Given an array of intervals — non-overlapping, ascending

$[[start_1, end_1], [start_2, end_2], \ldots, [start_n, end_n]]$

newInterval = [start, end]

merge newInterval with intervals → still has to be ascending + non-overlapping

e.g.

[[1,3],[6,9]] , [2,5]

→ [[1,5],[6,9]]

e.g.

[(1,2),(3,5),[6,7],(8,10),[12,16]]

[4,8]

→ [1,2],[3,10],(12,16]

naive solution

for each interval
  for num in interval
    start end

[1,2,3,4,5,6,7,8,9,10,12,13,14,15,16]

start end

[1,5], [6,9] [2,5]

[1,5], [6,9]

s e

[(1,2), (3,5), ~~[6,7]~~, (8,10], [12,16]]

scurr ecurr

[4,8]

[scurr ecurr

[1,2], [3,10], (12,16]]

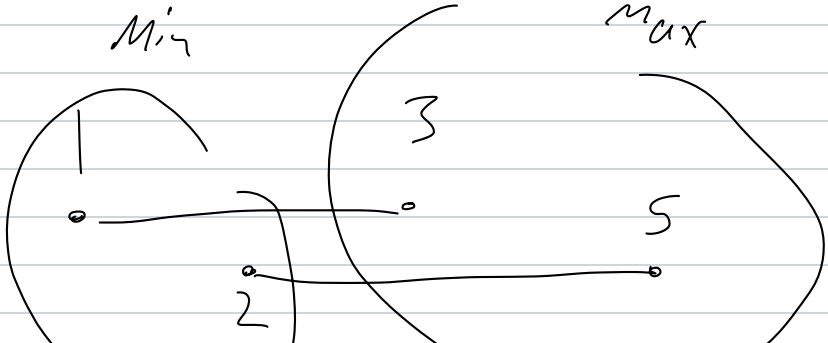
Overlap logic interval

s(urr) > e

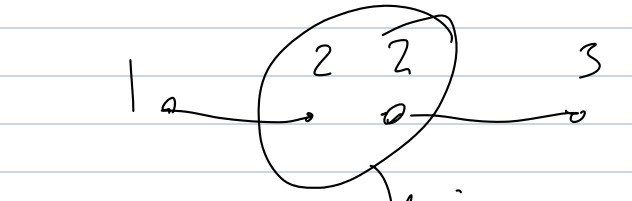
s(urr) < s

ecurr > e

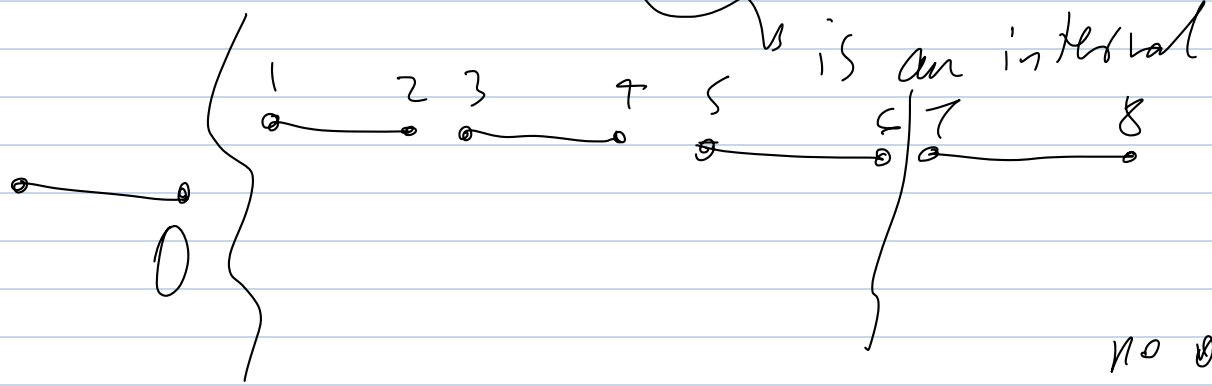
NeetCode



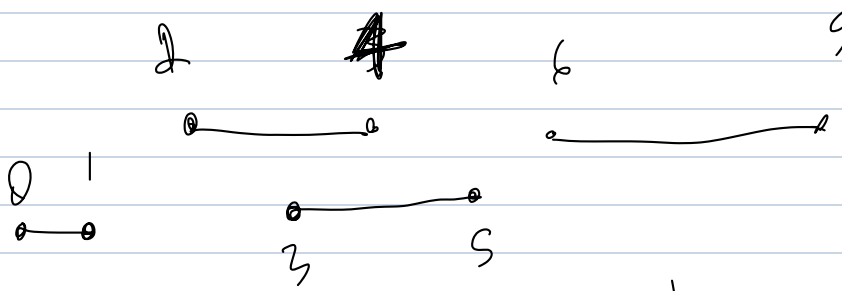
[<1,2), [3,5], [6,7], (8,10], [12,16]]



is an interval



no overlaps



$O(n)$ → Time

$O(n)$ → Space