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"""
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Moo 게임(상)

<https://www.acmicpc.net/problem/5904>

재귀적이고 길이가 무한대인 수열

$$S(k) = S(k-1) + [\text{"m"} + \text{"o"} * (k+2)] + S(k-1)$$

$$S(0) = \text{"m o o"}$$

$$S(1) = \text{"m o o m o o o m o o"} = \text{"m o o"} + \text{"m o o o"} + \text{"m o o"} \\ = S(0) + \text{"o"}\text{가 } (1(k)+2)\text{개인 수열 } \text{"m o o o"} + S(0)$$

$$S(2) = \text{"m o o m o o o m o o m o o o o m o o m o o o m o o"} \\ = \text{"m o o m o o o m o o"} + \text{"m o o o o"} + \text{"m o o m o o o m o o"} \\ = S(1) + \text{"o"}\text{가 } (2(k)+2)\text{개인 수열 } \text{"m o o o o"} + S(1)$$

- 입력: N ($1 \leq N \leq 109$)

- 출력: Moo 수열의 N번째 글자

- 11 입력시, m 출력

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"""
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import copy
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def mk_moo(num):
    moo_seq = ['m']
    if num == 0:
        return ['m', 'o', 'o']
    for i in range(num+2):
        moo_seq.append('o')
        i += 1
    return moo_seq

def mk_seq(num, seq1, seq2):
    seq1.extend(mk_moo(num))
    seq1.extend(seq2)
    return seq1

def moo_sequence():
    seq = mk_moo(0)
    s0 = mk_moo(0)
    mk_seq(1, seq, s0) # seq 생성
    s1 = copy.deepcopy(seq)
    mk_seq(2, seq, s1) # seq 생성
    s2 = copy.deepcopy(seq)
    mk_seq(3, seq, s2) # seq 생성
    s3 = copy.deepcopy(seq)
    mk_seq(4, seq, s3)
    return seq

def moo(num):
    if num == 0:
        return 'moo'
    else:
        return moo(num-1) + 'm' + 'o' * (num+2) + moo(num-1)
```

첫 번째

```
num = int(input())  
print(moo_sequence()[num-1])
```

11
m

두 번째

```
print(moo(4)[num-1])
```

m

✓ 0초 오후 5:15에 완료됨

