7A	GRAPH TRAVERSAL	
	Input	Standard Input
	Output	Standard Output

Problem Description

Gohan, who is a network administrator, supervises a network of computers. He is maintaining a log for the connections between the computers in the network. Two computers *a* and *b* are connected if they are directly connected or if there is a path from *a* to *b*. Occasionally, Bob has to determine quickly, whether two given computers are connected, according to the log information. Write a program to assist Gohan.

Input
The first line of input are 2 integers v ($1 \le v \le 50$) and e ($1 \le e \le 50$) representing the number of computers (vertices) and the number of connection between two computers (edges) respectively, follows by e lines where in each line there are 2 integers that represent the connecting nodes.

In the following line there is an integer T ($1 \le T \le 50$) that represents the number of test cases. The following T lines are the test cases. For each test case, there are 2 integers *a* and *b* ($1 \le a, b \le v$) which are the computers that Gohan are looking into.

Output
Output "Connected" if the nodes are connected, otherwise output "Not connected"

Sample Input	Sample Output
8 9 0 1 0 2 1 2 1 3 2 3 4 5 4 7 5 6 6 7 3 0 3 4 6 1 7	Connected Connected Not connected

Note: You may modify DepthFirstSearch.java given with the lecture slide. The program uses Graph.java, Bag.java and Stack.java, which need to be include in your project and submit to PC2.

7B SEKOLAH@FTSM REACHING OUT

Input	Standard Input
Output	Standard Output

Problem Description

Long semester holiday is just round the corner. sekolah@FTSM committee is planning to reach out most of popular workshop to schools in Semenanjung Malaysia. One of the committee's concern in the travelling expenses. You are to help them to identify the shortest path form a given city to a destination city. Figure 1 shows the map of Malaysia with the identified cities marked in circles. Figure 2 is the graph representation of the cities.
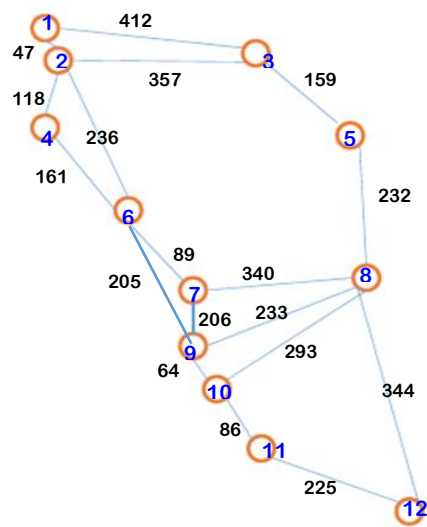

Figure 1

Figure 2

Table 1 list the name of the cities

Table 1

1	Kangar
2	Alor Setar
3	Kota Bharu
4	George Town
5	Kuala Terengganu
6	Ipoh
7	Cameron Highlands
8	Kuantan
9	Kuala Lumpur
10	Seremban
11	Melaka
12	Johor Baharu

Input

First line of input is integer *N* that represents the number of cities. In the following *N* lines is the adjacency matrix representation of the distance between the cities. (as in Figure 1 and 2). This follows by N lines that represent the name of the cities (as in Table 1).

In the following line there is an integer *T* (1 ≤ *T* ≤ 50) that represents the number of test cases. The following T lines are the test cases. For each test case, there are 2 integers *s* and *d* (1 ≤ *s, d* ≤ *N*) that represents the source and destination city respectively.

Output
For each test case, output the shortest distance between the two cities as shown in the sample output

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Sample Input

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12
0       47      412     0       0       0       0       0       0       0
47      0       357     118     0       236     0       0       0       0
412     357     0       0       159     0       0       0       0       0
0       118     0       0       0       161     0       0       0       0
0       0       159     0       0       0       0       232     0       0
0       236     0       161     0       0       89      0       205     0
0       0       0       0       0       89      0       340     206     0
0       0       0       0       232     0       340     0       233     293
0       0       0       0       0       205     206     233     0       64
0       0       0       0       0       0       0       293     64      0
0       0       0       0       0       0       0       0       0       86
0       0       0       0       0       0       0       344     0       0
Kangar
Alor Setar
Kota Bharu
George Town
Kuala Terengganu
Ipoh
Cameron Highlands
Kuantan
Kuala Lumpur
Seremban
Melaka
Johor Baharu
3
1 3
10 8
8 2
```

Sample Output

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Kangar to Kota Bharu is 404 km
Seremban to Kuantan is 293 km
Kuantan to Alor Setar is 665 km
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