

Contest Duration: 2025-05-03(Sat) 22:00 (<http://www.timeanddate.com/worldclock/fixedtime.html?iso=20250503T2100&p1=248>) - 2025-05-03(Sat) 23:40 (<http://www.timeanddate.com/worldclock/fixedtime.html?iso=20250503T2240&p1=248>) (local time) (100 minutes)

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D - Goin' to the Zoo

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Time Limit: 2 sec / Memory Limit: 1024 MiB

Score : 400 points

Problem Statement

In the country of AtCoder there are N zoos, numbered 1 to N . The admission fee for zoo i is C_i yen.

Mr. Suzuki likes M kinds of animals, animals 1, ..., M .

Animal i can be seen at K_i zoos, namely zoos $A_{i,1}, \dots, A_{i,K_i}$.

Find the minimum total admission fee required to see all M kinds of animals at least twice each.

If you visit the same zoo multiple times, the animals there are considered seen once per every visit.

Constraints

- $1 \leq N \leq 10$
- $1 \leq M \leq 100$
- $0 \leq C_i \leq 10^9$
- $1 \leq K_i \leq N$
- $1 \leq A_{i,j} \leq N$
- $j \neq j' \implies A_{i,j} \neq A_{i,j'}$
- All input values are integers.

2026-01-02 (Fri)
05:23:17 +11:00

Input

The input is given from Standard Input in the following format:

```
N M
C1 ... CN
K1 A1,1 ... A1,K1
:
KM AM,1 ... AM,KM
```

Output

Output the minimum total admission fee.

Sample Input 1

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```
4 3
1000 300 700 200
3 1 3 4
3 1 2 4
2 1 3
```

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Sample Output 1

Copy

```
1800
```

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For example, the following schedule achieves seeing animals 1, 2, 3 at least twice each for a total of 1800 yen:

- Go to zoo 3. Pay 700 yen and see animals 1 and 3.
- Go to zoo 3. Pay 700 yen and see animals 1 and 3.
- Go to zoo 4. Pay 200 yen and see animals 1 and 2.
- Go to zoo 4. Pay 200 yen and see animals 1 and 2.

Sample Input 2

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```
7 6
500 500 500 500 500 500 1000
3 1 2 7
3 2 3 7
3 3 4 7
3 4 5 7
3 5 6 7
3 6 1 7
```

Sample Output 2

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```
2000
```

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By visiting zoo 7 twice, you can see animals 1, 2, 3, 4, 5, 6 twice each for a total of 2000 yen.

#telegram)

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