#include <stdio.h>

#include <stdlib.h>

struct Node {

int coef;

int exp;

struct Node\* next;

};

typedef struct Node Node;

void insert(Node\*\* poly, int coef, int exp) {

Node\* temp = (Node\*) malloc(sizeof(Node));

temp->coef = coef;

temp->exp = exp;

temp->next = NULL;

if (\*poly == NULL) {

\*poly = temp;

return;

}

Node\* current = \*poly;

while (current->next != NULL) {

current = current->next;

}

current->next = temp;

}

void print(Node\* poly) {

if (poly == NULL) {

printf("0\n");

return;

}

Node\* current = poly;

while (current != NULL) {

printf("%dx^%d", current->coef, current->exp);

if (current->next != NULL) {

printf(" + ");

}

current = current->next;

}

printf("\n");

}

Node\* add(Node\* poly1, Node\* poly2) {

Node\* result = NULL;

while (poly1 != NULL && poly2 != NULL) {

if (poly1->exp == poly2->exp) {

insert(&result, poly1->coef + poly2->coef, poly1->exp);

poly1 = poly1->next;

poly2 = poly2->next;

} else if (poly1->exp > poly2->exp) {

insert(&result, poly1->coef, poly1->exp);

poly1 = poly1->next;

} else {

insert(&result, poly2->coef, poly2->exp);

poly2 = poly2->next;

}

}

while (poly1 != NULL) {

insert(&result, poly1->coef, poly1->exp);

poly1 = poly1->next;

}

while (poly2 != NULL) {

insert(&result, poly2->coef, poly2->exp);

poly2 = poly2->next;

}

return result;

}

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