**Week 7 Quiz**

**The due date for submitting this assignment has passed.**

**Due on 2018-09-27, 23:59 IST.**

**Assignment submitted on 2018-09-27, 23:57 IST**

All questions carry equal weightage. All Python code is assumed to be executed using Python3.

* If the answer to a question is a string, make sure you enclose the value in quotes (either single or double quotes).
* If the answer to a question is a list, make sure you enclose the value in square brackets and separate the values using commas.

You may submit as many times as you like within the deadline. Your final submission will be graded.

Given the following permutation of a,b,c,d,e,f,g,h,i,j, what is the next permutation in lexicographic (dictionary) order? Write your answer without any blank spaces between letters.

fjadbihgec



**Yes, the answer is correct.   
Score: 2.5**

**Accepted Answers:**

*(Type: Regex Match) ^[ ]\*fjadcbeghi[ ]\*$*

***2.5 points***

We want to add a function length() to the class Node that implements user defined lists which will compute the length of a list. An incomplete implementation of length() given below. You have to provide an expression to put in place of \*\*\* on the last line.

def length(self):

if self.value == None:

return(0)

elif self.next == None:

return(1)

else:

return(\*\*\*)



**Yes, the answer is correct.   
Score: 2.5**

**Accepted Answers:**

*(Type: Regex Match) ^[ ]\*1[ ]\*\+[ ]\*self\.next\.length\(\)[ ]\*$*

***2.5 points***

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Suppose we add this function foo() to the class Tree that implements search trees. For a name mytree with a value of type Tree, what would mytree.foo() compute?

def foo(self):

if self.isempty():

return(0)

elif self.isleaf():

return(1)

else:

return(1 + max(self.left.foo(),self.right.foo()))

 The number of nodes in mytree

 The largest value in mytree.

 The length of the longest path from root to leaf in mytree.

 The number of paths in mytree.

**Yes, the answer is correct.   
Score: 2.5**

**Feedback:**

*This computes the height of the tree, which is the length of the longest root to leaf path.*

**Accepted Answers:**

*The length of the longest path from root to leaf in mytree.*

Inorder traversal of a binary tree has been defined in the lectures. A preorder traversal lists the vertices of a binary tree (not necessarily a search tree) as follows:

* Print the root.
* Print the left subtree in preorder.
* Print the right subtree in preorder.

Suppose we have a binary tree with 10 nodes labelled a, b, c, d, e, f, g, h, i, j, with preorder traversal gbhecidajf and inorder traversal ehbicgjafd. What is the right child of the root node?



Hint

**Yes, the answer is correct.   
Score: 2.5**

**Accepted Answers:**

*(Type: Regex Match) ^[ ]\*d[ ]\*$*



