### **Online 2: SSSP**

Marks: 20 Time: 25 minutes

In your country there are N cities numbered from 1 to N. You live in city 1. You want to go to city N. There are M bidirectional roads connecting some cities to each other. It is possible to get to any city from any other city. But each city has a predefined amount of tax that you have to pay if you enter into that city. How can you get to city N paying the least tax?

#### Input

The first line of input contains two integers N and M – denoting the number of cities and the number of roads respectively.

The next line contains N positive integer values – the tax you need to pay to enter into each city. The next M lines contain two integers u, v ( $1 \le u$ ,  $v \le N$ ) – denoting that there is a road between city u and city v.

### Output

Print one integer – the least amount of tax you need to pay to get to city N.

Sample Input	Sample Output
3 2 5 10 15	25
1 2 2 3	
6 9 5 5 15 10 10 7 1 2 2 3 3 5 5 4 4 1 2 4 2 5 5 6 3 6	22

# Explanation

### Sample 1

There's only one path:  $1 \rightarrow 2 \rightarrow 3$ . You already live in city 1. So no tax is required to enter city 1. You need to pay 10 for city 2 and 15 for city 3. So a total of 25.

## Sample 2

The best path here is  $1 \rightarrow 2 \rightarrow 5 \rightarrow 6$ . Tax = 5 + 10 + 7 = 22.