

Contest Duration: 2025-05-17(Sat) 22:00 (<http://www.timeanddate.com/worldclock/fixedtime.html?iso=20250517T2100&p1=248>) - 2025-05-17(Sat) 23:40 (<http://www.timeanddate.com/worldclock/fixedtime.html?iso=20250517T2240&p1=248>) (local time) (100 minutes)

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Time Limit: 2 sec / Memory Limit: 1024 MiB

Score : 350 points

Problem Statement

For an integer sequence $A = (A_1, A_2, \dots, A_{|A|})$, we say that A is **tilde-shaped** if it satisfies all of the following four conditions:

- The length $|A|$ is at least 4.
- $A_1 < A_2$.
- There exists exactly one integer i with $2 \leq i < |A|$ such that $A_{i-1} < A_i > A_{i+1}$.
- There exists exactly one integer i with $2 \leq i < |A|$ such that $A_{i-1} > A_i < A_{i+1}$.

You are given a permutation $P = (P_1, P_2, \dots, P_N)$ of $(1, 2, \dots, N)$. Find the number of (contiguous) subarrays of P that are tilde-shaped.

Constraints

- $4 \leq N \leq 3 \times 10^5$
- $P = (P_1, P_2, \dots, P_N)$ is a permutation of $(1, 2, \dots, N)$.
- All input values are integers.

Input

The input is given from Standard Input in the following format:

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N $P_1 \ P_2 \ \dots \ P_N$

Output

Output the answer.

Sample Input 1

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```
6
1 3 6 4 2 5
```

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Sample Output 1

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```
2
```

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Among the subarrays of $(1, 3, 6, 4, 2, 5)$, exactly two are tilde-shaped: $(3, 6, 4, 2, 5)$ and $(1, 3, 6, 4, 2, 5)$.

Sample Input 2

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```
6
1 2 3 4 5 6
```

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Sample Output 2

[Copy](#)

```
0
```

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Sample Input 3

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```
12
11 3 8 9 5 2 10 4 1 6 12 7
```

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Sample Output 3

[Copy](#)

```
4
```

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