

# 1137. N-th Tribonacci Number

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  $n \geq 0$ .

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:

- $0 \leq n \leq 37$
- The answer is guaranteed to fit within a 32-bit integer, ie.  $\text{answer} \leq 2^{31} - 1$ .

```
res = [0,1,1]
    if n==0 or n==1 or n==2:
        return res[n]
    dp = [0]*(n+1)
    dp[0]=0
    dp[1]=1
    dp[2]=1
    for i in range(3,n+1):
        dp[i] = dp[i-1]+dp[i-2]+dp[i-3]
    return dp[n]
```

**GENIUS APPROACH==**

```
def tribonacci(self, n: int) -> int:
    dp = [0, 1, 1]
```

```
for i in range(3, n + 1):  
    dp[i % 3] = sum(dp)  
return dp[n % 3]
```