Cmpsc

Problem Set 4

Azalee McAlpine

Problem 1)

a) P(k): at end of kth iteration, values in A[1…(k+1)] are sorted

b) O(n^2)

c) O(1) space because you aren’t pulling from a buffer

d) It is stable.

Problem 2)

a) O(n (log n))

b) O(1) space because you aren’t pulling from a buffer

c) it is not stable due to it being a tree.

Problem 3)

a) O(n^2)

b) O(1) space because you aren’t pulling from a buffer

c) it is unstable because if you have two elements that are the same there is a possibility of the elements being placed in the wrong order

d) To make the algorithm stable, just place the elements in numerical order and then if you have the same element just insert it afterwards.