

## 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.  $\{1\} \leq \{1, 1\} \leq \dots \leq \{2\} \leq \{2, 1\} \leq \{2, 1, 1\} \leq \{2, 2\}$ .

### 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        | Input | Output                                    |
|-------|---------------|-------|---|
| 2     | 1<br>1 1<br>2 | 3     | 1<br>1 1<br>1 1 1<br>1 2<br>2<br>2 1<br>3 |