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

```c
#include<stdio.h>
#include<stdlib.h>
struct node{
    int data;
    struct node*next;
}*head=NULL;
typedef struct node *NODE;
NODE temp,newNode,prev=NULL,next=NULL,current;
void reverselist();
void displaylist();
void main(){
    int i,n,value;
    printf("How many  numbers you want to enter:");
    scanf("%d",&n);
    if(n<=0){
        printf("Enter a valid number\n");
    }
    else {
        for(i=1;i<=n;i++){
            newNode=(NODE)malloc(sizeof(struct node));
            printf("Enter number %d:",i);
            scanf("%d",&newNode->data);
            newNode->next=NULL;
            if(head==NULL)
            head=newNode;
            else {
                newNode->next=head;
                head=newNode;
                }
            }
            printf("Given linked list:");
            displaylist();
            reverselist();
            printf("Reversed linked list:");
            displaylist();
        }
}
    void reverselist(){
        current=head;
        while(current!=NULL){
            next=current->next;
            current->next=prev;
            prev=current;
            current=next;
        }
```

```
        head=prev;
    }
    void displaylist(){
        printf("%d",head->data);
        temp=head->next;
        while(temp!=NULL){
            printf("->%d",temp->data);
            temp=temp->next;
        }
    printf("\n");
}
```

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