Lab 4 Solutions

Problem 1. InsertionSort and BubbleSort are stable. SelectionSort is not.

SelectionSort is *not* stable. Example:

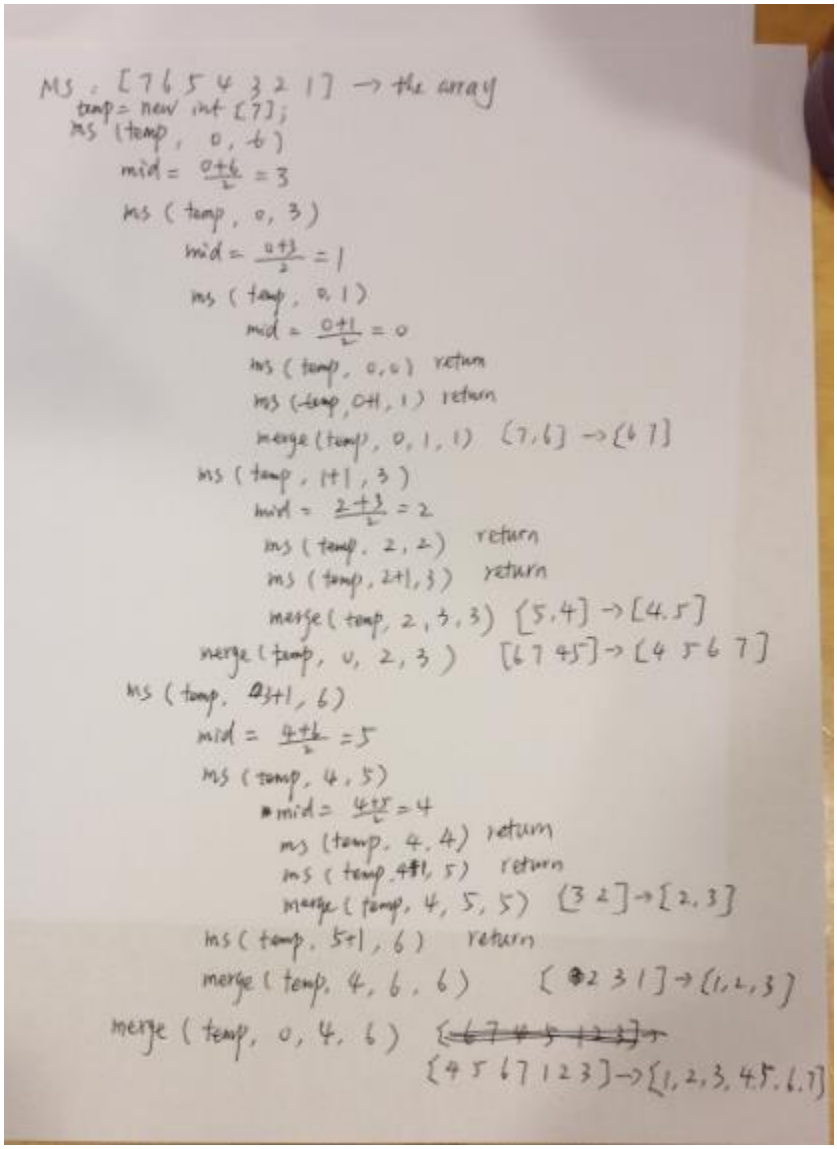
(4, a), (4, b), (2, c)

After first iteration of outer loop, this becomes

(2, c), (4, b), (4, a)

No other swaps occur in the rest of the execution. But now (4,b) and (4,a) have changed their relative positions.

Problem 2.



Problem 3.
See MergeSortPlus.java

Problem4

4. a

b. true

c. Every binary tree of height n has at most 2^n leaves.