



## 1-DP-Playing with Numbers

Started on	Friday, 10 October 2025, 1:38 PM
State	Finished
Completed on	Friday, 10 October 2025, 1:59 PM
Time taken	20 mins 31 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 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 %)

```
1 #include <stdio.h>
2
3 long long countWays(int n) {
4     if (n < 0) return 0;
5     long long dp[n + 1];
6     for (int i = 0; i <= n; i++) dp[i] = 0;
7
8     dp[0] = 1; // Base case
9
10    for (int i = 1; i <= n; i++) {
11        dp[i] += dp[i - 1];
12        if (i >= 3)
13            dp[i] += dp[i - 3];
14    }
15
16    return dp[n];
17}
18
19 int main() {
```

```
19 int main() {  
20     int n;  
21     scanf("%d", &n);  
22     printf("%lld\n", countWays(n));  
23     return 0;  
24 }  
25 }
```

	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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