

## Laboratory practice No. 5: Graph Implementation

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### 2) Code reference

Hasija.A (No date). *Check whether a given graph is Bipartite or not.* <https://bit.ly/2MUzZAG>

### 3) Practice for final project defense presentation

**3.1** For this exercise we use a python dictionary or hash table. In this case the keys for the vertices are the ID, and the keys for the edges are the ID and ID1. We only use these keys to access the points needed, basically we use them as coordinates.

**3.2** If we represent the map of the city with adjacency matrix it will consume  $n^2$  of memory, with  $n$  as the number of vertices.

**3.3** We based on graph theory, so we started the vertices at 1.

**3.4** We used an adjacency matrix due to the fact that the graphs in the examples were dense, and the algorithm, works in an easier way.

**3.5** The complexity of the algorithm is  $O(n^2)$

**3.6**  $n$  is the number of vertices in the graph

### 4) Practice for midterms

#### 4.1

	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								

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## ESTRUCTURA DE DATOS 1

### Código ST0245

4.2 0 -> [ 3, 4 ]  
 1 -> [ 0, 2, 5 ]  
 2 -> [ 1, 4, 6 ]  
 3 -> [ 7 ]  
 4 -> [ 2 ]  
 5 -> [ ]  
 6 -> [ 2 ]  
 7 -> [ ]

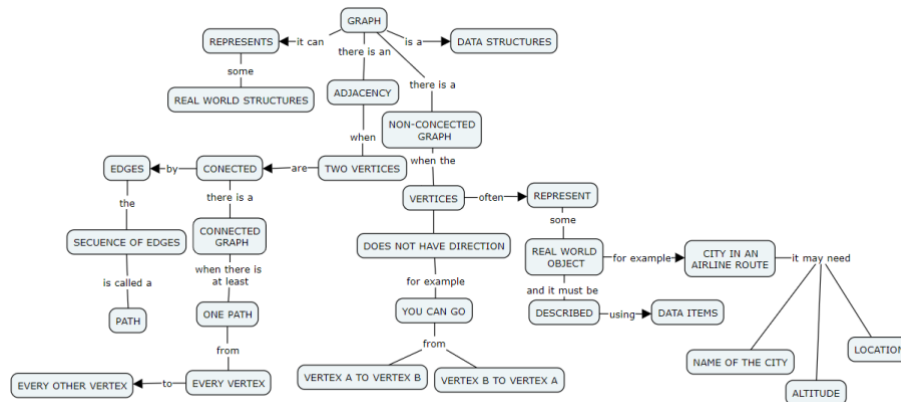
4.3 a

4.4 1. ii

2. i

### 5) Recommended reading (optional)

Mapa conceptual



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