Task B3. DECREASING SEQUENCES OF POINTS

Let \( A_1(x_1, y_1), A_2(x_2, y_2), \ldots, A_n(x_n, y_n) \) be a sequence of \( n \) different points in the plane with nonnegative integer coordinates. We call this sequence decreasing if for any two points \( A_i(x_i, y_i) \) and \( A_{i+1}(x_{i+1}, y_{i+1}) \), it is true that \( x_i \leq x_{i+1} \) and \( y_i \geq y_{i+1} \). For example, the sequence of points \( A_1(1,4), A_2(1,3), A_3(2,2), A_4(2,1), A_5(4,0) \) is decreasing.

Write program \texttt{points} which calculates the number of decreasing sequences of points for which \( x_i + y_i = a_i \), \( x_2 + y_2 = a_2 \), \ldots, \( x_n + y_n = a_n \).

**Input**
The positive integer \( n \) is given on the first line of the standard input. There are \( n \) nonnegative integers on the second line: \( a_1, a_2, \ldots, a_n \).

**Output**
On a line of the standard output the program has to write by modulo 123456789 the number of the above described sequences.

**Constraints**
\( n \leq 10000; \)
\( 0 \leq a_i \leq 10000 \) for \( i = 1, 2, \ldots, n \);
\( a_i \neq a_{i+1} \) for \( i = 1, 2, \ldots, n-1 \).

**Example**

**Input**
\[
3 \\
4 \ 5 \ 3
\]

**Output**
\[
10
\]