Problem: P5

Description

A shipper visits all points 1, 2, 3, ..., n (each point is visited exactly once) for delivering packages and comes back to the starting point. There is a precedence constraint between points on the route of shipper which is represented by a list of m pairs (i,j): point i must be located before point j on the route (i, j = 1, 2, ..., n). A route of shipper is feasible if it is a permutation of 1, 2, ..., n and satisfies the precedence constraint. The travel distance from point i to point j is d(i,j) (i,j = 1,...,n). Write a program that checks if a sequence x_1, x_2, ..., x_n is a feasible route of the shipper and computes the total travel distance of that route.

Input

- Line 1: contains a positive integer n (1 <= n <= 1000)
- Line 2: contains n positive integers x_1, x_2, ..., x_n
- Line i + 2 (i = 1,...,n): contains the i^{th} row of the distance matrix d
- Line n+3: contains a positive integer m (1 <= m <= 1000000)
- Line k + n + 3 (k = 1,...,m): contains two positive integers i and j (1 <= i, j <= n): point i must be located before point j on the route

Output

- Write the total travel distance of the route x_1, ..., x_n if it is feasible, or write -1 if the sequence x_1, ..., x_n is not feasible.

Example

Input

4

1 2 3 4

0 2 4 3

3 0 1 1

2 3 0 5

1 3 2 0

3

1 2

3 4

1 4

Output

9

Input

4

4 2 3 1

0 2 4 3

3 0 1 1

2 3 0 5

1 3 2 0

3

1 2

3 4

1 4

Output

-1

Source code

C++ 17

```
//C++
#include <bits/stdc++.h>

int main()
{

}
```

SUBMIT CODE

Or

C++ 17 | Select file

SUBMIT

Refresh

Bài nộp

Tìm kiếm

ID	Bài tập	Trạ
6774ce	CHECK_TSP_PRECEDENCE	Acc

5 hàng | 1-1 của 1