Problem 1 - Sequences of Limited Sum

You are given an integer **S**. Generate all non-empty sequences of numbers in range [1...S], which have sum of elements \leq **S**. Display the sequences in their natural order, e.g. $\{1\} \leq \{1, 1\} \leq ... \leq \{2\} \leq \{2, 1\} \leq \{2, 1, 1\} \leq \{2, 2\}$.

Input

On the single input line you are given the number S.

Output

- Print each sequence on separate line. The elements in a sequence must be separated by a single space.
- The elements in the sequences are distinct and **their order matters**: the sequences {1, 2} and {2, 1} are different and should **both** be printed.
- The sequences should be printed in their natural order (see the examples below).

Constraints

- The number **S** is integer in the range [1 ... 16].
- Time limit: 100 ms. Allowed memory: 24 MB.

Sample Input / Output

Input	Output
2	1 1 1 2

Input	Output
3	1
	1 1
	1 1 1
	1 2
	2
	2 1 3
	3

















