MSIT JNTUH ADS2 Week1 Exam

Marks:50 Time:4Hour Date:17/1/2018

Social Networking Graph

In a social networking site, people are connected with other people. The whole system appears as a giant connected graph. In this question, you are required to answer the total number of people connected at ***t*** nodes away from each other (***t*** distance connectivity). For example: Two persons directly connected are at 1 distance connectivity. While the two persons having a common contact without having direct connectivity, are at 2 distance connectivity.

First line of input line contains, two integers ***n*** and ***e***, where ***n*** is the nodes and ***e*** are the edges. Next ***e*** line will contain two integers ***u*** and ***v*** meaning that node ***u*** and node ***v*** are connected to each other in undirected fashion. Next line contains single integer, ***m***, which is number of queries. Next ***m*** lines, each have two inputs, one as source node and other as a required ***t*** distance connectivity which should be used to process query.

Note: The index of nodes will be 0-based. The example and the test case shown is of 1-based index. For submitting the solution, use 0-based indexing.

SAMPLE INPUT

```
9 10
1 2
2 3
1 7
2 4
3 4
4 7
7 8
9 7
7 6
5 6
3
4 2
5 3
2 1
```

SAMPLE OUTPUT

```
4
4
3
```

Explanation

After creating the graph, there was 3 queries,

i. Source node: 4, and we have to find out total number of nodes at a distance of 2 from node 4.

   1(4->2->1), 8(4->7->8), 9(4->7->9), 6(4->7->6) = 4

ii. Similarly as above

iii. Source node: 2, and we have to find out total number of nodes at a distance of 1 from node 2.

   1(2->1), 4(2->4), 3(2->3) = 3