Problem F
Maximum Subset Sum

Time limit: 1 second
Memory limit: 2048 megabytes

Problem Description

Given an integer n and a sequence $a_1, a_2, \ldots, a_n$, along with m pairs of integers (f_i, s_i). Note that a_i can be positive, negative or zero in this problem.

Consider a set of integers S where $S \subseteq \{1, 2, 3, \ldots, n\}$. This set is termed *nice* if it fulfills the following condition: for every pair (f_i, s_i), if f_i is in S, then s_i must also be in S. In other words, in a *nice* set, it is not possible that f_i is in S but s_i is not in S.

The cost of the set S is $\sum_{i \in S} a_i$. You have to calculate the maximum possible cost of a *nice* set. Note that an empty set is always *nice*, which has a cost of 0.

Input Format

The first line contains two integers n and m. The second line of the input contains n space-separated integers $a_1, a_2, \ldots, a_n$. The i-th of the following m lines contains two integers f_i and s_i, denoting a condition on a *nice* set.

Output Format

Output the maximum possible cost of a *nice* set.

Technical Specification

- $1 \leq n \leq 100$
- $0 \leq m \leq n \times (n-1)$
- $-10^7 \leq a_i \leq 10^7$ for $i = 1, 2, \ldots, n$
- $1 \leq f_i, s_i \leq n$ and $f_i \neq s_i$ for $i = 1, 2, \ldots, m$

Scoring

1. (4 points) $1 \leq n \leq 10$.
2. (6 points) No additional constraints.

Sample Input 1

```
5 4
3 5 -2 -3 1
2 3
3 4
4 2
4 5
```

Sample Output 1

```
4
```

Sample Input 2

```
5 4
3 5 -2 -3 1
2 3
4 2
4 3
4 5
```

Sample Output 2

```
7
```

Sample Input 3

```
7 6
1 -2 3 -4 5 -6 7
2 4
3 5
5 1
3 4
7 2
2 7
```

Sample Output 3

```
10
```