

Programming Task 2

1. Polynomial addition using Linked list.

Use a linked list to represent a polynomial.

Implement a function that adds the coefficient of same variable powers.

A Polynomial has mainly two fields. exponent and coefficient.

Input:

$$\text{1st number} = 5x^2 + 4x^1 + 2x^0$$

$$\text{2nd number} = -5x^1 - 5x^0$$

Output:

$$5x^2 - 1x^1 - 3x^0$$

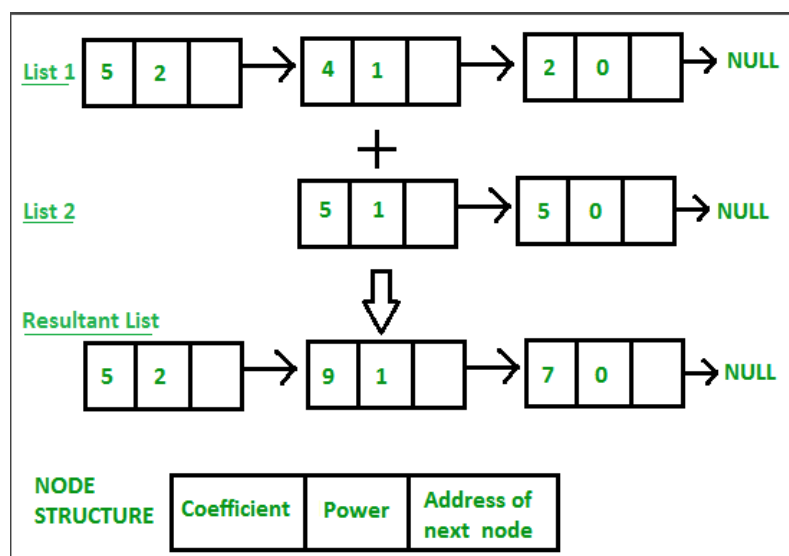
Input:

$$\text{1st number} = 5x^3 + 4x^2 + 2x^0$$

$$\text{2nd number} = 5x^1 - 5x^0$$

Output:

$$5x^3 + 4x^2 + 5x^1 - 3x^0$$



You can use this technique given below to represent a polynomial for passing to a function:

Each term of the polynomial can be represented as a pair of integers (coefficient, exponent). The polynomial itself is then a list of such pairs like [(3,4), (-17,2), (-3,1), (5,0)] for the polynomial $3x^4 - 17x^2 - 3x + 5$.