Laboratory practice No. 5: Applications of BFS and DFS

Juan David Echeverri Villada
Universidad Eafit
Medellín, Colombia
jdecheverv@eafit.edu.co

Octavio Vásquez Zapata
Universidad Eafit
Medellín, Colombia
ovasquezz@eafit.edu.co

3) Practice for final project defense presentation

3.4 Using an algorithm really similar to BFS, we walk over the dataset, painting the first node with one color, and each of his sons with another one. After that, we paint all of the sons of the sons with the first color, and we repeat that until we detect a collision of colors (a node that was already colored is recolored). If the recursion ends (end condition is same as BFS) without collisions, we can say that the graph is bicolor able, if we found at least one, the graph is not bicolor able

3.5 The complexity of the point 2.1 is O(n^2)

3.6 n is the number of edges 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								

4.2

0 -> [3,4]

PhD. Mauricio Toro Bermúdez
Professor | School of Engineering | Informatics and Systems
Email: mtorobe@eafit.edu.co | Office: Building 19 – 627
Phone: (+57) (4) 261 95 00 Ext. 9473

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

4.3 *B) O(n^2)*
4.4.1 *ii)* 1, 4, 5, 0, 2, 3
4.4.2 *i)* 1, 4, 5, 0, 2, 3

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