CPP Programming

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TP 01

Exercice 1:

The undirected unweighted graph is given. Find the shortest path from the first vertex to the k-th vertex

Input:
The first line contains the number of vertices n in a graph. In the second line the number k is given. In each of the next n rows n numbers are given - the adjacency matrix of the graph: in the i-th row of the jth place there is a 1 if the vertices i and j are connected by an edge, and 0 otherwise. The main diagonal of the matrix contains zeroes. The matrix is symmetric with respect to the main diagonal.

Output:
Print the number of connected components in a graph.

Sample:
Input:
6
0 1 1 0 0 0
1 0 1 0 0 0
1 1 0 1 0 0
0 0 0 0 1 0
0 0 0 1 0 0
0 0 0 0 0 0

Output:
1 3 4 5

Exercice 2:

The undirected unweighted graph is given. Find the number of its connected components.

Input:
The first line contains the number of vertices n (n less than or equal 100) in a graph. In each of the next n rows n numbers are given - the adjacency matrix of the graph: in the i-th row of the jth place there is a 1 if the vertices i and j are connected by an edge, and 0 otherwise. The main diagonal of the matrix contains zeroes. The matrix is symmetric with respect to the main diagonal.

Output:
Print the number of connected components in a graph.

Sample:
Input:
6
0 1 1 0 0 0
1 0 1 0 0 0
1 1 0 0 0 0
0 0 0 0 1 0
0 0 0 1 0 0
0 0 0 0 0 0

Output:
3