A palindrome has been broken into pieces. Put the pieces together in the right order.

**Input**

Input consists of several cases. Every case begins with the number of pieces $n$. Follow the $n$ pieces, made up of only lowercase letters. Assume $1 \leq n \leq 8$.

**Output**

For every case, print the palindrome that can be made by joining all the pieces. There is always exactly one solution.

**Sample input**

```
8
da
ba
learro
zal
azo
ela
bad
3
b
a
2
votemos
someto
1
pop
```

**Sample output**

```
dabalearrozalorrarzelabad
aba
sometovotemos
pop
```