DMOJLand Series: Fake Judges

Time limit: 0.5s **Memory limit:** 64M

In DMOJLand, when you submit a problem, you assume that a judge is grading a submission. In reality, it is the problem authors who assigned a specific point value for each person when they submit!

bruce has N students in his class. When the i^{th} person submits, they will gain a total of a_i points, where $1 \leq i \leq N$.

Unfortunately, you are submitting to **Ninjaclasher**'s problems, and he wants to minimize the total amount of points **bruce**'s class will obtain.

During the class, the students will submit Q times to **Ninjaclasher**'s problems. For the q^{th} query, $1 \leq q \leq N$, students l_j to r_j will submit and earn their respective points, where the total points they obtain are $\sum_{j=l}^{r} A_j$, or $A_l + A_{l+1} + \cdots + A_r$.

Before all of the queries are performed, **Ninjaclasher** can move around the positions of as many students as he would like. Can you help him minimize the total sum of all the queries?

(TLDR; This is why you get low marks on quizzes.)

Constraints

Subtask 1 [30%]

$1 \leq N, Q, A_i \leq 100$

$l_i = r_i$

Subtask 2 [70%]

No additional constraints.

Input Specification

The first line of input will contain 2 integers, N and Q $(1 \leq N, Q \leq 10^5)$, the size of the class and the number of times the students will submit, respectively.

The second line of input will contain a_i $(1 \leq a_i \leq 10^9)$, for $1 \leq i \leq N$, the number of points the i^{th} student will obtain every time he submits.

The next Q lines of input will contain l_i r_i, denoting the range of the students that will submit.

Output Specification

Output the minimum possible sum. It is guaranteed that this value will be at most 5×10^{18}.

Sample Input 1

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

Sample Output 1

```
17
```