



PROBLEM 6-1 (1/1 point)

Answer the questions below based on the following sorting function. If it helps, you may paste the code in your programming environment. Study the output to make sure you understand the way it sorts.

```
def swapSort(L):
    """ L is a list on integers """
    print "Original L: ", L
    for i in range(len(L)):
        for j in range(i+1, len(L)):
            if L[j] < L[i]:
                # the next line is a short
                # form for swap L[i] and L[j]
                L[j], L[i] = L[i], L[j]
            print L
    print "Final L: ", L
```

Does this function sort the list in increasing or decreasing order? (items at lower indices being smaller means it sorts in increasing order, and vice versa)



Increasing




☐ Decreasing

Show Answer

You have used 1 of 1 submissions

PROBLEM 6-2 (1 point possible)

What is the worst case time complexity of `swapSort`? Consider different kinds of lists when the length of the list is large.

- ☐ $O(n^2)$
- ☒ $O(n)$ 
- ☐ $O(\log(n))$
- ☐ $O(1)$

Show Answer

You have used 1 of 1 submissions

PROBLEM 6-3 (1/1 point)

If we make a small change to the line `for j in range(i+1, len(L)):` such that the code becomes:

```
def modSwapSort(L):  
    """ L is a list on integers """  
    print "Original L: ", L  
    for i in range(len(L)):  
        for j in range(len(L)):  
            if L[j] < L[i]:  
                # the next line is a short  
                # form for swap L[i] and L[j]  
                L[j], L[i] = L[i], L[j]  
            print L  
    print "Final L: ", L
```

What happens to the behavior of `swapSort` with this new code?

- ☐ No change
- ☒ `modSwapSort` now orders the list in descending order for all lists. ✓
- ☐ `modSwapSort` now orders the list in descending order for SOME lists but not all
- ☐ `modSwapSort` enters an infinite loop.

Show Answer

You have used 1 of 1 submissions

PROBLEM 6-4 (1/1 point)

What happens to the time complexity of this `modSwapSort` ?

- ☒ Best and worst cases stay the same. ✓
- ☐ Worst case stays the same but best case changes.



Best and worst cases change.

Show Answer

You have used 1 of 1 submissions

Show Discussion



EdX offers interactive online classes and MOOCs from the world's best universities. Online courses from MITx, HarvardX, BerkeleyX, UTx and many other universities. Topics include biology, business, chemistry, computer science, economics, finance, electronics, engineering, food and nutrition, history, humanities, law, literature, math, medicine, music, philosophy, physics, science, statistics and more. EdX is a non-profit online initiative created by founding partners Harvard and MIT.

© 2015 edX Inc.

About edX

[About](#)

[News](#)

[Contact](#)

[FAQ](#)

[edX Blog](#)

[Donate to edX](#)


[Jobs at edX](#)

Follow Us

 [Twitter](#)

 [Facebook](#)

 [Meetup](#)

 [LinkedIn](#)

 [Google+](#)

EdX, Open edX, and the edX and Open edX logos are registered trademarks or trademarks of edX Inc.

[Terms of Service and Honor Code](#)

[Privacy Policy \(Revised 10/22/2014\)](#)