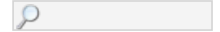



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G. Choosing Ads

time limit per test: 3 seconds
 memory limit per test: 512 megabytes
 input: standard input
 output: standard output

One social network developer recently suggested a new algorithm of choosing ads for users.

There are n slots which advertisers can buy. It is possible to buy a segment of consecutive slots at once. The more slots you own, the bigger are the chances your ad will be shown to users.

Every time it is needed to choose ads to show, some segment of slots is picked by a secret algorithm. Then some advertisers are chosen. The only restriction is that it should be guaranteed for advertisers which own at least $p\%$ of slots composing this segment that their ad will be shown.

From the other side, users don't like ads. So it was decided to show no more than $\lfloor \frac{100}{p} \rfloor$ ads at once. You are asked to develop a system to sell segments of slots and choose ads in accordance with the rules described above.

Input

The first line of the input contains three integers n , m and p ($1 \leq n, m \leq 150\,000$, $20 \leq p \leq 100$) — the number of slots, the number of queries to your system and threshold for which display of the ad is guaranteed.

Next line contains n integers a_i ($1 \leq a_i \leq 150\,000$), where the i -th number means id of advertiser who currently owns the i -th slot.

Next m lines contain queries descriptions. Each description is of one of the following forms:

- 1 l r id ($1 \leq l \leq r \leq n$, $1 \leq id \leq 150\,000$) — advertiser id bought all slots in a range from l to r inclusive;
- 2 l r ($1 \leq l \leq r$) — you need to choose advertisers for segment $[l, r]$.

Output

For each query of the second type answer should be printed in a separate line. First integer of the answer should be the number of advertisements that will be shown ($0 \leq cnt \leq \lfloor \frac{100}{p} \rfloor$). Next cnt integers should be advertisers' ids.

It is allowed to print one advertiser more than once, but each advertiser that owns at least $\lceil \frac{p(r-l+1)}{100} \rceil$ slots of the segment from l to r should be in your answer.

Example

input	Copy
5 9 33 1 2 1 3 3 2 1 5 2 1 5 2 1 3 2 3 3 1 2 4 5 2 1 5 2 3 5 1 4 5 1 2 1 5	
output	Copy
3 1 2 3 2 1 3 2 2 1 3 1 1000 1000 1 5	

VK Cup 2016 - Round 3

Finished

Practice



→ 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 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

→ Practice

You are registered for practice. You can solve problems unofficially. Results can be found in the contest status and in the bottom of standings.

→ Clone Contest to Mashup

You can clone this contest to a mashup.

Clone Contest

→ Submit?

Language: GNU G++11 5.1.0

Choose file: 选择文件 未选择任何文件

Be careful: there is 50 points penalty for submission which fails the pretests or resubmission (except failure on the first test, denial of judgement or similar verdicts). "Passed pretests" submission verdict doesn't guarantee that the solution is absolutely correct and it will pass system tests.

Submit

→ Problem tags

data structures *3100

No tag edit access

→ Contest materials

- Announcement (en)
- Tutorial (en)

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

Note

Samples demonstrate that you actually have quite a lot of freedom in choosing advertisers.

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