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# 2x GCD Queries





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The Greatest Common Divisor (GCD) of two integers,  $\boldsymbol{a}$  and  $\boldsymbol{b}$ , is the largest number which divides both  $\boldsymbol{a}$  and  $\boldsymbol{b}$ . For example: GCD(10, 5) = 5, GCD(21, 14) = 7. Let us assume GCD(0, 0) = 0.

You are given an array,  $m{A}$ , of  $m{N}$  integers. You are tasked to answer  $m{Q}$  queries. There are two types of queries:

- 1. print the GCD of the integers in A from index i to index j ( $i \le j$ ), i.e. GCD(A[i..j]), where i and j are inclusive.
- 2. update any element within the array to a specified value

#### **Input Format**

The first line of input contains the integer N. Following this line is N space separated integers  $a_i$  (where  $a_i$  denotes the ith integer).

The next line contains a single integer Q describing the number of queries to answer.

Then Q lines follow, each of these lines are may be of the form:

- ullet 1 i j Print the Greatest Common Divisor of the integers in  $oldsymbol{A}$  from index  $oldsymbol{i}$  to index  $oldsymbol{j}$
- ullet 2 i x Update A[i] to the value  $oldsymbol{x}$ , i.e. set  $A[i]=oldsymbol{x}$

#### Constraints

- $1 \le N \le 10^5$
- $-2*10^9 \le a_i \le 2*10^9$
- $1 \le Q \le 10^5$
- $oldsymbol{\cdot}$   $i \leq j$  and  $0 \leq i,j < N$
- $-2*10^9 \le x \le 2*10^9$

#### **Output Format**

For each query which begins with 1, please print the Greatest Common Divisor of the integers in  $m{A}$  from index  $m{i}$  to index  $m{j}$ .

#### Sample Input 0

2 0 14

2 2 7 1 0 2

### Sample Output 0

21

2 I 7

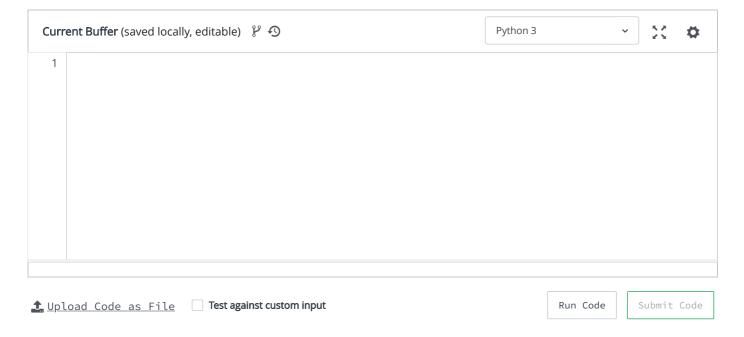
Sample	Input 1
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## Sample Output 1

1 3

Submissions: 53
Max Score: 30
Difficulty: Medium

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