Colossal Pepe

Colossal Pepe is the new ruler of Pepeland. Being the new ruler, he needs to manage the security of this kingdom. To better manage his kingdom, he divides it into 3 parts and gives the duty of protection to his 3 generals - Woumya, Dali, and Sesh.

As the rule of life implies, every chain is as strong as its weakest link. The security of each part of the kingdom is equal to the minimum security level of any city in that part. Pepe has given you the role of security management. You want the total security of the kingdom (the sum of the securities of the 3 parts) to be maximized.

Given a **circular** array A of N elements (representing the security level of each city), you need to divide the kingdom into 3 parts such that **each part is made out of a contiguous sequence of cities**, **the 3 parts are disjoint**, and **they also cover the whole kingdom**, such that the sum of the security of each part is maximized.

Input

- line 1: N
- line 2: N space-separated integers $A_1, A_2, \dots, A_N$

Output

- line 1: The maximum total security of the kingdom
- line 2: 3 parts. Each part should be described by 2 integers L and R (1-based indices)
  - If $L \le R$, the part consists of cities from index L to R.
  - If $L > R$, the part consists of cities from index L to N and then from 1 to R (wrapping around).

Constraints

- $3 \le N \le 5 \cdot 10^5$
- $0 \le A_i \le 10^9$

Subtasks

Subtask	Score	Additional constraints
1	10	$N \leq 500$
2	20	$N \leq 5000$
3	70	$N \leq 500000$

Examples

Example 1

```
6
10 10 11 10 10 10
```

The correct output is:

```
31
2 2
3 3
4 1
```

Explanation

In this sample, we can divide the kingdom into three parts:

- Part 1: indices 2 to 2 (value 10), minimum security = 10
- Part 2: indices 3 to 3 (value 11), minimum security = 11
- Part 3: indices 4 to 1 (wrapping around: indices $4, 5, 6, 1$). Values are $10, 10, 10, 10$. Minimum security = 10. Total security = 10 + 11 + 10 = 31. This partition shows how the last part wraps around from index 4 to index 1. Another valid partition could have been indices 1 to 2, 3 to 3, and 4 to 6.