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;
  };

  static void reverse(struct Node** head_ref) {
      struct Node* prev = NULL;
      struct Node* current = *head_ref;
      struct Node* next = NULL;
      while (current != NULL) {
         // Store next
         next = current->next;

         // Reverse current node's pointer
          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() {
        /* Start with the empty list */
        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