Minimal Cost

You are given a set of cities(numbered from ***1*** to ***N***) that are connected with directed roads. Each city has a value assigned to it. Your task is to find a path such that minimizes the Great Common Devisor in the values of the cities on the path and output that minimum GCD value.

There can be a path that contains only one city.

Input Format

- The first line contains two integer ***N*** and ***M***, number of cities and number of roads.
- Next line contains space seperated ***N*** integers representding the value of the i^{th} (V_i) city.
- Each of the next ***M*** lines contain two integers ***S*** and ***E***, denoting a directed road from city ***S*** to city ***E***.

Constraints

- $1 \leq N \leq 10^5$
- $1 \leq M \leq 10^5$
- $1 \leq V_i \leq 10^5$

Output Format

Print the minimum GCD value you found.

Sample Input 0

```
3 2
4 6 8
1 2
2 3
```

Sample Output 0

```
2
```

Explanation 0

Consider the path 1-> 2-> 3. $GCD(V_1,V_2,V_3) = GCD(4,6,8) = 2$ and it is the minimum GCD we can obtain going through any path in this set of cities.