Problem 1 – Sowing

You are given a field of **good soil** (represented as **1**) and **bad soil** (represented as **0**). You want to plant **chukundur**. But you can only plant it on **good soil** and **there cannot be any other planted chukundur** to its left or right.

Given **n seeds** and a **field**, generate all ways you can plant the seeds by following the above rules.

For example, for **n = 3** on the field **1 1 1 1 0 1** we can plant 3 chukundur seeds in the following ways:

1<u>1</u><u>1</u>101, <u>1</u>11<u>1</u>01, <u>1</u>111<u>1</u>01

Input

On the first input line you are given the number of seeds **n**.

On the second input line you are given the **field** - a sequence of integers separated by a single space.

Output

Print all ways **n** seeds can be planted in the given field. Display the seeds with **"."**.

The order of printing does not matter.

Constraints

- The length **L** of the field sequence will be in the range [1…30].
- The number of seeds **n** will be in the range [1...**L**].
- There will always be at least 1 possible sowing.
- The field will contain only **0**s and **1**s.
- Time limit: **100 ms**. Allowed memory: **16 MB**.

Examples

Input	Output
3 1 1 1 1 0 1	.1.10. .11.0. 1.1.0.

Input	Output
1 1 1 1 1	.111 1.11 11.1 111.