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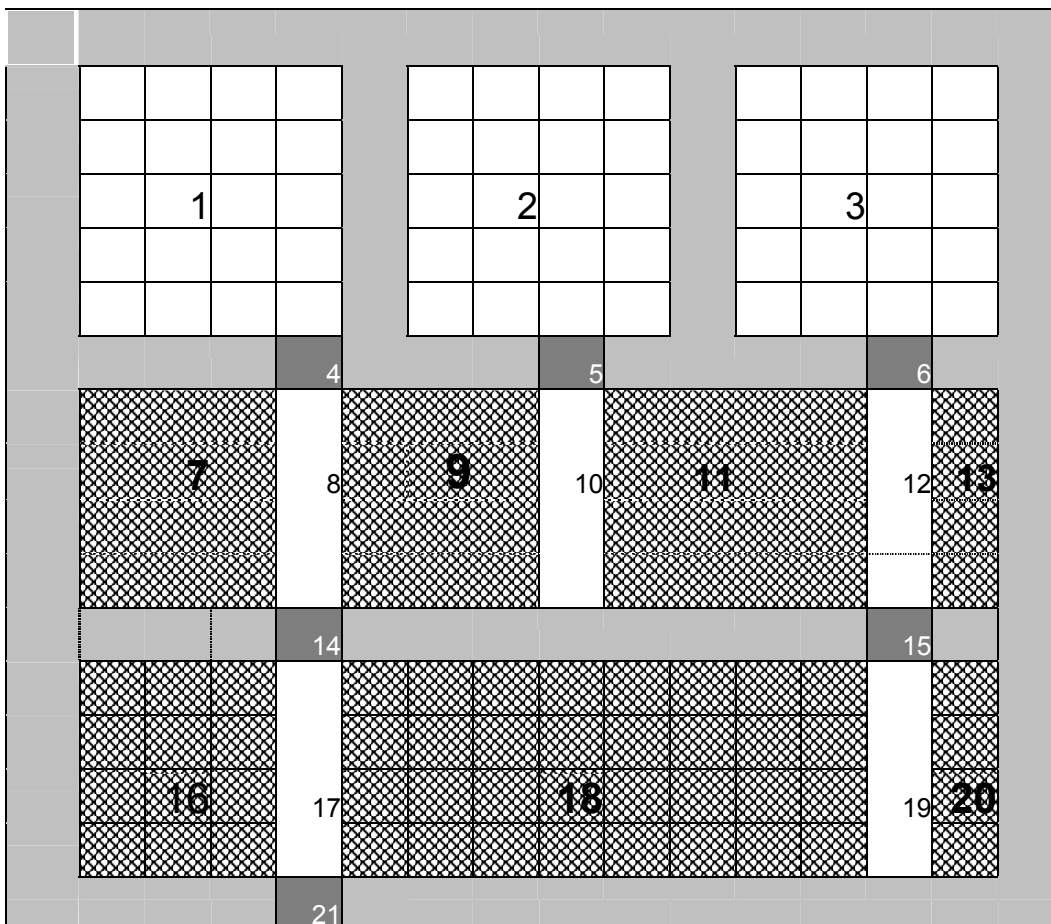
Problem No. 3 Mobil Cyclop Robot  
Executable Program : Prog3.exe, Prog3.class  
Source Program: Prog3.cpp, Prog3.java, Prog3.pas  
Input: Prog3.in, Output: Standard Output

You have a programmable mobil cyclop robot with a camera mounted on itself . It has the ability to identify different areas in a building, using the numbers assigned to each one of them in a four-neighborhood (by example, if the robot is in area 8, it can visualize his neighbors areas 7, 4, 9 and 14).

You have to design a program for the robot, in such a way that the robot can find the shortest length path, between any two data points without visiting twice any area. The length of the path is calculated with the number of visited areas, including the starting and the final areas.

In case of no possible path, the program should show the message: *“There is not possible path”*

Taking into account that the maximum number of areas is 99 and the minimum 2.



## INPUT

The first line of the input file contains an integer  $n$  representing the number of areas. The next  $n$  lines will have positive integers. The first one representing the area and the others, the neighborhoods. The last line will have two integers representing the start and final areas.

## OUTPUT

An integer representing the length of the shortest path or the string *"There is not possible path"*

## SAMPLE INPUT FILE

```
21
1 4
2 5
3 6
4 1 8
5 2 10
6 3 12
7 8
8 4 7 9 14
9 8 10
10 5 9 11
11 10 12
12 6 11 13 15
13 12
14 8 17
15 12 19
16 17
17 14 16 18 21
18 17 19
19 15 18 20
20 19
21 17
21 3
```

## SAMPLE OUTPUT FILE

```
8
```