EL9343 Homework 2
(Due October 13, 2016)

All problem/exercise numbers are for the third edition of CLRS text book

.

---

1. For the maximum subarray problem, if we use divide-conquer, but instead of dividing the array into two halves, we equally divide it into three segments, how should the algorithm be modified? what is the running time of the new algorithm?

2. Apply the bubble sort and insertion sort to an inverted array $[11, 8, 7, 5, 3, 1]$, show all intermediate results.

3. Using Figure 2.4 as a model, illustrate the operation of merge sort on the array $[29, 48, 15, 40, 25, 16, 30]$

4. Problem 2-1 in CLRS Text book

5. Exercise 6.1-3 in CLRS Text book;

6. Exercise 6.2-6 in CLRS Text book;

7. Using Figure 6.4 as a model, illustrate the operation of HEAPSORT on the array of

$$[29, 3, 18, 26, 37, 5, 16, 30, 1]$$

8. Problem 6-2 in CLRS Text book

9. Similar to Figure 7.1, show the steps of Hoare's Partition as well as Lomuto's Partition on the array of

$$[13, 19, 9, 12, 8, 7, 5, 4, 2, 6, 11, 14]$$