CPC '19 Contest 1 P1 - Distance

Time limit: 1.0s **Memory limit:** 64M

Eric wants to visit all N of his friends. Each friend lives at house i, labelled from 1 to N. Each house is separated by a single kilometre, meaning that the distance between house i and house j would be $|i - j|$. He decides to be a "cool kid", and not travel a certain distance more than once.

For example, if there are 3 houses, he could start at the third house, proceed to the first house, and visit the second house last, with travel distances of $[2, 1]$.

Eric must visit all of the N houses. Can you output a sequence that Eric can follow, such that he visits all N houses and never travels the same distance twice?

Constraints

Subtask 1 [30%]

$2 \leq N \leq 10$

Subtask 2 [70%]

$2 \leq N \leq 10^5$

Input Specification

The first and only line of input will contain an integer N, the number of houses Eric needs to visit. The houses are labelled from 1 to N.

Output Specification

You are to output a sequence of houses that matches the constraints stated in the problem description, each house separated by a space.

Sample Input 1

```
3
```

Sample Output 1

```
1 3 2
```

Sample Explanation 1

For the first sample, he could also travel from house 3 to 1, and then 1 to 2 as stated in the problem description.

Sample Input 2

```
2
```

Sample Output 2

```
2 1
```

Sample Explanation 2

In the second sample, he could also travel from 1 to 2.