

Loops

```
FOR
list = ["geeks", "for", "geeks"]
for index in range(len(list)):
    print list[index]
list = ["geeks", "for", "geeks"]
for index in range(len(list)):
    print list[index]
else:
    print "Inside Else Block"

WHILE
while (count < 3):
    count = count + 1
    print("Hello Geek")
```

Strings

Count number of occurrences of x in str
Use counter to create a collection of letters. Pull number where str matches. Also useful in anagram
 (Py) count = collections.Counter(str)

Reverse str
Useful in many problems including valid palindrome and plain reverse string
 (Py) revs = str[::-1]
 (Py) revs = str.reverse

Find first unique character
First create a collection of letters. THEN use enumerate() in for loop to find index of character with first 1
 (Py) count = collections.Counter(str)
 (Py) for idx,i in enumerate(str)

Lists

```
List = []
-----
# Addition of Elements
# in the List
```

Lists (cont)

```
-----
List.append(1)
List.append(2)
List.append(4)
for i in range(1, 4):
    List.append(i)
List2 = ['For', 'Geeks']
List.append(List2)
-----
# accessing a element from the
# list using index number
-----
print(List[0])
print(List[2])
-----
# Removing elements from List
# using Remove() method
-----
for i in range(1, 5):
    List.remove(i)
-----
# Removing element at a
# specific location from the
# Set using the pop() method
-----
List.pop(2)
-----
# Print elements from a
# pre-defined point to end
-----
Sliced_List = List[5:]
```



Intersection

```
class Solution(object):
    def intersect(self, nums1, nums2):
        from collections import Counter
        c1 = Counter(nums1)
        c2 = Counter(nums2)
        return list((c1&c2).elements())
```

Valid Anagram

```
class Solution(object):
    def isAnagram(self, s, t):
        sColl = collections.Counter(s)
        tColl = collections.Counter(t)
        if (sColl == tColl):
            return True
        else:
            return False
```

Valid Palendrone

```
class Solution(object):
    def isPalindrome(self, s):
        cleans = re.sub(r'[\^\w\s]', '', s).replace(" ", "").lower()
        revs = cleans[::-1]
        cleanr = re.sub(r'[\^\w\s]', '', revs).replace(" ", "").lower()
        if(cleanr == cleans):
            return True
        else:
            return False
```

Max depth of Tree

```
class Solution:
    def maxDepth(self, root: TreeNode) -> int:
        if root == None:
            return 0

        left = self.maxDepth(root.left)
        right = self.maxDepth(root.right)
```

Max depth of Tree (cont)

```
return 1 + max(left, right)
```

Shuffle an Array

```
class Solution:
    def __init__(self, nums):
        self.array = nums
        self.original = list(nums)

    def reset(self):
        self.array = self.original
        self.original = list(self.original)
        return self.array

    def shuffle(self):
        aux = list(self.array)
        for idx in range(len(self.array)):
            remove_idx = random.randrange(len(aux))
            self.array[idx] = aux.pop(remove_idx)
        return self.array
```

Shuffle an Array

```
class Solution:
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        self.array = nums
        self.original = list(nums)

    def reset(self):
        self.array = self.original
        self.original = list(self.original)
        return self.array

    def shuffle(self):
        aux = list(self.array)
        for idx in range(len(self.array)):
            remove_idx = random.randrange(len(aux))
            self.array[idx] = aux.pop(remove_idx)
        return self.array
```



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Page 2 of 4.

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Dicts

```
dict = {'Spammer' : 1}
# Deleting a key-value pair
del dict['Spammer']
# Adding a key-value pair
ab['Guido'] = 'guido@python.org'
```

import from file

```
with open('rules.json') as file:
    data = json.load(file)
```

Write to file

```
f= open("guru99.txt","w+")
f.write("This is line")
f.close
```

Linked List

```
class Node:
    def __init__(self,val):
        self.val = val
        self.next = None
        self.prev = None
    def traverse(self):
        node = self
        while node != None:
            print node.val
            node = node.next

n1 = Node(12)
n2 = Node(3)
n1.next = n2
n2.prev = n1
```

Remove Dupes from Array

```
def removeDuplicates(self, nums):
    for x in range(len(nums)-1,0,-1):
        if nums[x] == nums[x-1]:
            nums.remove(nums[x])
    print nums
```

Best time to Buy and Sell

```
class Solution(object):
    def maxProfit(self, prices):

        n = len(prices)-1
        if n <= 1:
            print 0
            maxprofit = 0

        for i in range(0, n):
            t = prices[i]
            m = prices[i+1]
            if t < m:
                maxprofit += m-t
                i++1
        return maxprofit
```

Contains Dupe

```
class Solution(object):
    def containsDuplicate(self, nums):
        nSorted = sorted(nums)
        ans = False
        l = len(nSorted)
        if len(nSorted) > 1:
            for i in range(0,len(nums)):
                if nSorted[i] == nSorted[i-1]:
                    ans = True
        return ans
```



Find non dup number

```
class Solution(object):
    def singleNumber(self, nums):

        nSort = sorted(nums)

        if(len(nums) > 1):
            for i in range(0,len(nSort)):
                if nSort[i] == nSort[i-1]:
                    nums.remove(nSort[i])
                    nums.remove(nSort[i-1])
            return nums[0]
```

Tree

Definition for a binary tree node.

```
class TreeNode(object):
    def __init__(self, x):
        self.val = x
        self.left = None
        self.right = None
```

Shuffle an Array

```
class Solution:
    def __init__(self, nums):
        self.array = nums
        self.original = list(nums)

    def reset(self):
        self.array = self.original
        self.original = list(self.original)
        return self.array

    def shuffle(self):
        aux = list(self.array)
        for idx in range(len(self.array)):
            remove_idx = random.randrange(len(aux))
            self.array[idx] = aux.pop(remove_idx)
        return self.array
```

Merge Sorted Arrays

```
class Solution(object):
    def merge(self, nums1, m, nums2, n):
        n1len = len(nums1)
        n2len = len(nums2)
        if n1len > n2len:
            while n1len != m:
                t = nums1[m]
                nums1.remove(t)
                n1len -=1

            elif n2len > n1len:
                while n2len != m:
                    t = nums2[m]
                    nums2.remove(t)
                    n2len -=1

            num1j = nums1 + nums2
            nums1 = sorted(num1j)

            return nums1
```



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Page 4 of 4.

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