

CS23331-DAA-2024-CSE / 1-DP-Playing with Numbers



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  [Flag question](#)

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 %)

```
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.

[Finish review](#)

[Back to Course](#)

[Data retention summary](#)