

## A. Eugeny and Array

time limit per test: 1 second

memory limit per test: 256 megabytes

input: standard input

output: standard output

Eugeny has array  $a = a_1, a_2, \dots, a_n$ , consisting of  $n$  integers. Each integer  $a_i$  equals to  $-1$ , or to  $1$ . Also, he has  $m$  queries:

- Query number  $i$  is given as a pair of integers  $l_i, r_i$  ( $1 \leq l_i \leq r_i \leq n$ ).
- The response to the query will be integer  $1$ , if the elements of array  $a$  can be rearranged so as the sum  $a_{l_i} + a_{l_i+1} + \dots + a_{r_i} = 0$ , otherwise the response to the query will be integer  $0$ .

Help Eugeny, answer all his queries.

### Input

The first line contains integers  $n$  and  $m$  ( $1 \leq n, m \leq 2 \cdot 10^5$ ). The second line contains  $n$  integers  $a_1, a_2, \dots, a_n$  ( $a_i = -1, 1$ ). Next  $m$  lines contain Eugene's queries. The  $i$ -th line contains integers  $l_i, r_i$  ( $1 \leq l_i \leq r_i \leq n$ ).

### Output

Print  $m$  integers — the responses to Eugene's queries in the order they occur in the input.

### Examples

input	output
<pre>2 3 1 -1 1 1 1 2 2 2</pre>	<pre>0 1 0</pre>
input	output
<pre>5 5 -1 1 1 1 -1 1 1 2 3 3 5 2 5 1 5</pre>	<pre>0 1 0 1 0</pre>

### Codeforces Round #182 (Div. 2)

Finished

### → Virtual participation

Virtual contest is a way to take part in past contest, as close as possible to participation on time. It is supported only ACM-ICPC mode for virtual contests. If you've seen these problems, a virtual contest is not for you - solve these problems in the archive. If you just want to solve some problem from a contest, a virtual contest is not for you - solve this problem in the archive. Never use someone else's code, read the tutorials or communicate with other person during a virtual contest.


Start virtual contest

### → Problem tags

implementation

No tag edit access

### → Contest materials

- Announcement 
- Tutorial 