57. Insert Interval

You are given an array of non-overlapping intervals intervals where intervals[i] = [$start_i$, end_i] represent the start and the end of the i^{th} interval and intervals is sorted in ascending order by $start_i$. You are also given an interval newInterval = [start, end] that represents the start and end of another interval.

Insert newInterval into intervals such that intervals is still sorted in ascending order by $start_i$ and intervals still does not have any overlapping intervals (merge overlapping intervals if necessary).

Return intervals *after the insertion*.

Note that you don't need to modify intervals in-place. You can make a new array and return it.

Example 1:

Input: intervals = [[1,3],[6,9]], newInterval = [2,5]

Output: [[1,5],[6,9]]

Example 2:

Input: intervals = [[1,2],[3,5],[6,7],[8,10],[12,16]], newInterval = [4,8]

Output: [[1,2],[3,10],[12,16]]

Explanation: Because the new interval [4,8] overlaps with [3,5],[6,7],[8,10].

Constraints:

$0 <= intervals.length <= 10^4$

intervals[i].length == 2

$0 <= start_i <= end_i <= 10^5$

intervals is sorted by $start_i$ in ascending order.

newInterval.length == 2

$0 <= start <= end <= 10^5$