

# CS23331-Design and Analysis of Algorithms-2023 Batch-CSE

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## Quiz navigation



Finish review

Started on	Friday, 18 October 2024, 1:55 PM
State	Finished
Completed on	Friday, 18 October 2024, 2:32 PM
Time taken	37 mins 23 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 findWays(int n) {
4     long long dp[n + 1];
5     dp[0] = 1;
6     dp[1] = 1;
7     dp[2] = 1;
8     dp[3] = 2;
9     for (int i = 4; i <= n; i++) {
10         dp[i] = dp[i - 1];
11         if (i - 3 >= 0) {
12             dp[i] += dp[i - 3];
13         }
14     }
15     return dp[n];
16 }
17
18 int main() {
19     int n;
20     scanf("%d", &n);
21     long long result = findWays(n);
22     printf("%lld\n", result);
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

→ 5-Implementation of Quick Sort

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2-DP-Playing with chessboard →