1236 N-th Tribonacci Number (link)

Description

The Tribonacci sequence T_n is defined as follows:

$T_0 = 0$, $T_1 = 1$, $T_2 = 1$, and $T_{n+3} = T_n + T_{n+1} + T_{n+2}$ for n >= 0.

Given `n`, return the value of T_n.

Example 1:

```
Input: n = 4
Output: 4
Explanation:
T_3 = 0 + 1 + 1 = 2
T_4 = 1 + 1 + 2 = 4
```

Example 2:

```
Input: n = 25
Output: 1389537
```

Constraints:

- `0 <= n <= 37`
- The answer is guaranteed to fit within a 32-bit integer, ie. `answer <= 2^31 - 1`.

(scroll down for solution)

Solution

Language: cpp

Status: Accepted

```cpp
class Solution {
public:
    int tribonacci(int n) {
        if (n == 0) return 0;
        if (n == 1 || n == 2) return 1;

        int T0 = 0, T1 = 1, T2 = 1;
        int Tn = 0;

        for (int i = 3; i <= n; ++i) {
            Tn = T0 + T1 + T2;
            T0 = T1;
            T1 = T2;
            T2 = Tn;
        }

        return Tn;
    }
};
```