65) .Count and Say

**The count-and-say sequence is a sequence of digit strings defined by the recursive formula:**

- **`countAndSay(1) = "1"`**
- **`countAndSay(n)` is the way you would "say" the digit string from `countAndSay(n-1)`, which is then converted into a different digit string.**

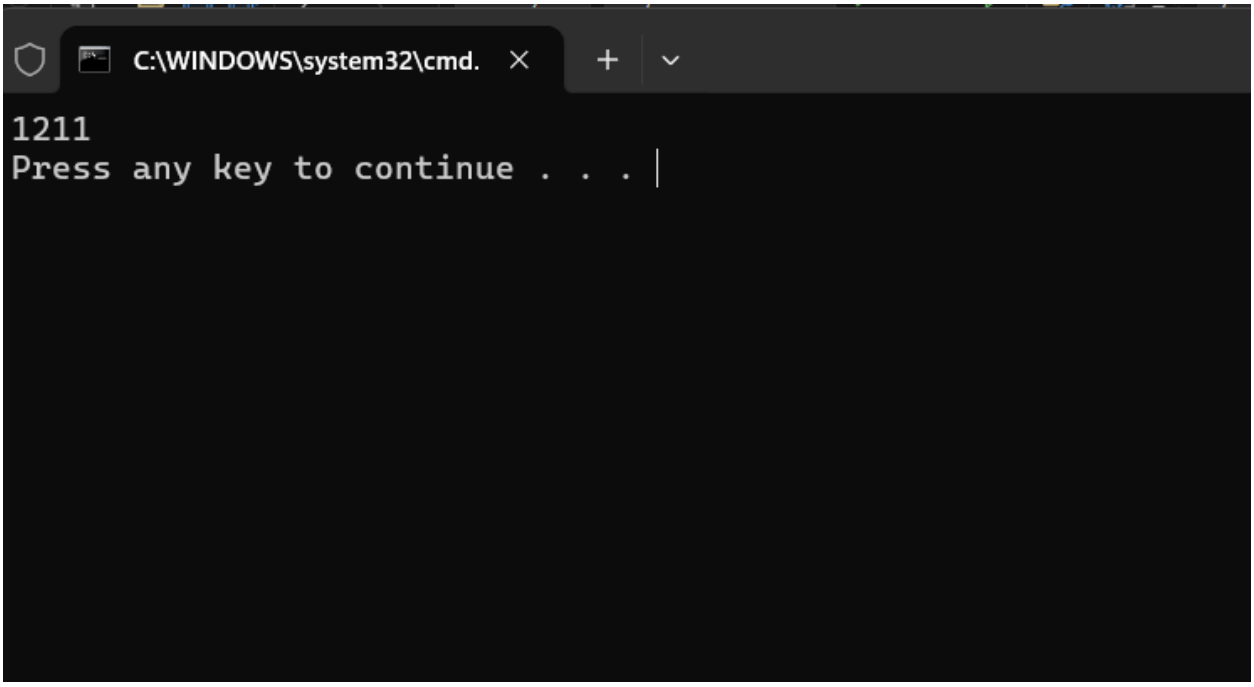
CODE:

```
def countAndSay(n):
    if n == 1:
        return "1"

    prev_term = "1"
    for _ in range(2, n + 1):
        current_term = []
        i = 0
        while i < len(prev_term):
            count = 1
            while i + 1 < len(prev_term) and prev_term[i] == prev_term[i + 1]:
                count += 1
                i += 1
            current_term.append(str(count))
            current_term.append(prev_term[i])
            i += 1
        prev_term = "".join(current_term)

    return prev_term
a=4
print(countAndSay(a))
```

OUTPUT:




TIME COMPLEXITY : $O(2^n)$