

RMQSQ - Range Minimum Query

You are given a list of **N** numbers and **Q** queries. Each query is specified by two numbers *i* and *j*; the answer to each query is the minimum number between the range [*i*, *j*] (inclusive).

Note: the query ranges are specified using 0-based indexing.

Input

The first line contains **N**, the number of integers in our list (**N** ≤ 100,000). The next line holds **N** numbers that are guaranteed to fit inside an integer. Following the list is a number **Q** (**Q** ≤ 10,000). The next **Q** lines each contain two numbers **i** and **j** which specify a query you must answer (**0** ≤ **i**, **j** ≤ **N-1**).

Output

For each query, output the answer to that query on its own line in the order the queries were made.

Example

Input:

```
3
1 4 1
2
1 1
1 2
```

Output:

```
4
1
```