# COCI '11 Contest 3 #1 Digitalna

**Time limit:** 1.0s     **Memory limit:** 32M

A while ago, Mirko's grandparents had to switch from analog to digital TV receiver. On their old analog receiver they could watch only two channels: BLJTV1 and BLJTV2. Switching to digital receiver they gained dozens of new channels, but they still wanted to watch just the two channels they had before. They asked Mirko to adjust the remote control in a way that **BLJTV1 is on first** and **BLJTV2 on the second** key.

When switched on, digital receiver creates a list of available channels. All of the channels are distinct and the list **always** contains BLJTV1 and BLJTV2. Mirko found the remote and he started adjusting the receiver. Menu contains the channel list and a little arrow which is marking the **currently selected** channel. After entering the menu, the arrow is marking the **first channel** on the list.

There are four operations in the menu, denoted with numbers 1 to 4:

1. move the arrow one place down (from channel $i$ to channel $i + 1$)
2. move the arrow one place up (from channel $i$ to channel $i - 1$)
3. move the arrow and selected channel one place down (channel $i$ and channel $i + 1$ are switching places, arrow ends up in place $i + 1$)
4. move the arrow and selected channel one place up (channel $i$ and channel $i - 1$ are switching places, arrow ends up in place $i - 1$)

Menu is robust, so invalid commands (such as a command which would move the arrow outside of the channel list) are just **ignored**.

Write a program which will, given a channel list, output a sequence of **any** operations such that, after they are executed, BLJTV1 will be on the first, and BLJTV2 on the second place in channel list. Additionally, the sequence length should be less than 500. Ordering of all other channels is arbitrary.

## Input Specification

First line of input contains a positive integer $N$ ($2 \leq N \leq 100$), number of channels.

Next $N$ lines contain a list of channels generated by the digital receiver. Each line contains the name of one channel. Channel name is a sequence of at most 10 characters - capital letters of English alphabet and digits.

Input sequence is created in such way that it will **always** be required to make **at least one** operation.

## Output Specification

First and only line of output should contain the sequence of Mirko's commands with no spaces in between.

## Sample Input 1

```
3
ABC
BLJTV1
BLJTV2
```

## Sample Output 1

```
33
```

## Sample Input 2

```
4
ABC1
ABC02
BLJTV2
BLJTV1
```

## Sample Output 2

```
11144411144
```

## Sample Input 3

```
4
ABC1
ABC02
BLJTV2
BLJTV1
```

## Sample Output 3

```
33144413
```