

# Problem Mar 21: Colour Day

Time limit: 4 seconds

Every year, Claire has the honour to present an exhibit on the *International Colour Day*. Her planned exhibit consists of a sequence of rooms, where two consecutive rooms are connected by one or more corridors. Each corridor consists of a number (possibly zero) of coloured segments, and Claire's vision is that visitors walk from one room to the next using corridors of their choosing and experience a stunning and possibly even unique sequence of colours. The corridors from the last room finally lead directly into the nearby park, where the visitors can admire the colours of nature in early spring.



A corridor with coloured segments. Photo by Robert Katzki

Last year, Claire already had an exhibit based on the same idea. Of course, she wants to avoid that visitors see colour sequences they have already seen last year. Since she does not know all the colour sequences seen by visitors last year, she wants to know whether she has to change her exhibit. That is, decide whether there is a colour sequence that someone could have seen last year which can also be seen this year.

## Input

The input consists of:

- One line with an integer  $n$  ( $1 \leq n \leq 2000$ ), the number of rooms of last year's exhibit.
- $n$  lines, each containing an integer  $k$  ( $1 \leq k \leq 2000$ ), followed by  $k$  strings, each is either '-' (representing a corridor without coloured segments) or consists only of the letters 'a' to 'z' (upper or lowercase). Each letter represents the colour of a segment.
- One line with an integer  $m$  ( $1 \leq m \leq 2000$ ), the number of rooms of this year's exhibit.
- $m$  lines, each containing an integer  $k$  ( $1 \leq k \leq 2000$ ), followed by  $k$  strings, each is either '-' (representing a corridor without coloured segments) or consists only of the letters 'a' to 'z' (upper or lowercase).

The total number of coloured corridor segments per exhibit is at most 2000.

## Output

Output "no" if Claire does not have to change her exhibit. Otherwise, output "yes", followed by a colour sequence that can be experienced in both exhibits. If an empty colour sequence can be experienced in both exhibits, you may output it as "-".

**Sample Input 1**

```

5
1 m
2 Y -
1 c
2 Ymc c
2 y M
2
2 m c c m Y c Y m c
3 y m c

```

**Sample Output 1**

```

yes
mYcYmcy

```

In the first sample case, last year's exhibit has 5 rooms. There are, for example, two corridors from room 2 to room 3, one with one segment of colour 'Y' and one with no coloured segments. There are two corridors from room 4 to room 5, one with three segments with colours 'Y', 'm' and 'c' and one with just one segment with colour 'c'.

**Sample Input 2**

```

5
2 m -
2 y -
2 c -
3 ymc c -
3 y m -
1
1 -

```

**Sample Output 2**

```

yes
-

```

**Sample Input 3**

```

3
2 m -
1 y
2 c -
2
2 - m
2 - c

```

**Sample Output 3**

```

no

```