#include <stdio.h>

#include<stdlib.h>

struct node{

int item;

struct node \*next;

};

typedef struct node node;

void display(node \*p){

if(p!=NULL)

{

printf("%d-->",p->item);

display(p->next);

}

else{printf("NULL\n");}

}

node \*firstdelete(node \*head){

if(head->item==NULL){printf("\nit is empty\n\n");}

else{

head=head->next;

}

return head;

}

void lastdelete(node \*head){

node \*temp,\*term;

if(head->item==NULL){

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

}

else{

temp=head;

while(temp->next->next!=NULL)

{

temp=temp->next;

}

temp->next=NULL;

}

}

void anydelete(node \*head){int val;node \*temp,\*term;

temp=head;

if(head->item==NULL){

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

}

else{

printf("enter number to delete:");

scanf("%d",&val);

while(temp->item!=val){

term=temp;

if(temp->next!=NULL){

temp=temp->next;

}

else{

printf("item not found\n\n");

return ;

}

}term->next=temp->next;

}

}

node \*firsthead(node \*head){

node \*new,\*temp;

new=(node\*)malloc(sizeof(node));

scanf("%d",&new->item);

if(head->item==NULL){

head->item=new->item;

}

else{

temp=head;

new->next=temp;

head=new;

}

return head;

}

void lasthead(node \*head){

node \*new,\*temp;

new=(node\*)malloc(sizeof(node));

scanf("%d",&new->item);

if(head->item==NULL){

head->item=new->item;

}

else{

temp=head;

while(temp->next!=NULL)

{

temp=temp->next;

}

temp->next=new;

new->next=NULL;

}

}

void anyhead(node \*head){

node \*new,\*temp,\*term;

int val;

new=(node\*)malloc(sizeof(node));

scanf("%d",&new->item);

printf("enter after which node willbe insert");

scanf("%d",&val);

if(head->item==0){

head->item=new->item;

}

else{

temp=head;

while(temp->item!=val)

{

if(temp->next!=NULL)

{temp=temp->next;}

else{

printf("item not found");

return;

}

}term=temp->next;

temp->next=new;

new->next=term;

}

}

int main()

{int ch=1,op;

node \*head;

head=(node\*)malloc(sizeof(node));

do{

printf("insert at first node\ninsert at last node\ninsert at any node\ndeleting at first node\ndeleting at last node\ndeleting at any node\ndisplay\nselect option :");

scanf("%d",&op);

switch(op)

{ case 1:

printf("inserting at first node\n");

head=firsthead(head);

break;

case 2:

printf("inserting at last node\n");

lasthead(head);

break;

case 3:

printf("inserting at any node\n");

anyhead(head);

break;

case 4:

printf("deleting at first node\n");

head=firstdelete(head);

break;

case 5:

printf("deleting at last node\n");

lastdelete(head);

break;

case 6:

printf("deleting at any node\n");

anydelete(head);

break;

case 7:

display(head);

break;

}

}while(ch==1);

return 0;

}