Dodgeball

2023/2024 SEASON – FOURTH ROUND

It is time to play dodge ball! Valentin and Viktor want to win the national championship, but beforehand, they have to build their team. They created a list of n potential participants where each is characterized by an integer $power_i$ – the contribution to the team. The boys are labelled with odd numbers, whereas the girls – with even numbers.

Moreover, the boys prepared a list of m pairs of students which under no circumstances should play together – mainly due to bad relationships. It turned out, that these pairs always consisted of a boy and a girl.

Your task is to help Viktor and Valentin and find the maximum possible total contribution value of the participants in the team, as well as the exact team. Note that more than one optimal team may exist so you can print any.

Input

The first line of the file **dodgeball.in** consists of two integers n, m – count of students and the number of pairs. The next line comprises of n integers - $power_1, power_2 \ldots power_n$ – the contribution values of the students. The next m lines consist of two integers – the indexes of the boy and the girl which cannot play together.

Output

On the first line of the file **dodgeball.out** print one integer – the total contribution value of the team. On the next line print k – the number of participants in the team. The last line should contain k integers - $b_1, b_2 \ldots b_k$- the indexes of the team members.

Constraints

$1 \leq n \leq 10^5, n\ is\ even$

$1 \leq m \leq 5 * 10^5$

$0 \leq power_i \leq 10^6$

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Time limit: 1.5 sec.

Memory limit: 256 MB

Sample test

Input (dodgeball.in)	Output (dodgeball.out)
10 7 6 2 1 7 4 3 5 4 3 3 1 4 3 8 5 4 7 4 7 6 9 2 1 10	22 5 1 5 7 8 9

Sample test explanation

Neither of the boys with indexes 1, 5, 7 and 9 resents playing with the girl with index 8. The maximum possible total contribution value is 22.