Given an integer N, print all the Derrangements of 1 to N. A permutation of 1 to N is called a Derrangement, if none of the numbers is in its original position. You have to use recursion.

**Input**

Input will consist of an integer, N (2 <= N <= 8) in one line.

**Output**

Output will consist of several lines, each line with a new derrangement in lexicographic order.

|  |  |
| --- | --- |
| **Sample Input** | **Output of Sample Input** |
| 3 | 2 3 1  3 1 2 |
| 2 | 2 1 |
| 4 | 2 1 4 3  2 3 4 1  2 4 1 3  3 1 4 2  3 4 1 2  3 4 2 1  4 1 2 3  4 3 1 2  4 3 2 1 |