# Problem B
## Bell Ringing
### Problem ID: bells

*Method ringing* is used to ring bells in churches, particularly in England. Suppose there are $6$ bells that have $6$ different pitches. We assign the number $1$ to the bell highest in pitch, $2$ to the second highest, and so on. When the $6$ bells are rung in some order—each of them exactly once—it is called a *row*. For example, $1, 2, 3, 4, 5, 6$ and $6, 3, 2, 4, 1, 5$ are two different rows.

An *ideal* performance contains all possible rows, each played exactly once. Unfortunately, the laws of physics place a limitation on any two consecutive rows; when a bell is rung, it has considerable inertia and the ringer has only a limited ability to accelerate or retard its cycle. Therefore, the position of each bell can change by at most one between two consecutive rows.

In Figure **??**, you can see the pattern of a non-ideal performance, where bells only change position by at most one.

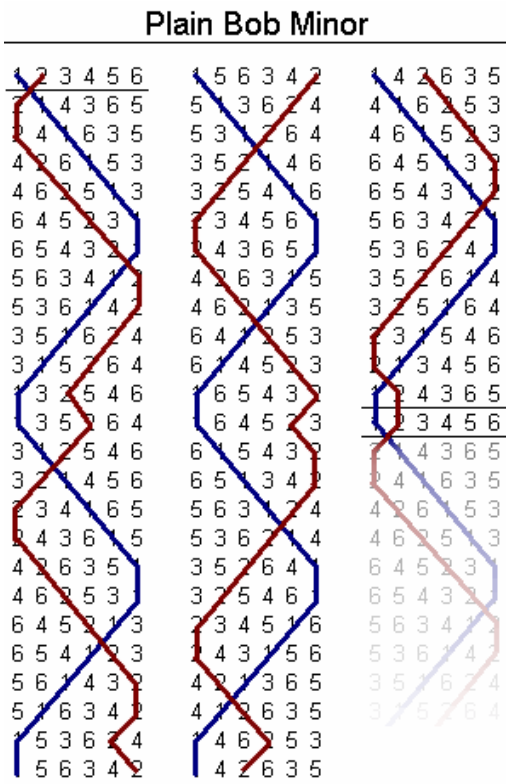



Figure B.1: A non-ideal performance respecting the inertia of bells. The trajectory of bell number $1$ is marked with a blue line and trajectory of bell number $2$ marked with a brown line.

Given $n$, the number of bells, output an ideal performance. All possible rows must be present exactly once, and the first row should be $1, 2, \ldots, n$.

## Input

The first and only line of input contains an integer $n$ such that $1 \leq n \leq 8$.

## Output

Output an ideal sequence of rows, each on a separate line. The first line should contain the row $1, 2, \ldots, n$ and each two consecutive lines should be at most $1$ step away from each other. Each row should occur exactly once in the output.

| Sample Input 1 | Sample Output 1 |
|---|---|
| 2 | 1 2<br>2 1 |