



MITx: 6.00.1x Introduction to Computer Science and Programming Using Python

[Home](#)[Course](#)[Discussion](#)[Progress](#)[Notes](#)[Calendar](#)[Help](#)[barrybbarron](#)

▶ [Welcome to the edX Platform](#)

▶ [Entrance Survey](#)

▼ [Download Python and Get Motivated!](#)

[Set up your Coding Environment](#)

[Get into the MIT Mindset](#)

[Resources](#)

▶ [Week 1: Python Basics](#)

▶ [Week 2: Simple Programs](#)

▶ [Week 3: Structured Types](#)

▶ [Week 4: Good](#)

Final Exam > Final Exam > Problem 4

◀ Previous



Next ▶

Problem 4

[Bookmark this page](#)

Problem 4

20.0 points possible (graded)

You are given the following definitions:

- A run of monotonically increasing numbers means that a number at position $k+1$ in the sequence is greater than or equal to the number at position k in the sequence.
- A run of monotonically decreasing numbers means that a number at position $k+1$ in the sequence is less than or equal to the number at position k in the sequence.

Implement a function that meets the specifications below.

```
def longest_run(L):  
    """  
    Assumes L is a list of integers containing at least 2  
    elements.  
    Finds the longest run of numbers in L, where the  
    longest run can  
    either be monotonically increasing or monotonically  
    decreasing.  
    In case of a tie for the longest run, choose the  
    longest run  
    that occurs first.  
    Does not modify the list.  
    Returns the sum of the longest run.
```

Programming Practices
▶ Midterm Exam
▶ Week 5: Object Oriented Programming
▶ Week 6: Algorithmic Complexity
▶ Week 7: Plotting
▶ Exit Survey
▶ Final Exam
▶ Sandbox

```
"""  
# Your code here
```



For example:

- If `L = [10, 4, 3, 8, 3, 4, 5, 7, 7, 2]` then the longest run of monotonically increasing numbers in `L` is `[3, 4, 5, 7, 7]` and the longest run of monotonically decreasing numbers in `L` is `[10, 4, 3]`. Your function should return the value `26` because the longest run of monotonically increasing integers is longer than the longest run of monotonically decreasing numbers.
- If `L = [5, 4, 10]` then the longest run of monotonically increasing numbers in `L` is `[4, 10]` and the longest run of monotonically decreasing numbers in `L` is `[5, 4]`. Your function should return the value `9` because the longest run of monotonically decreasing integers occurs before the longest run of monotonically increasing numbers.

Paste your entire function, including the definition, in the box below. Do not leave any debugging print statements.

```
1 #paste your code here  
2
```

Press ESC then TAB or click outside of the code editor to exit

Unanswered

Submit

You have used 0 of 10 attempts

[< Previous](#)

[Next >](#)

© All Rights Reserved



[About](#) [edX for Business](#) [Blog](#) [News](#) [Help Center](#) [Contact](#) [Careers](#) [Donate](#)

[Terms of Service & Honor Code](#) [Privacy Policy](#) [Accessibility Policy](#) [Sitemap](#) [Media Kit](#)

© 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®

