RAJALAKSHMI ENGINEERING COLLEGE

CHANDRU G S 2024-CSE

C2

Started on	Sunday, 16 November 2025, 8:00 PM
State	Finished
Completed on	Sunday, 16 November 2025, 8:08 PM
Time taken	7 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>

unsigned long long countWays(int n) {
    unsigned long long dp[n + 1];
    dp[0] = 1;
    if (n >= 1) dp[1] = 1;
    if (n >= 2) dp[2] = 1;
    if (n >= 3) dp[3] = 2;

    for (int i = 4; i <= n; i++)
        dp[i] = dp[i-1] + dp[i-3];

    return dp[n];
}

int main() {
    int n;
    scanf("%d", &n);
    printf("%llu", countWays(n));
    return 0;
}

```

	Input	Expected	Got	
✔	6	6	6	✔
✔	25	8641	8641	✔
✔	100	24382819596721629	24382819596721629	✔

Passed all tests! ✔

Correct

Marks for this submission: 10.00/10.00.

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