

B. Queue

time limit per test: 2 seconds
memory limit per test: 256 megabytes
input: standard input
output: standard output

There are n walrus standing in a queue in an airport. They are numbered starting from the queue's tail: the 1-st walrus stands at the end of the queue and the n -th walrus stands at the beginning of the queue. The i -th walrus has the age equal to a_i .

The i -th walrus becomes displeased if there's a younger walrus standing in front of him, that is, if exists such j ($i < j$), that $a_i > a_j$. The displeasure of the i -th walrus is equal to the number of walruses between him and the furthest walrus ahead of him, which is younger than the i -th one. That is, the further that young walrus stands from him, the stronger the displeasure is.

The airport manager asked you to count for each of n walruses in the queue his displeasure.

Input

The first line contains an integer n ($2 \leq n \leq 10^5$) — the number of walruses in the queue. The second line contains integers a_i ($1 \leq a_i \leq 10^9$).

Note that some walruses can have the same age but for the displeasure to emerge the walrus that is closer to the head of the queue needs to be **strictly younger** than the other one.

Output

Print n numbers: if the i -th walrus is pleased with everything, print "-1" (without the quotes). Otherwise, print the i -th walrus's displeasure: the number of other walruses that stand between him and the furthest from him younger walrus.

Examples

input
6 10 8 5 3 50 45
output
2 1 0 -1 0 -1

input
7 10 4 6 3 2 8 15
output
4 2 1 0 -1 -1 -1

input
5 10 3 1 10 11
output
1 0 -1 -1 -1