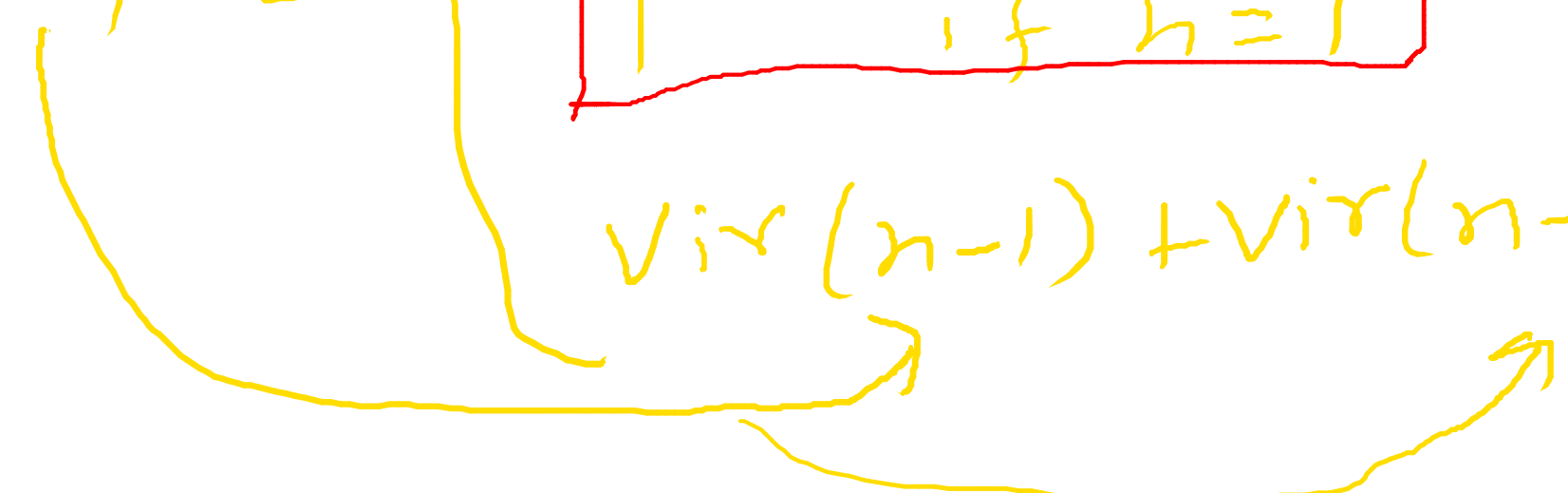


$$Vir(n) = \begin{cases} 0 & \text{if } n=0 \\ 1 & \text{if } n=1 \\ Vir(n-1) + Vir(n-2) & \text{if } n \geq 2 \end{cases}$$


fibonacci sequence

Virahanka numbers

$$Vir: \mathbb{N} \cup \{0\} \rightarrow \mathbb{N} \cup \{0\}$$

0, 1, 1, 2, 3, 5, 8, 13, ...

$$\text{fact}(n) = \begin{cases} 1 & \text{if } n=0 \\ \text{fact}(n-1) \times n & \text{otherwise} \end{cases}$$

$$\text{succ}(n) = n+1$$

$$\underline{\text{add}}(m, n) = \begin{cases} n & \text{if } m=0 \\ \text{succ}(\text{add}(m-1, n)) & \text{otherwise} \end{cases}$$

$$mul(m, n) = \begin{cases} 0 & \text{if } m=0 \text{ or } n=0 \\ n & \text{if } m=1 \\ m & \text{if } n=1 \\ add(m, mul(m, n-1)) & \text{otherwise} \end{cases}$$

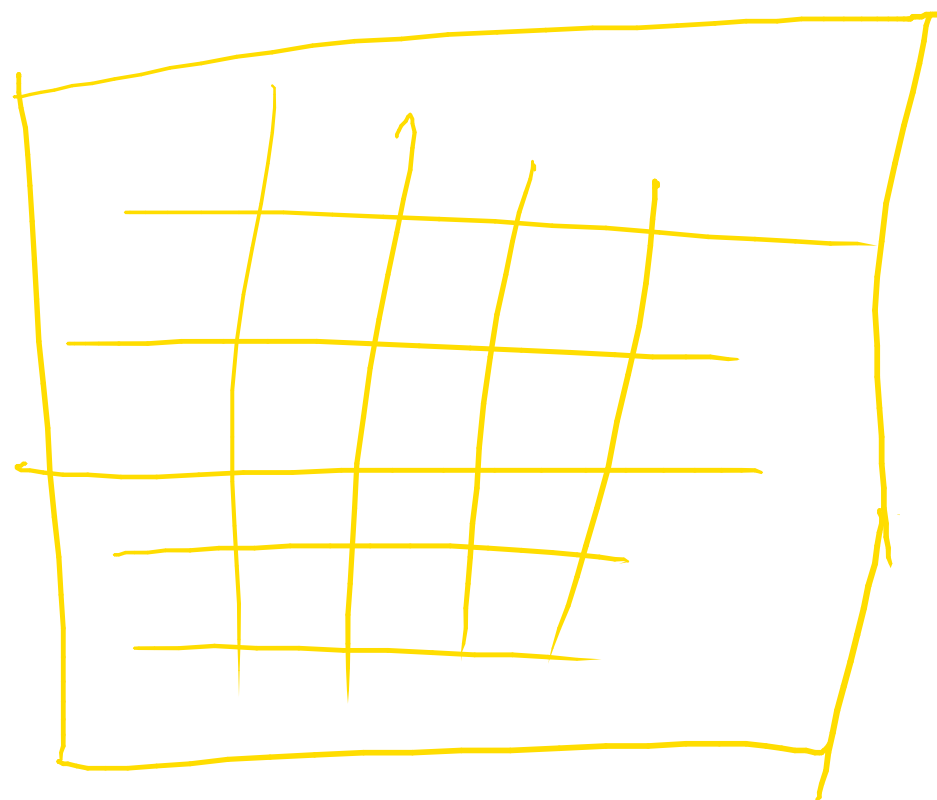
assume $m \neq 0$
 m & n both
 are not 0

m^n

$$pow(m, n) = \begin{cases} 1 & \text{if } n=0 \\ m & \text{if } n=1 \\ mul(m, pow(m, n-1)) & \text{otherwise} \end{cases}$$

$$\text{foo}(n) = n + \text{foo}(n-1)$$





8x8

place 8 queens so that
no queen is attacking
another queen