

## Problem B. Game With A Fairy

Input file: *standard input*  
Output file: *standard output*  
Time limit: 2 seconds  
Memory limit: 256 mebibytes

*This is an interactive problem.*

You met a fairy in a beautiful forest glade. The fairy is in good mood and would like to give you a present, but not before you best her in a game though.

There are  $n$  trunks in the glade; the trunks are numbered from 1 to  $n$ . Some of the trunks (**possibly all, and at least one**) contain magical treasure. You can choose several trunks (possibly all) and list their numbers to the fairy. If none of them contain treasure, then you are unlucky and do not get any treasure. However, if more than one of the chosen trunks contains treasure, the fairy thinks you are too greedy and does not give you any treasure either. If **exactly one** of the trunks chosen by you contains treasure, then you get the treasure and are expelled from the forest (that is, the game ends).

You can make at most **200** guesses before the night falls and the fairy becomes annoyed with you. It is guaranteed that the fairy is honest and does not move any treasure after you enter the forest. Can you best the fairy and get the precious treasure?

### Interaction Protocol

At the start of the interaction, a single integer  $n$  is fed to your program on a separate line. In all test cases except the first one,  $n = 10^4$ . The first test case coincides with the sample. In each test, the trunks which contain treasure are fixed in advance and stay the same each time a solution is evaluated.

For each query you make, print a single line of  $n$  characters;  $i$ -th of the characters must be “1” if the  $i$ -th trunk is chosen for this query, or “0” if the  $i$ -th trunk is not chosen.

After each query, your program is fed with a line containing “+” if you won the treasure, or “-” if you didn’t win the treasure (note that in this case, you are not told whether no trunks contain treasure, or there are multiple trunks with treasure). After receiving the “+” answer, your program must terminate immediately.

Do not forget to end your lines with “new line” characters, and flush your output after each query.

### Example

standard input	standard output
3	100
-	111
-	010
+	

### Note

In the sample test, magical treasure is in trunks 2 and 3.