



Dynamic GCD

Problem

Submissions

Leaderboard

Discussions

You are given an array A with N integers, and M queries. Each query is of one of two types:

1. Change the i th element of A to x .
2. Get the greatest common divisor of $A[l], A[l+1], \dots, A[r-1], A[r]$ (that is, the GCD of $A[i]$ for all i in $[l, r]$).

For each query of type 2, print the result of the query.

Grading

Correctness & Efficiency: 80%

- Passes 20 test cases: 80%
- Passes 15 to 19 test cases: 60%
- Passes 7 to 14 test cases: 40%
- Passes 1 to 6 test cases: 20%
- Passes 0 test cases: 0%

Code Quality: 20%

Input Format

The first line of each test case will contain two space-separated integers N and M . The second line contains N space-separated integers, the initial elements of A . Following this are M lines, each describing a single query.

Each query will be of type 1 or 2, as described in the problem statement. Queries of type 1 look like "1 i x ", and queries of type 2 look like "2 l r ". All indices (i, l, r) are 1-indexed.

Constraints

$$1 \leq N \leq 10^5$$

$$1 \leq M \leq 10^5$$

$$1 \leq \text{initial array element values} \leq 10^9$$

$$1 \leq i \leq N$$

$$1 \leq x \leq 10^9$$

$$1 \leq l \leq r \leq N$$

Output Format

For each test case, print a single line of output containing the answers to the queries of type 2, separated by spaces. Trailing spaces will be ignored.

Sample Input 0

```
5 5
1 2 3 4 5
2 1 5
2 4 4
1 4 3
1 2 3
2 2 4
```

Sample Output 0

```
1 4 3
```

[f](#) [t](#) [in](#)

Submissions: 2

Max Score: 10

Difficulty: Medium

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☆☆☆☆☆

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C++



```
1 #include <cmath>
2 #include <cstdio>
3 #include <vector>
4 #include <iostream>
5 #include <algorithm>
6 using namespace std;
7
8
9 int main() {
10     /* Enter your code here. Read input from STDIN. Print output to STDOUT */
11     return 0;
12 }
13
```

Line: 1 Col: 1

[Upload Code as File](#)

☐ Test against custom input

Run Code

Submit Code