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Problem Nitin and his Friend:

Manu wants to go to his friend Nitin's house amidst the pandemic. He is aware of which places are under lock down and which are not. The plot of the map is given as a square matrix in which ‘1’ depicts that place is under lock down(you cannot travel through that place) and ‘0’ depicts that you can travel through that place. Also Manu can travel only to neighboring place i.e, a cell sharing a common edge with Manu's current cell. But he got a special privilege which he can use only once; From a place (x_1, y_1) he can travel to a place (x_2, y_2) through places that are also under lockdown, **NOTE: both (x_1, y_1) and (x_2, y_2) should be '0'** at the cost of square of euclidean distance between (x_1, y_1) and (x_2, y_2).
Manu desperately wants to go to his friend Nitin's house at the same time he is a miser and not good at math and also lazy. So help him find the minimum amount of money to spend so that he could reach his friend’s house.

Input:

The first line contains an integer N. The no. of. rows or no. of. columns of the matrix.
Second line contains two integers x1, y1. Rhithick’s current coordinate and **is guaranteed that it is always ‘0’.**
Third line contains two integers x2, y2. Rhithick friend’s coordinate and **is guaranteed that it is always ‘0’.**
The next n lines contain contains n characters depicting either ‘0’ means that place is currently not under lock down and ‘1’ that place is currently under lock down.

Output:

Print the minimum possible amount Rhithick needs to spend to meet his friend.

Constraints:

- 1 <= N <= 50
- 1 <= x1, y1 <= N
- 1 <= x2, y2 <= N
- S_{ij} = 0 or S_{ij} = 1 where 1 <= i, j <= N depicts the row and column of the matrix

Example 1:

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INPUT                OUTPUT
5                     10
1 1
5 5
00001
11111
00111
00110
00110
```

Explanation 1:

- Manu starts at cell (1, 1) and goes to cell (1, 4) free of cost.
- From cell (1, 4) he uses the privilege and goes to cell (4, 5) and that costs him (4-1)^2 + (5-4)^2 = 10 bucks.

Editorial:

If the end coordinate is reachable from start of course it takes 0 extra bucks to spend. So if the end point is not reachable from start then we have to find the closest distance between two coordinates such that after spending the extra cost in reaching that coordinate, from where the end point is reachable (or it could also be the endpoint itself in some cases).
So, we can do a bfs from the start point gather all the possible cells a person can go from start cell and then do a bfs from end point and gather all the places one can go from end point. Store it in two different arrays. Now find the minimum euclidean distance by brute force.

Solution Code

Tester's Code

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