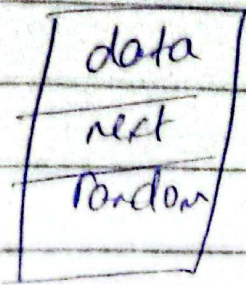
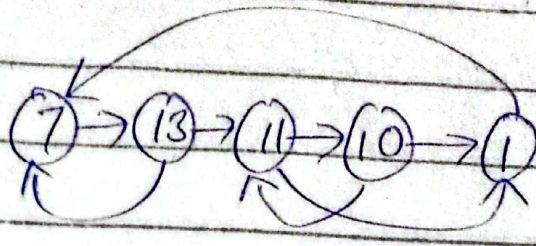


Copy List with Random Pointer

we will be using the random pointer



Node



Make Deep Copy

Steps

① Simple Copy

② Random Connection to new LL

Using two pointers

newptr temp \rightarrow given LL

oldptr temp \rightarrow copied LL

Unordered map $\{N_1, N_2, \dots, N_n\}$;

Node* newhead = new Node(head->val)

oldtemp = head \rightarrow next

newtemp = newhead

^ [head] = newhead

while (oldtemp != NULL) {

Node* copyNode = new Node(oldtemp->val)

^ [oldtemp] = copyNode

newtemp->next = copyNode

oldtemp = oldtemp->next

newtemp = newtemp->next

}

oldtemp = head;

newtemp = newhead;

while (oldtemp != NULL) {

newtemp->random = oldtemp->random;

oldtemp = oldtemp->next;

newtemp = newtemp->next;

}

return newhead;

$T.C = O(n)$