

Contest Duration: 2025-05-03(Sat) 08:00 (<http://www.timeanddate.com/worldclock/fixedtime.html?iso=20250503T2100&p1=248>) - 2025-05-03(Sat) 09:40 (<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 MB

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  $1, \dots, M$ .

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

- $1 \leq N \leq 10$
- $1 \leq M \leq 100$
- $0 \leq C_i \leq 10^9$
- $1 \leq K_i \leq N$
- $1 \leq A_{i,j} \leq N$

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- $j \neq j' \implies A_{i,j} \neq A_{i,j'}$
- All input values are integers.

## Input

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

```

N M
C_1 \dots C_N
K_1 A_{1,1} \dots A_{1,K_1}
\vdots
K_M A_{M,1} \dots A_{M,K_M}

```

## 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

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```

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

Copy

2000


Copy

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

### Language

Python (CPython 3.11.4) ▼

### Source Code

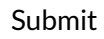
 Open File CustomizeToggle EditorAuto Height

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\* at most 512 KiB

\* Your source code will be saved as *Main.extension*.

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