Spells

Lord Voldemort wants to destroy Hogwarts. The first step in achieving his goal is rendering all wizards powerless by destroying all spells stored in Hogwarts' spellbook. To stop this from happening, Dumbledore will hide the spells in the following way:

- First, he takes the n spells from the book and creates cnt_i scrolls of the i^{th} spell.
- Then, he finds m hiding spots. In the i^{th} hiding spot, he hides $size_i$ unique scrolls; i.e., no two scrolls of the same spell are allowed in the same hiding spot. It is guaranteed that $\sum_{i=1}^{n} cnt_i = \sum_{i=1}^{m} size_i$.
- Dumbledore calls two hiding spots a **safe pair** if all spells hidden in the spot of smaller size (or equal size) are also hidden in the other.
- He also defines a **safe group** S as a set of hiding spots such that any two spots from the group form a safe pair.
- Finally, he defines the **safety** as the maximum size of a safe group.

Dumbledore now wants you to distribute the scrolls into the hiding spots to maximize safety.

Input

The first line contains the number of spells in the book n, and the number of hiding spots m. The second line contains the numbers $cnt_1, cnt_2, \ldots, cnt_n$. The third line contains the numbers $size_1, size_2, \ldots, size_m$.

Output

The first line contains an integer k, representing the maximum achievable safety.

The next m lines describe a distribution of scrolls into the m hiding spots achieving safety k. The i^{th} of these lines contains $size_i$ integers describing the $size_i$ scrolls hidden in the i^{th} hiding spot. A scroll is specified by the index of the spell from which it was created. You can output the scrolls in any order.

The last line contains k integers $id_1, id_2, \ldots, id_k$ representing the indices of the hiding spots in a safety group S of size k for the given distribution of scrolls. You can output the hiding spots in S in any order.

Constraints

- $1 \leq n, m \leq 2 \cdot 10^5$
- $1 \leq \sum_{i=1}^{n} cnt_i = \sum_{i=1}^{m} size_i \leq 10^6$
- $1 \leq cnt_1 \leq cnt_2 \leq \ldots \leq cnt_n$
- $1 \leq size_1 \leq size_2 \leq \ldots \leq size_m$
- It is guaranteed that it is possible to distribute the scrolls into the hiding spots.
- If multiple distributions of scrolls into the hiding spots achieve safety k or multiple safety groups S of size k exist for the output distribution, you may output any of them.
- **Scoring:** You are awarded 50% of the points for each subtask if you correctly output the value k regardless of the rest of output.

Subtasks

#	Points	Restrictions
1	9	$1 \leq \sum_{i=1}^{n} cnt_i \leq 8$
2	16	$1 \leq n, m \leq 100$
3	17	$1 \leq n, m \leq 1\,000$
4	39	$1 \leq \sum_{i=1}^{n} cnt_i \leq 100\,000$
5	19	No further constraints.

Example

Input

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

Output

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

Explanation

Initially, there are 5 spells, numbered $1, 2, 3, 4, 5$. Dumbledore creates 1 scroll of the first spell, 1 scroll of the second, 1 scroll of the third. 3 scrolls of the fourth, and 4 scrolls of the fifth. The collection of resulting scrolls is $1, 2, 3, 4, 4, 4, 5, 5, 5, 5$. Dumbledore distributes the resulting 10 scrolls into the hiding spots as follows:

- Hiding spot 1: scroll 5;
- Hiding spot 2: scrolls $4, 5$;
- Hiding spot 3: scrolls $3, 5, 4$;
- Hiding spot 4: scrolls $4, 5, 1, 2$. A safe group S of size $k = 3$ is formed by hiding spots $1, 2, 4$.

Another safe group S' of size 3 would be formed by hiding spots $1, 2, 3$. Outputting it would also be correct.