AVAILABLE LESSONS:

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Time Complexity

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PAINLESS

CountFactors

START

Count factors of given number n.

Programming language: C++

A positive integer D is a *factor* of a positive integer N if there exists an integer M such that N = D * M.

For example, 6 is a factor of 24, because M = 4 satisfies the above condition (24 = 6 * 4).

Write a function:

```
int solution(int N);
```

that, given a positive integer N, returns the number of its factors.

For example, given N = 24, the function should return 8, because 24 has 8 factors, namely 1, 2, 3, 4, 6, 8, 12, 24. There are no other factors of 24.

Assume that:

- N is an integer within the range [1..2,147,483,647].

Complexity:

- expected worst-case time complexity is O(sqrt(N));
- expected worst-case space complexity is O(1).

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Sieve of Eratosthenes

Lesson 12

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