1-DP-Playing with Numbers

Started on	Thursday, 20 November 2025, 9:31 PM
State	Finished
Completed on	Thursday, 20 November 2025, 9:35 PM
Time taken	4 mins 34 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 %)

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

int main() {
    int n;
    if (scanf("%d", &n) != 1) return 0;
    if (n < 0) {
        printf("0\n");
        return 0;
    }

    unsigned long long *dp = malloc((size_t)(n + 1) * sizeof(unsigned long long));
    if (!dp) return 0;

    dp[0] = 1ULL;
    for (int i = 1; i <= n; ++i) {
        dp[i] = 0ULL;

        dp[i] += dp[i - 1];

        if (i - 3 >= 0) dp[i] += dp[i - 3];
    }

    printf("%llu\n", dp[n]);

    free(dp);
    return 0;
}
```

	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