S.No: 22	Exp. Name: ***Reversing the links of a linked list***	Date:2023-07-16

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) {
      // Store next
      next = current->next;
      // RReverse current node'x pointer
      current->next = prev;
      // Move pointers one position ahead.
      prev = current;
      current = next;
   }
   *head_ref = prev;
}
/*Function to push a node */
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;
}
/*Function to print linked list */
void printList(struct Node* head) {
   struct Node* temp = head;
   while (temp!= NULL) {
      printf("%d", temp->data);
      if (temp -> next!=NULL) {
         printf("->");
      }
      temp = temp->next;
   }
}
/* Driver program to test above function*/
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

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