Problem A

Each student wants to attend some of the university courses. Each course x has a fixed capacity c_x: no more than c_x students can attend this course. Furthermore, each student s has only a limited amount of time t_s, and so they can attend at most t_s courses. Each student pays us 1 dollar for every course they attend. Determine the maximum amount we can earn subject to these constraints.

Input and output

The first line contains integers $n, m \leq 1000$, the number of courses and the number of students. The next line contains n integers $c_1, \ldots, c_n$ ($1 \leq c_i \leq m$), the capacities of the courses. Each of the next m lines describes one student, and contains an integer t ($1 \leq t \leq n$, the number of courses the student can attand), an integer k ($1 \leq k \leq m$), and k distinct integers specifying the numbers of the courses the student is interested in attending.

Output a single integer, the maximum amount we can earn.

Example

Input:

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

Output:

```
3
```