21. Easy

Given heads of two sorted linked lists

→ merge into one sorted linked list

should be made by splicing the nodes of list1 and list2

return the head of the merged linked list.

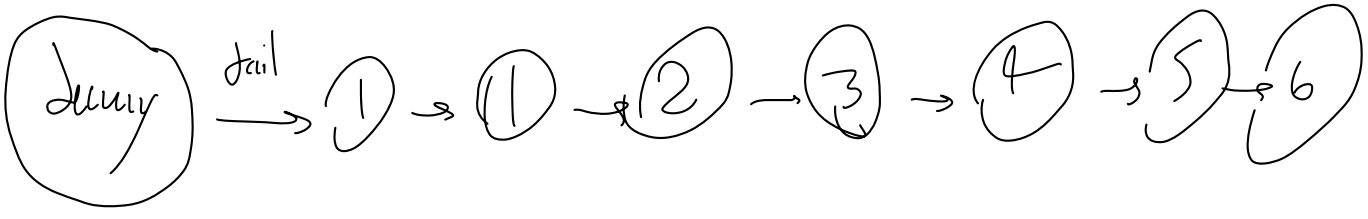
Example

list1: 1 → 2 → 4 → ∅

list2: 1 → 3 → 4 → 5 → 6

if empty and either not empty, just add the rest of non empty.

merged: 1 → 1 → 2 → 3 → 4 → 4



Linked Lists (AlgoExpert)

array ↝ [2, 1, 5, 6]

Space in memory → 4 back to back slots

Linked Lists :

3 → 1 → 4 → 2

Singly linked list → reads from left to right

in array memory slots have to be back to back

Linked List → stored anywhere in the memory and uses pointers

LinkNodes has value, and pointer to next value

get or set item in list → O(i) → i = index

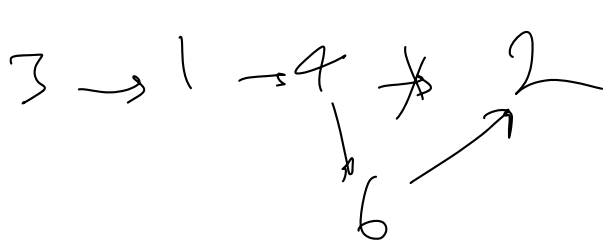
initialize → O(N) ST

Copy → O(N) ST

Traverse → O(N) T

insert element → O(1) Can put anywhere, no shifting is required in memory.

delete element → O(1)



Doubly Linked List → two pointer next and previous