class Node:

   def \_\_init\_\_(self, coeff, power):

       self.coeff = coeff

       self.power = power

       self.next = None

def insert\_term(head, coeff, power):

   new\_node = Node(coeff, power)

   if head is None or power > head.power:

       new\_node.next = head

       return new\_node

   temp = head

   while temp.next and temp.next.power >= power:

       if temp.next.power == power:

           temp.next.coeff += coeff

           return head

       temp = temp.next

   if temp.power == power:

       temp.coeff += coeff

   else:

       new\_node.next = temp.next

       temp.next = new\_node

   return head

def add\_poly(p1, p2):

   result = None

   while p1 and p2:

       if p1.power == p2.power:

           result = insert\_term(result, p1.coeff + p2.coeff, p1.power)

           p1 = p1.next

           p2 = p2.next

       elif p1.power > p2.power:

           result = insert\_term(result, p1.coeff, p1.power)

           p1 = p1.next

       else:

           result = insert\_term(result, p2.coeff, p2.power)

           p2 = p2.next

   while p1:

       result = insert\_term(result, p1.coeff, p1.power)

       p1 = p1.next

   while p2:

       result = insert\_term(result, p2.coeff, p2.power)

       p2 = p2.next

   return result

def display\_poly(head):

   if head is None:

       print("0")

       return

   temp = head

   while temp:

       print(f"{temp.coeff}x^{temp.power}", end=" ")

       if temp.next:

           print("+", end=" ")

       temp = temp.next

   print()

def get\_polynomial():

   head = None

   n = int(input("Enter number of terms: "))

   for \_ in range(n):

       coeff = int(input("Enter coefficient: "))

       power = int(input("Enter power: "))

       head = insert\_term(head, coeff, power)

   return head

print("Enter first polynomial:")

poly1 = get\_polynomial()

print("Enter second polynomial:")

poly2 = get\_polynomial()

print("\nFirst Polynomial:")

display\_poly(poly1)

print("Second Polynomial:")

display\_poly(poly2)

sum\_poly = add\_poly(poly1, poly2)

print("Sum of Polynomials:")

display\_poly(sum\_poly)