Problem E. How Many Ways?

Time limit	1000 ms
Mem limit	262144 kB
OS	Windows

Omar has recently joined 1337. Each day, he either comes to school or spends the day resting at home. When he comes to school, he finds a place in $E1$ or $E2$ and spends the whole day sitting there. For example: for 2 days, these are the possible scenarios:

Day 1	**Day 2**
home	home
home	$E1$
home	$E2$
$E1$	home
$E1$	$E1$
$E1$	$E2$
$E2$	home
$E2$	$E1$
$E2$	$E2$

Now, you have to count the number of possible scenarios for a given number of days N. Since the answer will be huge, print it modulo $10^9 + 7$ Can you do it?

Input

N, the number of days. $1 \leq N \leq 10^{18}$

Output

output the number of possible scenarios!

Examples

Input	Output
2	9