RAJALAKSHMI ENGINEERING COLLEGE



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| **Started on** | Saturday, 25 October 2025, 9:35 AM |
| **State** | Finished |
| **Completed on** | Saturday, 25 October 2025, 9:46 AM |
| **Time taken** | 10 mins 6 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 %)

```
# include <stdio.h>
# include <stdlib.h>


long int countways(int n){
    if (n<0) return 0;
    long int *dp = (long int *)malloc(sizeof(long int)*n+1);
    dp[0] = 1;
    for(int i=1; i<n+1; i++){
        dp[i] += dp[i-1];
        if(i>=3)
            dp[i] += dp[i-3];
    }
    return dp[n];
}
int main(){
    int n;
    scanf("%d", &n);
    printf("%ld", countways(n));
}
```

| | 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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