Extended Fibonacci Sequence 2

You are given a sequence of Fibonacci numbers, defined as $F_0 = 4$, $F_1 = 5$, and $F_n = F_{n-1} + F_{n-2}$ for all $n>1$.

Define the nth term of a sequence S as $S_n = S_{n-1} + F_n$ where $S_0 = F_0$.

Your task:

Given n, return the last 10 digits of $\sum_{i=0}^{n} S_i$.

Bounds:
$1<n\leq1000$

Input:
Line 1 contains a single number n.

Output:
The output contains at most 10 digits on one line.

Sample Input:
30

Sample Output:
42612578