Problem A

We play the following variant of the NIM game: We have n piles of matches. The two players alternate. In each turn, the current player takes from a single pile a positive number of matches, but at most $\lceil s/2 \rceil$, where s is the size of the pile. The player who cannot make a valid move loses.

Input and output

The first line contains a single integer $n \leq 10$, the number of piles. The i-th of the n following lines contains a single integer s_i ($1 \leq s_i \leq 10^6$), the number of matches on the i-th pile. You are guaranteed that the first player to move has a winning strategy from the described position.

On each line of the output, write out two positive integers a ($1 \leq a \leq n$) and t, describing a valid move of the first player from the current position: Take t matches from the a-th pile. In their move, the second player always takes one match from the non-empty pile with the smallest possible number; however, you are not allowed to take advantage of this: You must make sure that after each of your moves, the second player does not have any winning strategy.

Example

Input:

```
3
1
2
3
```

Output:

```
3 2
3 1
2 1
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