❖ Linked list programs

Ex: split one list into two linked list

```
#include<iostream.h>
struct node
        {   int item;
            node *next;  };
        void split(node *f1,node*&f2)
                        { node *p,*q;
                        int c;     p=f1;
                          cout<<"enter the number to split\n";  cin>>c;
                          while(p->item!=c)
                          p=p->next;
                          f2=p->next;
                          p->next=0;  }
         void print(node *f)
                    {  node *p;
                            p=f;
                            while(p!=0)
                                        { cout<<p->item; p=p->next;}
                                    }
void main()
        { node *p,*q,*f1,*f2;
                f1=new node;
```

```
cin>>f1->item;  f1->next=0;
p=f1;
for(int i=1; i<5;i++)
  {       q=new node;
          cin>>q->item;    q->next=0;
          p->next =q;      p=q;  }
          p=f1;
          split(f1,f2);
           print(f2);
                                    }
```

Ex:Print linked list in reeves order:

```
#include<iostream.h>
#include<conio.h>
#include<stdlib.h>
struct node{
            int data;
            struct node *link;
           }*p,*q,*f,*r,*start;

void createNnode()
{
 int n,i;
 p=new node;
 start=p;
 cout<<"how many elements you like to create"<<endl;
 cin>>n;
 for(i=0;i<n;i++)
  {
   cin>>p->data;
```

```
   if(i!=n-1)
   q=new node;
   else q=NULL;
   p->link=q;
   p=q;
  }
}
void displaylist()
{
 p=start;
 while(p!=NULL)
    {
     cout<<"\t"<<p->data;
     p=p->link;
    }
}
void invert(struct node **x)
{
 p=*x;
 q=NULL;
 while(p!=NULL)
    {
     r=q;
     q=p;
     p=p->link;
     q->link=r;
    }
 *x=q;
}
void printrev(struct node*p)
{
 if(p!=NULL)
  {
  printrev(p->link);
  cout<<"\t"<<p->data;
  }
 }
```

```
void main()
{
 int choice,k,item,item1,l;
 clrscr();
 start=NULL;
 do
  {
   cout<<"representation of linked list and its operation"<<endl;
   cout<<"----------------------------------------------"<<endl;
   cout<<"1-creation alinked list"<<endl;
   cout<<"2-display the content of the linked list"<<endl;
   cout<<"3-print the elements in reverse order"<<endl;
   cout<<"4-reverse the order of the list element"<<endl;
   cout<<"5-exit"<<endl;
   cout<<"select your choice"<<endl;
   cin>>choice;
   switch(choice)
      {
       case(1):
       createNnode();
       break;
       case(2):
           {
            cout<<"the element of the liked list are:"<<endl;
            displaylist();
            break;
            }
            case(3):
              {
               cout<<"this is the elements of the list are printed in reverse order"<<endl;
               printrev(start);
               break;
              }
               case(4):
                 {
                    invert(&start);
                    cout<<"the elements of the list are reversed"<<endl;
```

```
                break;
                }
        }
}while(choice!=5);
}
```