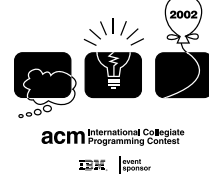


Problem B

Binary numbers



ACM Central European Programming Contest, Warsaw 2002, Poland

Given a positive integer n , find the positions of all 1's in its binary representation. The position of the least significant bit is 0.

Task

Write a program that:

- reads a positive integer n from the standard input,
- computes the positions of 1's in the binary representation of n ,
- writes the result to the standard output.

Input

The first and only line of the input contains exactly one integer n , $1 \leq n \leq 10^6$.

Output

The output should contain increasing sequence of integers separated by single spaces — the positions of 1's in the binary representation of the input number.

Example

For the input:

13

the correct answer is:

0 2 3