Problem G. Grp

Input file:	*standard input*
Output file:	*standard output*
Time limit:	5 seconds
Memory limit:	512 mebibytes

Distribute all non-empty subsets of $\{\mathtt{a}, \mathtt{b}, \mathtt{c}, \ldots\}$ (first n lowercase English letters) of size at most k into as few groups as possible, subject to the following conditions:

- each subset must belong to exactly one group;
- subsets belonging to the same group must have no common elements;
- the total size of subsets belonging to the same group must be at most k.

Input

The only line contains two integers n and k ($1 \le k \le n \le 17$).

Output

Display the smallest number of groups g, followed by g group descriptions.

Group description i must consist of an integer s_i, followed by s_i subset descriptions. Each subset description must be a string containing subset elements in any order without spaces.

Examples

standard input	standard output
3 2	5 1 ab 1 ac 1 bc 1 b 2 c a
3 3	4 1 abc 2 ab c 2 ac b 2 bc a