



Exercise 6

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Exercise 6

4/4 points (graded)

ESTIMATED TIME TO COMPLETE: 8 minutes

Here is another version of a sorting function:

```
def mySort(L):
    """ L, list with unique elements """
    clear = False
    while not clear:
        clear = True
        for j in range(1, len(L)):
            if L[j-1] > L[j]:
                clear = False
                temp = L[j]
                L[j] = L[j-1]
                L[j-1] = temp
```

Compare this to:

```
def newSort(L):
    """ L, list with unique elements """
    for i in range(len(L) - 1):
        j=i+1
        while j < len(L):
            if L[i] > L[j]:
                temp = L[i]
                L[i] = L[j]
                L[j] = temp
        j += 1
```

1. Do these two functions result in the same sorted lists?

☒ Yes☐ No

2. Do these two functions execute the same number of assignments of values into entries of the lists?

☒ Yes. They execute the same number of assignments.☐ No. `newSort` may use more - but never fewer - inserts than `mySort` .☐ No. `mySort` may use more - but never fewer - inserts than `newSort` .☐ No. Either function may use more inserts than the other.

3. Is the worst-case order of growth of these functions the same?

☒ Yes. `newSort` and `mySort` have the same complexity.☐ No. `newSort` has higher complexity than `mySort` .☐ No. `mySort` has higher complexity than `newSort` .

4. Do these two functions examine the same number of entries in the list?

- ☐ Yes. `newSort` and `mySort` examine the same number of entries.
- ☐ No. `newSort` examines more entries than `mySort` .
- ☐ No. `mySort` examines more entries than `newSort` .
- ☒ No. `mySort` and `newSort` examine different numbers of entries, but one cannot always say which function will examine the most entries.



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Question 2

I have verified the answer of question 2 by adding counters in the two functions to count the number of times of swap. I tested the t...

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