Dynamic Programming

Program – 1

Aim:

To find the number of ways a positive integer nnn can be represented using the numbers 1 and 3.

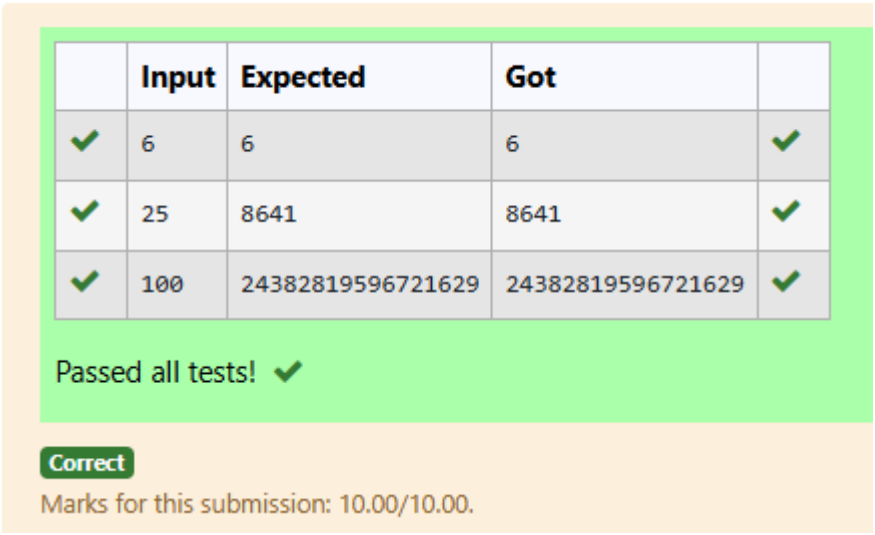
Input:

- First line: An integer nnn – the target number.

Code:

```
#include <stdio.h>

int main() {

long long n;

   scanf("%lld", &n);


   long long a[n + 1];

   a[0] = 1;

   a[1] = 1;

   a[2] = 1;

   a[3] = 2;

   for (int i = 4; i <= n; i++) {

      a[i] = a[i - 1] + a[i - 3];

   }


   printf("%lld",a[n]);

   return 0;

}
```

Output:



	Input	Expected	Got	
✔	6	6	6	✔
✔	25	8641	8641	✔
✔	100	24382819596721629	24382819596721629	✔

Passed all tests! ✔

Correct

Marks for this submission: 10.00/10.00.