

Candy Party

Description

Due to the great performance in the school contest, Prof Zhao wants to reward n students with sugar. These students are labeled by $1, 2, \dots, n$, and student i wants to get f_i sugar. Prof Zhao wants to realize all students' wishes.

Prof Zhao would like to reward students by their study groups. The study group is defined that every pair of students in the study groups knows each other, which means that they are friends or they have some same friends. For example, when $(A_1, A_2), (A_2, A_3), (A_3, A_4)$ are friends, A_1, A_2, A_3, A_4 can form a study group. Prof Zhao can do the following operations for an arbitrary number of times:

1. Select the largest study group in the present.
2. For each student in the selected group, he will decrease their desire for sugar by 1.

When a student's desire is zero, he realized all of his desire and feels so happy that he doesn't want to have anything to do with any other students (end all relationship).

Now Prof Zhao wants to know the minimum steps which will take to completely realize all students' desire.

Input

Two integer n, m in the first line.

n integers f_i in the second line, representing the candy of i th student desired.

m lines, each line has two integer a_i, b_i , which means student a_i and b_i could contact each other.

- 40% cases, the contact relationship is a tree
- 70% cases, $1 \leq n \leq 1e5, 1 \leq m \leq 2e5$
- 100% cases, $1 \leq n \leq 5e5, 1 \leq m \leq 1e6, 1 \leq f_i \leq 1e9$

Output

A integer, representing the minimum steps which will take to completely realize all students' desire.

Sample Input 1

```
3 2
3 2 3
1 2
2 3
```

Sample Output 1

```
4
```

Sample Input 2

```
10 8
9 9 8 2 4 4 3 5 3 1
1 2
2 3
3 4
4 5
5 1
7 8
8 9
9 10
```

Sample Output 2

```
18
```

📁 Problems

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📊 Rankings

🏠 View Contest

📄 Information

ID	2003
Time Limit	2000MS
Memory Limit	256MB
IO Mode	Standard IO
Created By	root
Level	Mid
Score	100
Tags	Show

📈 Statistic

Details

AC

WA

AC: 55	9.12%
WA: 548	90.88%

Language:

c

🔄

📄

Theme:

Solarized Light

1

✏ Submit