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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 2, Question 4

Due on 2021-03-09, 22:00 IST

Question 4

Recall that the positions in a list of length n are $0, 1, \dots, n-1$. We want to write a function `mod3pos(l)` that returns the elements at all positions in `l` that are divisible by 3. In other words, the function should return the list `[l[0], l[3], ...]`. For instance `mod3pos([]) == []`, `mod3pos([7]) == [7]`, `mod3pos([8, 11, 8, 11]) == [8, 11]` and `mod3pos([19, 3, 44, 44, 3, 19, 17, 23]) == [19, 44, 17]`. A recursive definition of `mod3pos` is given below. You have to fill in the missing argument for the recursive call.

```
def mod3pos(l):
    if len(l) == 0:
        return([])
    else:
        return(...)
```

Open up the code submission box below and fill in the missing argument for the recursive call.

Sample Test Cases

	Input	Output
Test Case 1	<code>mod3pos([0, 1, 2, 3, 4, 5, 6, 7, 8, 9])</code>	<code>[0, 3, 6, 9]</code>
Test Case 2	<code>mod3pos([19, 23, 14, 11, 12, 17, 6, 4, 23, 44, 55, 77])</code>	<code>[19, 11, 6,</code>
Test Case 3	<code>mod3pos([2])</code>	<code>[2]</code>



function definitions, sorting ()

Week 3 Programming Assignment ()

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

Week 4 Quiz ()

Week 4 Programming Assignment ()

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

Week 5 Programming Assignment ()

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

Week 6 Quiz ()

Test Case 4	mod3pos([0,1,2])	[0]
Test Case 5	mod3pos([8,11,8,11])	[8, 11]
Test Case 6	mod3pos([19,3,44,44,3,19,17,23])	[19, 44, 17]

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 mod3pos(l):
2     if len(l) == 0:
3         return([])
4     else:
5         return(
6             # Complete the recursive call below this line
7             [l[0]] + mod3pos(l[3:])
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 == "mod3pos":
24     arg = tolist(farg)
25     print(mod3pos(arg))
26
```



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

**Week 7 Quiz
()**

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

**Week 8
Programming
Assignment
()**

**Text
Transcripts ()**

Books ()

**Download
Videos ()**

**Online
Programming
Test -
Sample ()**

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

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

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



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

- ☐ Online Test 2,
Question 1
(/noc20_cs26/progassignment?
name=160)
- ☐ Online Test 2,
Question 2
(/noc20_cs26/progassignment?
name=161)
- ☐ Online Test 2,
Question 3
(/noc20_cs26/progassignment?
name=162)
- ☐ **Online Test 2,
Question 4
(/noc20_cs26/progassignment?
name=163)**
- ☐ Online Test 2,
Question 5
(/noc20_cs26/progassignment?
name=164)
- ☐ Online Test 2,
Question 6
(/noc20_cs26/progassignment?
name=165)
- ☐ Online Test 2,
Question 7
(/noc20_cs26/progassignment?
name=166)
- ☐ Online Test 2,
Question 8
(/noc20_cs26/progassignment?
name=167)

