# 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** |  | **Input** | **Output** |
| 2 | 1 1 1 2 | 3 | 1  1 1  1 1 1  1 2  2  2 1  3 |