Q1. Using the merge sort algorithm, draw a diagram showing the divide and conquer strategy used by the algorithm. Use the following list:

[2, 9, 5, 4, 8, 1, 6, 7]

Draw the diagram here:

Q2. Use Quick Sort on the following list:

[50 , 20, 90, 30, 80, 40]

Write the index of the pivot and the list after each partition has completed. Use the partition method implemented in Python in the lecture (which is also described in the online textbook).

Original List

50	20	90	30	80	40

After first partition:
Index of pivot : _____

After second partition:
Index of pivot : _____

After third partition:
Index of pivot : _____