

## Counting rectangles within a grid

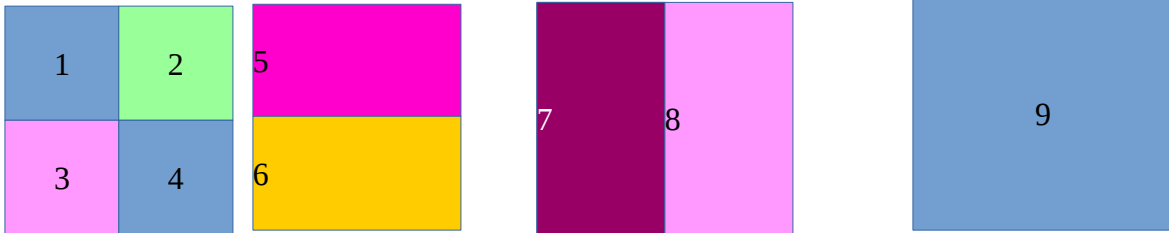
Assuming a squared grid of  $N$  points,  $N \geq 2$  (meaning an  $N \times N$  grid) we define “enclosed rectangles” to be the count of all possible rectangles that can be generated with them.

Examples

For  $N = 2$  we have exactly 1 “enclosed rectangles”:



For  $N = 3$  we have 9 “enclosed rectangles”:



## Question

How many “enclosed rectangles” we have when  $N = 10,000$  ?