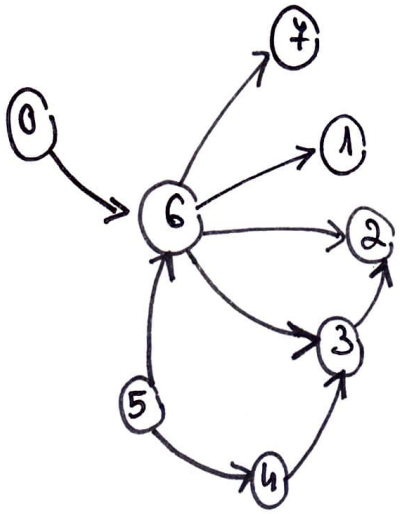
ACTIVITATE	DURATA EXECUTIEI	ACTIVITAȚI PRECEDENTE
0	1	—
1	2	6
2	1	3, 6
3	2	4, 6
4	1	5
5	2	—
6	5	0, 5
7	1	6

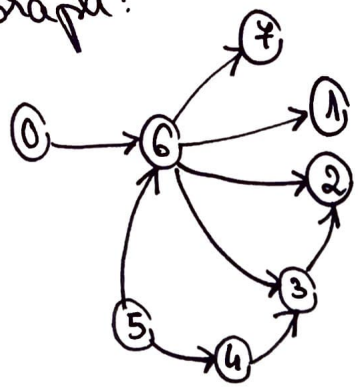
The corresponding graph for the project:



Topological sorting using predecessor counting algorithm

Graph:

G_1:



	x, y	count: dictionary	q: queue	sorted: list
initialization		0 1 2 3 4 5 6 7 0 1 2 2 1 0 2 1	← | 0 | 5 | ←	[]
iteration 1	x=0 y=6	0 1 2 3 4 5 6 7 0 1 2 2 1 0 1 1	← | 5 | ←	[0]
iteration 2	x=5 y=4 y=6	0 1 2 3 4 5 6 7 0 1 2 2 0 0 1 1 0 1 2 3 4 5 6 7 0 1 2 2 0 0 0 1	← ← ← | 4 | ← ← | 4 | 6 | ←	[0,5]
iteration 3	x=4 y=3	0 1 2 3 4 5 6 7 0 1 2 1 0 0 0 1	← | 6 | ←	[0,5,4]
iteration 4	x=6 y=1 y=2 y=3 y=7	0 1 2 3 4 5 6 7 0 0 2 1 0 0 0 1 0 1 2 3 4 5 6 7 6 0 1 1 0 0 0 1 0 1 2 3 4 5 6 7 0 0 1 0 0 0 0 1 0 1 2 3 4 5 6 7 0 0 1 0 0 0 0 0	← ← ← | 1 | ← ← | 1 | 3 | ← ← | 1 | 3 | 7 | ←	[0,5,4,6]
iteration 5	x=1	the same as before	← | 3 | 7 | ←	[0,5,4,6,1]
iteration 6	x=3 y=2	0 1 2 3 4 5 6 7 0 0 0 0 0 0 0 0	← | 7 | ← ← | 7 | 2 | ←	[0,5,4,6,1,3]
iteration 7	x=7	the same as before	← | 2 | ←	[0,5,4,6,1,3,7]
iteration 8	x=2	the same as before	← ← stop	[0,5,4,6,1,3,7,2]

G_1 is a DAG and the size of the sorted is: 8

Algorithm for computing the earliest scheduling

sorted = [0, 5, 4, 6, 1, 3, 7, 2]

prerequisites = {'0': inf; '1': [6]; '2': [3, 6]; '3': [4, 6]; '4': [5]; '5': inf; '6': [0, 5]; '7': [6]}

auxiliary_durations = [1, 2, 1, 2, 1, 2, 5, 1]

durations = [1, 2, 1, 2, 1, 2, 5, 1]

auxiliary_durations[ ][1] ↑ prerequisites

durations[X][0] ↑

	X	prerequisites	auxiliary durations: dict	duration	maximum end
iteration 1	X = 0	inf	0 1 2 3 4 5 6 7 [ ] 2 1 2 1 2 5 1 0 1 2 3 4 5 6 7 [0] 2 1 2 1 2 5 1 0 1 2 3 4 5 6 7 [0,1] 2 1 2 1 2 5 1	d = 1	
iteration 2	X = 5	inf	0 1 2 3 4 5 6 7 [0,1] 2 1 2 1 [ ] 5 1 0 1 2 3 4 5 6 7 [0,1] 2 1 2 1 [0,2] 5 1	d = 2	
iteration 3	X = 4	5	0 1 2 3 4 5 6 7 [0,1] 2 1 2 [2,3] [0,2] 5 1	d = 1	me = 0 me = 2
iteration 4	X = 6	[0, 5]	0 1 2 3 4 5 6 7 [0,1] 2 1 2 [2,3] [0,2] [2,7] 1	d = 5	me = 0 me = 1 me = 2
iteration 5	X = 1	6	0 1 2 3 4 5 6 7 [0,1] [7,9] 1 2 [2,3] [0,2] [2,7] 1	d = 2	me = 0 me = 7
iteration 6	X = 3	4, 6	0 1 2 3 4 5 6 7 [0,1] [7,9] 1 [7,9] [2,3] [0,2] [2,7] 1	d = 2	me = 0 me = 3 me = 7
iteration 7	X = 7	6	0 1 2 3 4 5 6 7 [0,1] [7,9] 1 [7,9] [2,3] [0,2] [2,7] [7,8]	d = 1	me = 0 me = 7
iteration 8	X = 2	3, 6	0 1 2 3 4 5 6 7 [0,1] [7,9] [3,10] [7,9] [2,3] [0,2] [2,7] [7,8]	d = 1	me = 0 me = 9