#include<stdio.h>

#include<stdlib.h>

#include<math.h>

typedef struct PolyNode{

int coef;

int exp;

struct PolyNode \*next;

}PolyNode,\*PolyList;

void cteatePolyList(PolyList &PL,int n){

PolyNode \*ra = NULL;

PolyNode \*de = NULL;

int i,j;

PL = (PolyList)malloc(sizeof(PolyNode));

PL->next = NULL;

ra = PL;

for(i=0;i<n;i++){

de = (PolyNode\*)malloc(sizeof(PolyNode));

scanf("%d %d",&de->coef,&de->exp);

de->next = ra->next;

ra->next = de;

}

PolyNode \*p = PL->next;

PolyNode \*q;

PL->next = NULL;

while(p !=NULL){

q = p;

p = p->next;

q->next = PL->next;

PL->next = q;

}

}

void outputPolyList(PolyList PL){

PolyNode \*p;

p = PL->next;

while(p != NULL){

printf("(%d,%d),",p->coef,p->exp);

p = p->next;

}

printf("\n");

}

int find(PolyList PL,int e){

PolyNode \*p;

p = PL->next;

while( p != NULL && p->exp < e){

p = p->next;

}

if(p != NULL && p->exp == e){

return p->coef;

}

else {

return 0;

}

}

PolyList addPolyList(PolyList A,PolyList B){

PolyList C;

PolyList ra;

PolyNode \*pa,\*pb,\*ptemp;

int c;

C = A;

pa = A->next;

pb = B->next;

C->next = NULL;

ra = C;

while(pa !=NULL && pb != NULL){

if(pa->exp == pb->exp){

c = pa->coef + pb->coef;

if(c != 0){

pa->coef = c;

ra->next = pa;

ra = ra->next;

pa = pa->next;

}

else{

ptemp = pa->next;

free(pa);

pa = ptemp;

}

ptemp = pb->next;

free(pb);

pb = ptemp;

}

else if(pa->exp < pb->exp){

ra->next = pa;

ra = pa;

pa = pa->next;

}

else{

ra->next = pb;

ra = pb;

pa = pb->next;

}

}

if(pa != NULL){

ra->next = pa;

}

else{

ra->next = pb;

}

free(B);

return C;

}

int main(){

PolyList Alist,Blist,Clist;

int s1,s2;

printf("请输入第一个多项式的项数： ");

scanf("%d",&s1);

printf("请输入第一个多项式的各项：（系数） （指数）\n");

cteatePolyList(Alist,s1);

printf("第一个多项式为：\n");

outputPolyList(Alist);

printf("---------------------------------------------\n");

printf("请输入第二个多项式的项数： ");

scanf("%d",&s2);

printf("请输入第一个多项式的各项：（系数） （指数）\n");

cteatePolyList(Blist,s2);

printf("第二个多项式为：\n");

outputPolyList(Blist);

printf("---------------------------------------------\n");

Clist = addPolyList(Alist,Blist);

printf("相加后的多项式为：\n");

outputPolyList(Clist);

return 0;

}