Find the keys   P29346_en

Rick Deckard falls asleep while Rachael plays the piano and lets down her hair.

DECKARD: I dreamt music.
RACHAEL: I didn't know if I could play. I remember lessons. I don't know if it's me or Tyrell's niece.

Rachael softly plays thirteen notes on the piano:

C C#D D#E F F#G G#A A#B C

DECKARD: You play beautifully.
RACHAEL: I remember well there are twelve different notes: C, C#, D, D#, E, F, F#, G, G#, A, A# and B; and then comes C again. However, if I play in the key of C, I can't use the second, the fourth, the seventh, the ninth nor the eleventh notes, that is, C#, D#, F#, G# nor A#.

Rachael plays a scale of C:

C D E F G A B C

RACHAEL: However, if I play in the key of, say E, I can't use the second, the fourth, the seventh, the ninth nor the eleventh notes either, but now starting from E, that is, F, G, A#, C nor D.

Rachael plays a scale of E:

E F# G#A B C# D#E

DECKARD: If I play a tune, can you tell me the key it is in?
RACHAEL: Of course!

Deckard plays some notes:

C# B C# F# D C# D C# B

Rachael covers her face with her hand…

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Despite Deckard's clumsy attempts at musical art, can you write a program such that, given a sequence of notes, tells the possible keys the tune is written in?

Input

Input consists of several cases. Every case begins with a number *n* followed by *n* notes. Note names are uppercase letters from A to G, optionally suffixed by #. There are no E# nor B# notes.

Output

For every case, print a lexicographically sorted list of the possible keys the tune is written in. If a tune cannot belong to any key, print "None".

Sample input 1

```
7 C D E F G A B
7 E F# G# A B C# D#
9 C# B C# F# D C# D C# B
5 C D E F# G#
2 A# F
```

Sample output 1

```
C
E
A D
None
A# C# D# F F# G#
```

Problem information

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Generation: 2026-01-25T10:38:32.952Z

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