24/11/25 6) a) WAP to implement single link list for the following operations. (i) Sort the link list (ii) Reverse the link list (iii) Concatenation of two linked list.

① Sorting

```
for (i = head; i -> next != NULL; i = i -> next) {
    for (j = i -> next; j != NULL; j = j -> next) {
        if (i -> data > j -> data) {
            tempdata = i -> data;
            i -> data = j -> data;
            j -> data = tempdata; }
    } }
```

② Reversing

```
struct Node* reverselist (struct Node * head) {
    struct Node * prev = NULL, * curr = head, * next = NULL;
    while (curr != NULL) {
        next = curr -> next;
        curr -> next = prev;
        prev = curr;
        curr = next; }
    return prev; }
```

③ Concatination

```
struct Node* concatenate (head1, head2) {
    if (head1 = NULL) {
        return head2; }
temp = head1
while (temp -> next != NULL) {
    temp = temp -> next; }
```

```
temp->next = head2;
return head1; }
```

o/p

1. Insert at list 1:
2. Insert at list 2:
3. Display list 1:
4. Display list 2
5. Concatenate lists
6. Reverse list
7. Sort list
8. Exit

→ Enter your choice : 1
Enter number of elements to insert : 3
Enter 3 elements : 1 3
→ Enter your choice : 2
Enter number of elements to insert : 2
Enter 2 elements : 5
→ Enter your choice : 3
list 1 : 1 3
→ Enter your choice : 4
list 2 : 5
→ Enter your choice : 5
1 6 3 8 5
→ Enter your choice : 6
5 8 3 6 1
→ Enter your choice : 7
1 3 5 6 8
→ Enter your choice : 8
Exiting.