

Handout 9

Sorting practice

Question 1.

(a). Sort the following list using bubble sort. Each iteration, circle the two elements which are compared

$L = [20, 14, 7, 8]$

To make the answer for this question clearer, assume we are using the following $O(N^2)$ algorithm for bubble sort (no optimizations).

```
def bubbleSort(L):  
    for n in range(len(L)):  
        for j in range(1, len(L)):  
            if L[j-1] > L[j]:  
                swap(j-1, j, L)
```

20	14	7	8	
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(b). Sort the following list using selection sort. Each iteration, circle the two elements which are compared.

L = [20, 14, 7, 8]

To make the answer for this question clearer, assume we are using the following $O(N^2)$ algorithm for selection sort (no optimizations).

```
def selectionSort(L):  
    for startIdx in range(len(L)):  
        minIdx = findMinimum(startIdx, L)  
        swap(startIdx, minIdx, L)
```

20	14	7	8
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