Problem 2. Sorting

Given a list of integers, sort the list in ascending order and return it. You must solve the problem without using **any built-in sorting functions** and within the divide and conquer concepts. Complete the function "def sort(lst_in: list[int]) -> list[int]"

Example:

  Input: lst_in= [5,2,3,1]

  Output = sort(lst_in)

  Output: [1,2,3,5]

Constraints:

  0 <= lst_in.length <= 1,000

  -1,000<= lst_in[i] <= 1,000

Submission guidelines for Gradescope are as follows:

  1. Do Not Rename Files: Do not change the file names when submitting.

  2. Do Not Change Function Names: Keep the original function names as specified.

  3. Follow Input and Output Formats Accurately: Ensure that the input and output formats match the specified requirements exactly.