

Contest Duration: 2025-08-16(Sat) 22:00 (<http://www.timeanddate.com/worldclock/fixedtime.html?iso=20250816T2100&p1=248>) - 2025-08-16(Sat) 23:40 (<http://www.timeanddate.com/worldclock/fixedtime.html?iso=20250816T2240&p1=248>) (local time) (100 minutes)

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F - All Included

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Time Limit: 2 sec / Memory Limit: 1024 MiB

Score : 550 points

Problem Statement

You are given N lowercase English strings S_1, S_2, \dots, S_N , and an integer L .

Find the number, modulo 998244353, of length- L lowercase English strings that contain all of S_1, S_2, \dots, S_N as substrings.

► What is a substring?

Constraints

- $1 \leq N \leq 8$
- $1 \leq L \leq 100$
- N and L are integers.
- Each S_i is a string of length 1 and 10, inclusive, consisting of lowercase English letters.
- $S_i \neq S_j$ ($i \neq j$)

Input

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

2026-01-02 (Fri)
05:28:48 +11:00

N L

S_1

S_2

:

S_N

Output

Output the answer.

Sample Input 1

[Copy](#)

2 4

ab

c

[Copy](#)

Sample Output 1

[Copy](#)

153

[Copy](#)

Some of the strings that satisfy the condition are `abcz` and `cabc`. `acbd` does not contain `ab` as a substring, so it does not satisfy the condition.

Sample Input 2

[Copy](#)

2 6

abc

cde

[Copy](#)

Sample Output 2

[Copy](#)

54

[Copy](#)

Sample Input 3

[Copy](#)

[Copy](#)

2026-01-02 (Fri)
05:28:48 +11:00

```
5 50
bbfogggj
zkbach
eedirhyc
ffgd
oemmswj
```

Sample Output 3

[Copy](#)

```
689020583
```

[Copy](#)

```
/#telegram)
```

```
#url=https%3A%2F%2Fatcoder.jp%2Fcontests%2Fabc419%2Ftasks%2Fabc419_f%3Flang%3Den&title=F%20-
```

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