#include<string.h>

#include<ctype.h>

#include<malloc.h> /\* malloc()等 \*/

#include<limits.h> /\* INT\_MAX等 \*/

#include<stdio.h> /\* EOF(=^Z或F6),NULL \*/

#include<stdlib.h> /\* atoi() \*/

#include<io.h> /\* eof() \*/

#include<math.h> /\* floor(),ceil(),abs() \*/

#include<process.h> /\* exit() \*/

#define TRUE 1

#define FALSE 0

#define OK 1

#define ERROR 0

#define INFEASIBLE -1

typedef int ElemType;

typedef int Status;

typedef int Boolean;

typedef int ElemType;

typedef struct myNode{

ElemType xishu;

ElemType zhisu;

struct myNode\* Next;

}Node;

typedef Node\* LinkList;

//多项式按照指数大小排序

void insertNewPoint\_link(LinkList p1,LinkList p2)

{

LinkList p=p1;

while (p->Next!=NULL)

{

if (p->Next->zhisu>p2->zhisu)

{

p2->Next=p->Next;

p->Next=p2;

break;

}

p=p->Next;

}

if (p->Next==NULL)

{

p->Next=p2;

}

}

//打印多项式

Status ListTraverse(LinkList L)

{

LinkList temp=L->Next;

while (temp!=NULL)

{

printf("%d %d",temp->xishu,temp->zhisu);

printf("\n");

temp=temp->Next;

}

return OK;

}

//多项式的加法计算

Status add(LinkList pa,LinkList pb)

{

LinkList p;

p=pa->Next;

LinkList q;

q=pb->Next;

LinkList pre;

p=pa->Next;

LinkList u;

while (p!=NULL||q!=NULL)

{

if (p->zhisu<q->zhisu)

{

pre=p;p=p->Next;

}

else if(p->zhisu==q->zhisu)

{

int x=p->xishu+q->xishu;

if (x!=0)

{

p->xishu=x;

pre=p;

}

else

pre->Next=p->Next;//指向下一个结点

p=pre->Next;

q=q->Next;

}

else

{

u=q->Next;

pre->Next=p;

pre=q;

q=u;

}

pre=pre->Next;

}

pre->Next=NULL;

return 0;

}

int main( )

{

int zhishu;

int xishu;

LinkList head1=(LinkList)malloc(sizeof(Node));

LinkList head2=(LinkList)malloc(sizeof(Node));

LinkList tem=NULL;

head1->Next=NULL;

head2->Next=NULL;

printf("输入链表一的系数和指数，如：3,2 以0,0结束输入：\n");

scanf("%d,%d",&xishu,&zhishu);

while (xishu!=0||zhishu!=0)

{

tem=(LinkList)malloc(sizeof(Node));

tem->xishu=xishu;

tem->zhisu=zhishu;

tem->Next=NULL;

insertNewPoint\_link(head1,tem);

scanf("%d,%d",&xishu,&zhishu);

}

printf("链表一按指数升序排序后的多项式为：\n");

ListTraverse(head1);

printf("\n");

printf("输入链表一的系数和指数，如：3,2 以0,0结束输入：\n");

scanf("%d,%d",&xishu,&zhishu);

while (xishu!=0||zhishu!=0)

{

tem=(LinkList)malloc(sizeof(Node));

tem->xishu=xishu;

tem->zhisu=zhishu;

tem->Next=NULL;

insertNewPoint\_link(head2,tem);

scanf("%d,%d",&xishu,&zhishu);

}

printf("链表二按指数升序排序后的多项式为：\n");

ListTraverse(head2);

printf("\n");

add(head1,head2);

printf("多项式相加后的结果为：\n");

ListTraverse(head1);

return 0;

}