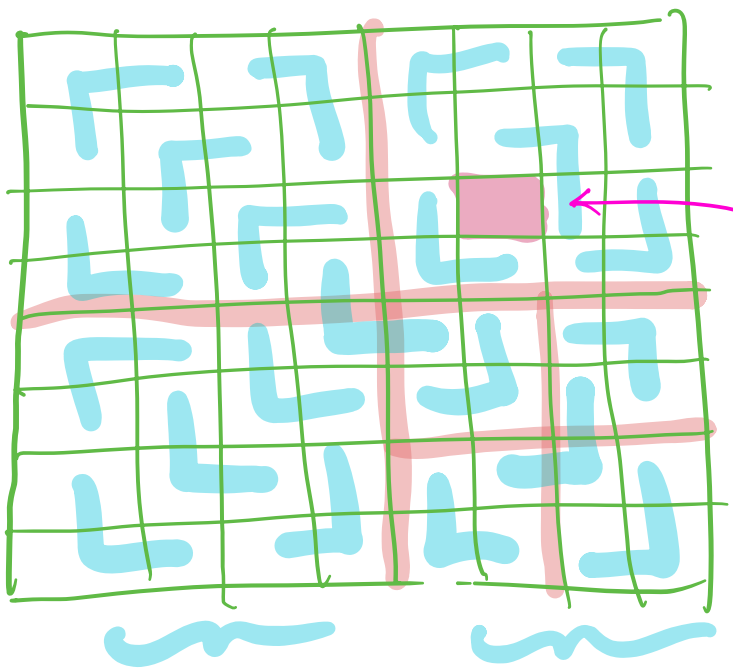
Herringbone Tile

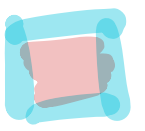
- a puzzle with a Diride and Conquer solution.



