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#include<stdio.h>

typedef struct Node{
    int value;
    struct Node * next;
}Node;

void printList(Node *head, int len){
    Node *temp = head;
    int i = 0;
    while(temp != NULL){
        printf("%d", temp->value);
        temp = temp->next;
        if(i < len - 1) printf(" ");
        i++; // No trailing spaces
    }
}

Node* reverseList(Node *head){
    Node *prev, *curr, *next;
    prev = NULL;
    curr = head;
    next = curr->next;
    while(curr != NULL){
        curr->next = prev;
        prev = curr;
        curr = next;
        next = (curr == NULL)? NULL: curr->next;
    }
    head = prev;
    return head;
}

int main(){
    int n, x;
    scanf("%d", &n);
    Node arr[n];
    for(int i=0; i < n; i++){
        scanf("%d", &x);
        arr[i].value = x;
        arr[i].next = NULL;
    }
    Node* head;
    scanf("%d", &x);
    head = &arr[x];
    for(int i=0; i < n-1; i++){
        int x1, x2;
        scanf("%d %d", &x1, &x2);
        arr[x1].next = &arr[x2];
    }
    printList(head, n);
    printf("\n");
    head = reverseList(head);
    printList(head, n);
}
```