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NPTEL (<https://swayam.gov.in/explorer?ncCode=NPTEL>) » Programming, Data Structures And Algorithms Using Python (course)



## Course outline

How does an NPTEL online course work? ()

Week 1 : Introduction ()

Week 1 Quiz ()

Week 2: Basics of Python ()

Week 2 Quiz ()

Week 2 Programming Assignment ()

Week 3: Lists, inductive

# Online Test 1, Question 4

Due on 2021-03-09, 12:00 IST

## Question 4

A list is a decreasing if each element is strictly smaller than the preceding one. For instance [], [7], [11,8] and [89,63,44,19,3] are decreasing, while [3,18,4] and [23,14,14,3] are not. Here is a recursive function to check if a list is decreasing. You have to fill in the missing argument for the recursive call.

```
def decreasing(l):
    if l==[] or len(l) == 1:
        return(True)
    else:
        return(...)
```

### Sample Test Cases

	Input	Output
Test Case 1	decreasing([17,16])	True
Test Case 2	decreasing([-1,-2,-3])	True
Test Case 3	decreasing([83,59,44,44,23,19])	False
Test Case 4	decreasing([23,14,3,14,3,23])	False
Test Case 5	decreasing([11,8,7])	True
Test Case 6	decreasing([3,18,4])	False

**function  
definitions,  
sorting ()**

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**Week 3  
Programming  
Assignment  
()**

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**Week 4:  
Sorting,  
Tuples,  
Dictionaries,  
Passing  
Functions,  
List  
Comprehension  
()**

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**Week 4 Quiz  
()**

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**Week 4  
Programming  
Assignment  
()**

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**Week 5:  
Exception  
handling,  
input/output,  
file handling,  
string  
processing ()**

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**Week 5  
Programming  
Assignment  
()**

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**Week 6:  
Backtracking,  
scope, data  
structures;  
stacks,  
queues and  
heaps ()**

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**Week 6 Quiz  
()**

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The due date for submitting this assignment has passed.

As per our records you have not submitted this assignment.

Sample solutions (Provided by instructor)

```
1 def decreasing(l):
2     if l==[] or len(l) == 1:
3         return(True)
4     else:
5         return(
6             # Complete the recursive call below this line
7             l[0] > l[1] and decreasing(l[1:])
8             # Complete the recursive call above this line
9         )
10
11 import ast
12
13 def tolist(inp):
14     inp = ast.literal_eval(inp)
15     return(inp)
16
17 fncall = input()
18 lparen = fncall.find("(")
19 rparen = fncall.rfind(")")
20 fname = fncall[lparen]
21 farg = fncall[lparen+1:rparen]
22
23 if fname == "decreasing":
24     arg = tolist(farg)
25     print(decreasing(arg))
```

**Week 7:  
Classes,  
objects and  
user defined  
datatypes ()**

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**Week 7 Quiz  
()**

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**Week 8:  
Dynamic  
programming,  
wrap-up ()**

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**Week 8  
Programming  
Assignment  
()**

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**Text  
Transcripts ()**

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**Books ()**

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**Download  
Videos ()**

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**Online  
Programming  
Test -  
Sample ()**

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**Online  
Programming  
Test 1, 01  
Dec 2020,  
10:00-12:00  
()**

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**Online  
Programming  
Test 2, 01  
Dec 2020,  
20:00-22:00  
()**

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**Online  
Programming  
Test 1, 09  
Mar 2021,  
10:00-12:00  
()**

- ☐ Online Test 1,  
Question 1  
(/noc20\_cs26/progassignment?  
name=148)
- ☐ Online Test 1,  
Question 2  
(/noc20\_cs26/progassignment?  
name=149)
- ☐ Online Test 1,  
Question 3  
(/noc20\_cs26/progassignment?  
name=151)
- ☐ **Online Test 1,  
Question 4  
(/noc20\_cs26/progassignment?  
name=152)**
- ☐ Online Test 1,  
Question 5  
(/noc20\_cs26/progassignment?  
name=155)
- ☐ Online Test 1,  
Question 6  
(/noc20\_cs26/progassignment?  
name=156)
- ☐ Online Test 1,  
Question 7  
(/noc20\_cs26/progassignment?  
name=157)
- ☐ Online Test 1,  
Question 8  
(/noc20\_cs26/progassignment?  
name=158)

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**Online  
Programming  
Test 2, 09  
Mar 2021,  
20:00-22:00  
( )**