CS2134 Homework 2 Spring 2016

February 5, 2016

Programming Part:

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1)

1. sort(B.begin( ), B.begin()+$);
2. (A.begin( ), A.end(), greater<int>); //A now contains 10, 9, 8, 7, 6, 5, 4, 3, 2, 1
3. sort(B.begin( ), B.end(), greater<int>);// B now contains 2, 2, 2, 1, 1, 1
4. merge(A.begin( ), A.end(), B.begin( ), B.edn(), C.begin( ), greater<int>());
   // C now contains 10, 9, 8, 7, 6, 5, 4, 3, 2, 2, 2, 2, 1, 1, 1, 1

2) yes it is stable. This is because even though the list is broken down into smaller lists, those lists will still remain in relative order, so equal values will remain in the same place relative to the originals.

3) {1,2,3,5,10,11}

4) {1,2,3,5,10,11}

5) {11,10,1,3,2,5}

6) {28,2,10,27,5,1}

{28,2,10} {27,5,1}

{28,2} {10} {27,5} {1}

{28} {2} {27} {5}

B)

{28,2,10,27,5,1}

{10,1,5,28,27}

{28,5} {10,1}

7)

a) O(n)

b) O(nlog(n))

8) The list is already sorted, so it does not need to be recalled.

9)

A)4,2,1,1,2,4

b) log(n)

10)

A)4,2,1,1,2,1,1,4,2,1,1,2,1,1

b) (nlog(n))