

Introduction to Algorithms

Module 6.5: Practice Day 01

(Practice Questions)

Topics:

- 1. Graph
- 2. DFS

Question: You will be given an undirected graph. Print its DFS traversal in reverse order. Consider root as 1.

Sample Input	Sample Output		
4 4 12 43 32 24	3 4 2 1 (4 3 2 1 is also valid ans)		

Question: You will be given an adjacency matrix for a directed graph (index starting from 1) as input. Now, convert it to an adjacency list and print it.

Sample Input	Sample Output		
4 0001 1001 1100 0010	List 1:4 List 2:14 List 3:12 List 4:3		
5 00000 10011 11011 11100 00100	List 1: List 2: 1 4 5 List 3: 1 2 4 5 List 4: 1 2 3 List 5: 3		

Question: You will be given a directed graph as input. Store this graph in an adjacency list. Now, convert this adjacency list to an adjacency matrix (index starting from 1) and print it. Consider root as 1.

Sample Input	Sample Output
3	0 1 1
5	0 0 1
12	110
23	
13	
3 1	
3 2	

Question: You will be given an undirected graph as input. This graph will contain only one connected component. The edge number will be exactly node-1. Then take a node from the input and print its depth. Consider root as 1.

Sample Input	Sample Output
7 6 12 24 25 13 36 17	Depth of 7 = 1
7 6 12 24 25 13 36 17	Depth of 4 = 2

Question: You will be given an undirected graph as input. This graph will contain only one connected component. The edge number will be exactly node-1. Then take a node from the input and print its height. Consider root as 1.

Sample Input	Sample Output		
7	height of 1 = 2		
6			
12			
2 4			
2 5			
13			
3 6			
17			
1			
7	height of 7 = 0		
6	_		
12			
2 4			
2 5			
13			
3 6			
17			
7			