S.No: 15	Exp. Name: ***Write the code to reverse elements of a single linked list***	Date:2023-06-15

Aim:

Write a C program to reverse elements of a single linked list.

Source Code:

reverseElements.c

```
#include<stdio.h>
#include<stdlib.h>
int main()
{
struct node
{
   int data;
   struct node *next;
};
struct node *head,*temp,*newnode;
   int i=1,n,s;
   head==NULL;
   printf("Enter the total number of nodes: ");
   scanf("%d",&n);
   while(i<=n)
   {
      newnode=(struct node*)malloc(sizeof(struct node));
       printf("Enter the data of node %d: ",i);
       scanf("%d",&newnode->data);
       newnode->next=NULL;
       if(head==NULL)
       {
         temp=head=newnode;
         i++;
       }
       else
       {
         temp->next=newnode;
         temp=newnode;
         i++;
       }
 }
   temp=head;
   printf("Data in the list\n");
   while(temp!=NULL)
   {
      printf("Data = %d\n",temp->data);
      temp=temp->next;
 }
   printf("Press 1 to reverse the order of singly linked list\n");
   scanf("%d",&s);
   if(s==1)
   {
      struct node *prev,*cur,*next;
      prev=NULL;
      cur=next=head;
```

```
      while(next!=NULL)
      {
         next=next->next;
         cur->next=prev;
         prev=cur;
         cur=next;
  }
      head=prev;
 }
   temp=head;
   printf("Data in the list\n");
   while(temp!=NULL)
   {
      printf("Data = %d\n",temp->data);
      temp=temp->next;
 }
}
```

Execution Results - All test cases have succeeded!

Test Case - 1
User Output
Enter the total number of nodes: 5
Enter the data of node 1: 26
Enter the data of node 2: 394
Enter the data of node 3: 145
Enter the data of node 4: 624
Enter the data of node 5: 731
Data in the list 1
Data = 26 1
Data = 394 1
Data = 145 1
Data = 624 1
Data = 731 1
Press 1 to reverse the order of singly linked list 1
Data in the list
Data = 731
Data = 624
Data = 145
Data = 394
Data = 26

Test Case - 2
User Output
Enter the total number of nodes: 8
Enter the data of node 1: 21
Enter the data of node 2: 94
Enter the data of node 3: 214
Enter the data of node 4: 24
Enter the data of node 5: 45
Enter the data of node 6: 694

```
Enter the data of node 7:  321
Enter the data of node 8:  356
Data in the list 1
Data = 21 1
Data = 94 1
Data = 214 1
Data = 24 1
Data = 45 1
Data = 694 1
Data = 321 1
Data = 356 1
Press 1 to reverse the order of singly linked list 1
Data in the list
Data = 356
Data = 321
Data = 694
Data = 45
Data = 24
Data = 214
Data = 94
Data = 21
```