## DWARF TOWER

Little Vasya is playing a new game named "Dwarf Tower". In this game there are $n$ different items, which you can put on your dwarf character. Items are numbered from 1 to $n$. Vasya wants to get the item with number 1 .

There are two ways to obtain an item:

- You can buy an item. The $i$-th item costs ci money.
- You can craft an item. This game supports only $m$ types of crafting. To craft an item, you give two particular different items and get another one as a result.

Help Vasya to spend the least amount of money to get the item number 1.

## Input

The first line of input contains two integers $n$ and $m(1 \leq n \leq 10000 ; 0 \leq m \leq 100000)$ - the number of different items and the number of crafting types.

The second line contains $n$ integers $c i-$ values of the items $\left(0 \leq c_{i} \leq 10^{9}\right)$.
The following $m$ lines describe crafting types, each line contains three distinct integers $a_{i}, x_{i}, y_{i}$ $-a_{i}$ is the item that can be crafted from items $x_{i}$ and $y_{i}\left(1 \leq a_{i}, x_{i}, y_{i} \leq n ; a_{i}<>x_{i} ; x_{i}<>y_{i}, y_{i}<>a_{i}\right)$.

## Output

The output should contain a single integer — the least amount of money to spend.

## Examples

| № | stdin |  |  |
| :---: | :--- | :--- | :--- |
| 1 | 5 | 3 |  |
| 5 |  | 2 |  |
|  | 5 | 0 | 1 |
| 5 | 2 | 5 | stdout |
|  | 2 | 3 |  |
| 4 | 2 | 3 |  |
| 1 | 4 | 5 |  |
| 2 | 3 | 1 |  |
|  | 2 | 2 | 1 |
| 1 | 2 | 3 | 2 |