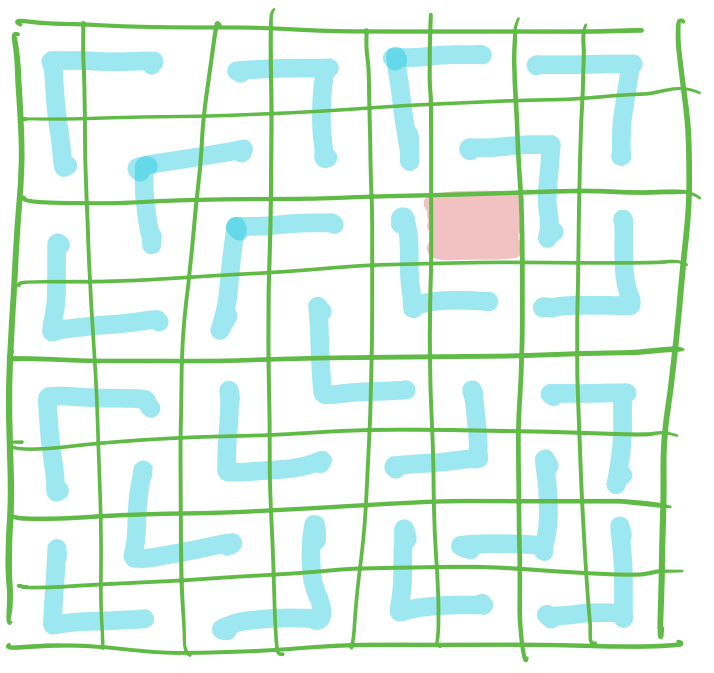
← a $2^n \times 2^n$ grid

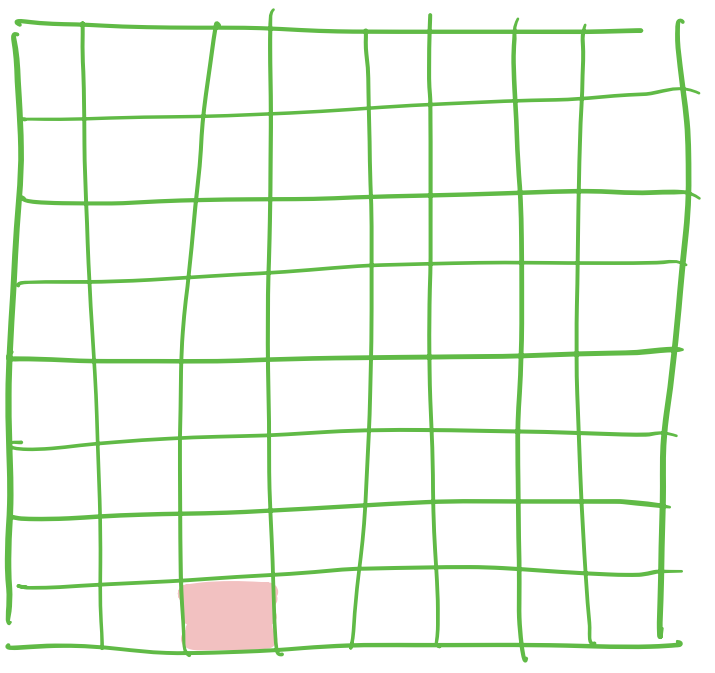
in this case, $n = 3$.

a "missing square"



Can you tile the grid with tiles of this shape?

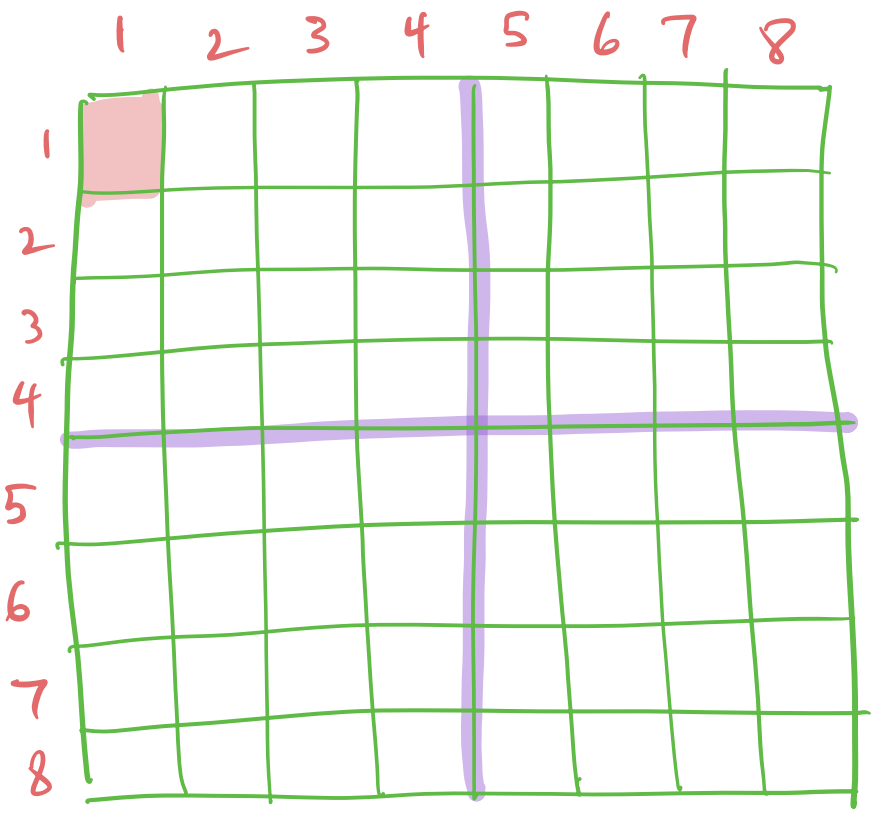


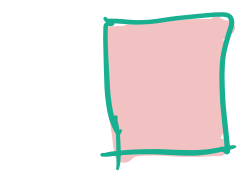


$2^{2n} - 1 \equiv 0$

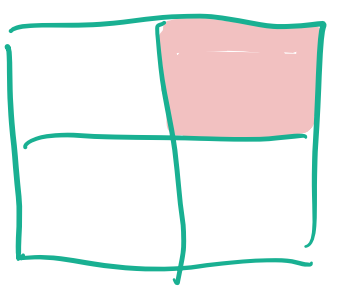
Tile the grid, covering all but the missing space

– use Divide and Conquer to do it





Base case $n = 0$



Slightly larger case $n = 1$

input: int n, ordered pair (x, y) $\quad 1 \le x \le 2^n$ $\quad 1 \le y \le 2^n$

n: $2^n \times 2^n$ grid

(x, y): missing square