Maximize It!

54/115 challenges solved

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You are given a function $f(X) = X^2$. You are also given K lists. The i^{th} list consists of N_i elements.

You have to pick one element from each list so that the value from the equation below is maximized:

$$S = (f(X_1) + f(X_2) + \ldots + f(X_k))\%M$$

X_i denotes the element picked from the i^{th} list . Find the maximized value S_{max} obtained.

$\%$ denotes the modulo operator.

Note that you need to take exactly one element from each list, not necessarily the largest element. You add the squares of the chosen elements and perform the modulo operation. The maximum value that you can obtain, will be the answer to the problem.

Input Format

The first line contains 2 space separated integers K and M.

The next K lines each contains an integer N_i, denoting the number of elements in the i^{th} list, followed by N_i space separated integers denoting the elements in the list.

Constraints

$1 \leq K \leq 7$

$1 \leq M \leq 1000$

$1 \leq N_i \leq 7$

$1 \leq Magnitude\ of\ elements\ in\ list\ \leq 10^9$

Output Format

Output a single integer denoting the value S_{max}.

Sample Input

```
3 1000
2 5 4
3 7 8 9
5 5 7 8 9 10
```

Sample Output

```
206
```

Explanation

Picking 5 from the 1^{st} list, 9 from the 2^{nd} list and 10 from the 3^{rd} list gives the maximum S value equal to $(5^2 + 9^2 + 10^2)\%1000 = 206$.

Change Theme Language Python 3

```python
# Enter your code here. Read input from STDIN. Print output to STDOUT
from itertools import product

k, m = map(int, input().split())

lsts = []
s_max = 0
for _ in range(k):
    lsts.append(list(map(int, input().split()))[1:])

prods = list(product(*lsts))
for i in prods:
    tmp = 0
    for j in range(k):
        tmp += i[j]**2
    tmp_mod = tmp % m
    if tmp_mod > s_max:
        s_max = tmp_mod
print(s_max)


```

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54/115 challenges solved.

47%

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Next Challenge

Test case 0 Compiler Message

Test case 1

Test case 2

Test case 3

Test case 4

Test case 5

Test case 6

Success

Hidden Test Case

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