

6048 Dr Who's Banquet

Dr. Who is organising a banquet, and will be inviting several guests. A guest is happy, if he can chat with a fixed number of other guests. We assume that guests cannot talk to themselves. Help Dr. Who make all his guests happy, if possible, by organising chats between guests.

Input

The program input contains several data sets, and each data set is encoded on a line by itself. A data set consists of $n \leq 10000$ positive integers a_1, a_2, \dots, a_n , separated by single whitespaces. The last integer a_n is immediately followed by the newline character. Each number a_i , with $1 \leq i \leq n$ is the number of chat partners guest i would like to have. We assume that $a_i \leq 1000$ for all $1 \leq i \leq n$. The last data set is followed by the end of file.

Output

If all guests can be made happy, the program output consists of a $n \times n$ matrix m , where $m[i][j] = m[j][i] = 1$ if guests i and j chat, and $m[i][j] = m[j][i] = 0$, otherwise. The matrix will be represented at standard output, as follows: each value $m[i][j]$ from a row will be followed by one whitespace (including the last value from the row). Each row will be separated by the newline character. If it is not possible for all guests to be happy, then the program output is the message 'fail'.

The matrix and the message are always separated by an empty line.

Sample Input

```
3 3 1 1
4 4 3 3 2 2 2
3 3 1 1
2 2 2 2
```

Sample Output

```
fail

0 1 1 0 1 0 1
1 0 0 1 1 0 1
1 0 0 1 0 1 0
0 1 1 0 0 1 0
1 1 0 0 0 0 0
0 0 1 1 0 0 0
1 1 0 0 0 0 0

fail

0 1 1 0
1 0 0 1
1 0 0 1
0 1 1 0
```