3	7	10
5	6	3	4	7
4	4	2	2	4
3	2	1	1	2
2	0	1	0	1
1	1	3	0	3
0	X	0	0	0

\Rightarrow all activities are critical