S.No: 22	Exp. Name: ***Reversing the links of a linked list***	Date:2023-06-10

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;
} *head = NULL;
typedef struct node *NODE;
void reverselist();
void displaylist();
void main() {
   int n, i, value;
   NODE newNode;
   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",&value);
         newNode->data = value;
         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() {
   NODE prev = NULL, next = NULL, current;
   current = head;
   while(current != NULL) {
      next = current->next;
      current->next = prev;
      prev = current;
```


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```
      current = next;
   }
   head = prev;
}
void displaylist() {
   NODE temp;
   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

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