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).

```python
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 |
(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)