

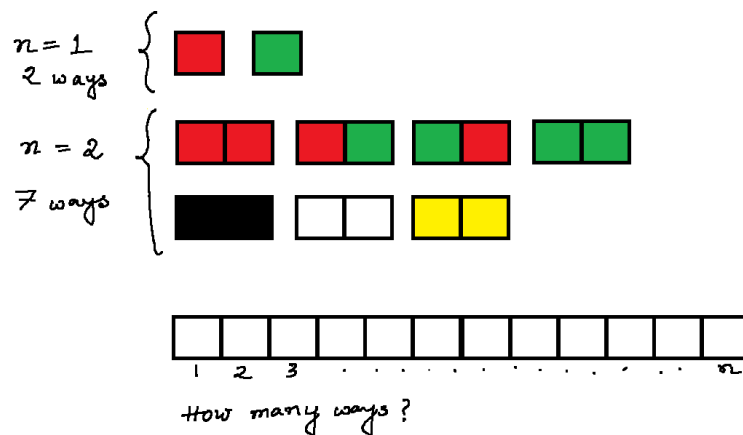
## Online Assignment on Function and Recursion (A2)

Solve the problem below. You have 30 minutes. After you are done, rename the file containing your source code as your student ID (so, if your student ID is 2005061, the name of your file should be 2005061.c). Then submit that file to Moodle. Make sure you submit a file containing source code.

Failure to not follow these instructions will result in penalties.

### Problem 1.

- Suppose you are trying to tile a  $1 \times n$  walkway with 5 different types of tile - a red  $1 \times 1$  tile, a green  $1 \times 1$  tile, a black  $1 \times 2$  tile, a white  $1 \times 2$  tile, and a yellow  $1 \times 2$  tile. Write a recursive function to find the number of ways you can tile the  $1 \times n$  walkway. ( $1 \leq n \leq 19$ )



Input (n)	Output
1	2
2	7
3	20
7	1640
19	871696100

Important things to keep in mind:

- You **CANNOT** use any library functions other than **scanf/printf**
- You **CANNOT** use **array or loops** to solve this problem
- The input value of the integer (N) will be smaller than  $2^{31}$  and fit into 32 bit integers
- **Your main function should only contain input, output and function call statements. No processing should be there.**