

Rajalakshmi Engineering College

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NeoColab_REC_CS23231_DATA STRUCTURES

REC_DS using C_Week 1_COD_Question 1

Attempt : 1
Total Mark : 10
Marks Obtained : 10

Section 1 : Coding

1. Problem Statement

Janani is a tech enthusiast who loves working with polynomials. She wants to create a program that can add polynomial coefficients and provide the sum of their coefficients.

The polynomials will be represented as a linked list, where each node of the linked list contains a coefficient and an exponent. The polynomial is represented in the standard form with descending order of exponents.

Input Format

The first line of input consists of an integer n , representing the number of terms in the first polynomial.

The following n lines of input consist of two integers each: the coefficient and the exponent of the term in the first polynomial.

The next line of input consists of an integer m , representing the number of terms in the second polynomial.

The following m lines of input consist of two integers each: the coefficient and the exponent of the term in the second polynomial.

Output Format

The output prints the sum of the coefficients of the polynomials.

Sample Test Case

Input: 3

2 2

3 1

4 0

3

2 2

3 1

4 0

Output: 18

Answer

```
// You are using GCC
```

```
#include <stdio.h>
```

```
#include <stdlib.h>
```

```
struct Node{
```

```
    int c,e;
```

```
    struct Node* next;
```

```
};
```

```
struct Node* insert(struct Node* head,int a,int b){
```

```
    struct Node* newNode = (struct Node*)malloc(sizeof(struct Node));
```

```
    newNode->c=a;
```

```
    newNode->e=b;
```

```
    newNode->next = NULL;
```

```
    if(head == NULL){
```

```
        return newNode;
```

```
    }
```

```
    struct Node* temp=head;
```

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

```
        temp=temp->next;
```

```

    }
    temp->next=newNode;
    return head;
}
int sum(struct Node* h1,struct Node* h2){
    struct Node* t1=h1;
    struct Node* t2=h2;
    int s=0;
    while(t1!=NULL){
        s+=t1->c;
        t1=t1->next;
    }
    while(t2!=NULL){
        s+=t2->c;
        t2=t2->next;
    }
    return s;
}
void freeList(struct Node* h) {
    struct Node* t=h;
    while(t!=NULL){
        h=h->next;
        free(t);
        t=h;
    }
}
int main(){
    int n1;
    scanf("%d",&n1);
    struct Node* h1=NULL;
    for(int i=0;i<n1;i++){
        int c,e;
        scanf("%d %d",&c,&e);
        h1=insert(h1,c,e);
    }
    int n2;
    scanf("%d",&n2);
    struct Node* h2=NULL;
    for(int i=0;i<n2;i++){
        int c,e;
        scanf("%d %d",&c,&e);
        h2 = insert(h2,c,e);
    }
}

```

```
}  
    printf("%d",sum(h1,h2));  
    freeList(h1);  
    freeList(h2);  
    return 0;  
}
```

Status : Correct

Marks : 10/10