Range Minimum Query

- Given a sequence of n integers $a_0, \ldots, a_{n-1}$. We denote rmq(i, j) the minimum element of the sequence a_i, a_{i+1}, $\ldots$, a_j. Given m pairs $(i_1, j_1), \ldots, (i_m, j_m)$, compute the sum $Q = \text{rmq}(i_1, j_1) + \ldots + \text{rmq}(i_m, j_m)$

- **Input**
    - Line 1: contains an integer n $(1 <= n <= 10^6)$
    - Line 2: contains $a_0, \ldots, a_{n-1}$ $(1 <= a_i <= 10^6)$
    - Line 3: contains m $(1 <= m <= 10^6)$
    - Line $k+3$ $(k = 1, \ldots, m)$: contains i_k, j_k $(0 <= i_k < j_k < n)$

- **Output**
    - Write the value Q

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- Example

stdin	stdout
16 2 4 6 1 6 8 7 3 3 5 8 9 1 2 6 4 4 1 5 0 9 1 15 6 10	6