**[Copy List with Random Pointer](https://leetcode.com/problems/copy-list-with-random-pointer/)**

class Solution {

public Node copyRandomList(Node head) {

if(head == null) {

return null;

}

HashMap<Node, Node> map = new HashMap<>();

Node dummy = new Node(-1);

Node current = dummy;

while(head != null) {

Node newNode = null;

if(!map.containsKey(head)) {

newNode = new Node(head.val);

map.put(head , newNode);

}

else {

newNode = map.get(head);

}

if(head.random != null) {

if(!map.containsKey(head.random)) {

newNode.random = new Node(head.random.val);

map.put(head.random , newNode.random);

}

else {

newNode.random = map.get(head.random);

}

}

current.next = newNode;

current = current.next;

head = head.next;

}

return dummy.next;

}

}

Time complexity : O(n) Number of nodes

Space Complexity : O(n) Number of nodes