#include<stdio.h>

#include<stdlib.h>

struct node {

int data;

struct node \*next;

struct node \*prev;

}\*start=NULL,\*temp,\*head,\*t;

void create(){

int item;

printf("enter data to add: ");

scanf("%d",&item);

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

head->data=item;

head->next=NULL;

//head->prev=NULL;

if (start==NULL){

start=head;

head->prev=NULL;

}

else{

temp=start;

while(temp->next!=NULL){

temp=temp->next;

}

temp->next=head;

head->prev=temp;

}

}

void traverse(){

printf("data in the list\n");

temp=start;

while(temp!=NULL){

printf("%d\t",temp->data);

temp=temp->next;

}

}

void insertbeg(){

int item;

printf("enter data to add: ");

scanf("%d",&item);

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

head->data=item;

if(start==NULL){

head->prev=NULL;

head->next=NULL;

start=head;

}

else{

head->next=start;

start=head;

}

}

void insertpar(){

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

int count = 1;

int item,pos;

printf("enter position: ");

scanf("%d",&pos);

printf("enter data to add: ");

scanf("%d",&item);

head->data=item;

temp = start;

while (count != pos) {

t=temp;

temp=temp->next;

count++;

}

t->next = head;

head->next=temp;

}

void deletefirst(){

if(start==NULL)

{

printf("Empty\n");

}

else{

printf("deleted data is %d\n",start->data);

temp=start;

start=start->next;

free(temp);

}

}

void deletelast(){

if(start==NULL)

{

printf("Empty\n");

}

else{

temp=start;

if(temp->next==NULL){

printf("deleted data is %d\n",temp->data);

free(temp);

start=NULL;

}

else{

while(temp->next!=NULL){

t=temp;

temp=temp->next;

}

printf("deleted data is %d\n",temp->data);

free(temp);

t->next=NULL;

}

}

}

void deletekey(){

int key;

printf("enter key\n");

scanf("%d",&key);

if(start==NULL)

{

printf("Empty\n");

}

else{

temp=start;

while(temp->data!=key){

t=temp;

temp=temp->next;

}

if (temp==start){

start=start->next;

free(temp);

}

else{

t->next=temp->next;

}

}

}

void main(){

do{

printf("\nMENU \n 1. insert\n 2. traverse\n 3.Insert at beginning\n 4. insert at end\n 5.insesrt at pos \n 6.Delete first element\n 7.Delete last element\n 8.Delte key\n ");

int ch;

scanf("%d",&ch);

if (ch==1){

create();

}

else if (ch==2){

traverse();

}

else if (ch==3){

insertbeg();

}

else if (ch==4){

create();

}

else if (ch==6){

deletefirst();

}

else if (ch==7){

deletelast();

}

else if (ch==8){

deletekey();

}

else if (ch==5){

insertpar();

}

else{

break;

}

}while(1);

}

OUTPUT

MENU

1. insert

2. traverse

3.Insert at beginning

4. insert at end

5.insesrt at pos

6.Delete first element

7.Delete last element

8.Delte key

1

enter data to add: 1

MENU

1. insert

2. traverse

3.Insert at beginning

4. insert at end

5.insesrt at pos

6.Delete first element

7.Delete last element

8.Delte key

1

enter data to add: 2

MENU

1. insert

2. traverse

3.Insert at beginning

4. insert at end

5.insesrt at pos

6.Delete first element

7.Delete last element

8.Delte key

3

enter data to add: 0

MENU

1. insert

2. traverse

3.Insert at beginning

4. insert at end

5.insesrt at pos

6.Delete first element

7.Delete last element

8.Delte key

4

enter data to add: 3

MENU

1. insert

2. traverse

3.Insert at beginning

4. insert at end

5.insesrt at pos

6.Delete first element

7.Delete last element

8.Delte key

2

data in the list

0 1 2 3

MENU

1. insert

2. traverse

3.Insert at beginning

4. insert at end

5.insesrt at pos

6.Delete first element

7.Delete last element

8.Delte key

5

enter position: 2

enter data to add: 2

MENU

1. insert

2. traverse

3.Insert at beginning

4. insert at end

5.insesrt at pos

6.Delete first element

7.Delete last element

8.Delte key

2

data in the list

0 2 1 2 3

MENU

1. insert

2. traverse

3.Insert at beginning

4. insert at end

5.insesrt at pos

6.Delete first element

7.Delete last element

8.Delte key

6

deleted data is 0

MENU

1. insert

2. traverse

3.Insert at beginning

4. insert at end

5.insesrt at pos

6.Delete first element

7.Delete last element

8.Delte key

7

deleted data is 3

MENU

1. insert

2. traverse

3.Insert at beginning

4. insert at end

5.insesrt at pos

6.Delete first element

7.Delete last element

8.Delte key

8

enter key

1

MENU

1. insert

2. traverse

3.Insert at beginning

4. insert at end

5.insesrt at pos

6.Delete first element

7.Delete last element

8.Delte key

2

data in the list

2 2