Concatenated words   X67572_en

Given n words, print all the ways to concatenate them so that there are no two equal adjacent letters.

Input

Input consists of an n between 1 and 8, followed by n words, each one made up of between 1 and 10 lowercase letters. No word has two adjacent equal letters.

Output

Print all the correct ways to concatenate the n words, one per line.

Information about the checker

You can print the solutions to this exercise in any order.

Sample input 1

```
2
z
abcdz
```

Sample output 1

```
zabcdz
```

Sample input 2

```
3
adefghijka
b
cxyzc
```

Sample output 2

```
adefghijkabcxyzc
adefghijkacxyzcb
badefghijkacxyzc
bcxyzcadefghijka
cxyzcadefghijkab
cxyzcbadefghijka
```

Sample input 3

```
2
ie
ei
```

Sample output 3

Sample input 4

```
3
a
b
b
```

Sample output 4

```
bab
bab
```

Problem information

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Generation: 2026-01-25T22:03:14.623Z