

B. Shifting

time limit per test: 2 seconds
memory limit per test: 256 megabytes
input: standard input
output: standard output

John Doe has found the beautiful permutation formula.

Let's take permutation $p = p_1, p_2, \dots, p_n$. Let's define transformation f of this permutation:

where k ($k > 1$) is an integer, the transformation parameter, r is such maximum integer that $rk \leq n$. If $rk = n$, then elements p_{rk+1}, p_{rk+2} and so on are omitted. In other words, the described transformation of permutation p cyclically shifts to the left each consecutive block of length k and the last block with the length equal to the remainder after dividing n by k .

John Doe thinks that permutation $f(f(\dots f(p = [1, 2, \dots, n], 2) \dots, n-1), n)$ is beautiful. Unfortunately, he cannot quickly find the beautiful permutation he's interested in. That's why he asked you to help him.

Your task is to find a beautiful permutation for the given n . For clarifications, see the notes to the third sample.

Input

A single line contains integer n ($2 \leq n \leq 10^6$).

Output

Print n distinct space-separated integers from 1 to n — a beautiful permutation of size n .

Examples

input
2
output
2 1

input
3
output
1 3 2

input
4
output
4 2 3 1

Note

A note to the third test sample:

- $f([1, 2, 3, 4], 2) = [2, 1, 4, 3]$
- $f([2, 1, 4, 3], 3) = [1, 4, 2, 3]$
- $f([1, 4, 2, 3], 4) = [4, 2, 3, 1]$