SSN COLLEGE OF ENGINEERING
DEPARTMENT OF CSE

DATA STRUCTURES LABORATORY (CS8381)

Ex. No. 3 Application of Linked List - Polynomial Operations

Represent a polynomial expression using linked list ADT. Perform addition and multiplication operations on the given two polynomials. The following are the menu options:

a) Enter Polynomial 1
b) Enter Polynomial 2
c) Add two Polynomial expressions
d) Multiply two Polynomial expressions
e) Display the two Polynomials and the resultant in expression form

Accept the terms of the polynomial as long as the user wishes and represent the polynomial using linked list. Verify your program for the following cases:

case 1:

P1: $3x^5 + 5x^2 + 6x - 1$
P2: $5.5x^2 + 3x - 2$
Result: $3x^5 + 10.5x^2 + 9x - 3$

case 2:

P1: $5x^2 + 8x + 3$
P2: $6x^3 - 5x^2 + 8x$
Result: $6x^3 + 16x + 3$

case 3:

P1:
P2: $5x - 6$
Result: $5x – 6$

Similarly, apply the multiplication operation for the above cases.

Note: 3 files need to be maintained.

1. Structure, type declarations, constants and function definitions
2. Function prototypes
3. Application