COUNT AND SAY

☆ In this problem, we are given an integer and our job is to return Run Length Encoding recursively from 1 to that integer.

Run Length encoding of a string is finding a sequence of unique characters and then replace it with the number of times it occurs and the character. So for eg: '1111' becomes '41', '33' becomes '23'.

We create a function describe where we keep a counter and iterate through entire string. If character on iteration is same as character in next iteration we add one to counter. If it isn't, we make the required changes to the string and then reset the counter. This function is then called recursive-ly.

C++ :

```
string countAndSay(int N) {
    string result = "1";
    for(int i=0; i<N; i++) {
        result = describe(result);
    }
    return result;
}
```

```
string describe(string s) {
    string res = "";
    int c = 1;
    for(int i = 1; i < s.length(); i++) {
        if (s[i] == s[i-1]) {
            c++;
        } else {
            res += to_string(c) + s[i-1];
            c = 1;
        }
    }
    res += to_string(c) + s.back();
    return res;
}
```