



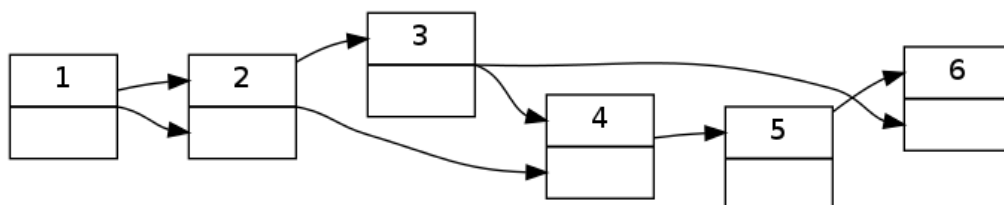
SDE Technical Test - November

[Back to Question List](#)

Question 4 / 4

Given a single linked list with an additional pointer to a random node (which can also be NULL), clone the list and return it.

Example:



One arrow points to the next element, while the other points to the 'random' element. If there is only one arrow out of a node, it points to the next node. Clone and return the head of the new list alone.

Note: Your code will not be considered for evaluation if you just return the input list as the cloned list.

Pick your language

C

C++

Java

```

23  /* Write your custom functions here */
24  static Node cloneLinkedList(Node head) {
25  /*
26   Structure of each node
27   class Node {
28       Node next;
29       Node random;
30       int val;
31   };
32  */
33
34       if(head==null)
35           return null;
36
37       Node newHead = null;
38
39       int headFlag = 1;
40
41       HashMap<Node, Node> nodeMapping = new HashMap<Node, Node>();
42
43       Node tmp = head;
44       Node prev = head;
45       while(tmp!=null){
46           Node newNode = new Node();
47           newNode.val = tmp.val;
48           newNode.next = tmp.next;
49           newNode.random = null;
50           nodeMapping.put(tmp, newNode);
51
52           if(headFlag==1){
53               newHead = newNode;
54               headFlag = 0;
55           }
56
57           tmp = tmp.next;
58       }
59
60       tmp = head;
61       while(tmp!=null){
62           Node correspondingNode = nodeMapping.get(tmp);

```

PROGRESS

```
63         Node randomNode = tmp.random;
64         if(randomNode!=null){
65             Node correspondingRandomNode = nodeMap.get(randomNode);
66             correspondingNode.random = correspondingRandomNode;
67         }
68         tmp = tmp.next;
69     }
70
71
72     return newHead;
73 }
74
```

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