

Contest Duration: 2025-04-19(Sat) 22:00 (<http://www.timeanddate.com/worldclock/fixedtime.html?iso=20250419T2100&p1=248>) - 2025-04-19(Sat) 23:40 (<http://www.timeanddate.com/worldclock/fixedtime.html?iso=20250419T2240&p1=248>) (local time) (100 minutes)

iso=20250419T2100&p1=248) - 2025-04-19(Sat) 23:40 (<http://www.timeanddate.com/worldclock/fixedtime.html?iso=20250419T2240&p1=248>) (local time) (100 minutes)

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F - Path to Integer

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Time Limit: 2 sec / Memory Limit: 1024 MiB

Score : 525 points

Problem Statement

There is an $N \times N$ grid. Let cell (i, j) denote the cell in the i -th row from the top and j -th column from the left. Each cell contains a digit from 1 to 9; cell (i, j) contains $A_{i,j}$.

Initially, a token is on cell $(1, 1)$. Let S be an empty string. Repeat the following operation $2N - 1$ times:

- Append to the end of S the digit in the current cell.
- Move the token one cell down or one cell to the right. However, do not move it in the $(2N - 1)$ -th operation.

After $2N - 1$ operations, the token is on cell (N, N) and the length of S is $2N - 1$.

Interpret S as an integer. The score is the remainder when this integer is divided by M .

Find the maximum achievable score.

Constraints

- $1 \leq N \leq 20$
- $2 \leq M \leq 10^9$
- $1 \leq A_{i,j} \leq 9$
- All input values are integers.

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Input

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

```
 $N$   $M$   
 $A_{1,1}$   $A_{1,2}$   $\dots$   $A_{1,N}$   
 $A_{2,1}$   $A_{2,2}$   $\dots$   $A_{2,N}$   
 $\vdots$   
 $A_{N,1}$   $A_{N,2}$   $\dots$   $A_{N,N}$ 
```

Output

Print the answer.

Sample Input 1

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```
2 7  
1 2  
3 1
```

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Sample Output 1

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```
5
```

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There are two ways to move the token:

- Move through $(1, 1)$, $(1, 2)$, $(2, 2)$. Then $S = 121$, and the score is the remainder when 121 is divided by 7, which is 2.
- Move through $(1, 1)$, $(2, 1)$, $(2, 2)$. Then $S = 131$, and the score is the remainder when 131 is divided by 7, which is 5.

The maximum score is 5, so print 5.

Sample Input 2

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```
3 100000  
1 2 3  
3 5 8  
7 1 2
```

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Sample Output 2

[Copy](#)

13712

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Sample Input 3

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```
5 402
8 1 3 8 9
8 2 4 1 8
4 1 8 5 9
6 2 1 6 7
6 6 7 7 6
```

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Sample Output 3

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384

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