Introduction to Algorithms

Module 2.5: Practice Day 01

(GeeksforGeeks and Practice)

Topics:

1. Graph Representation
2. BFS

GeeksforGeeks Links:

1. [BFS of graph | Practice | GeeksforGeeks](#)

Practice Problem 1

Question: You will be given an undirected graph as input. Then you will be given a query **Q**. For each query, you will be given source **S** and destination **D**. You need to print the shortest distance between S and D. If there is no path from S to D, print **-1**.

Sample Input	Sample Output
6 7 0 1 0 2 1 2 0 3 4 2 3 5 4 3 6 0 5 1 5 2 5 2 3 1 4 0 0	2 3 3 2 2 0
7 5 0 1 0 2 4 5 4 6 5 7 3 0 4 5 1 1 3	-1 -1 -1

Practice Problem 2

Question: You will be given an undirected graph which will be connected as input. Then you will be given a level **L**. You need to print the node values at level L in descending order. The source will be 0 always.

Sample Input	Sample Output
3 2 0 1 0 2 1	2 1
6 7 0 1 0 2 1 2 0 3 4 2 3 5 4 3 1	3 2 1
6 7 0 1 0 2 1 2 0 3 4 2 3 5 4 3 2	5 4

Practice Problem 3

Question: You will be given an undirected graph as input. Then you will be given a node **N**. You need to print the number of nodes that are directly connected to the node N.

Sample Input	Sample Output
6 5 0 1 0 2 0 3 2 3 4 5 2	2
6 5 0 1 0 2 0 3 2 3 4 5 0	3
7 7 0 1 1 2 2 3 1 3 4 0 0 5 5 6 1	3