

Aim:

Write a C program to reverse the links (not just displaying) of a linked list.

Note: Add node at the beginning.

Source Code:

reverseLinkedList.c

```
#include<stdio.h>
#include<stdlib.h>
struct Node{
    int data;
    struct Node* next;
};
static void reverse(struct Node** head_ref){
    struct Node* prev=NULL;
    struct Node* current=*head_ref;
    struct Node* next=NULL;
    while(current!=NULL){
        next=current->next;
        current->next=prev;
        prev=current;
        current=next;
    }
    *head_ref=prev;
}
void push(struct Node** head_ref,int new_data){
    struct Node* new_node=(struct Node*)malloc(sizeof(struct Node));
    new_node->data=new_data;
    new_node->next=(*head_ref);
    (*head_ref)=new_node;
}
void printList(struct Node* head){
    struct Node* temp=head;
    while(temp!=NULL){
        printf("%d", temp->data);
        if(temp->next!=NULL){
            printf("->");
        }
        temp=temp->next;
    }
}
int main(){
    struct Node* head=NULL;
    int i,count=0,num=0;
    printf("How many numbers you want to enter:");
    scanf(" %d", &count);
    for(i=0;i<count;i++){
        printf("Enter number %d:",i+1);
        scanf(" %d",&num);
        push(&head,num);
    }
    printf("Given linked list:");
```

```

printList(head);
reverse(&head);
printf("\nReversed linked list:");
printList(head);
}

```

Execution Results - All test cases have succeeded!

Test Case - 1
User Output
How many numbers you want to enter: 4
Enter number 1: 6
Enter number 2: 1
Enter number 3: 8
Enter number 4: 5
Given linked list:5->8->1->6
Reversed linked list:6->1->8->5

Test Case - 2
User Output
How many numbers you want to enter: 2
Enter number 1: 5
Enter number 2: 9
Given linked list:9->5
Reversed linked list:5->9