##Copy random linkedlist

Link: <https://www.acwing.com/problem/content/89/>

# Definition for singly-linked list with a random pointer.

# class ListNode(object):

# def \_\_init\_\_(self, x):

# self.val = x

# self.next = None

# self.random = None

class Solution(object):

def copyRandomList(self, head):

"""

:type head: ListNode

:rtype: ListNode

"""

##copy 2 parts. Copy their links to its next

##copy their random link to their next

root = head

dummy = dummy2 = dummy3 = ListNode(-1)

dic = {}

while head:

dic[head] = head.random

dummy.next = ListNode(head.val)

dummy,head = dummy.next,head.next

dummy2 = dummy2.next

while dummy2:

dummy2.random = dic[root]

#print dic[dummy2].val

dummy2,root = dummy2.next,root.next

return dummy3.next