

# Rajalakshmi Engineering College

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Batch: 2028  
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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***

```
#include<stdio.h>
#include<stdlib.h>
typedef struct poly{
    int coeff;
    int expo;
    struct poly* next;
}Node;
Node* newnode(int coeff,int expo){
    Node* new_node=(Node*)malloc(sizeof(Node));
    new_node->coeff=coeff;
    new_node->expo=expo;
    new_node->next=NULL;
    return new_node;
}
void insertNode(Node** head, int coeff, int expo){
    Node* temp= *head;
    if(temp==NULL){
        *head=newnode(coeff,expo);
        return;
    }
}
```

```

        while(temp->next!=NULL){
            temp=temp->next;
        }
        temp->next= newnode(coeff,expo);
    }
int main()
{
    int n,coeff,expo;
    scanf("%d",&n);
    Node* poly1;
    Node* poly2;
    for(int i=0;i<n;i++)
    {
        scanf("%d %d",&coeff,&expo);
        insertNode(&poly1,coeff,expo);
    }
    scanf("%d",&n);
    for(int i=0;i<n;i++){
        scanf("%d %d",&coeff,&expo);
        insertNode(&poly2,coeff,expo);
    }
    int sum=0;
    while(poly1!=NULL)
    {
        sum+=poly1->coeff;
        poly1=poly1->next;
    }
    while(poly2!=NULL)
    {
        sum+=poly2->coeff;
        poly2=poly2->next;
    }
    printf("%d",sum);
}

```

**Status :** Correct

**Marks :** 10/10