RAJALAKSHMI ENGINEERING COLLEGE

7 UVAIS HAPEEPULLAH 2024-CSE

U2

Started on	Wednesday, 29 October 2025, 10:28 AM
State	Finished
Completed on	Wednesday, 29 October 2025, 10:44 AM
Time taken	15 mins 51 secs
Grade	**10.00** out of 10.00 (**100**%)

Question 1 | Correct Mark 10.00 out of 10.00

Playing with Numbers:

Ram and Sita are playing with numbers by giving puzzles to each other. Now it was Ram term, so he gave Sita a positive integer 'n' and two numbers 1 and 3. He asked her to find the possible ways by which the number n can be represented using 1 and 3.Write any efficient algorithm to find the possible ways.

Example 1:

Input: *6*
Output:*6*
Explanation: *There are 6 ways to 6 represent number with 1 and 3*

1+1+1+1+1+1
3+3
1+1+1+3
1+1+3+1
1+3+1+1
3+1+1+1

Input Format

First Line contains the number n

Output Format

Print: The number of possible ways 'n' can be represented using 1 and 3

Sample Input

6

Sample Output

6

Answer: (penalty regime: 0 %)

```c
#include <stdio.h>
long long find_ways_large(int n) {
    if (n < 0) return 0;
    if (n == 0) return 1;
    if (n == 1) return 1;
    if (n == 2) return 1;
    long long dp[n + 1];
    dp[0] = 1LL;
    dp[1] = 1LL;
    dp[2] = 1LL;
    dp[3] = 2LL;
    for (int i = 4; i <= n; i++) {
        dp[i] = dp[i - 1] + dp[i - 3];
    }
    return dp[n];
}
int main() {
    int n;
        if (scanf("%d", &n) != 1 || n < 1) {
        fprintf(stderr, "Invalid input. Please enter a positive integer.\n");
        return 1;
    }
    long long result = find_ways_large(n);
    printf("%lld\n", result);
    return 0;
}
```

	Input	Expected	Got	
✔	6	6	6	✔

	Input	Expected	Got	
✔	25	8641	8641	✔
✔	100	24382819596721629	24382819596721629	✔

Passed all tests! ✔

Correct

Marks for this submission: 10.00/10.00.

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