**9. program to implement Linked list operations:**

#include<stdio.h>

#include<stdlib.h>

struct node

{

int data;

struct node \*next;

};

struct node \*start;

void insert\_begin();

void insert\_last();

void insert\_locc();

void delete\_begin();

void delete\_last();

void delete\_locc();

void print();

int main ()

{

int ch=0;

while(ch!=8)

{

printf("\nEnter the operation to be performed\n");

printf("\n1.Insert in the begining\n2.Insert at last\n3.Insert at any specified position\n4.Delete from Beginning\n5.Delete from last\n6.Delete node after specified location\n7.Show\n8.Exit\n");

scanf("\n%d",&ch);

switch(ch)

{

case 1:

insert\_begin();

break;

case 2:

insert\_last();

break;

case 3:

insert\_locc();

break;

case 4:

delete\_begin();

break;

case 5:

delete\_last();

break;

case 6:

delete\_locc();

break;

case 7:

print();

break;

case 8:

exit(0);

break;

default:

printf("Enter valid option");

}

}

}

void insert\_begin()

{

struct node \*p;

int value;

p=(struct node \*) malloc(sizeof(struct node \*));

if(p==NULL)

{

printf("\nOVERFLOW");

}

else

{

printf("\nEnter value\n");

scanf("%d",&value);

p->data=value;

p->next=start;

start=p;

}

}

void insert\_last()

{

struct node \*p,\*temp;

int value;

p=(struct node\*)malloc(sizeof(struct node));

if(p==NULL)

{

printf("\nOVERFLOW");

}

else

{

printf("\nEnter value\n");

scanf("%d",&value);

p->data=value;

if(start==NULL)

{

p->next=NULL;

start=p;

}

else

{

temp=start;

while(temp->next!=NULL)

{

temp=temp->next;

}

temp->next=p;

p->next=NULL;

}

}

}

void insert\_locc()

{

int i,loc,value;

struct node \*p, \*temp;

p=(struct node \*)malloc(sizeof(struct node));

if(p==NULL)

{

printf("\nOVERFLOW");

}

else

{

printf("\nEnter element value");

scanf("%d",&value);

p->data=value;

printf("\nEnter the location after which you want to insert ");

scanf("\n%d",&loc);

temp=start;

for(i=0;i<loc;i++)

{

temp=temp->next;

if(temp==NULL)

{

printf("\ncan't insert\n");

return;

}

}

p->next=temp->next;

temp->next=p;

}

}

void delete\_begin()

{

struct node \*p;

if(start==NULL)

{

printf("\nList is empty\n");

}

else

{

p=start;

start=p->next;

free(p);

}

}

void delete\_last()

{

struct node \*p,\*p1;

if(start==NULL)

{

printf("\nlist is empty");

}

else if(start->next==NULL)

{

start=NULL;

free(start);

printf("\nOnly node of the list deleted ...\n");

}

else

{

p=start;

while(p->next!=NULL)

{

p1=p;

p=p->next;

}

p1->next=NULL;

free(p);

}

}

void delete\_locc()

{

struct node \*p,\*p1;

int loc,i;

printf("\n Enter the location of the node after which you want to perform deletion \n");

scanf("%d",&loc);

p=start;

for(i=0;i<loc;i++)

{

p1=p;

p=p->next;

if(p==NULL)

{

printf("\nCan't delete");

return;

}

}

p1->next=p->next;

free(p);

printf("\nDeleted node %d ",loc+1);

}

void print()

{

struct node \*p;

p=start;

if(p==NULL)

{

printf("Nothing to print");

}

else

{

printf("\nprinting values\n");

while (p!=NULL)

{

printf("\n%d",p->data);

p=p->next;

}

}

}

