

Task-5

The recursive function `qck-srt` takes a list of integers 'data'. It returns a sorted list of integers. If the length of the input list is 1, return the list. Otherwise, choose a random pivot element from the input list. Divide the input list into three sublists: elements less than the pivot, elements equal to the pivot, and elements greater than the pivot. Recursively call `qck-srt` on the sublists of elements less than and greater than the pivot. Concatenate the sorted sublists with the pivot element in between. The time complexity is $O(n \log n)$ for this algorithm.