

$x =$

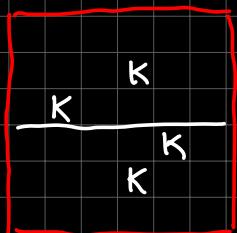


$$\frac{y_2 - y_1}{x_2 - x_1}$$

- can't I just loop through, store all values + then loop through again?

X dont think I can since board can be
 $\text{INT_MAX} \times \text{INT_MAX}$

if it's in order then the array can reuse
some index's after they've been checked



divide board in half



2 bitsets don't work

if $(5, 2) = \text{Knight}$,

$(5, 8) = \text{Knight}_2$

$\neg (20, 2) = \text{Knight}_3$

$\text{col}(5) = \text{true}$
 $\text{then } \text{row}(2) = \text{true}$
 $\text{row}(8) = \text{true}$
 $\text{col}(20) = \text{true}$



depending on knights in each row
this could store duplicates so much that
we end up hitting space limits even faster

- Only use two strings
- Knights can attack same square w/o being able to attack each other!
 - Knight attack square = 1
 - Knight placement square = 2
 - neither = 0
 - if placing square = 1 something can attack
return false
 - if attack square = 2 its attacking another
return false
- either Bitset or HashSet<String>
 - 1)
 - 2)
↳ probably fails
space complexity

- 3)
 - 1) I can loop half then check other half along with previous -2 rows/columns

1) probably will fail



$(1,2) \rightarrow (2,4), (2,0), (3,3), (3,1)$

- I can sort it first which would be based
on column

- so chunks of 5 columns with indefinite

rows?

a1 a2 aa z2

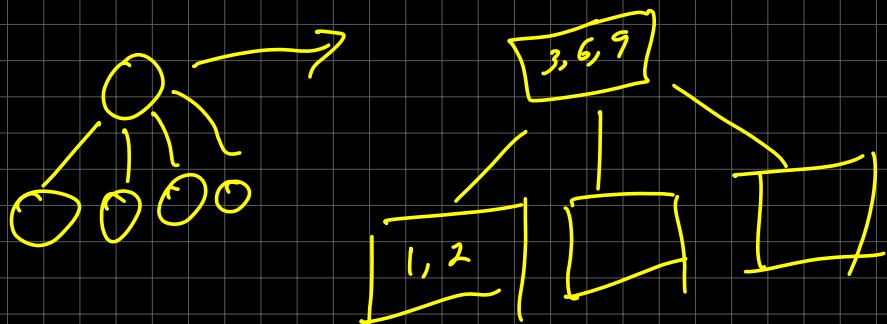
Cannot use 2d array since
that requires $O(n^2)$ to initialize

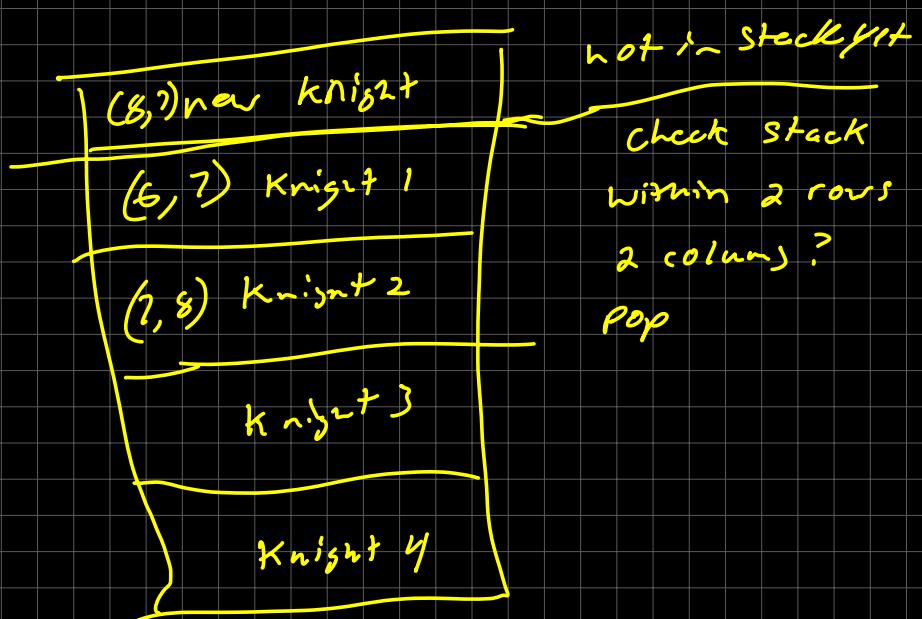
if there's any knights within an
absolute difference of 2 cols, 1 row or
1 col, 2 rows then return false

$K(n)$ = non-attacking knights on a board

$$= \begin{cases} \frac{1}{2}n^2 & n \geq 2 \text{ even} \\ \frac{1}{2}(n^2 + 1) & n \geq 1 \text{ odd} \end{cases}$$

$$\left[\begin{matrix} 1+1+2 \\ \vdots \end{matrix} \right]$$





Requires List to be sorted

Just gonna try hashmaps of hashmaps
hopefully maxInt doesn't destroy map

- possible that reducing tree size by 10 of Int max may make things worse if I then insert over that requiring a rehash cycle that then goes over Int max as size
- Also I think this goes over space limit

Byte codes:

1 means attacked

2 means Knight is true

if column difference is 1 row is 2

if is 2 row is 1

$$2 \% 2 = 0 + 1 = 1$$

$$1 \% 2 = 1 + 1 = 2$$

board size is 2 billion