

## 1-DP-Playing with Numbers

|              |                                  |
|--------------|----------------------------------|
| Started on   | Friday, 10 October 2025, 2:13 PM |
| State        | Finished                         |
| Completed on | Friday, 10 October 2025, 2:51 PM |
| Time taken   | 38 mins 3 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 |
2 | #include <stdio.h>
3 | #include <stdint.h>
4 |
5 | int main() {
6 |     int n;
7 |     if (scanf("%d", &n) != 1) return 0;
8 |
9 |     if (n < 0) {
10 |         printf("0\n");
11 |         return 0;
12 |     }
13 |
14 |     long long dp[n+1];
15 |     for (int i = 0; i <= n; ++i) dp[i] = 0;
16 |
17 |     dp[0] = 1;
18 |     for (int i = 1; i <= n; ++i) {
19 |         dp[i] = dp[i-1];
20 |         if (i >= 3) dp[i] += dp[i-3];
21 |     }
22 |
23 |     printf("%llu\n", dp[n]);
24 |     return 0;
25 | }
26 |
```

|   | Input | Expected          | Got               |   |
|---|-------|-------------------|-------------------|---|
| ✓ | 6     | 6                 | 6                 | ✓ |
| ✓ | 25    | 8641              | 8641              | ✓ |
| ✓ | 100   | 24382819596721629 | 24382819596721629 | ✓ |

Passed all tests! ✓

Correct

Chat with the Pa

!

Correct

Marks for this submission: 10.00/10.00.

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