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 ≤ S**. Display the sequences in their **natural order**, e.g. {1} ≤ {1, 1} ≤ … ≤ {2} ≤ {2, 1} ≤ {2, 1, 1} ≤ {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