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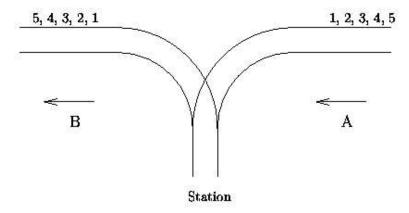
C. Train Order

Time Limit: 1.0 Seconds   Memory Limit: 65536K

There is a railway station in PopPush City (See the picture below). All the trains arriving from A are numbered 1,2,3,...N. The station is dead-end, and some trains may stop here temporarily to let the behind trains pass by. Please note the trains cannot go backward, that is, once they enter the station, they cannot return to the direction A, and once they left the station to direction B, they cannot return the station too.

Now your task is, given N, output all the possible sequence when all the trains left the station. Each sequence should be represented as a string containing only 1,2,3...N. And the string should be sorted lexicographically.

Input

The first line is an integer T, the number of test cases. Then T cases follows.

Each case contains only one number N in one line. You can assume $1 \leq N \leq 9$.

Output

Output all the possible sequences for each test case. Each line contains one sequence.

Sample Input

```
2
2
3
```

Sample Output

```
12
21
123
132
213
231
321
```

Source: TJU Exam 2008

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