

We are recovering from significant hosting issues. Much of the site is functional, but currently email delivery is not. Please bear with us as we validate site functionality.



Bookmarks

- ▶ [Welcome to the edX Platform](#)
- ▶ [Entrance Survey](#)
- ▶ [Download Python and Get Motivated!](#)
- ▶ [Week 1: Python Basics](#)
- ▶ [Week 2: Simple Programs](#)
- ▶ [Week 3: Structured Types](#)
- ▶ [Week 4: Good Programming Practices](#)
- ▶ [Midterm Exam](#)
- ▶ [Week 5: Object Oriented Programming](#)

Week 6: Algorithmic Complexity > 12. Searching and Sorting Algorithms > Exercise 4

Exercise 4

Bookmark this page

Exercise 4

1 point possible (graded)

ESTIMATED TIME TO COMPLETE: 5 minutes

Here is some code for linear search that uses the fact that a set of elements is sorted in increasing order:

```
def search(L, e):
    for i in range(len(L)):
        if L[i] == e:
            return True
        if L[i] > e:
            return False
    return False
```

Consider the following code, which is an alternative version of `search`.

```
def search3(L, e):
    if L[0] == e:
        return True
    elif L[0] > e:
        return False
    else:
        return search3(L[1:], e)
```


Which of the following statements is correct? You may assume that each function is tested with a list `L` whose elements are sorted in increasing order. For simplicity, assume `L` is a list of integers.

☐ `search` and `search3` return the same answers.




▼ **Week 6:**
Algorithmic Complexity


11. Computational Complexity

[Finger Exercises](#) 

12. Searching and Sorting Algorithms

[Finger Exercises](#) 

Problem Set 6

[Problem Set due Mar 9, 2017 15:30 PST](#) 

► **Week 7:**
Plotting

► **Exit Survey**

► **Sandbox**

☐ `search` and `search3` return the same answers provided `L` is non-empty.

☐ `search` and `search3` return the same answers provided `L` is non-empty and `e` is in `L`.

☐ `search` and `search3` do not return the same answers.

☐ `search` and `search3` return the same answers for lists of length 0 and 1 only.

Submit

Exercise 4

Topic: Lecture 12 / Exercise 4

Show Discussion

© All Rights Reserved



© 2012-2017 edX Inc. All rights reserved except where noted. EdX, Open edX and the edX and Open EdX logos are registered trademarks or trademarks of edX Inc.

POWERED BY
OPENedX

