CSES Problem Set

Josephus Problem I

Time limit: 1.00 s **Memory limit:** 512 MB

Consider a game where there are n children (numbered $1, 2, \ldots, n$) in a circle. During the game, every second child is removed from the circle, until there are no children left. In which order will the children be removed?

Input

The only input line has an integer n.

Output

Print n integers: the removal order.

Constraints

- $1 \le n \le 2 \cdot 10^5$

Example

Input:
```
7
```

Output:
```
2 4 6 1 5 3 7
```

Sorting and Searching

...
Playlist
Towers
Traffic Lights
Josephus Problem I
Josephus Problem II
Nested Ranges Check
Nested Ranges Count
Room Allocation
...

Your submissions