# Interweave Nodes

You have been given two singly linked lists of length 'N1' and 'N2' respectively. Your task is to modify them by interweaving alternate nodes of the two linked lists. If one list is smaller than the other, complete the process using another linked list.

**Detailed explanation** ( Input/output format, Notes, Images )  ⌄

### Constraints :

1 <= T <= 10
0 <= N1 <= 10^4
0 <= N2 <= 10^4
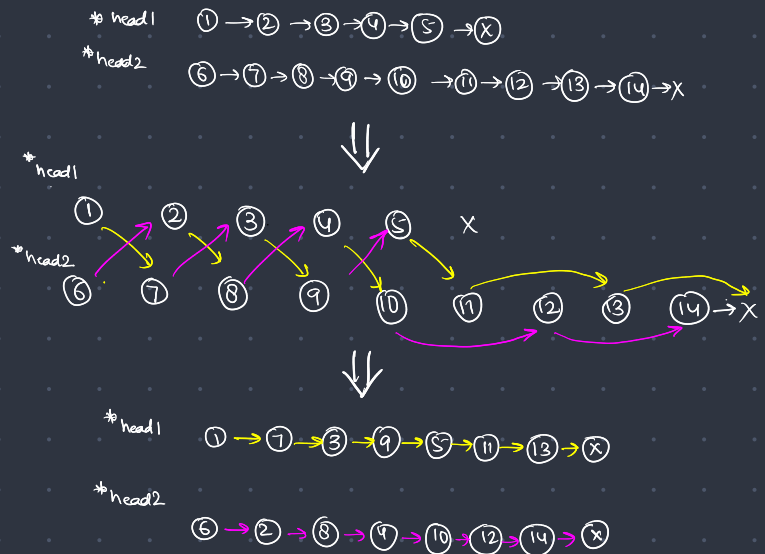-10^9 <= data <= 10^9 and data != -1

Time Limit : 1 sec

**Sample Input 1 :**

```
3
1 2 3 4 5 -1
6 7 8 9 10 -1
-1
3 4 5 7 -1
5 4 3 7 9 -1
4 3 -1
```

**Sample Output 1 :**

```
1 7 3 9 5
6 2 8 4 10
4 7
3 5
5 3 3 9
4 4 7
```

→ **Approach :-**



```cpp
vector< Node *> interweaveNodes(Node *head1, Node *head2) {
        if(!head1 && !head2)
          return {};

        Node* first = head1;
        Node* second = head2;
        if(!head1→next && !head2→next) return {head1, head2};
        Node* f = second→next;
        Node* s = first→next;

        while(f≠NULL && s≠NULL) {
                first→next = f;
                second→next = s;
                first = f;
                second = s;
                s = first→next;
                f = second→next;
        }
        if(!s) {
                first→next = f;
                first = f;
                while(first≠NULL) {
                        second→next = first→next;
                        second = first;
                        first = first→next;
                }
        }
        if(!f) {
                second→next = s;
                second = s;
                while(second≠NULL) {
                        first→next = second→next;
                        first = second;
                        second = second→next;
                }
        }

        return { head1, head2 };
}
```

Time Complexity : $O(max(N,M))$

Space Complexity : $O(1)$