Laboratory practice No. 1: Graphs Implementation

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3) Practice for final project defense presentation

1. In number 1.1, two codes were implemented, in the first the algorithm was based on an adjacency matrix, in the second an adjacency list was made. For a graph with V vertices, an adjacency matrix is a V x V matrix of zeros and ones, where the entry in row i and column j is 1 if and only if the edge (i, j) is in the graph. Representing a graph with adjacency lists combines adjacency matrices with edge lists. For each vertex i, it stores an array of the vertices adjacent to it.
2. In the case of the implementation of graphs with adjacency matrices, this is more convenient for dense graphs (with many edges). And it is more convenient to use an adjacent list implementation in a directed graph since less memory is consumed than with an unmanaged degree.
3. t is more convenient to use adjacency matrices since they are more useful with dense graphs that have many edges.
4. Depends on the algorithm, in the case of matrices with adjacency a lot of memory is consumed, but it is useful for dense graphs. In case you have a directed graph, it is a good option to use Adjacency Lists.
5. I think it is better to implement an adjacency list since this algorithm can be implemented through a directed graph.
6. The complexity for the proposed algorithm is O (n ^ 2)
7. The variables n, m represent the entries to the recursive function, that is, if it has a single entry it will be designated as n, if it has two entries one will be designated as n and the other as m, thus increasing the number of variables depending on the entries that the function has.

4) Practice for midterms

1.

	0	1	2	3	4	5	6	7
0				1	1			
1	1		1			1		
2		1			1		1	
3								1
4			1					
5								
6			1					
7								

2.

0 -> [3,4]
1 -> [0,2,5]
2 -> [1,4,6]
3 -> [7]
4 -> [2]
5 -> [ ]
6 -> [2]
7 -> [ ]

3. b

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